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Major Retail Development, Catherine Street, Windsor Transportation Impact Study

Paradigm Transportation Solutions Limited

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Major Retail Development, Catherine Street, Windsor Transportation Impact Study



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Executive Summary

Content

Paradigm Transportation Solutions Limited (Paradigm) has been retained to conduct this Transportation Impact Study (TIS) for a proposed Major Retail Development located at 6630 Tecumseh Road in the City of Windsor.

This TIS includes an analysis of existing traffic conditions, a description of the proposed development, analysis of future traffic conditions, and assessment of development traffic impacts with recommendations as appropriate to accommodate the proposed development.

Study Area

The subject lands are part of the Forest Glade North Planning Area, bounded by CN rail corridor to the north, Lauzon Parkway to the east, Tecumseh Road to the south, and Jefferson Boulevard to the west. The area includes significant commercial developments, including Walmart, Home Depot, Staples, etc. The subject development is located immediately north of the existing Home Depot site.

Catherine Street currently extends west from Lauzon Parkway within the study area. The following network additions are proposed to be implemented in conjunction with the development of the subject site:

- ▶ The westerly extension of Catherine Street from its current terminus to the west of the subject site, with the new alignment located between the subject site and the Home Depot property;
- ▶ A north-south Catherine Street road connection between Catherine Street (east-west) extension and Tecumseh Road to the west of the Home Depot site; and
- ▶ The northerly extension of Rose-Ville Garden Drive between Tecumseh Road and the Catherine Street extension. This extension will include a new access to the Home Depot site.
- ▶ All three roadways will have a three-lane cross-section with a two-way centre-turn lane. The existing intersection of Catherine Street and Lauzon Parkway is under traffic signal control. The new intersection of Catherine Street and Tecumseh Road will be implemented with traffic signal control. The new intersection of Catherine Street and Rose-Ville Garden Drive could also be implemented with traffic signal control, as reviewed in this study.



Proposed Development

The subject site is located directly to the north of the existing Home Depot and will be separated by the extension of Catherine Street. The development is proposed to accommodate a Costco Wholesale Store of 158,000 sq. ft. GFA including a gas station comprising 16 pumps; and a Sobeys Supermarket Store of 100,556 sq. ft. GFA.

Vehicular access is proposed via two driveways (identified as Access A and Access B in this report) to the extended section of Catherine Street and located approximately 200 metres apart at the easterly and westerly site limits.

The development is anticipated to be completed by 2025.

TIS Scope

The scope of the Transportation Impact Study for the proposed development includes:

► **Study Area Intersections:**

Existing Intersections

- Catherine Street & Lauzon Parkway (signalized);
- Lauzon Parkway & Tecumseh Road (signalized);
- Tecumseh Road & Rose-Ville Garden Drive (signalized);
- Tecumseh Road & Home Depot Access (signalized);
- Tecumseh Road & Walmart Access/ East Park Drive (signalized); and
- Tecumseh Road & Jefferson Street (signalized).

New Intersections

- Catherine Street & Rose-Ville Garden Drive (future, unsignalized);
- Tecumseh Road & Catherine Street (North-South);
- Subject Site Access Intersections on Catherine Street; and
- Home Depot Access Intersection on Rose-Ville Garden Drive extension.

► **Analysis Periods:** Weekday AM and PM and Saturday peak hours.

► **Traffic Conditions:**

- Base Year: 2024 – Existing;



- 2025 – Development Completion;
 - 2030 – Five years after development; and
 - 2035 – 10 years after development.
 - Background Traffic Growth: Future background traffic is projected using a growth rate of 1.7% per year. No active other area developments are identified in the timeframe analysed in this study. However, potential developments of all vacant lands are considered in a companion traffic study based on a 20-year timeframe as noted below.
- **Additional Considerations:** City of Windsor staff provided comments on a previously circulated version of this report. City staff comments have been addressed in this report and are summarized in **Table 1.1** in **Section 1.3** of this report.

Conclusions

Based on the investigations carried out, it is concluded that:

- **Existing Traffic Conditions:** The study area intersections are operating at acceptable levels of service. The following peak hour critical movements are identified based on operational parameters including volume-to-capacity (v/c) ratios, delays, and vehicle queuing:

Jefferson Boulevard and Tecumseh Road

- The southbound left-turn movement is operating at LOS F with a theoretical v/c ratio greater than 1.00 and a 95th percentile queue length that is exceeding the existing storage of 45 metres during the PM peak hour;

Tecumseh Road and Walmart Access/ East Park Drive

- The 95th percentile queue length of the northbound left-turn is exceeding the existing storage of 25 metres during the PM peak hour;
- The 95th percentile queue length of the southbound left-turn is exceeding the existing storage of 20 metres during the weekday PM and Saturday peak hours;

Lauzon Parkway and Tecumseh Road

- The eastbound left-turn movement is operating at LOS E with a theoretical v/c ratio greater than 1.00 during the Saturday peak hour;



- The eastbound shared through/right-turn movement is operating at LOS D with a theoretical v/c ratio of 0.85 during the Saturday peak hour; and
 - The 95th percentile queue length of the southbound right-turn movement is exceeding the existing storage of 70 metres during the Saturday peak hour.
- ▶ **Development Trip Generation:** The development is forecast to generate 309 (196 inbound & 113 outbound) net new trips during the AM peak hour, 1031 (498 inbound & 533 outbound) net new trips during the PM peak hour, and 1483 (740 inbound & 743 outbound) net new trips during the Saturday peak hour.
- ▶ **2025 Background Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under existing traffic conditions.

Jefferson Boulevard and Tecumseh Road

- The 95th percentile queue length of the southbound left-turn movement is projected to exceed the existing storage length of 45 metres during the weekday AM and Saturday peak hours;

East Park Drive/Walmart Access and Tecumseh Road

- The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage length of 25 metres during the Saturday peak hour;

Lauzon Parkway and Tecumseh Road

- The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage length of 90 metres during the Saturday peak hour; and

Lauzon Parkway and Catherine Street

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage length of 50 metres during the weekday PM and Saturday peak hours.
- ▶ **2025 Total Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under 2030 background traffic conditions, with additional critical movements at the following intersections:

Lauzon Parkway and Tecumseh Road

- The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.85 during the PM peak hour;



- The northbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.88 during the PM peak hour;

Lauzon Parkway and Catherine Street

- The eastbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour;
- The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour. The 95th percentile queue length is projected to exceed the existing storage of 20 metres during the weekday PM and Saturday peak hours;
- The southbound shared through/right-turn movement is forecast to operate at LOS E with a v/c ratio of 0.89 during the PM peak hour and at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour;

Rose-Ville Garden Drive and Catherine Street

- The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the weekday PM and Saturday peak hour;

Catherine Street and Access A

- The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour; and

Catherine Street and Access B

- The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour.

- ▶ **2030 Background Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under 2025 background traffic conditions except for the 95th percentile queue length of the northbound left-turn movement at the intersection of Rose-Ville Garden Drive and Tecumseh Road, which is projected to exceed the existing storage of 50 metres.
- ▶ **2030 Total Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under 2025 total and 2030 background traffic conditions, with additional critical movements at the following intersections:

Jefferson Boulevard and Tecumseh Road



- The westbound through movement is forecast to operate at LOS D with a v/c ratio of 0.85 during the PM peak hour;

Rose-Ville Garden Drive and Tecumseh Road

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 25 metres during the Saturday peak hour;
- The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage of 50 metres during the weekday PM and Saturday peak hours;

Lauzon Parkway and Tecumseh Road

- The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.86 during the Saturday peak hour;
- The westbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 1.00 during the Saturday peak hour; and
- The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 1.00 during the Saturday peak hour.

- ▶ **2035 Background Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under 2030 background traffic conditions, with the addition of the following critical movements:

Jefferson Boulevard and Tecumseh Road

- The westbound through movement is forecast to operate at LOS D with a v/c ratio of 0.87 during the PM peak hour;
- The 95th percentile queue length of the northbound right-turn movement is projected to marginally exceed the existing storage of 60 metres during the Saturday peak hour;

Rose-Ville Garden Drive and Tecumseh Road

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 25 metres during the Saturday peak hour;
- The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage of 50 metres during the Saturday peak hour;

Lauzon Parkway and Tecumseh Road

- The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.95 during the PM peak hour and 0.88 during the Saturday peak hour;



- The westbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour;
 - The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour; and
 - The northbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.89 during the PM peak hour.
- ▶ **2035 Total Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under 2030 total traffic conditions, with the addition of the following critical movements:

Tecumseh Road and Catherine Street (North-South)

- The 95th percentile queue length of the eastbound left-turn movement is projected to marginally exceed the existing storage of 45 metres during the Saturday peak hour;

Rose-Ville Garden Drive and Tecumseh Road

- The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.88 during the PM peak hour;
- The 95th percentile queue length of the westbound left-turn movement is projected to exceed the existing storage of 50 metres during the weekday PM and Saturday peak hours; and

Lauzon Parkway and Tecumseh Road

- The 95th percentile queue length of the westbound left-turn movement is projected to exceed the existing storage of 120 metres during the Saturday peak hour.

Summary of Impact Assessment

- ▶ **Site Accesses:** As noted, two all-moves access points (Access A and Access B) are proposed for the development on the extension of Catherine Street. Both access points are assumed to be under Stop Sign Control.

The two access intersections are projected to operate with reasonable levels of service for all inbound/outbound turning movements during weekday and Saturday peak hours. Delays and poor levels of service are noted for the outbound left-turn movement during the weekday PM and Saturday peak hours.



Eastbound left-turn lanes are identified as warranted on Catherine Street at both access points, with 15 meters of storage at Access A, and 50 meters of storage at Access B. However, these requirements can be accommodated by the two-way centre-turn lane that will be provided on Catherine Street.

Based on the operational analysis, auxiliary right-turn lanes are not identified as required on Catherine Street at Access A or Access B.

- ▶ **Study Area Intersections:** Overall, the study area road system can accommodate the future traffic increases assessed over the 10-year timeframe analysed in this study. The proposed extensions of Catherine Street and Rose-Ville Garden Drive, and the addition of a Catherine Street north-south road connection between Catherine Street and Tecumseh Road, are conducive to dispersing development traffic to multiple intersections and minimising their impacts.

A parallel comprehensive transportation study has been completed to assess all future developments in the study area over a 20-year (2025-2045) period, as part of the Environmental Assessment study for the proposed study area road improvements.

Recommendations

Based on the findings and conclusions of this study, it is recommended that the development be considered for approval as proposed.



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1 Introduction

1.1 Overview

Paradigm Transportation Solutions Limited (Paradigm) has been retained to conduct this Transportation Impact Study (TIS) for a proposed Major Retail development located at 6630 Tecumseh Road in the City of Windsor. **Figure 1.1** details the subject development location.

The subject lands are part of the Forest Glade North Planning Area, bounded by CN rail corridor to the north, Lauzon Parkway to the east, Tecumseh Road to the south, and Jefferson Boulevard to the west. The area includes significant commercial developments, including Walmart, Home Depot, Staples, etc. The subject development is located immediately north of the existing Home Depot site.

Catherine Street currently extends west from Lauzon Parkway within the study area. The following network additions are proposed to be implemented in conjunction with the development of the subject site:

- ▶ The westerly extension of Catherine Street from its current terminus to the west of the subject site, with the new alignment located between the subject site and the Home Depot property;
- ▶ A north-south Catherine Street road connection between Catherine Street extension and Tecumseh Road to the west of the Home Depot site; and
- ▶ The northerly extension of Rose-Ville Garden Drive between Tecumseh Road and Catherine Street extension.
- ▶ All three roadways will have a three-lane cross-section with a two-way centre-turn lane. The existing intersection of Catherine Street and Lauzon Parkway is under traffic signal control. The new intersection of Catherine Street and Tecumseh Road will be implemented with traffic signal control. The new intersection of Catherine Street and Rose-Ville Garden Drive could also be implemented with traffic signal control, as reviewed in this study.

The subject site is located directly to the north of the existing Home Depot and will be separated by the extension of Catherine Street. The development is proposed to accommodate a Costco Wholesale Store of 158,000 sq. ft. GFA with a gas station comprising 16 pumps; and a Sobeys Supermarket Store of 100,556 sq. ft. GFA.

Vehicular access is proposed via two driveways (identified as Access A and Access B in this report) to the extended section of Catherine



Street and located approximately 200 metres apart at the easterly and westerly site limits.

The development is anticipated to be completed by 2025.

1.2 Purpose and Scope

The purpose of this report is to identify and assess the potential traffic impact resulting from the proposed development. The scope of the study, developed in consultation with City of Windsor staff via e-mail in February 2024, includes:

- ▶ assessment of the current traffic and site conditions within the study area;
- ▶ estimates of background traffic growth for five years after development completion (2030), 10 years after completion (2035), and 20 years after completion (2045);
- ▶ estimates of additional traffic generated by the subject site;
- ▶ analyses of the impact of the future traffic on the surrounding road network, including the following study area intersections:
 - Catherine Street & Lauzon Parkway (signalized);
 - Lauzon Parkway & Tecumseh Road (signalized);
 - Tecumseh Road & Rose-Ville Garden Drive (signalized);
 - Tecumseh Road & Home Depot Access (signalized);
 - Tecumseh Road & Walmart Access/ East Park Drive (signalized);
 - Tecumseh Road & Jefferson Street (signalized);
 - Catherine Street & Rose-Ville Garden Drive (future, unsignalized);
 - Tecumseh Road & Catherine Street (North-South); and
 - Access Intersections.
- ▶ recommendations, if necessary, to mitigate the site generated traffic in a satisfactory manner.

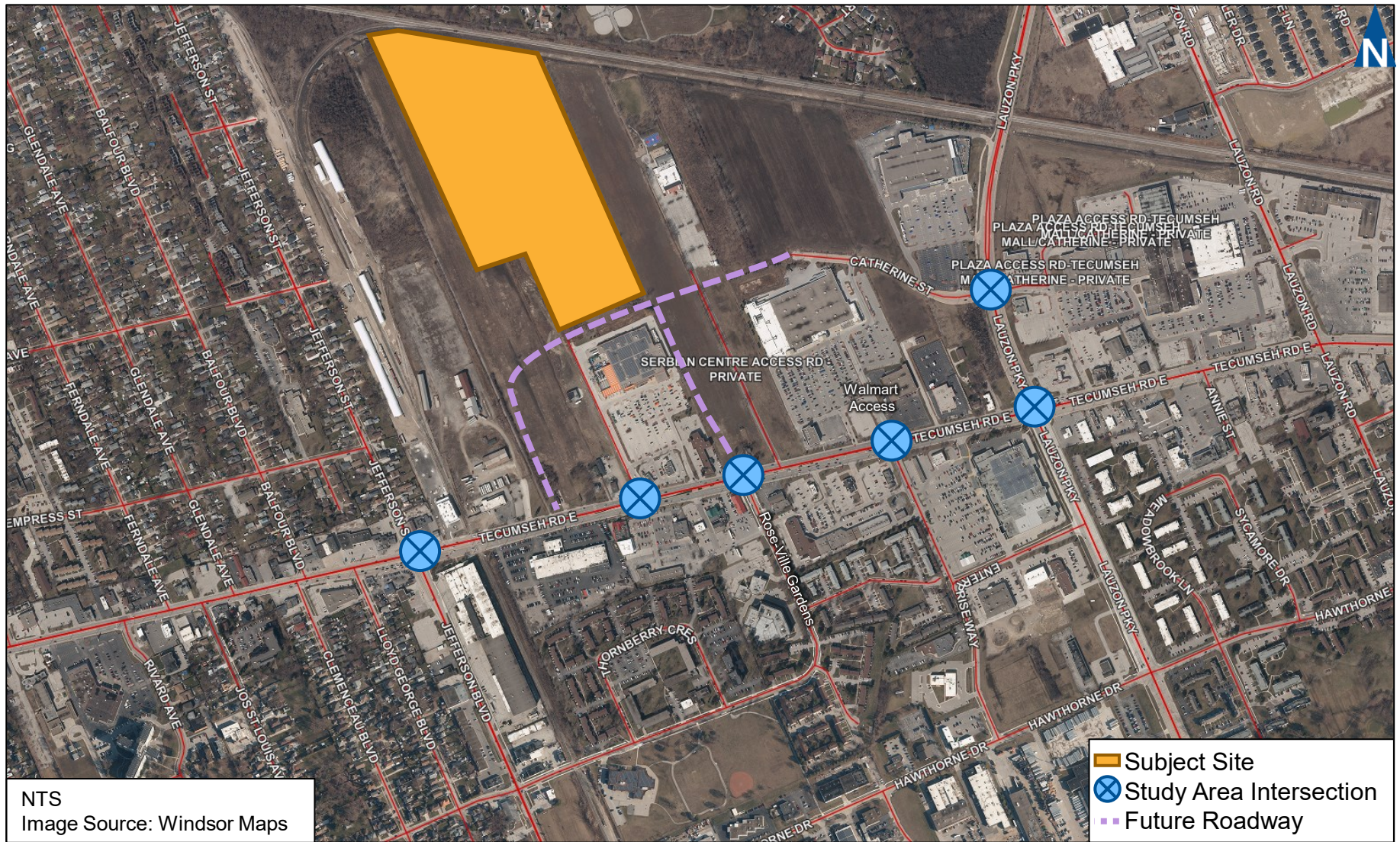
Appendix A contains the pre-study consultation material and responses from the City of Windsor.



This study has been prepared in accordance with the requirements detailed by the City of Windsor Transportation Impact Study Guidelines¹.

¹ Transportation Impact Study Guidelines, City of Windsor, 10 October 2013.





Location of Subject Site

Major Retail Development, Catherine Street, Windsor TIS
230538

Figure 1.1

1.3 Consultation Comments

City of Windsor staff provided comments on a previously circulated versions of this report. City staff comments have been addressed in this report as summarized in **Table 1.1** below.



TABLE 1.1: CITY OF WINDSOR STAFF COMMENTS

Staff Comment	Clarification
1. The signals at the Home Depot entrance on Tecumseh to be removed as a new signalized intersection is introduced on Tecumseh at the western most connection point. This is not considered.	The existing signalized access intersection to Home Depot is included in the analysis for 2025 traffic conditions. This access intersection is included as a restricted RIRO access for the 2030 and 2035 Horizon Years. This is necessary to accommodate the significant southbound right-turn movements along Tecumseh Road under future traffic conditions. The new Home Depot access to Rose Ville Garden Drive extension is analysed for all three horizons.
2. Please review the lane configuration at the existing intersection of Lauzon Pkwy and Catherine and update the report (separate NRT Lane exists).	Noted and updated.
3. It is not clearly stated whether a gas station is included in the proposed Costco Store. Please make sure to address this in the scope and if it is necessary update the report accordingly.	The gas station with 16 pumps are included in the Costco trip generation estimates in Section 3.2 and Appendix D.
4. It is not clear why background/ existing developments in the area is not considered.	Existing development traffic is captured in the existing roadway traffic volumes. No future developments in the study area are identified for 2030 and 2035 horizons, but are identified and included in the 20-year (2045) transportation study.
5. The size (SqFt) of the proposed supermarket differs from the size in the site plan. Please make sure the latest site plan is used in the TIS.	Noted and updated.
6. The impact of induced traffic on the new road network is not shown. It is intuitively expected that people will make SBRT at the intersection of Lauzon/Catherine or drive westerly from Tecumseh Mall access and use the new Catherine street to stay away from busy intersections on Tecumseh such as Lauzon and Tecumseh.	This is addressed based on existing intersection turning movements and operational capacities along Lauzon Parkway and Tecumseh Road.



<p>7. It is expected that auxiliary RT lanes are warranted particularly at the new accesses on Catherine, let's say for 2030 and later. Please include the assumptions, thresholds, and analysis showing why auxiliary right-turn lanes are identified as not required.</p>	<p>Based on the traffic forecasts in this study, westbound right-turn lanes are not warranted at the two access intersections.</p>
<p>8. Please evaluate if All-Way Stop is warranted at Rose-Ville Garden Drive and Catherine Street and if it can improve the traffic operation (as it is forecasted to operate at undesirable LOS for future operation). Define different lane configuration scenarios for shared/de facto lanes and separate lanes under two-way and all-way stop and evaluate how the LOS is improved. Also, please evaluate the situation if Home Depot Signal on Tecumseh is removed.</p>	<p>All-way stop will not be appropriate for this intersection. Traffic signal control has been assumed as scenario analysis in Section 4.11. Based on the results, traffic signal control could be considered for implementation.</p>
<p>9. Re-evaluate the intersection of Rose-Ville garden and new Home Hardware access under the condition when the existing Signal at the Home Depot Access and Tecumseh is removed.</p>	<p>This is addressed for the 2030 and 2035 scenarios, as noted above.</p>
<p>10. Please make sure the most recent TMCs are used in the analysis (don't forget the impact of COVID shutdown period if older TMCs are used).</p>	<p>As noted in Section 2.3, Paradigm collected weekday traffic volumes at four of the study area intersections in February 2024. Any historic data used (from 2020 to 2021) is noted to be in a similar order of magnitude to Paradigm's 2024 counts.</p>
<p>11. It is expected the final traffic and transportation assessment provides recommendation for road cross-section, intersection lane configuration, and also Active Transportation facility.</p>	<p>These are addressed in the 20-year EA study.</p>
<p>12. Roseville Garden Drive and Catherine St is required to be evaluated for signal warrant and analysed if signal can improve the operation at this intersection. As Table 3 indicates LOS "F", 91 second of delay and there is a 125-metre left queue.</p>	<p>As noted above, this is addressed in Section 4.11</p>



2 Existing Conditions

2.1 Existing Roadways

The main roadways near the subject development considered in assessing the traffic impacts of the development include:

- ▶ **Lauzon Parkway** is a north-south Class I Arterial Road² with a six-lane cross section. A multi-use cycling and walking trail is provided on the west side of the roadway, and a sidewalk is provided on the east side. The posted speed limit is 60 km/h.
- ▶ **Tecumseh Road** is an east-west Class I Arterial Road with a six-lane cross section. Sidewalks are provided on both sides of the roadway, and no cycling facilities are provided. The posted speed limit is 60 km/h.
- ▶ **Jefferson Boulevard** is a north-south Class I Arterial Road with a two-lane cross section. It is noted that the cross-section expands to four lanes at its intersection with Tecumseh Road. Sidewalks and exclusive cycling lanes are provided on both sides of the roadway. The posted speed limit is 50 km/h.
- ▶ **Rose-Ville Garden Drive** is a north-south Class II Collector Road with a two-lane cross section. Sidewalks are provided on both sides of the roadway, and no cycling facilities are provided. The posted speed limit is 50 km/h.
- ▶ **Catherine Street** is an east-west collector road with a two-lane cross section. Sidewalks are provided on both sides of the roadway, and no cycling facilities are provided. The assumed speed limit is 50 km/h.
- ▶ **East Park Drive** is a north-south local road with a two-lane cross section. Sidewalks and cycling facilities are not provided on either side of the roadway. The assumed speed limit is 50 km/h.

Figure 2.1 illustrates the traffic control and lane configuration at the study area intersections.

As shown, Tecumseh Road and Lauzon Parkway (south of Catherine Street) have a six-lane cross-section. Traffic signals and auxiliary turn-lanes are provided at the intersections of Catherine Street and Lauzon Parkway; Lauzon Parkway and Tecumseh Road; Tecumseh Road and Jefferson Street; Tecumseh Road and Rose-Ville Garden Drive;

² *City of Windsor Official Plan Volume I*, Schedule F: Roads and Bikeways, Office Consolidation 15 January 2024.



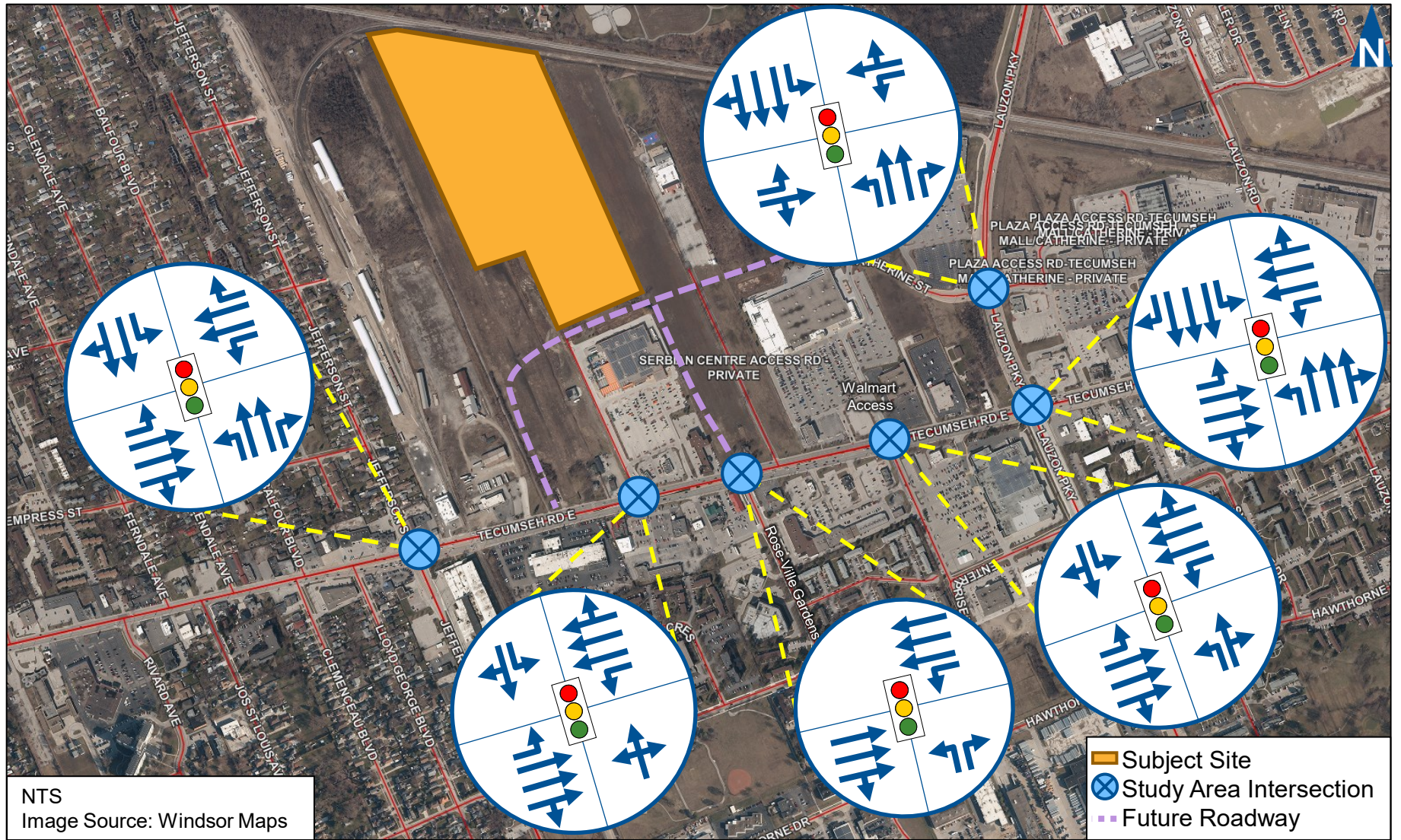
Tecumseh Road and Home Depot Access; and Tecumseh Road and Walmart Access/ East Park Drive.

Table 2.1 indicates the existing turn-lane storage lengths at different intersections.

TABLE 2.1: EXISTING TURN LANE STORAGE LENGTHS

Intersection	Movement	Storage Length
Tecumseh Road and Jefferson Boulevard	EBL	55
	WBL	95
	NBL	65
	NBR	60
	SBL	45
Tecumseh Road and the Home Depot Access	EBL	35
	WBL	30
	SBL	45
Tecumseh Road and Rose-Ville Garden Drive	WBL	50
	NBL	50
Tecumseh Road and the Walmart Access/East Park Drive	EBL	65
	WBL	40
	NBL	25
	SBL	20
Lauzon Parkway and Tecumseh Road	EBL	90
	WBL	120
	NBL	90
	SBL	70
	SBR	70
Lauzon Parkway and Catherine Street	EBL	50
	WBL	80
	NBL	20
	SBL	115





Existing Lane Configuration and Traffic Controls

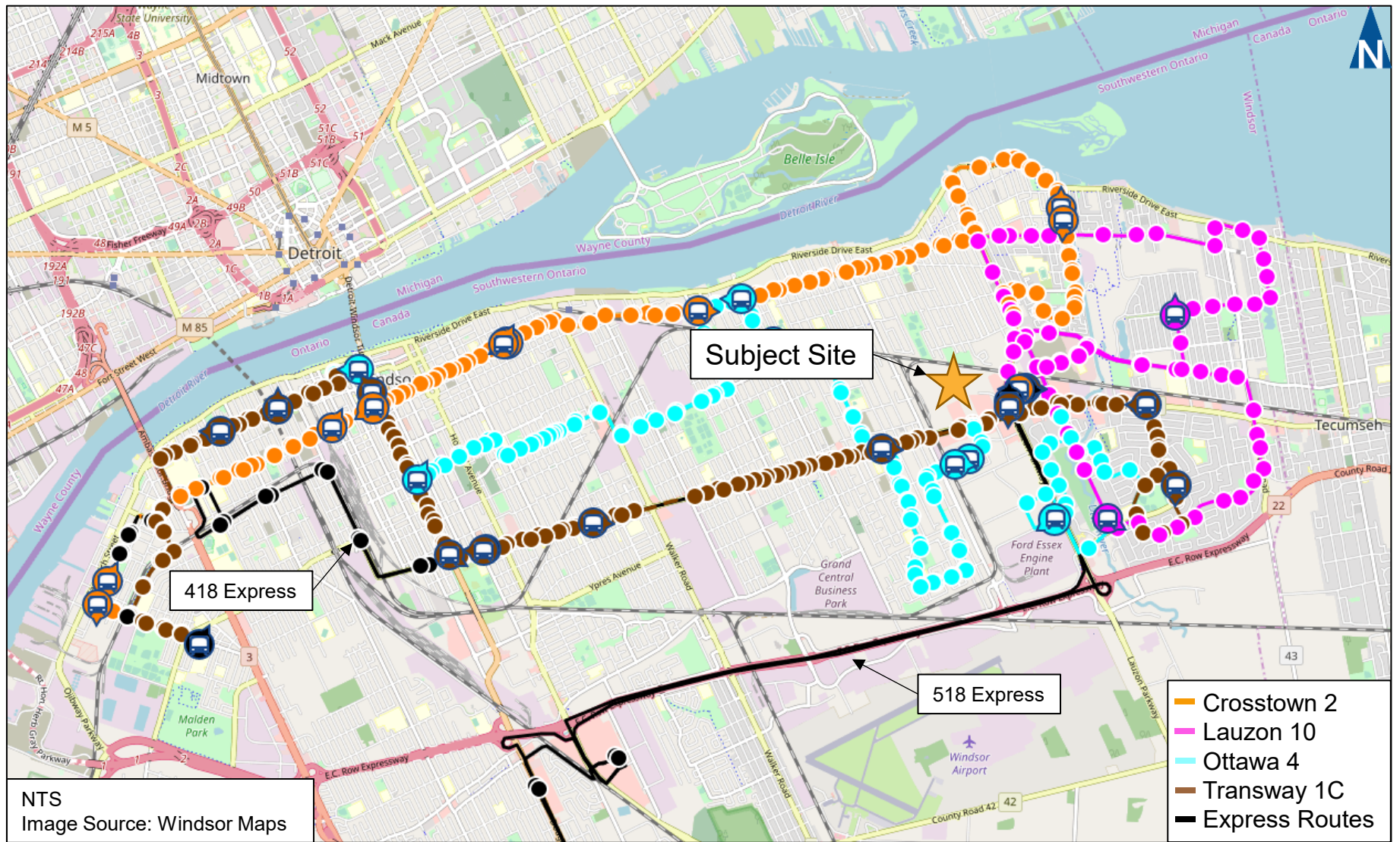
2.2 Transit Service

Transit Windsor operates four routes within the study area. The routes include:

- ▶ **Crosstown 2** provides service between the Hotel Dieu Grace Healthcare Terminal to the west and the Tecumseh Mall Terminal to the east. The route operates seven days per week with 10- to 15-minute headways on weekdays, 20- to 30-minute headways on Saturdays, and 40-minute headways on Sundays.
- ▶ **Lauzon 10** provides service between the Tecumseh Mall Terminal to the west, Cora Greenwood Drive to the northeast, and Banwell Road to the southeast. The route operates Monday to Saturday with 35-minute headways on weekdays and 70-minute headways on Saturdays.
- ▶ **Ottawa 4** provides service between the Windsor International Transit Terminal to the northwest and the Tecumseh Mall Terminal to the southeast. The route operates seven days per week with 20-minute headways on weekdays, 30-minute headways on Saturdays, and 45-minute headways on Sundays.
- ▶ **Transway 1C** provides service between the Hotel Dieu Grace Healthcare Terminal to the west, the Windsor International Transit Terminal to the north, and the Tecumseh Mall Terminal to the east. The route operates seven days per week with 10-minute headways on weekdays, 20- to 30-minute headways on Saturdays, and 40-minute headways on Sundays.
- ▶ **418 Express** provides service between the Hotel Dieu Grace Healthcare Terminal to the west and the Tecumseh Mall Terminal to the east. The route operates on weekdays only with 30-minute headways.
- ▶ **518 Express** provides service between the St. Clair College Terminal to the southwest and the Tecumseh Mall Terminal to the northeast. The route operates seven days per week with 35-minute headways.

Figure 2.2 illustrates the existing transit service.





Existing Transit Network

Figure 2.2

2.3 Traffic Volumes

Paradigm conducted weekday and Saturday turning movement counts (TMC) at the intersections of Lauzon Parkway and Catherine Street; Lauzon Parkway and Tecumseh Road; Tecumseh Road and Parkview Avenue; and Tecumseh Road and Rose-Ville Garden Drive on 01 and 03 February 2024.

Paradigm also conducted Saturday TMCs at Tecumseh Road and the Home Depot Access; Tecumseh Road and Jefferson Boulevard; and Tecumseh Road and the Walmart Access/East Park Drive on 18 May 2024. The City provided weekday counts at the three intersections collected on 24 March 2021 and 24 November 2020.

It is noted that the data provided by the City is in a similar order of magnitude as the 2024 TMCs collected by Paradigm. Therefore, the volumes were not grown and are assumed to be reflective of 2024 traffic volumes.

Table 2.2 summarizes the data source, collection date, and peak hours at each intersection.

Figure 2.3a, **Figure 2.3b**, and **Figure 2.3c** respectively illustrate the existing weekday AM and PM and Saturday peak hour turning movement traffic volumes.

The above traffic figures indicate the inbound/outbound driveway traffic at the main signalized access points for the Home Depot and the Walmart sites. **Table 2.2** summarizes the respective peak hour signalized driveway traffic volumes for the two sites. It is noted that the two sites have additional right-in-right-out driveways on Tecumseh Road, and the corresponding driveway volumes are not included in **Table 2.2**.

Appendix B contains the detailed traffic counts and signal timings for the study area intersections.



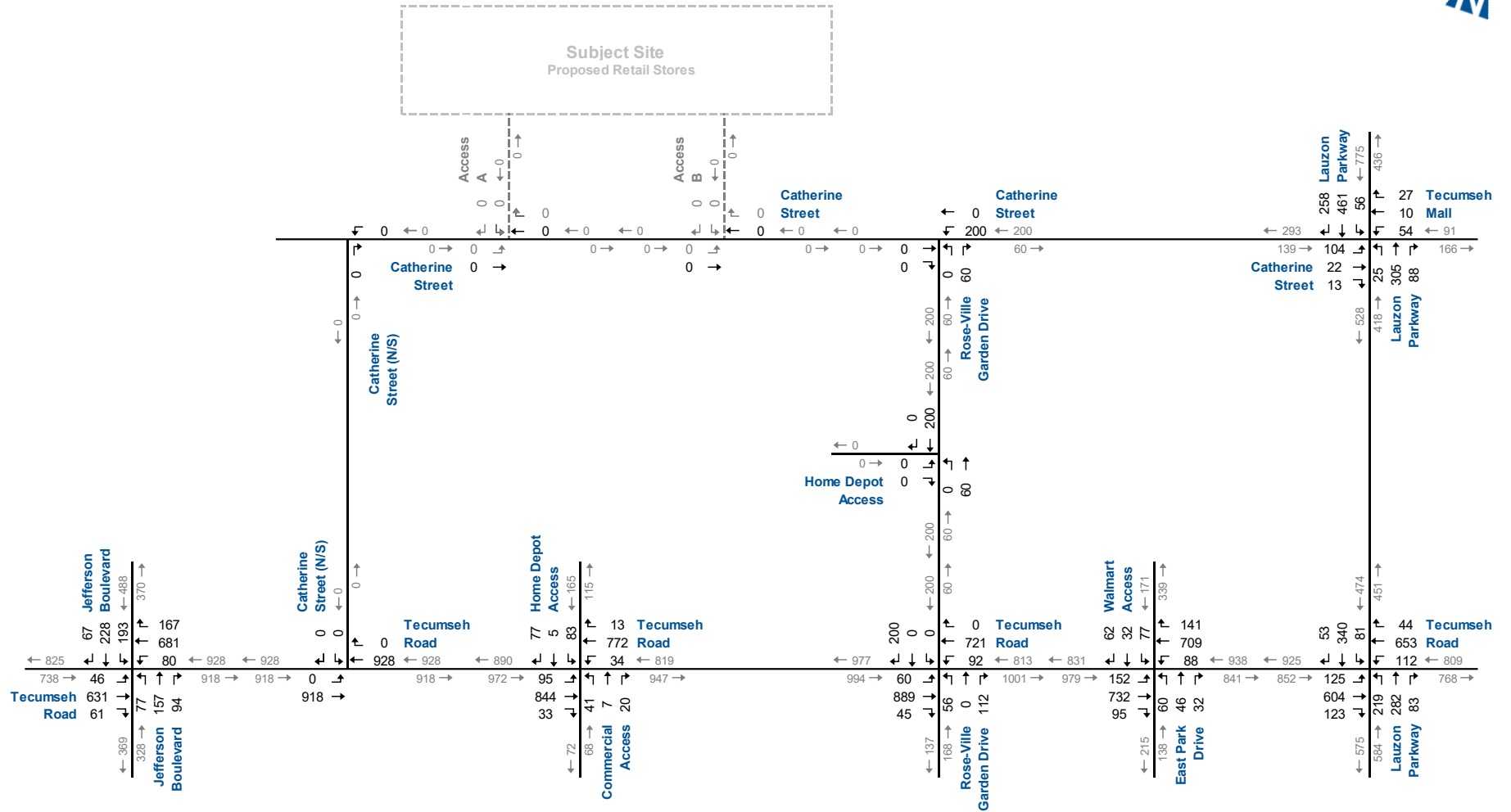
TABLE 2.2: INTERSECTION PEAK HOURS

Intersection	Source	Date	AM Peak Hour	PM Peak Hour	Saturday Peak Hour
Lauzon Parkway and Catherine Street	Paradigm	01 and 03 February 2024	8:30 - 9:30	4:45 - 5:45	12:00 - 1:00
Lauzon Parkway and Tecumseh Road	Paradigm	01 and 03 February 2024	8:45 - 9:45	4:45 - 5:45	1:00 - 2:00
Tecumseh Road and Parkview Avenue	Paradigm	01 and 03 February 2024	8:45 - 9:45	4:45 - 5:45	11:15 - 12:15
Tecumseh Road and Rose-Ville Garden Drive	Paradigm	01 and 03 February 2024	8:30 - 9:30	4:30 - 5:30	1:45 - 2:45
Tecumseh Road and the Home Depot Access	City	24 March 2021	8:45 - 9:45	3:00 - 4:00	-
	Paradigm	18 May 2024	-	-	11:30 - 12:30
Tecumseh Road and Jefferson Boulevard	City	24 March 2021	8:15 - 9:15	3:00 - 4:00	-
	Paradigm	18 May 2024	-	-	12:45 - 1:45
Tecumseh Road and the Walmart Access/East Park Drive	City	24 November 2020	9:00 - 10:00	3:00 - 4:00	-
	Paradigm	18 May 2024	-	-	2:00 - 3:00





AM Peak Hour

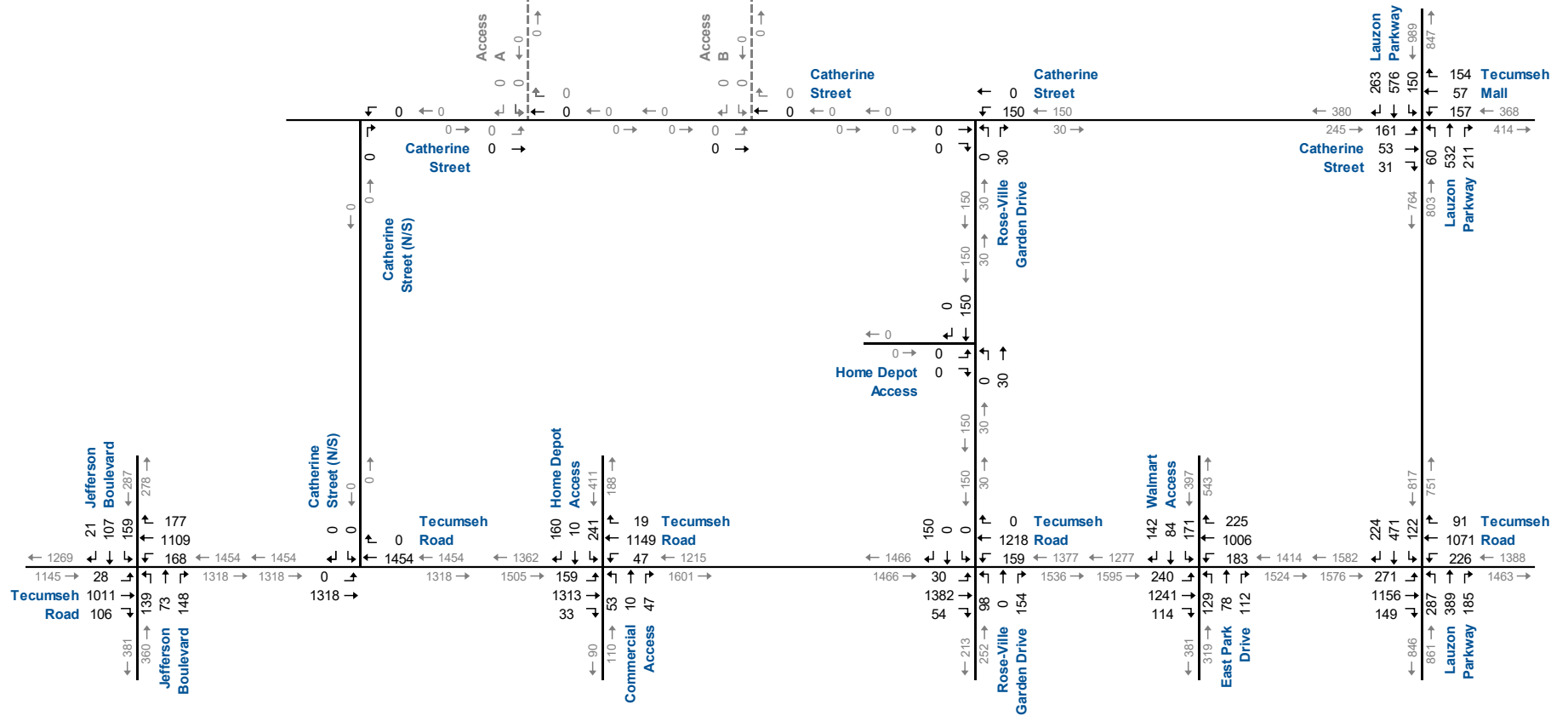


Existing Traffic Volumes AM Peak Hour

Figure 2.3a



Saturday Peak Hour



Existing Traffic Volumes Saturday Peak Hour

Figure 2.3c

2.4 Traffic Operations

The level of service conditions at the study area intersections have been assessed through intersection operational analysis using Synchro 11.

Intersection level of service (LOS) is a recognized method of quantifying the average delay experienced by drivers at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles intending to make a particular movement, compared to the estimated capacity for that movement. The capacity is based on several criteria related to the opposing traffic flows and intersection geometry.

The highest possible rating is LOS A, under which the average total delay is equal or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity (v/c) ratio is greater than 1.00, the movement is classed as LOS F and remedial measures are usually implemented if they are feasible. LOS E is usually used as a guideline for the determination of road improvement needs on through lanes, while LOS F may be acceptable for left-turn movements at peak times, depending on delays.

Movements are considered critical under the following conditions:

- ▶ Any movement at a signalized intersection with level of service "F".
- ▶ Through movements and shared through/turning movements at a signalized intersection with v/c of 0.85 or higher;
- ▶ Exclusive turning movements at a signalized intersection with v/c of 1.0 or higher;
- ▶ Any movement at an unsignalized intersection with LOS E or worse; or
- ▶ 95th percentile queue lengths for individual movements exceeds available lane storage.

Table 2.3a, **Table 2.3b**, and **Table 2.3c** summarize the results of the intersection operational analysis under existing conditions, including the weekday AM and PM and Saturday peak hour LOS, v/c ratios, and 95th percentile queues experienced.

The following critical movements are noted at the study area intersections under existing traffic conditions:

- ▶ Jefferson Boulevard and Tecumseh Road



- The southbound left-turn movement is operating at LOS F with a theoretical v/c ratio greater than 1.00 and a 95th percentile queue length that is exceeding the existing storage of 45 metres during the PM peak hour;
- ▶ Tecumseh Road and Walmart Access/ East Park Drive
 - The 95th percentile queue length of the northbound left-turn is exceeding the existing storage of 25 metres during the PM peak hour;
 - The 95th percentile queue length of the southbound left-turn is exceeding the existing storage of 20 metres during the weekday PM and Saturday peak hours;
- ▶ Lauzon Parkway and Tecumseh Road
 - The eastbound left-turn movement is operating at LOS E with a theoretical v/c ratio greater than 1.00 during Saturday peak hour;
 - The eastbound shared through/right-turn movement is operating at LOS D with a theoretical v/c ratio of 0.85 during the Saturday peak hour; and
 - The 95th percentile queue length of the southbound right-turn movement is exceeding the existing storage of 70 metres during the Saturday peak hour.

Appendix C contains the detailed Synchro 11 reports.



TABLE 2.3A: EXISTING TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
AM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 10 0.13 0 55 55	B 13 0.29 5 -> ->	> > > > >	B 13	A 9 0.20 0 95 95	B 14 0.41 8 -> ->	B 12 0.22 4 -> ->	B 13	C 34 0.35 9 65 56	D 41 0.39 10 -> ->	D 43 0.52 14 60 46	D 40	D 43 0.69 26 45 19	D 45 0.68 21 -> ->	> > > > >	D 44	C 23	
	Commercial Access/Home Depot Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 4 0.18 0 35 35	A 6 0.28 1 -> ->	> > > > >	A 6	A 4 0.08 0 30 30	A 0 0.26 1 -> ->	> > > > >	A 0	< < < < <	D 45 0.42 10 -> ->	> > > > >	D 45	D 43 0.40 11 45 34	D 43 0.46 11 -> ->	> > > > >	D 43	A 8	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.		A 0 0.29 1 -> ->	> > > > >	A 0	A 3 0.18 0 50 50	A 3 0.24 1 -> ->		A 3	D 43 0.31 7 50 43	D 49 0.70 16 -> ->		D 47						A 5
	Tecumseh Road & Serbian Centre Private Drive	TWSC	LOS Delay V/C Q		A 0 0.00 0		A 0	A 0 0.00 0	> > > >	A 0								B 15 0.00 0		B 15	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 5 0.33 1 65 64	A 9 0.31 1 -> ->	> > > > >	A 9	A 5 0.19 0 40 40	A 0 0.37 1 -> ->	> > > > >	A 1	D 45 0.35 8 25 17	D 39 0.32 10 -> ->	> > > > >	D 41	D 44 0.40 10 20 10	D 40 0.40 12 -> ->	> > > > >	D 42	A 9	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 16 0.47 5 90 85	C 31 0.34 19 -> ->	> > > > >	C 28	B 16 0.31 3 120 117	C 20 0.33 11 -> ->	> > > > >	B 20	D 38 0.70 22 90 68	C 32 0.33 11 -> ->	> > > > >	C 35	C 26 0.28 6 70 64	C 23 0.32 8 -> ->	C 31 0.79 21 70 49	> > > > >	C 26	C 27
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 43 0.23 6 50 44	D 40 0.17 4 -> ->	> > > > >	D 42	D 45 0.36 8 80 72	D 40 0.19 4 -> ->	> > > > >	D 43	A 5 0.05 0 20 20	A 0 0.18 0 -> ->	A 0 0.09 0 -> ->	A 0	A 4 0.09 0 115 115	A 6 0.23 1 -> ->	> > > > >	A 6	A 9	

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



TABLE 2.3B: EXISTING TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
PM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 18 0.45 2 55 53	C 20 0.57 22 -> ->	> > > > >	C 21	B 17 0.53 3 95 92	C 22 0.68 31 -> ->	B 19 0.45 20 -> ->	C 21	D 36 0.58 18 65 47	D 46 0.66 22 -> ->	D 42	F 93 1.01 69 45 -24	D 45 0.68 28 -> ->	> > > > >	E 66	C 31		
	Commercial Access/Home Depot Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 6 0.36 1 35 34	B 11 0.49 2 -> ->	> > > > >	B 11	A 8 0.09 0 30 30	A 1 0.47 2 -> ->	> > > > >	A 1	< < < < <	D 43 0.42 14 -> ->	> > > > >	D 43	D 46 0.64 26 45 19	D 40 0.41 15 -> ->	> > > > >	D 44	B 10	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.		B 19 0.52 2 -> ->	> > > > >	B 20	C 27 0.79 4 50 46	A 5 0.34 1 -> ->		A 8	D 42 0.40 14 50 36	D 52 0.84 32 -> ->		D 49						B 17
	Tecumseh Road & Serbian Centre Private Drive	TWSC	LOS Delay V/C Q		A 0 0.00 0			A 0	A 0 0.00 0	> > >	A 0							C 17 0.01 0	C 17		
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 35 0.84 11 65 54	C 23 0.67 29 -> ->	> > > > >	C 25	C 27 0.72 8 40 32	C 31 0.66 44 -> ->	> > > > >	C 31	D 46 0.66 27 25 -2	C 32 0.45 22 -> ->	> > > > >	D 38	D 47 0.67 26 20 -6	C 31 0.40 20 -> ->	> > > > >	D 39	C 30	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	D 39 0.86 26 90 64	D 47 0.79 79 -> ->	> > > > >	D 47	D 36 0.76 14 120 106	C 29 0.54 28 -> ->	> > > > >	C 31	C 33 0.70 23 90 67	D 40 0.74 38 -> ->	> > > > >	D 40	C 34 0.60 14 70 56	D 43 0.37 19 -> ->	E 57 0.80 50 70 20	D 46	D 41	
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 48 0.60 20 50 30	C 32 0.18 8 -> ->	> > > > >	D 42	D 40 0.48 18 80 62	D 36 0.49 22 -> ->	> > > > >	D 38	A 9 0.09 1 20 19	A 0 0.26 1 -> ->	A 0 0.26 1 -> ->	A 1	A 10 0.31 2 115 113	B 13 0.27 6 -> ->	> > > > >	B 13	B 13	

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement

TABLE 2.3C: EXISTING TRAFFIC OPERATIONS – SATURDAY PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
Saturday Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 12 0.10 1 55 54	B 16 0.41 11 -> ->	> > > > >	B 16	B 12 0.46 2 95 93	B 16 0.57 14 -> ->	B 12 0.20 4 -> ->	B 15	D 35 0.40 15 65 50	D D 0.14 4 -> ->	D D 0.64 21 60 39	D 41	D 36 0.44 17 45 28	D D 0.24 8 -> ->	> > > > >	D 38	C 20	
	Commercial Access/Home Depot Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 9 0.38 1 35 34	B 15 0.47 10 -> ->	> > > > >	B 14	A 10 0.16 1 30 29	A A 1 > >	> > > > >	A 1	< < < < <	D 38 0.37 14 -> ->	> > > > >	D 38	D 46 0.71 35 45 10	C 35 0.44 19 -> ->	> > > > >	D 42	B 14	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.		B 16 0.43 2 -> ->	> > > > >	B 16	A 10 0.48 1 50 49	A A 4 > >		A 4	D 45 0.44 14 50 36	D 54 0.77 24 -> ->		D 50						B 13
	Tecumseh Road & Serbian Centre Private Drive	TWSC	LOS Delay V/C Q		A 0 0.00 0			A 0 0.00 0	> > >		A 0								C 18 0.03 1	C 18	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 26 0.75 8 65 57	B 18 0.53 18 -> ->	> > > > >	B 20	B 15 0.58 3 40 37	C 26 0.55 28 -> ->	> > > > >	C 25	D 45 0.53 18 25 7	C 32 0.42 19 -> ->	> > > > >	D 38	D 45 0.62 23 20 -3	C 34 0.50 23 -> ->	> > > > >	D 39	C 26	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	E 77 1.01 51 90 39	D 53 0.85 73 -> ->	> > > > >	E 59	D 45 0.85 24 120 96	D D 0.78 44 -> ->	> > > > >	D 42	D 36 0.79 27 90 63	C 29 0.38 16 -> ->	> > > > >	C 31	C 27 0.36 10 70 60	D 41 0.37 20 -> ->	E 78 0.95 85 70 -15	> > > > >	D 54	D 48
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 48 0.60 20 50 30	C 31 0.19 9 -> ->	> > > > >	D 41	D 39 0.50 20 80 60	C 35 0.52 24 -> ->	> > > > >	D 36	B 10 0.16 1 20 19	A A 0.30 1 1 1	A A 1	A 1	B 11 0.33 2 115 113	B 15 0.34 9 -> ->	> > > > >	B 15	B 16	

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



3 Proposed Development

3.1 Development Description

The subject site is located directly to the north of the existing Home Depot and will be separated by the extension of Catherine Street. The development is proposed to accommodate a Costco Wholesale Store of 158,000 sq. ft. GFA with a gas station comprising 16 pumps; and a Sobeys Supermarket Store of 100,556 sq. ft. GFA.

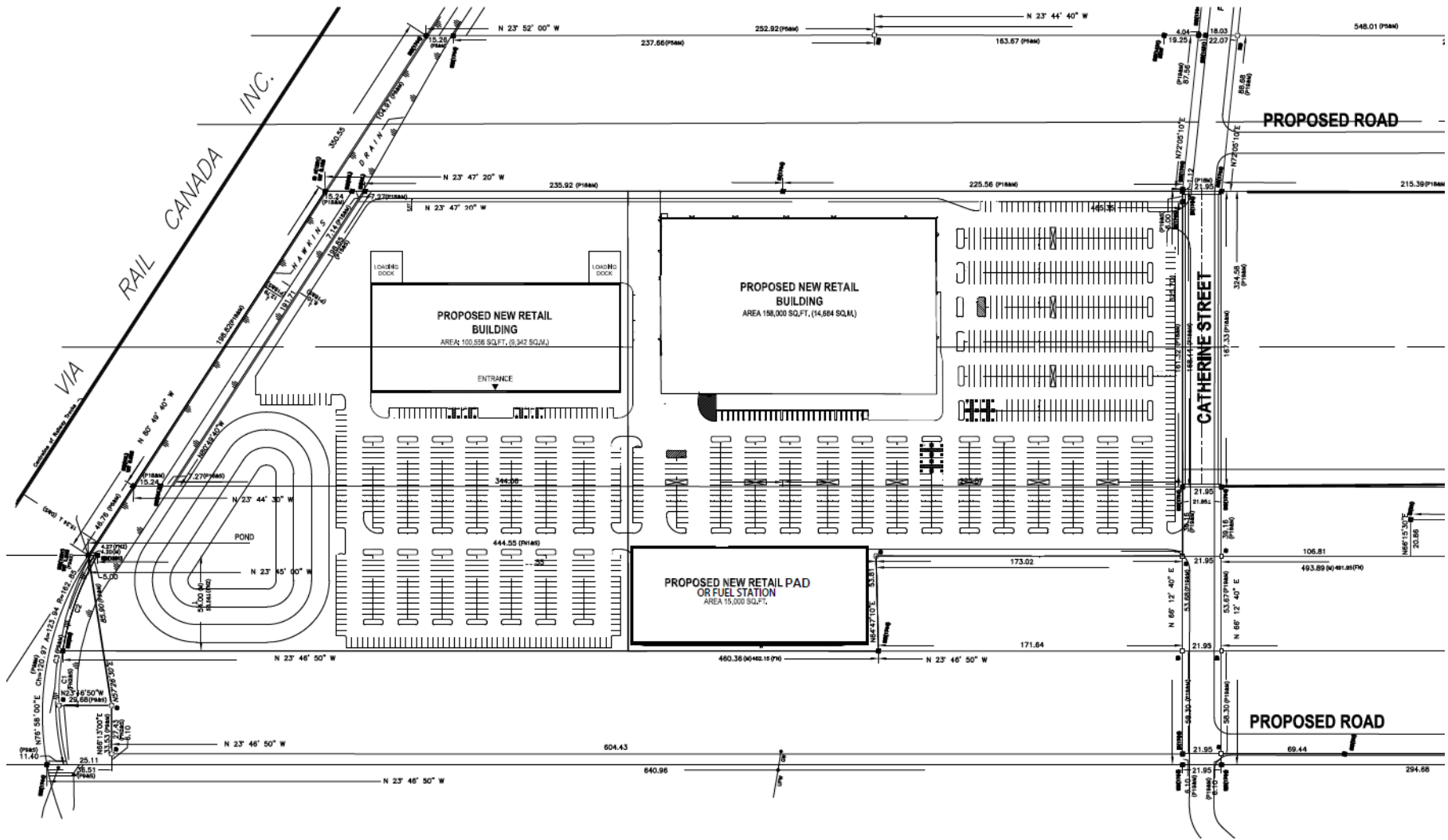
Vehicular access is proposed via two driveways (identified as Access A and Access B in this report) to the extended section of Catherine Street and located approximately 200 metres apart at the easterly and westerly site limits.

The development is anticipated to be completed by 2025.

Figure 3.1 shows the concept site plan.



CONCEPTUAL PLAN



Concept Site Plan

3.2 Development Trip Generation

The Weekday AM/PM and Saturday peak hour trip generation for the development was estimated using two separate methodologies as described below:

Costco Trip Generation: The Costco trip generation for 158,000 sq. ft. GFA and the gas station with 16 pumps, was provided by Kittelson & Associates Inc., who maintain a trip generation database for Costco stores. The estimates included pass-by trips and diverted trips. The actual estimates and trip reductions are included in **Appendix D**.

Sobey's Trip Generation: The trip generation estimates for the Sobey's store were based on trip rates corresponding to the Supermarket Land Use (LUC 850) in the Institute of Transportation Engineers (ITE) Trip Generation Manual³. Pass-by trip estimates are based on the Pass-by tables for LUC 850 included in the ITE Trip Generation Manual Appendix.

Table 3.1 summarizes the trip generation estimates based on the above methodologies, as described in **Appendix D**.

TABLE 3.1: TRIP GENERATION

Land Use	Gross Floor Area	AM Peak Hour				PM Peak Hour				Saturday Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
Costco w/ 16 Fueling Positions (from Kittelson & Associates)	158,000 sq. ft.	2.23	199	154	353	7.41	566	605	1171	10.03	794	791	1585
850: Supermarket (Sobey's)	100,556 sq. ft.	2.86	170	118	288	Eq	388	388	776	Eq	459	459	918
Trip Generation			369	272	641		954	993	1947		1253	1250	2503
<i>Internal Trip Reduction</i>		10%	-39	-25	-64	10%	-95	-99	-194	10%	-128	-122	-250
Net Trip Generation			330	247	577		859	894	1753		1125	1128	2253
<i>Costco Pass-by Trips</i>		-	-64	-64	-128	-	-104	-104	-208	-	-125	-125	-250
<i>Costco Diverted Trips</i>		-	-70	-70	-140	-	-176	-176	-352	-	-185	-185	-370
<i>Sobey's Pass-by Trips</i>		0%	0	0	0	24%	-81	-81	-162	19%	-75	-75	-150
Net Additional Trips			196	113	309		498	533	1031		740	743	1483

LUC 850 | PM: $\text{Ln}(T) = 0.81 \text{Ln}(X) + 2.92$ | Saturday: $\text{Ln}(T) = 0.74 \text{Ln}(X) + 3.41$

3.3 Pass-by and Diverted Trips

As indicated in **Table 3.1**, pass-by and diverted trips have been estimated for the three peak hours. As described in **Appendix D** (Trip Generation), pass-by trips for the subject development will be drawn from the eastbound and westbound traffic volumes on Tecumseh Road, and the southbound traffic volumes on Lauzon Parkway.

Similarly, diverted trips will be drawn from the surrounding commercial developments, including the Tecumseh Mall, Walmart, Home Depot,

³ Institute of Transportation Engineers, *Trip Generation Manual*, 11th ed., (Washington, DC: ITE, 2021).



and the commercial plazas near Rose-Ville Garden Drive south of Tecumseh Road.

Based on the existing traffic volumes on each roadway, the pass-by trips have been proportionately discounted from Tecumseh Road and Lauzon Parkway traffic volumes based on the following directional proportions: 50% originating from the west and 30% from the east for Tecumseh Road; and 20% from the north for Lauzon Parkway.

Appendix D contains the pass-by and diverted traffic volume figures.

3.4 Net Site Traffic Volumes

The net trip generation indicated in **Table 3.1** are the total site generated trips discounted by internal capture, and the net additional trips are further discounted by pass-by and diverted trips. The net additional trips include the newly added site traffic volumes at the boundary study area intersections.

3.5 Development Trip Distribution and Assignment

The proposed development comprising two major retail stores is expected to attract trips from across the City and potentially from nearby municipalities in Essex County. The directional distribution of development traffic was determined using the spatial distribution of population based on the geographical location and population of each electoral ward of the City that is included in the Windsor 2016 census data⁴.

Figure 3.2 illustrates the location of the City's municipal wards.

Table 3.2 summarizes the City of Windsor population information, broken down by each ward.

⁴ <https://www.citywindsor.ca/residents/planning/plans-and-community-information/about-windsor/demographics/2016-demographics>.



TABLE 3.2: POPULATION BY ELECTORAL WARD

Ward No.	Population	Population %
Ward 1	21879	10%
Ward 2	20789	10%
Ward 3	22096	10%
Ward 4	24670	11%
Ward 5	18487	9%
Ward 6	23575	11%
Ward 7	24313	11%
Ward 8	19071	9%
Ward 9	20714	10%
Ward 10	20893	10%
Total	216487	100%

Based on the above distribution of the City's population by electoral wards and their locations, as well as a review of the road connections and route convenience to the subject development from directional grouping of municipal wards, the following routes for (origin/destination) trip assignment were identified:

- ▶ Ward 1, 2, 3, 9, and 10: Trips from these more westerly wards have a more convenient route via E.C. Row Expressway and accessing the subject development via Jefferson Boulevard/Rose-Ville Garden Drive, and Lauzon Parkway. A relatively minor portion of the trips will use Tecumseh Road to/from the study area; as well as Riverside Drive to the north and accessing the study area via Jefferson Boulevard.
- ▶ Ward 4 & 5: Trips from these wards are most conveniently routed via Tecumseh Road, and to a lesser extent via Riverside Dr/Jefferson Boulevard.
- ▶ Ward 6: Located to the north of the study area – trips are routed via Jefferson Boulevard and Lauzon Parkway.
- ▶ Ward 7: Located to the north & east of the study area – trips are routed via Lauzon Parkway and Tecumseh Road (to/from east).
- ▶ Ward 8: Encompasses the study area- trips routed via study area roads.

Table 3.3 summarizes the subject development trip assignment.

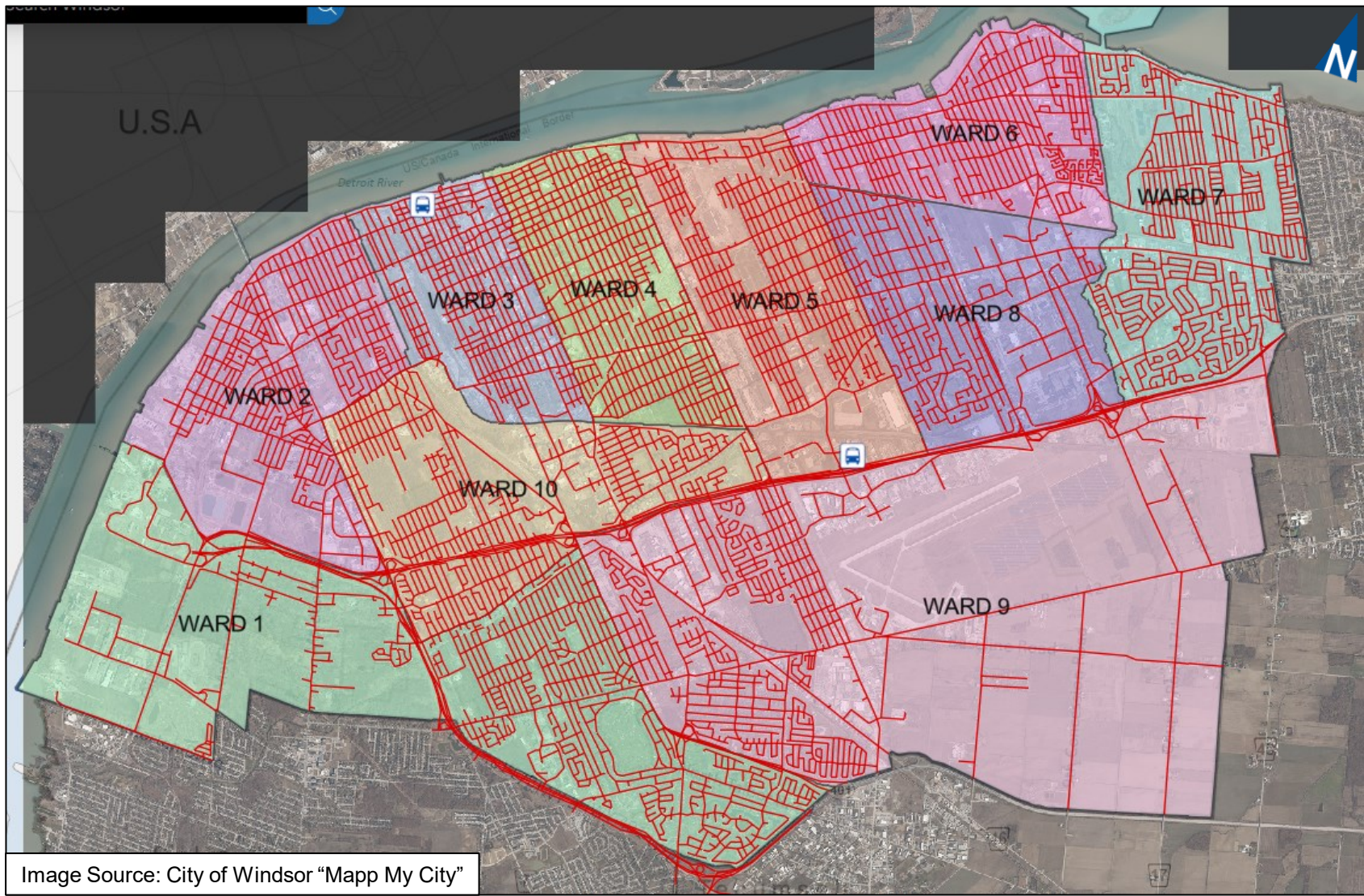


TABLE 3.3: DEVELOPMENT TRAFFIC ASSIGNMENT

Ward Groups (O/D)	Route Assignment	Distribution
Wards 1, 2, 3, 8, 9 & 10	West & South via ECR / Lauzon Parkway	30%
Wards 1, 2, 3, 8, 9 & 10	South via Jefferson Boulevard/Rose-Ville Garden Drive	20%
Wards 2, 3, 4 & 5	West via Tecumseh Road	20%
Wards 2, 3, 4, 5 & 6	West & North via Riverside Drive/Jefferson Boulevard	7%
Wards 6 & 7	North via Lauzon Parkway	15%
Ward 7	East via Tecumseh Road	8%
Total		100%

Figure 3.3a, Figure 3.3b, and Figure 3.3c illustrate the net site-generated traffic volumes for the weekday AM and PM and Saturday peak hours, respectively.

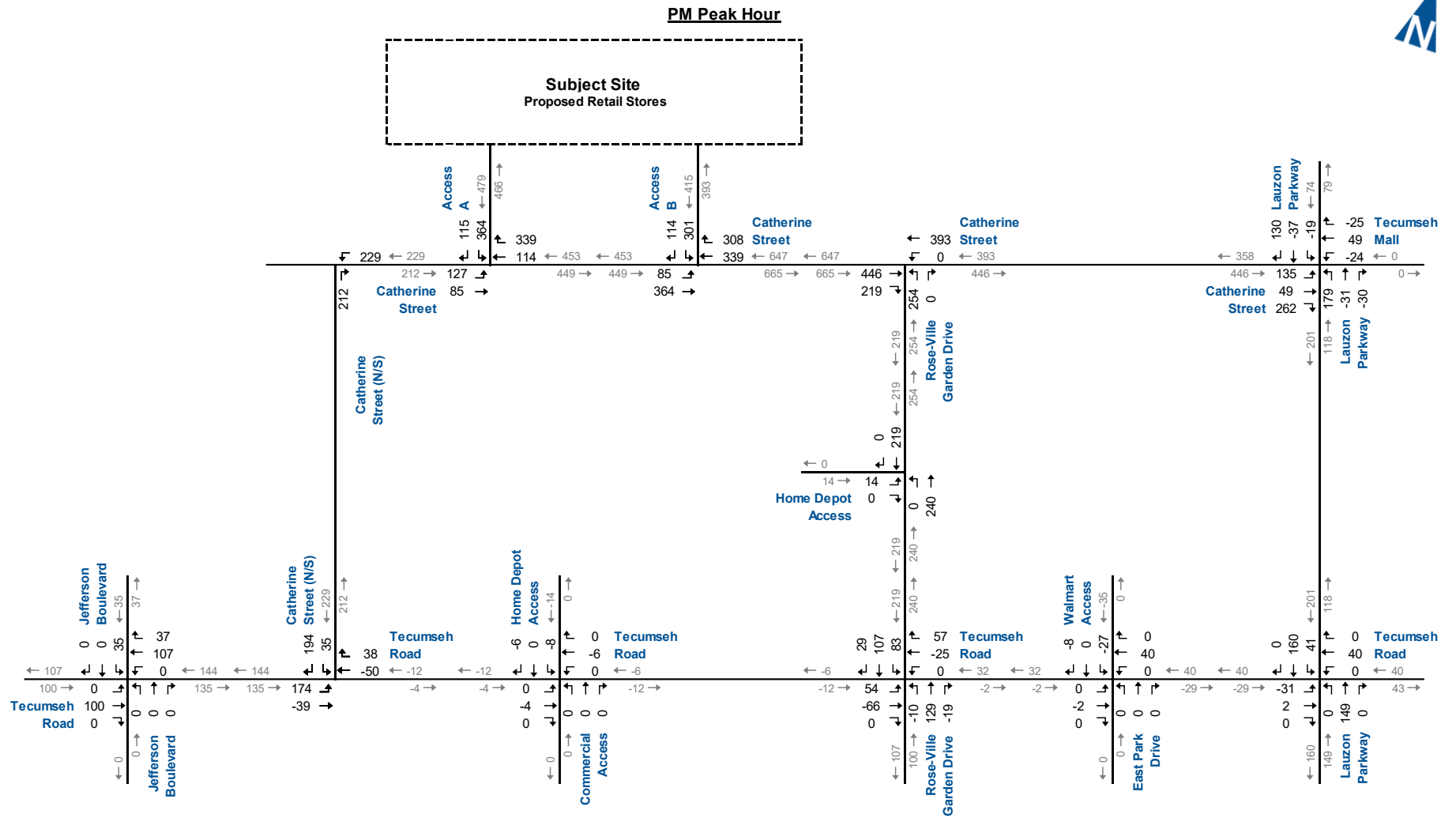




City of Windsor Municipal Ward Map

Major Retail Development, Catherine Street, Windsor TIS
230538

Figure 3.2



Net Site Generated Traffic Volumes PM Peak Hour

Figure 3.3b

4 Evaluation of Future Traffic Conditions

The assessment of future traffic conditions includes estimates of future background and total traffic volumes, and the analyses for the traffic conditions at anticipated development completion (2025), five years after development (2030), and 10 years after development (2035).

4.1 Background Traffic Forecasts

Increases in background road traffic volumes are based on an annual road traffic growth rate of 1.7% over the ten-year period.

No other developments in the study area are included in this timeframe, but they are included in the 20-year transportation study that has been concurrently prepared.

4.2 Network Modifications

As noted, the following additions to the existing road network are proposed to be implemented in conjunction with the development of the subject site:

- ▶ The westerly extension of Catherine Street from its current terminus to the west of the subject site, with the new alignment located between the subject site and the Home Depot property;
- ▶ A north-south Catherine Street road connection between Catherine Street (east-west) extension and Tecumseh Road to the west of the Home Depot site; and
- ▶ The northerly extension of Rose-Ville Garden Drive between Tecumseh Road and Catherine Street extension.

Both the east-west and north-south segments of Catherine Street and the Rose-Ville Garden Drive extension are proposed to have a three-lane cross-section with one lane in each direction and a centre two-way left-turn lane.

It is noted that an existing auxiliary left-turn lane is in place with 25 metres of storage on the eastbound leg of the Rose-Ville Garden Drive and Tecumseh Road intersection. An auxiliary left-turn lane has been assumed with 60 metres of storage for the new southbound approach.

4.2.1 New Intersections

Figure 4.1 illustrates the future intersection lane configuration and traffic controls assumed in the analyses.



As illustrated in **Figure 4.1**, the following traffic control measures are assumed for the new intersections:

- ▶ Tecumseh Road & Catherine Street (North-South): Traffic Signal Control; and
- ▶ Rose-Ville Garden Drive & Catherine Street: Two-way Stop Control.

4.2.2 Home Depot Access

The existing Home Depot site located on the north side of Tecumseh Road has a right-in/right-out driveway and a signalized all-moves driveway on Tecumseh Road. An additional all-moves driveway connection is to be provided to the extension of Rose-Ville Garden Drive between Catherine Street and Tecumseh Road.

The new connection to Rose-Ville Garden Drive is included in the analysis of all future (2025, 2030, 2035) background and total traffic conditions.

The existing signalized access intersection is included in the analysis for 2025 background and total traffic conditions. For 2030 and 2035 traffic conditions, the existing signalized access intersection is replaced by a RIRO restricted access, as illustrated in **Figure 4.1**.

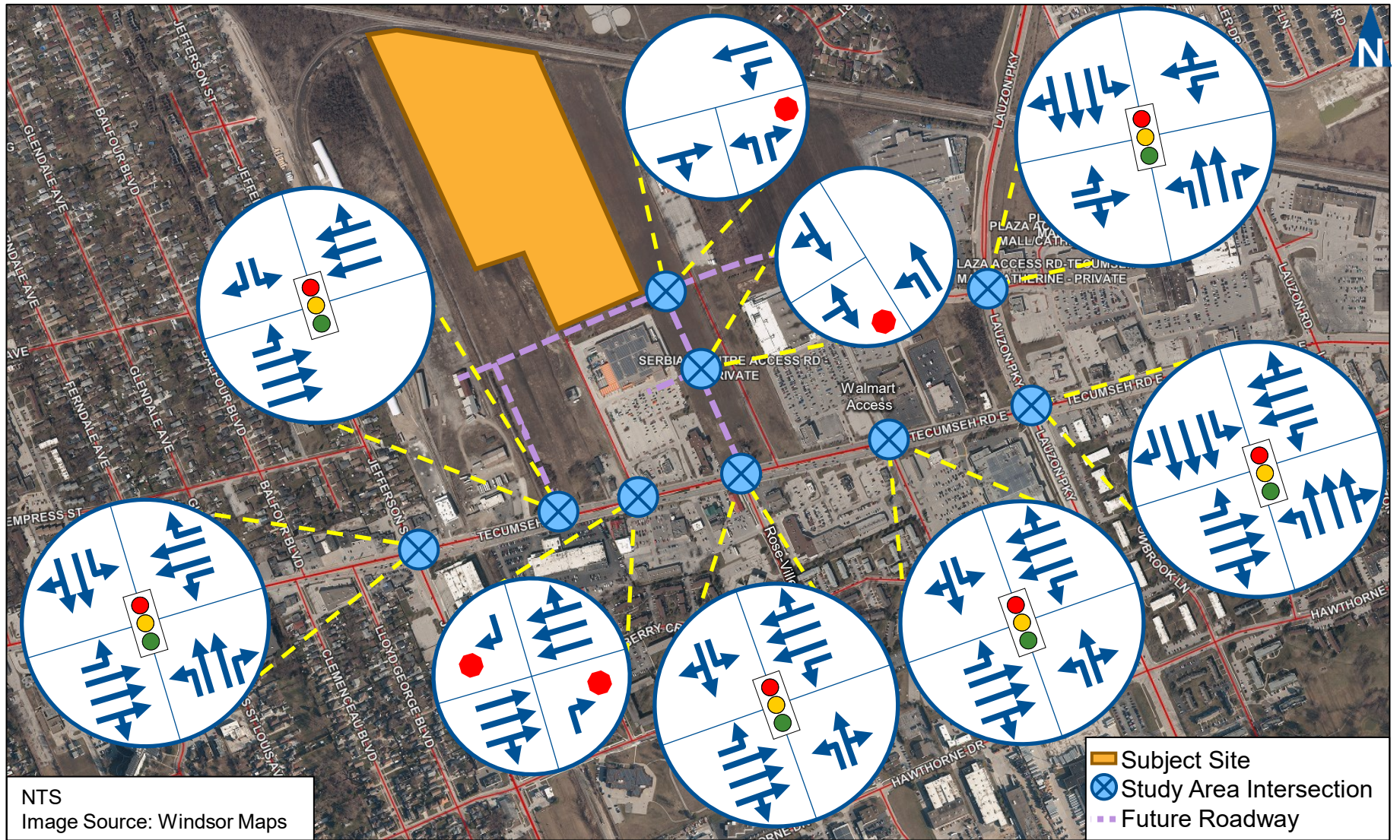
For the purposes of the analyses, the existing turning movements at the signalized driveway are redistributed appropriately between the existing driveway and the new driveway for both inbound and outbound traffic.

Appendix E includes the redistributed Home Depot traffic volumes.

4.2.3 Induced Traffic in the Study Area

The introduction of road connections in the study area will induce redistribution of existing and future background traffic volumes. The westerly extension of Catherine Street and its north-south connection to Tecumseh Road as well as the extension of Roseville Garden Drive between Tecumseh Road and Catherine Street will induce a portion of the southbound right-turn movement and the eastbound left-turn movement at the intersection of Tecumseh Road and Lauzon Parkway to divert to the intersection of Catherine Street and Lauzon Parkway using the new road connections. The redistribution of the respective turning movements has been based on the operational capacities of the impacted intersections.





Future Lane Configuration and Traffic Controls

Figure 4.1



4.3 2025 Background Traffic Operations

The traffic volumes have been grown to the year of development completion (2025) and include road traffic growth volumes and redistributed Home Depot site traffic volumes.

Figure 4.2a, **Figure 4.2b**, and **Figure 4.2c** illustrate the 2025 background traffic volumes, including road traffic growth and redistributed Home Depot site traffic volumes.

The 2025 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions. Signal timing splits have been optimized.

Table 4.1a, **Table 4.1b**, and **Table 4.1c** summarize the results of the 2025 background traffic operations. The results indicate that the study area intersections are forecast to operate at similar levels of service as under existing traffic conditions, with the following additional critical movements:

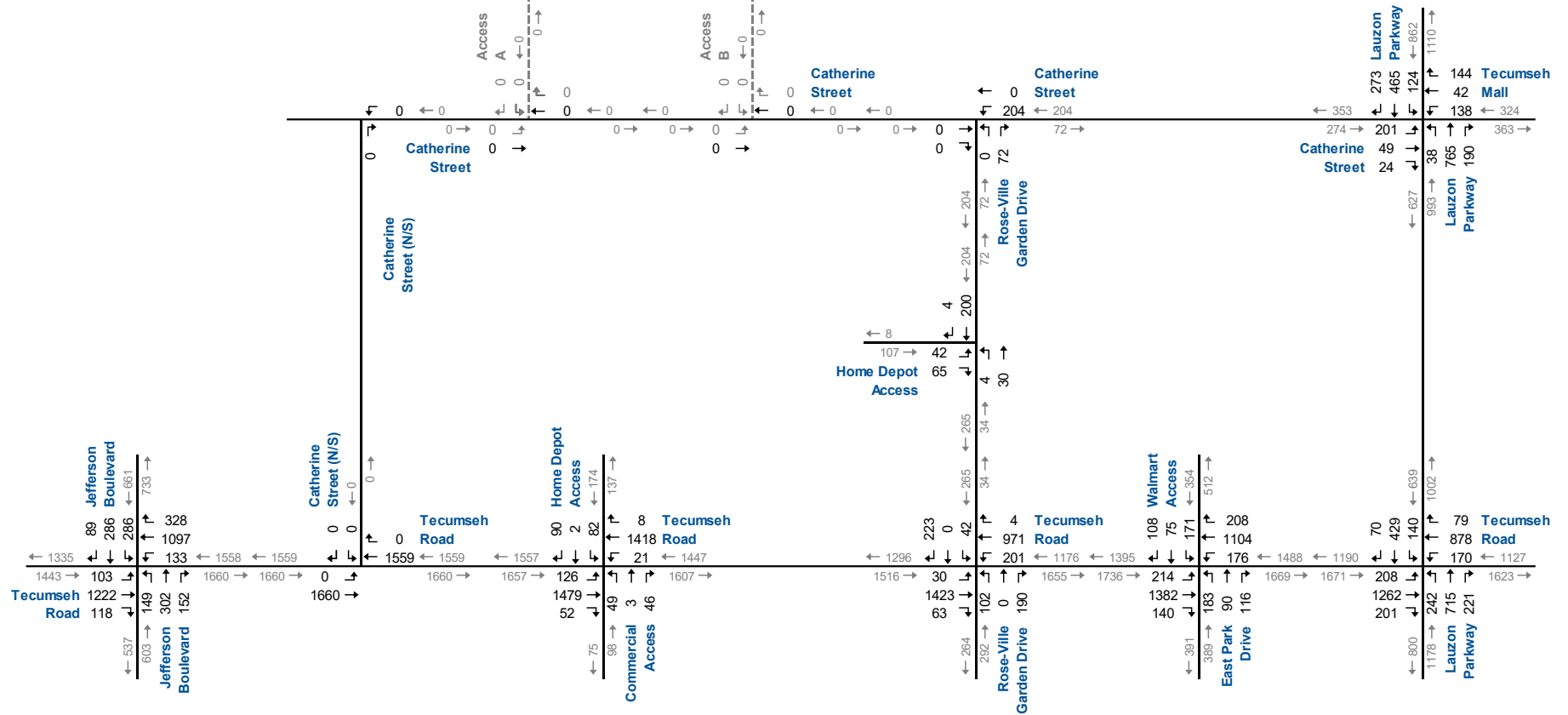
- ▶ Jefferson Boulevard and Tecumseh Road
 - The 95th percentile queue length of the southbound left-turn movement is projected to exceed the existing storage length of 45 metres during the weekday AM and Saturday peak hours;
- ▶ East Park Drive/Walmart Access and Tecumseh Road
 - The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage length of 25 metres during the Saturday peak hour;
- ▶ Lauzon Parkway and Tecumseh Road
 - The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage length of 90 metres during the Saturday peak hour; and
- ▶ Lauzon Parkway and Catherine Street
 - The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage length of 50 metres during the weekday PM and Saturday peak hours.

Appendix F contains the supporting detailed Synchro 11 reports.





PM Peak Hour



2025 Background Traffic Volumes PM Peak Hour

Figure 4.2b

TABLE 4.1A: 2025 BACKGROUND TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
AM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 11 0.15 1 55 54	B 14 0.30 10 -> ->	> > > > >	B 14	A 10 0.20 0 95 95	C 28 0.42 24 -> ->	C 23 0.23 16 -> ->	C 26	C 34 0.36 16 65 49	D 43 0.39 24 -> ->	D 43 0.53 60 36	D 40	D 43 0.70 48 45 -3	D 45 0.69 39 -> ->	> > > > >	D 44	C 28	
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	A 0 0.00 0 45 45	C 31 0.64 48 -> ->	> > > > >	C 31	A 0 0.00 0 45 45	D 36 0.65 58 -> ->	> > > > >	D 36	A 0 0.00 0 -> ->	D 0 0.00 0 -> ->	A 0 0.00 0 -> ->	A 0 0.00 0 -> ->	A 0 0.00 0 -> ->	A 0 0.00 0 -> ->	> > > > >	A 0	C 33	
	Commercial Access/Home Depot Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 4 0.18 0 35 35	B 12 0.28 1 -> ->	> > > > >	B 11	A 4 0.08 0 30 30	A 0 0.26 2 -> ->	> > > > >	A 0	< 45 0.40 18 -> ->	D 45 0.40 18 -> ->	> > > > >	D 45	D 41 0.20 10 45 35	D 42 0.39 16 -> ->	> > > > >	D 42	A 10	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 6 0.13 2 25 23	A 6 0.31 2 -> ->	> > > > >	A 6	A 6 0.21 0 50 50	A 0 0.21 1 -> ->	> > > > >	A 1	D 46 0.35 14 50 36	C 35 0.35 21 -> ->	> > > > >	D 39	D 38 0.08 4 120 116	D 39 0.66 44 -> ->	> > > > >	D 39	B 10	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 6 0.30 1 65 64	C 21 0.29 2 -> ->	> > > > >	B 19	A 6 0.20 0 40 40	A 1 0.31 3 -> ->	> > > > >	A 1	D 45 0.35 16 25 9	D 39 0.32 17 -> ->	> > > > >	D 41	D 44 0.40 20 20 0	D 40 0.40 21 -> ->	> > > > >	D 42	B 14	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 12 0.26 3 90 87	C 28 0.32 27 -> ->	> > > > >	C 27	B 13 0.29 3 120 117	B 16 0.30 14 -> ->	> > > > >	B 16	D 40 0.72 44 90 46	D 38 0.44 25 -> ->	> > > > >	D 38	C 32 0.33 14 70 56	C 32 0.48 19 -> ->	C 31 0.24 8 70 62	> > > > >	C 32	C 27
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 44 0.53 31 50 19	D 37 0.13 8 -> ->	> > > > >	D 42	D 41 0.30 13 80 67	D 37 0.15 8 -> ->	> > > > >	D 40	A 6 0.06 0 20 20	A 0 0.15 1 -> ->	A 0 0.10 1 -> ->	A 0	A 5 0.09 0 115 115	A 8 0.24 1 -> ->	> > > > >	A 8	B 12	
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	A 10 0.08 2	> > >	> > >	A 10	A 8 0.14 4 15 11	A 0 0.00 0 -> ->	> > >	A 8	A 8 0.00 0 100 100	A 0 0.08 2 -> ->	A 9 0.08 2 -> ->	A 9	A 0 0.00 0 -> ->	A 0 0.00 0 -> ->	> > >	A 0		
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.	A 0 0.00 0 -> ->	> > > > >	> > > > >	A 0	A 8 0.14 4 15 11	A 0 0.00 0 -> ->	> > >	A 8	A 0 0.00 0 100 100	A 9 0.08 2 -> ->	A 9 0.08 2 -> ->	A 9	A 0 0.00 0 -> ->	A 0 0.00 0 -> ->	> > >	A 0		

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



TABLE 4.1B: 2025 BACKGROUND TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 23 0.51 5 55 50	C 21 0.59 45 -	> > > > >	C 22	B 18 0.55 7 95 88	D 40 0.70 112 -	C 34 0.47 62 -	D 37	D 36 0.57 32 65 33	D 42 0.54 42 -	D 41	F 90 1.00 105 45 -60	D 44 0.65 50 -	> > > > >	E 64	D 37	
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	A 0 0.00 0 45 45	C 34 0.61 94 -	> > > > >	C 34	A 0 0.58 -	> > > >	A 0					A 0 0.00 0 -		0 0.00 0 -	A 0	B 17	
	Commercial Access/Home Depot Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 4 0.35 1 35 34	A 8 0.46 2 -	> > > > >	A 7	A 6 0.08 0 30 30	A 1 0.44 2 -	> > > > >	A 1	< < < < <	D 49 0.56 28 -	> > > > >	D 49	D 46 0.42 22 45 23	D 45 0.46 25 -	> > > > >	D 46	A 8
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 12 0.10 1 25 24	C 26 0.59 54 -	> > > > >	C 27	C 26 0.80 5 50 45	C 27 0.36 22 -	> > > > >	C 27	D 51 0.57 31 50 19	D 37 0.54 44 -	> > > > >	D 42	D 43 0.21 10 120 110	D 39 0.60 51 -	> > > > >	D 40	C 29
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 22 0.76 10 65 55	A 2 0.65 4 -	> > > > >	A 4	B 14 0.57 8 40 32	D 38 0.59 83 -	> > > > >	C 35	D 49 0.68 53 25 -28	C 32 0.46 41 -	> > > > >	D 40	D 50 0.68 51 20 -31	C 32 0.41 35 -	> > > > >	D 41	C 22
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 23 0.65 21 90 69	D 46 0.78 112 -	> > > > >	D 44	D 37 0.77 26 120 94	C 28 0.53 49 -	> > > > >	C 30	C 34 0.69 44 90 46	D 48 0.80 76 -	> > > > >	D 42	D 36 0.63 26 70 44	D 44 0.39 35 -	D 42 0.21 16 70 54	D 42	D 40
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 47 0.70 56 50 -6	C 28 0.15 12 -	> > > > >	D 42	C 34 0.39 28 80 52	C 31 0.40 34 -	> > > > >	C 32	B 12 0.11 2 20 18	A 1 0.48 3 -	A 2 0.29 2 -	A 2	B 13 0.33 6 115 109	B 17 0.30 17 -	> > > > >	B 16	B 16
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	B 10 0.15 4		> > >	B 10						A 8 0.00 0	A 0 0.00 0	A 1		A 0 0.00 0	> > >	A 0	
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > > >	A 0	A 8 0.14 4 15 11	A 0 0.00 0 -			A 8	A 0 0.00 0 100 100	A 9 0.07 2 -	A 9					

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



TABLE 4.1C: 2025 BACKGROUND TRAFFIC OPERATIONS – SATURDAY PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
Saturday Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 10 0.08 3 55 52	B 16 0.42 61 -> ->	> > > > >	B 16	B 11 0.47 17 95 78	A 1 0.58 3 -> ->	A 0 0.21 2 -> ->	A 2	D 35 0.40 40 65 25	D D 0.14 11 -> ->	D D 0.65 52 60 8	D D 0.45 47 45 -2	D D 0.24 20 -> ->	> > > > >	D 38	B 14		
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	A 0 0.00 0 45 45	A 4 0.65 19 -> ->	> > > > >	A 4	B 18 0.71 78 -> ->	> > > > >	> > > > >	B 18				A 0 0.00 0 -> ->		A 0 0.00 0 -> ->	A 0	B 11		
	Commercial Access/Home Depot Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 6 0.36 11 35 24	C 25 0.42 120 -> ->	> > > > >	C 23	A 8 0.16 3 30 27	A 0 0.38 2 -> ->	> > > > >	A 1	< < 0.54 < < <	D 47 > 40 -> ->	> > > > >	D 47	D 45 0.51 43 46 45 2	D 43 0.52 46 -> ->	> > > > >	D 44	B 17	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 8 0.09 3 25 22	B 14 0.46 62 -> ->	> > > > >	B 14	A 10 0.48 14 50 36	A 0 0.40 2 -> ->	> > > > >	A 2	D 48 0.50 35 50 15	D D 0.46 47 -> ->	> > > > >	D 41	D 43 0.28 21 120 99	D 39 0.55 59 -> ->	> > > > >	D 40	B 13	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 15 0.65 28 65 37	B 11 0.50 46 -> ->	> > > > >	B 12	B 13 0.53 23 40 17	B 19 0.50 70 -> ->	> > > > >	B 18	D 46 0.55 46 25 -21	C 33 > 54 -> ->	> > > > >	D 38	D 47 0.64 60 20 -40	C 34 0.51 63 -> ->	> > > > >	D 40	B 20	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 27 0.71 46 90 44	D 44 0.70 140 -> ->	> > > > >	D 42	D 38 0.83 56 120 64	C 28 0.61 91 -> ->	> > > > >	C 30	E 59 0.90 96 90 -6	D 36 0.52 58 -> ->	> > > > >	D 44	C 32 0.44 34 70 36	D 45 0.47 56 81 70 -11	D 51 0.71 81 70 ->	D 45	D 39	
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 36 0.70 65 50 -15	C 24 0.15 20 -> ->	> > > > >	C 33	D 44 0.58 57 80 23	D 46 0.74 74 -> ->	> > > > >	D 45	B 15 0.19 9 20 11	A 5 0.34 11 -> ->	A 5 0.35 12 -> ->	A 6	B 15 0.35 25 115 90	C 21 0.42 61 -> ->	> > > > >	C 20	C 21	
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	B 10 0.20 5		> > >	B 10						A 8 0.00 0	A 0 0.00 0		A 1		A 0 0.00 0	> > >	A 0	
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -> ->	> > > > >	A 0	A 8 0.10 2 15 13	A 0 0.00 0 -> ->		A 8	A 0 0.00 0 100 100		A 9 0.09 2 -> ->		A 9					

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



4.4 2025 Total Traffic Operations

Figure 4.3a, **Figure 4.3b**, and **Figure 4.3c** illustrate the 2025 total traffic volumes, including trips generated by the proposed development.

The 2025 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions. Signal timing splits have been optimized.

Table 4.2a, **Table 4.2b**, and **Table 4.2c** summarize the results of the 2025 total traffic operations. The results indicate that the study area intersections are forecast to operate at similar levels of service as under 2025 background traffic conditions, except for the following movements:

- ▶ Lauzon Parkway and Tecumseh Road
 - The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.85 during the PM peak hour;
 - The northbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.88 during the PM peak hour;
- ▶ Lauzon Parkway and Catherine Street
 - The eastbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour;
 - The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour. The 95th percentile queue length is projected to exceed the existing storage of 20 metres during the weekday PM and Saturday peak hours;
 - The southbound shared through/right-turn movement is forecast to operate at LOS E with a v/c ratio of 0.89 during the PM peak hour and at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour;
- ▶ Rose-Ville Garden Drive and Catherine Street
 - The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the weekday PM and Saturday peak hour;
- ▶ Catherine Street and Access A



- The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour; and
- ▶ Catherine Street and Access B
 - The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour.

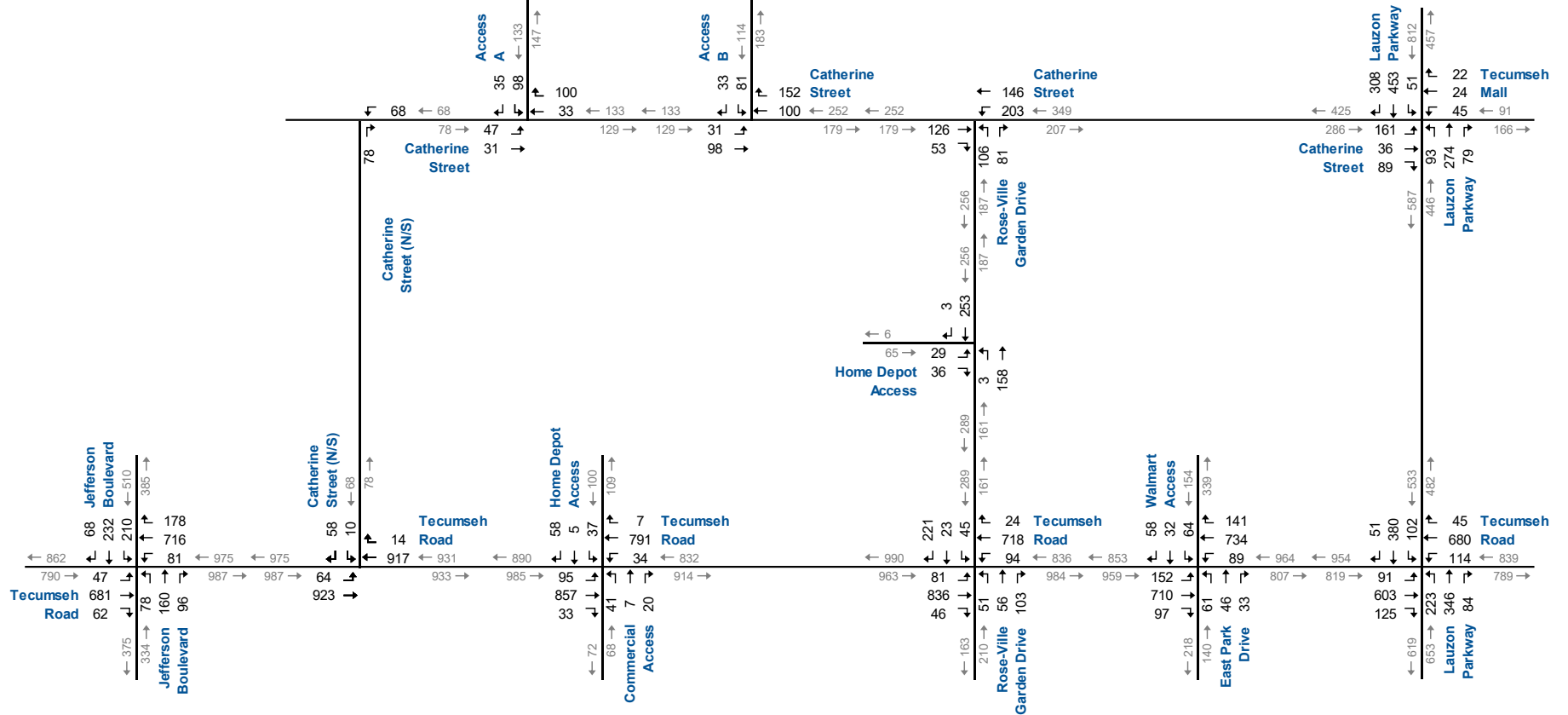
The site access intersections on Catherine Street are forecast to operate at acceptable levels of service during the weekday AM and PM and Saturday peak hours, except for the southbound (outbound) left-turn movements at both site access intersections. Both outbound left-turn movements are forecast to operate with extended delays during the Saturday peak hour, and the easterly access (Access B) is forecast to operate with extended delays during the PM peak hour.

Appendix G contains the supporting detailed Synchro 11 reports.





AM Peak Hour

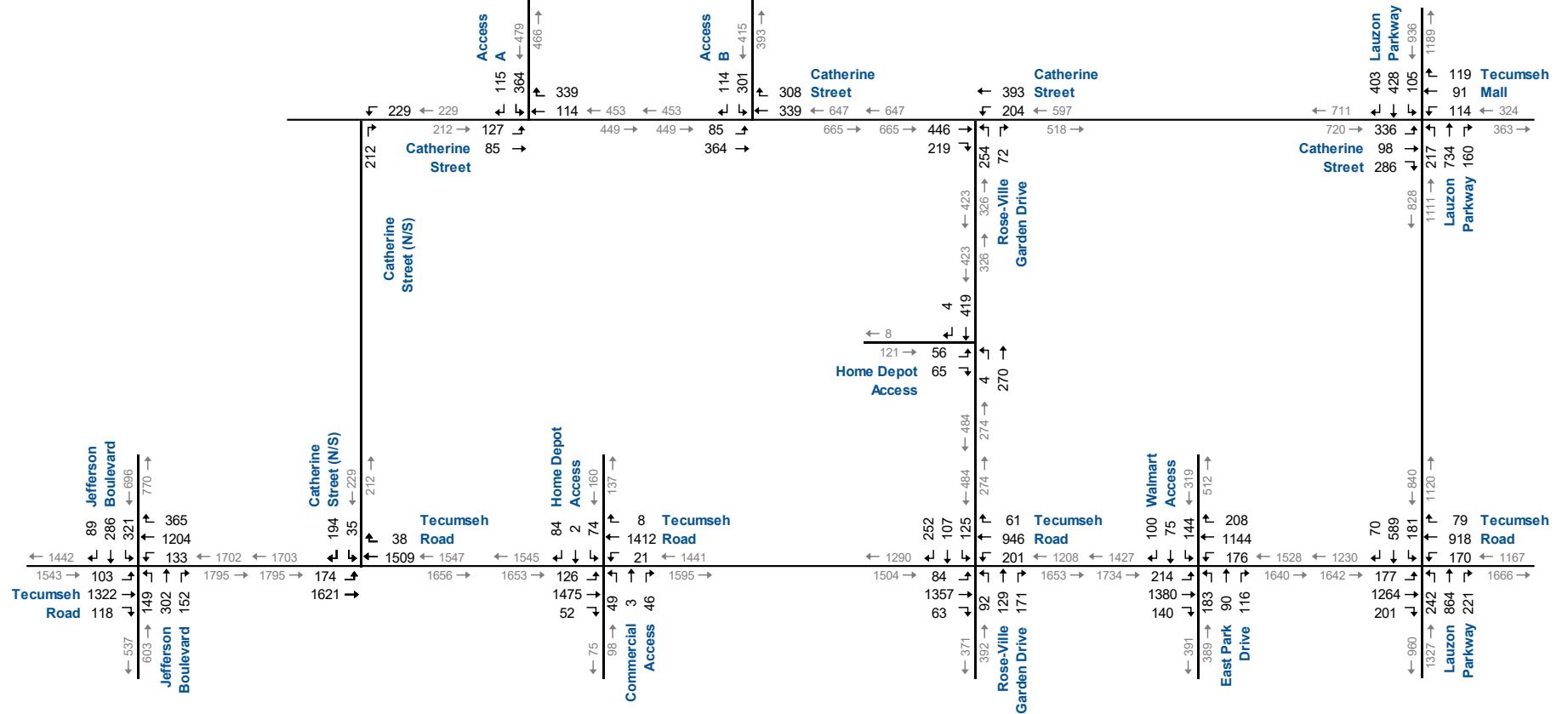


2025 Total Traffic Volumes AM Peak Hour

Figure 4.3a



PM Peak Hour

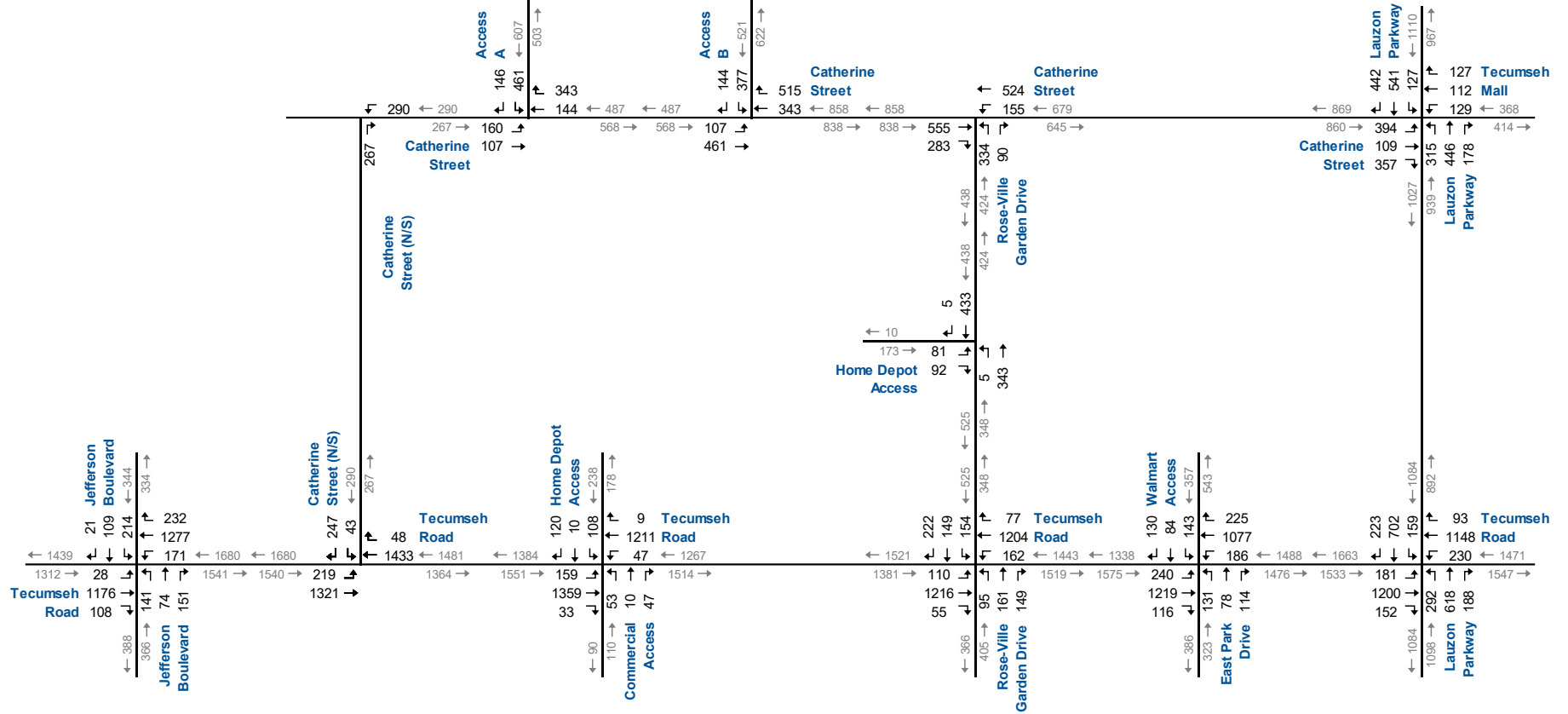


2025 Total Traffic Volumes PM Peak Hour

Figure 4.3b



Saturday Peak Hour



2025 Total Traffic Volumes Saturday Peak Hour



Figure 4.3c

TABLE 4.2A: 2025 TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 11 0.15 1 55 54	B 14 0.31 10 -	> > > > >	B 14	A 10 0.21 0 95 95	C 21 0.43 20 -	B 18 0.24 13 -	B 20	C 35 0.36 16 65 49	D 42 0.42 20 -	D 44 0.57 25 60 35	D 41	D 45 0.74 54 45 -9	D 45 0.68 39 -	> > > > >	D 45	C 26
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	C 24 0.30 8 45 37	B 11 0.55 16 -	> > > > >	B 12	A 23 0.74 34 -	C 23	> > > > >						B 11 0.01 1 -	> > > > >	B 11	B 17	
	Commercial Access/Home Depot Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 4 0.18 0 35 35	B 12 0.28 1 -	> > > > >	B 11	A 4 0.08 0 30 30	A 0 0.26 2 -	> > > > >	< < < < <	D 44 0.39 17 -	> > > > >	D 44	D 41 0.18 9 45 36	D 42 0.37 16 -	> > > > >	D 42	A 9	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 12 0.18 2 25 23	B 12 0.31 6 -	> > > > >	B 12	A 7 0.22 1 50 49	A 0 0.22 1 -	> > > > >	A 1	D 46 0.33 12 50 38	C 35 0.44 29 -	> > > > >	D 37	D 39 0.19 10 120 110	D 38 0.69 50 -	> > > > >	D 39	B 14
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 5 0.30 1 65 64	C 21 0.28 2 -	> > > > >	B 19	A 6 0.20 0 40 40	A 0 0.31 2 -	> > > > >	A 1	D 45 0.35 16 25 9	D 39 0.32 17 -	> > > > >	D 41	D 44 0.33 16 20 4	D 40 0.38 20 -	> > > > >	D 41	B 14
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 12 0.22 2 90 88	C 28 0.31 27 -	> > > > >	C 27	B 13 0.29 3 120 117	B 16 0.30 15 -	> > > > >	B 16	D 42 0.74 46 90 44	D 39 0.52 30 -	> > > > >	D 40	C 32 0.43 16 70 54	C 33 0.53 21 -	C 31 0.24 8 70 62	C 32	C 28
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 42 0.59 38 50 12	D 37 0.42 26 -	> > > > >	D 40	D 43 0.29 10 80 70	C 34 0.15 9 -	> > > > >	D 38	A 8 0.23 0 20 20	A 9 0.15 1 -	A 9 0.09 1 -	A 9	A 7 0.08 0 115 115	B 13 0.38 8 -	> > > > >	B 11	B 17
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	B 11 0.10 2	> > >	> > >	B 11						A 8 0.00 0	A 0 0.00 0	A 0	A 0 0.00 0	> > >	A 0	A 0	
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > > >	A 0	A 8 0.16 4 15 11	A 0 0.00 0 -	> > > > >	A 5	C 18 0.29 9 100 91	A 10 0.10 2 -	A 14						
	Catherine Street & Access A	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.04 1 15 14	A 0 0.00 0 -	> > > > >	A 5	A 0 0.00 0 -	> > > > >	A 0						B 11 0.14 4 -	A 9 0.04 1 -	> > > > >	B 10	
Catherine Street & Access B	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.03 1 15 14	A 0 0.00 0 -	> > > > >	A 2	A 0 0.00 0 -	> > > > >	A 0						B 11 0.13 4 -	A 9 0.04 1 -	> > > > >	B 11		

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



TABLE 4.2B: 2025 TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
PM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 0.56 6 55 49	C 22 50 - -	> > > >	C 23	C 0.59 7 95 88	D 42 134 -	D 36 70 -	D 39	D 0.57 32 65 33	D 42 38 -	D 46 42 60 18	D 41	F 1.12 143 45 -98	D 44 0.65 50 -	> > > >	F 83	D 41	
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	C 0.76 15 45 30	C 27 0.65 67 -	> > > >	C 27	C 0.77 76 -	> > >	C 30						C 22 0.06 4 -	C 26 0.35 121 -	> > > >	C 26	C 28	
	Commercial Access/Home Depot Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 0.35 1 35 34	A 0.46 2 -	> > > >	A 1	A 0.07 0 30 30	A 0.44 2 -	> > > >	A 1	< < < <	D 50 28 -	> > > >	D 50	D 0.38 20 45 25	D 45 0.44 22 -	> > > >	D 46	A 4	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 0.31 6 25 19	D 41 0.67 100 -	> > > >	D 40	C 0.84 16 50 34	C 0.43 51 -	> > > >	C 32	D 0.56 28 50 22	C 33 59 -	> > > >	D 37	D 0.58 35 120 85	D 49 0.72 74 -	> > > >	D 40	D 37	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 0.77 9 65 56	A 0.64 4 -	> > > >	A 4	B 0.57 8 40 32	D 0.59 80 -	> > > >	C 34	D 0.69 53 25 -28	C 0.47 42 -	> > > >	D 41	D 0.60 40 20 -20	C 0.40 34 -	> > > >	D 39	C 22	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 0.61 20 90 70	D 0.85 120 -	> > > >	D 49	D 0.79 29 120 91	C 0.58 56 -	> > > >	C 32	C 0.73 44 90 46	E 0.88 94 -	> > > >	D 48	D 0.77 38 70 32	D 0.48 48 -	D 0.19 16 70 54	D 43	D 44	
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 0.80 80 50 -30	C 0.59 57 -	> > > >	C 35	D 0.47 27 80 53	C 0.31 26 -	> > > >	C 28	C 0.83 25 20 -5	B 0.61 22 -	B 0.33 10 -	B 15	C 0.37 14 115 101	E 0.89 103 -	> > > >	D 41	C 29	
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	B 0.24 7		> > >	B 14						A 0.00 0	A 0.00 0	A 0		A 0.00 0	> > >	A 0		
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0.00 0 -	> > > >	A 0	B 0.25 8 15 7	A 0.00 0 -	> > > >	A 4	F 1.25 106 100 -6		B 0.16 4 -	F 150						
	Catherine Street & Access A	TWSC	LOS Delay V/C Q Stor. Avail.	A 0.13 3 15 12	A 0.00 0 -	> > > >	A 5		A 0.00 0 -	> > > >	A 0					E 0.84 62 -	B 0.17 5 -	> > >	D 34		
Catherine Street & Access B	TWSC	LOS Delay V/C Q Stor. Avail.	A 0.10 2 15 13	A 0.00 0 -	> > > >	A 2		A 0.00 0 -	> > > >	A 0					F 0.96 76 -	B 0.23 7 -	> > >	F 57			

MOE - Measure of Effectiveness
 LOS - Level of Service
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 Q - 95th Percentile Queue Length (m)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



TABLE 4.2C: 2025 TOTAL TRAFFIC OPERATIONS – SATURDAY PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Saturday Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 10 0.09 3 55 52	B 17 0.47 70 -	> > > >	B 17 -	B 12 0.52 17 95 78	A 1 0.65 4 -	A 0 0.27 2 -	A 2 -	D 35 0.40 40 65 25	D 40 0.14 11 -	D 47 0.65 52 60 8	D 41 -	D 39 0.60 66 45 -21	D 41 0.24 20 -	> > > > >	D 40 -	B 15 -
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	C 24 0.79 39 45 6	A 0 0.56 1 -	> > > >	A 4 -	B 17 0.85 59 -	> > > >	B 18 -					C 20 0.07 9 -	C 25 0.42 144 -	> > > >	C 24 -	B 12 -	
	Commercial Access/Home Depot Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 6 0.36 10 35 25	A 9 0.42 50 -	> > > >	A 9 -	A 6 0.14 3 30 27	A 0 0.38 2 -	> > > >	A 1 -	< < < <	D 47 0.54 40 -	> > > >	D 47 -	D 44 0.47 38 45 7	D 43 0.51 44 -	> > > >	D 44 -	A 10 -
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 18 0.43 18 25 7	C 30 0.55 106 -	> > > >	C 29 -	B 20 0.57 26 50 24	C 29 0.55 105 -	> > > >	C 28 -	D 46 0.48 33 50 17	C 30 0.55 79 -	> > > >	C 33 -	D 46 0.63 58 120 62	C 34 0.69 100 -	> > > >	D 37 -	C 30 -
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 14 0.66 26 65 39	A 1 0.50 3 -	> > > >	A 3 -	B 11 0.48 22 40 18	B 18 0.52 70 -	> > > >	B 18 -	D 46 0.54 46 25 -21	C 34 0.44 55 -	> > > >	D 38 -	D 45 0.55 49 20 -29	C 34 0.49 61 -	> > > >	D 38 -	B 15 -
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 29 0.68 42 90 48	D 47 0.77 146 -	> > > >	D 46 -	D 48 0.87 65 120 55	C 31 0.67 100 -	> > > >	C 34 -	E 57 0.91 94 90 -4	D 39 0.66 79 -	> > > >	D 43 -	C 32 0.58 43 70 27	D 47 0.65 76 -	D 49 0.68 75 70 -5	D 45 -	D 42 -
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	E 76 1.00 112 50 -62	C 30 0.73 118 -	> > > >	D 51 -	E 56 0.69 56 80 24	D 36 0.57 73 -	> > > >	D 43 -	F 81 1.05 100 20 -80	C 21 0.38 43 -	C 21 0.36 37 -	D 41 -	C 26 0.37 31 115 84	F 118 1.12 216 -	> > > >	E 68 -	D 53 -
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	C 16 0.37 13	> > >	C 16 -						A 8 0.01 0	A 0 0.00 0		A 0 -	A 0 0.00 0	> > >	A 0 -		A 0 -
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > >	A 0 -	B 11 0.23 7 15 8	A 0 0.00 0 -	> > > >	A 3 -	F 410 1.78 190 100 -90	C 17 0.24 7 -	F 326 -						
	Catherine Street & Access A	TWSC	LOS Delay V/C Q Stor. Avail.	A 9 0.17 4 15 11	A 0 0.00 0 -	> > > >	A 6 -	A 0 0.00 0 -	> > > >	A 0 -					F 146 1.21 152 -	B 12 0.23 7 -	> > > >	F 114 -		
Catherine Street & Access B	TWSC	LOS Delay V/C Q Stor. Avail.	B 11 0.16 4 15 11	A 0 0.00 0 -	> > > >	A 2 -	A 0 0.00 0 -	> > > >	A 0 -					F 290 1.53 181 -	C 17 0.34 11 -	> > > >	F 215 -			

MOE - Measure of Effectiveness
 LOS - Level of Service
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4.5 2030 Background Traffic Operations

The traffic volumes have been grown to five-years after development completion (2030) and include road traffic growth volumes and redistributed Home Depot site traffic volumes.

Figure 4.4a, **Figure 4.4b**, and **Figure 4.4c** illustrate the 2030 background traffic volumes, including road traffic growth and redistributed Home Depot site traffic volumes.

The 2030 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions. Signal timing splits have been optimized.

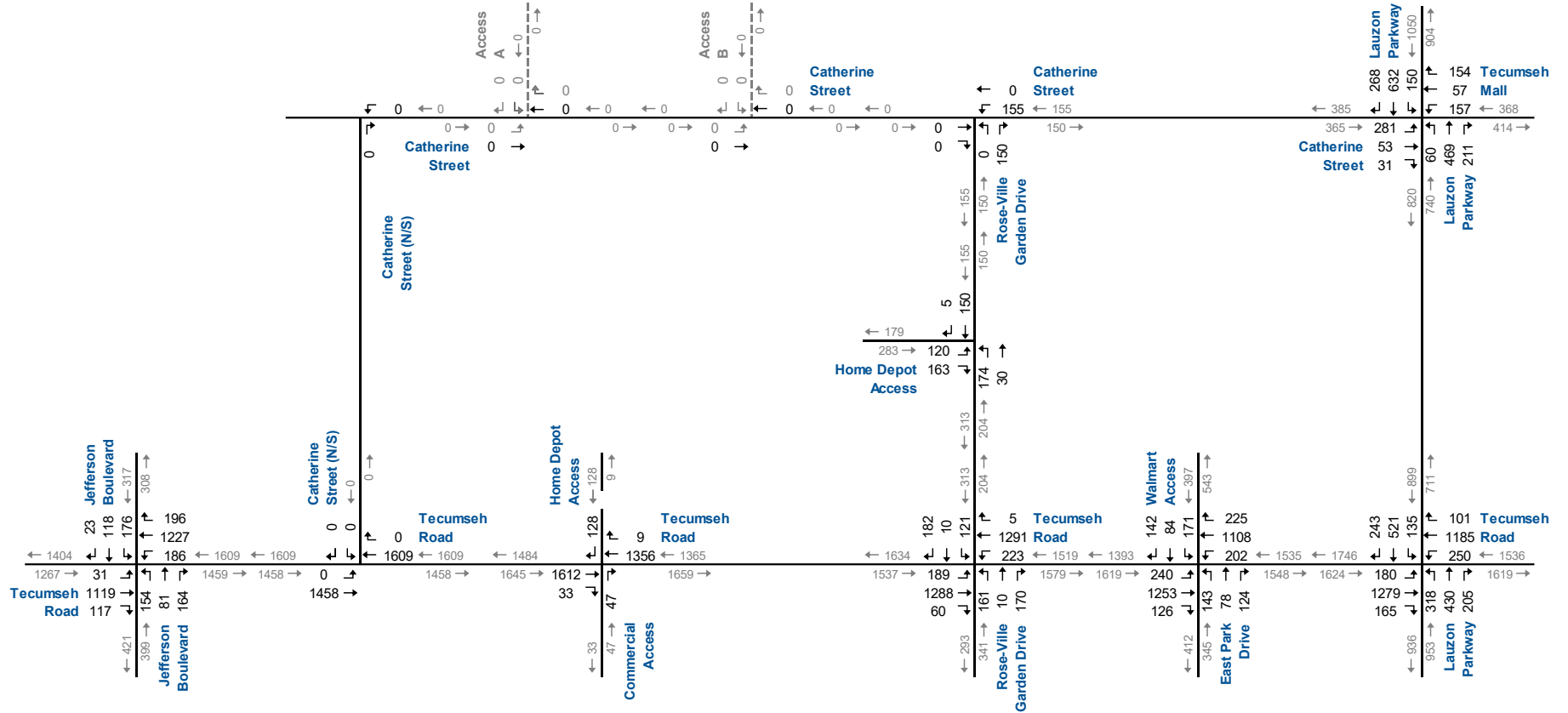
Table 4.3a, **Table 4.3b**, and **Table 4.3c** summarize the results of the 2030 background traffic operations. The results indicate that the study area intersections are forecast to operate at similar levels of service as under 2025 background traffic conditions except for the 95th percentile queue length of the northbound left-turn movement at the intersection of Rose-Ville Garden Drive and Tecumseh Road, which is projected to exceed the existing storage of 50 metres.

Appendix H contains the supporting detailed Synchro 11 reports.





Saturday Peak Hour



2030 Background Traffic Volumes Saturday Peak Hour

Figure 4.4c

TABLE 4.3A: 2030 BACKGROUND TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 12 0.18 1 55 54	B 15 0.33 12 -> ->	> > > > >	B 15	B 10 0.24 1 95 94	C 30 0.47 38 -> ->	C 25 0.25 20 -> ->	C 27	D D 0.38 18 65 47	D D 0.49 28 -> ->	D D 0.65 28 60 32	D 42	D D 0.71 50 45 -5	D D 0.69 41 -> ->	> > > > >	D 43	C 28
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	A 0 0.00 0 45 45	D 39 0.61 70 -> ->	> > > > >	D 39	C 28 0.62 51 -> ->	> > > > >	C 28						A 0 0.00 0 -> ->		A 0 0.00 0 -> ->	A 0	C 33
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -> ->	> > > > >	A 0	A 0 0.00 0 -> ->	> > > > >	A 0			C 15 0.06 2 -> ->	C 15				C 15 0.17 4 -> ->	C 15	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 16 0.36 8 25 17	B 13 0.35 10 -> ->	> > > > >	B 14	A 8 0.34 1 50 49	A 0 0.23 1 -> ->	> > > > >	A 2	D 46 0.52 25 50 25	C 32 0.35 22 -> ->	> > > > >	D 38	D D 0.15 8 120 112	D D 0.58 41 -> ->	> > > > >	D 35	B 14
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 5 0.31 1 65 64	A 9 0.31 2 -> ->	> > > > >	A 9	A 5 0.21 0 40 40	A 0 0.33 2 -> ->	> > > > >	A 1	D 44 0.37 16 25 9	D D 0.32 18 -> ->	> > > > >	D 41	D D 0.39 20 20 0	D D 0.39 21 -> ->	> > > > >	D 41	A 10
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 12 0.25 3 90 87	B 29 0.35 31 -> ->	> > > > >	C 28	B 13 0.33 4 120 116	B 17 0.32 16 -> ->	> > > > >	B 16	D 48 0.80 55 90 35	D D 0.46 26 -> ->	> > > > >	D 42	C 32 0.37 15 70 55	C C 0.52 21 -> ->	C 31 0.26 9 70 61	C 32	C 28
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 43 0.57 35 50 15	D 36 0.12 7 -> ->	> > > > >	D 42	D 40 0.28 12 80 68	D 36 0.14 8 -> ->	> > > > >	D 38	A 6 0.06 0 20 20	A A 0.15 1 -> ->	A A 0.10 1 -> ->	A 0	A A 0.09 0 115 115	A A 0.27 2 -> ->	> > > > >	A 9	B 12
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	B 11 0.16 4		> > >	B 11					A 8 0.09 2	A A 0.00 0		A 5		A 0 0.00 0	> > >	A 0	
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -> ->	> > > > >	A 0	A 8 0.14 4 15 11	A 0 0.00 0 -> ->	> > > > >	A 8	A 0 0.00 0 100 100		A A 0.10 2 -> ->	A 9					

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



TABLE 4.3B: 2030 BACKGROUND TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay 28 V/C 0.61 Q 8 Stor. 55 Avail. 47	C C > > > -> ->	> > > > > > >	C 25	C 23 0.65 9 95 86	D 43 0.78 140 -> ->	D 36 0.52 73 -> ->	D 40	D D D D D D	D 39 0.65 38 65 27	D 41 0.55 45 -> ->	D 45 0.66 45 60 15	D 42	F 116 1.09 131 45 -86	D D > > > ->	> > > > > ->	E 75	D 40
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay 0 V/C 0.00 Q 0 Stor. 45 Avail. 45	A C > > > -> ->	> > > > > > >	C 32		B 13 0.58 16 -> ->	> > > > > >	B 13						A 0 0.00 0 -> ->		A 0 0.00 0 -> ->	A 0	C 23
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay 0 V/C 0.00 Q 0 Stor. -> Avail. ->	A C > > > -> ->	> > > > > > >	A 0		A 0 0.00 0 -> ->	> > > > > >	A 0				D 28 0.25 7 -> ->	D 28			D 30 0.41 14 -> ->	D 30	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay 17 V/C 0.51 Q 10 Stor. 25 Avail. 15	B C > > > -> ->	> > > > > > >	C 27	D 38 0.86 30 50 20	C 33 0.45 52 -> ->	> > > > > >	C 34	D 52 0.69 50 50 0	C C > > > ->	C 32 0.50 42 -> ->	> > > > > >	D 41	D 42 0.34 20 120 100	C C > > > ->	> > > > > ->	D 35	C 31
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay 23 V/C 0.78 Q 11 Stor. 65 Avail. 54	C A > > > -> ->	> > > > > > >	A 5	B 14 0.64 10 40 30	C 31 0.64 68 -> ->	> > > > > >	C 29	D 50 0.71 58 25 -33	C C > > > ->	C 32 0.47 42 -> ->	> > > > > >	D 40	D 50 0.68 50 20 -30	C C > > > ->	> > > > > ->	D 40	C 21
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay 22 V/C 0.63 Q 17 Stor. 90 Avail. 73	C D > > > -> ->	> > > > > > >	D 47	D 48 0.85 35 120 85	C 28 0.55 51 -> ->	> > > > > >	C 31	E 56 0.86 64 90 26	D D > > > ->	D 45 0.84 78 -> ->	> > > > > >	D 49	D 49 0.79 38 70 32	D D > > > ->	D 40 0.21 17 70 53	D 43	D 43
	Lauzon Parkway & Catherine Street	TCS	LOS Delay 47 V/C 0.74 Q 64 Stor. 50 Avail. -14	D C > > > -> ->	> > > > > > >	D 42	C 31 0.36 26 80 54	C 28 0.36 32 -> ->	> > > > > >	C 29	B 14 0.12 2 20 18	A A > > > ->	A 4 0.31 4 -> ->	> > > > > >	A 4	B 15 0.36 8 115 107	B B > > > ->	> > > > > ->	B 19	B 17
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay 13 V/C 0.31 Q 10	B C > > > -> ->	> > > > > > >	B 13					A 8 0.11 3	A A > > > ->	A 0 0.00 0	> > > >	A 6		A 0 0.00 0	> > > >	A 0	
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay 0 V/C 0.00 Q 0 Stor. -> Avail. ->	A C > > > -> ->	> > > > > > >	A 0	A 8 0.14 4 15 11	A A > > > -> ->		A 8	A 0 0.00 0 100 100	A A > > > ->	A 9 0.11 3 -> ->	> > > >	A 9					

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



TABLE 4.3C: 2030 BACKGROUND TRAFFIC OPERATIONS – SATURDAY PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
Saturday Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 11 0.10 4 55 51	B 17 0.47 69 -	> > > > >	B 18	B 12 0.54 19 95 76	A 1 0.64 4 -	A 0 0.23 2 -	A 2	C 35 0.44 44 65 21	D 39 0.15 12 -	D 47 0.67 57 60 3	D 41	D 36 0.48 51 45 -	D 40 0.25 22 -	> > > > >	D 38	B 15	
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	A 0 0.00 0 45 45	A 1 0.63 3 -	> > > > >	A 1	C 22 0.70 111 -	> > > > >	C 22					A 0 0.00 0 -		A 0 0.00 0 -	> > > > >	A 0	B 12	
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > > >	A 0	A 0 0.00 0 -	> > > > >	A 0			C 23 0.20 5 -	C 23				C 25 0.43 16 -	> > > > >	C 25	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 14 0.59 25 25 0	B 19 0.52 78 -	> > > > >	B 19	B 16 0.66 28 50 22	B 18 0.49 69 -	> > > > >	B 18	D 48 0.64 58 50 -8	C 33 0.43 51 -	> > > > >	D 40	D 43 0.48 53 120 77	C 34 0.48 58 -	> > > > >	D 37	C 22	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 15 0.68 27 65 38	A 1 0.53 3 -	> > > > >	A 3	B 12 0.52 26 40 14	B 20 0.54 74 -	> > > > >	B 19	D 46 0.58 50 25 -25	C 33 0.44 56 -	> > > > >	D 38	D 47 0.64 60 20 -40	C 34 0.50 63 -	> > > > >	D 40	B 16	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 28 0.67 40 90 50	D 48 0.80 154 -	> > > > >	D 47	E 57 0.91 76 120 44	C 29 0.66 100 -	> > > > >	C 34	F 81 0.99 86 90 4	D 35 0.53 61 -	> > > > >	D 51	C 32 0.47 37 70 33	D 44 0.49 60 70 -18	> > > > >	D 44	D 43	
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 36 0.76 80 50 -30	C 22 0.14 20 -	> > > > >	C 33	D 44 0.58 57 80 23	D 47 0.74 74 -	> > > > >	D 46	B 17 0.21 10 20 10	A 8 0.36 17 -	A 8 0.38 17 -	A 8	B 17 0.37 28 115 87	C 24 0.47 70 -	> > > > >	C 23	C 24	
	Rose-Ville Gardens Drive & Rose-Ville Garden Access	TWSC	LOS Delay V/C Q	B 15 0.46 18		> > >	B 15						A 8 0.13 4	A 0 0.00 0	A 7	A 0 0.00 0		A 0 0.00 0	> > >	A 0	
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > > >	A 0	A 8 0.10 2 15 13	A 0 0.00 0 -	> > > > >	A 8	A 0 0.00 0 100 100	A 9 0.15 4 -	A 9							

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



4.6 2030 Total Traffic Operations

Figure 4.5a, **Figure 4.5b**, and **Figure 4.5c** illustrate the 2030 total traffic volumes, including trips generated by the proposed development.

The 2030 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions. Signal timing splits have been optimized.

Table 4.4a, **Table 4.4b**, and **Table 4.4c** summarize the results of the 2030 total traffic operations. The results indicate that the study area intersections are forecast to operate at similar levels of service as under 2025 total and 2030 background traffic conditions, with the following additional critical movements:

- ▶ Jefferson Boulevard and Tecumseh Road
 - The westbound through movement is forecast to operate at LOS D with a v/c ratio of 0.85 during the PM peak hour;
- ▶ Rose-Ville Garden Drive and Tecumseh Road
 - The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 25 metres during the Saturday peak hour;
 - The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage of 50 metres during the PM peak hour;
- ▶ Lauzon Parkway and Tecumseh Road
 - The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 25 metres during the Saturday peak hour;
 - The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.86 during the Saturday peak hour;
 - The westbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 1.00 during the Saturday peak hour; and
 - The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 1.00 during the Saturday peak hour.

The site access intersections on Catherine Street are forecast to operate at acceptable levels of service during the weekday AM and PM and Saturday peak hours, except for the southbound (outbound) left-turn movements at both site access intersections. Both outbound left-



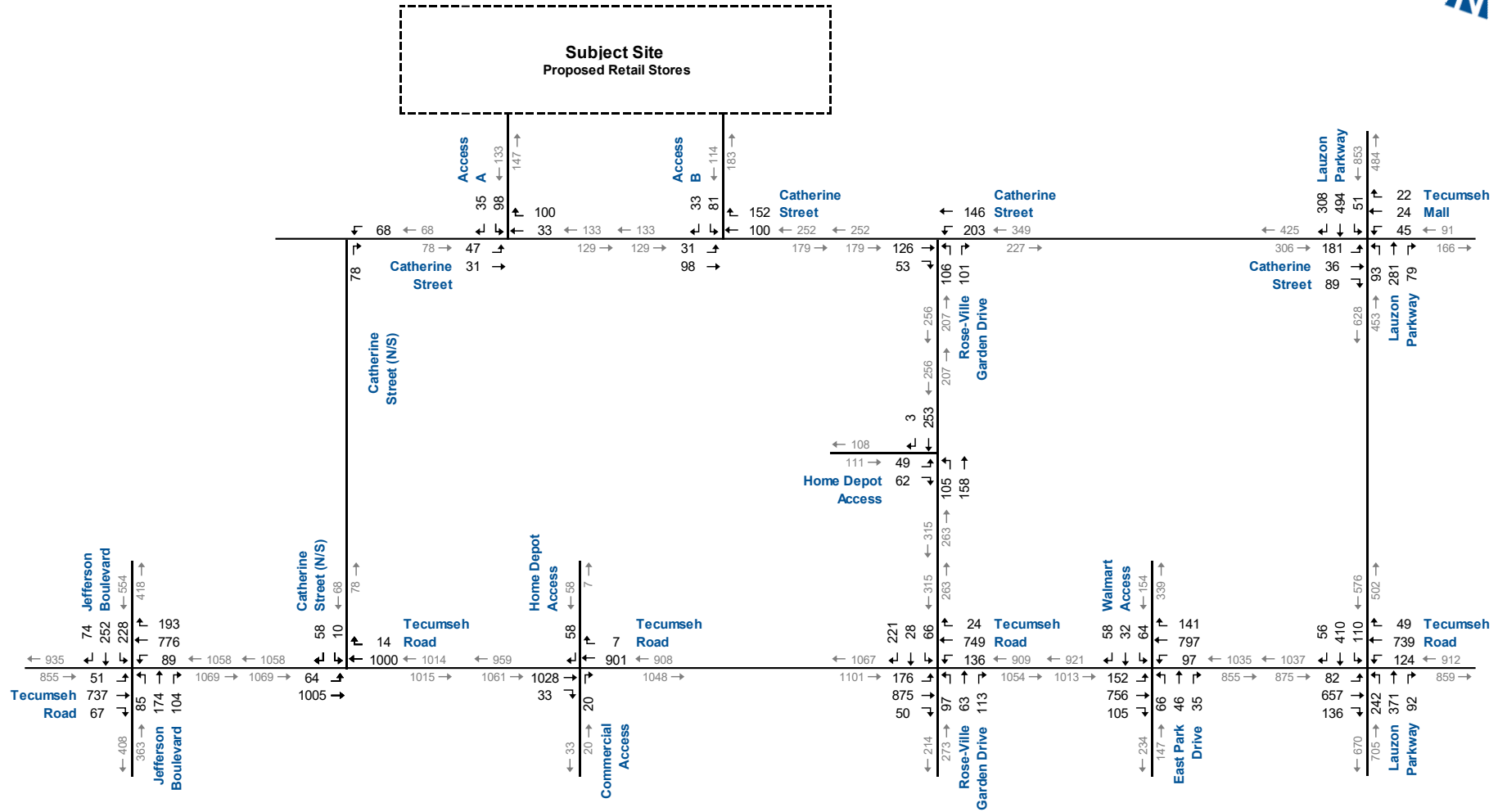
turn movements are forecast to operate with extended delays during the Saturday peak hour, and the easterly access (Access B) is forecast to operate with extended delays during the PM peak hour.

Appendix I contains the supporting detailed Synchro 11 reports.





AM Peak Hour

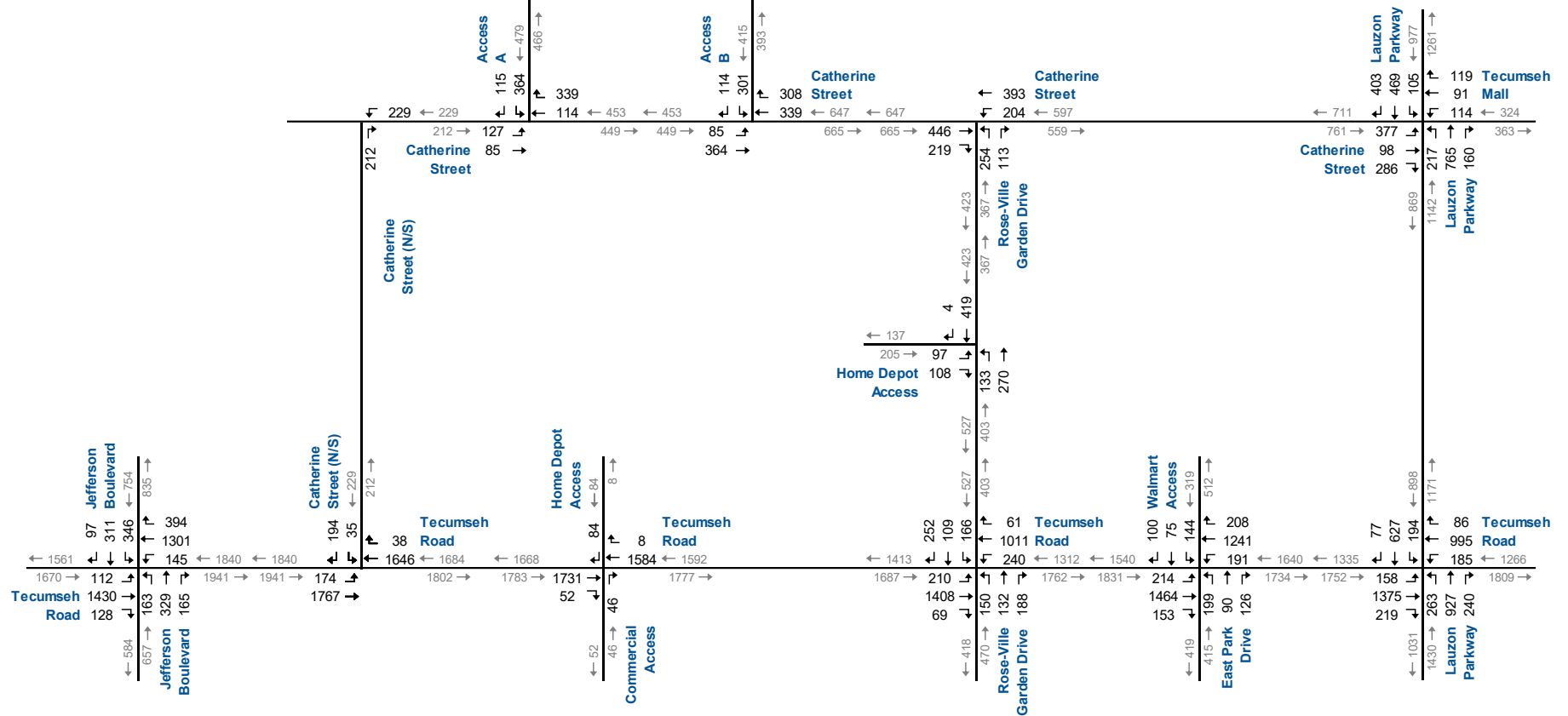


**2030 Total Traffic Volumes
AM Peak Hour**

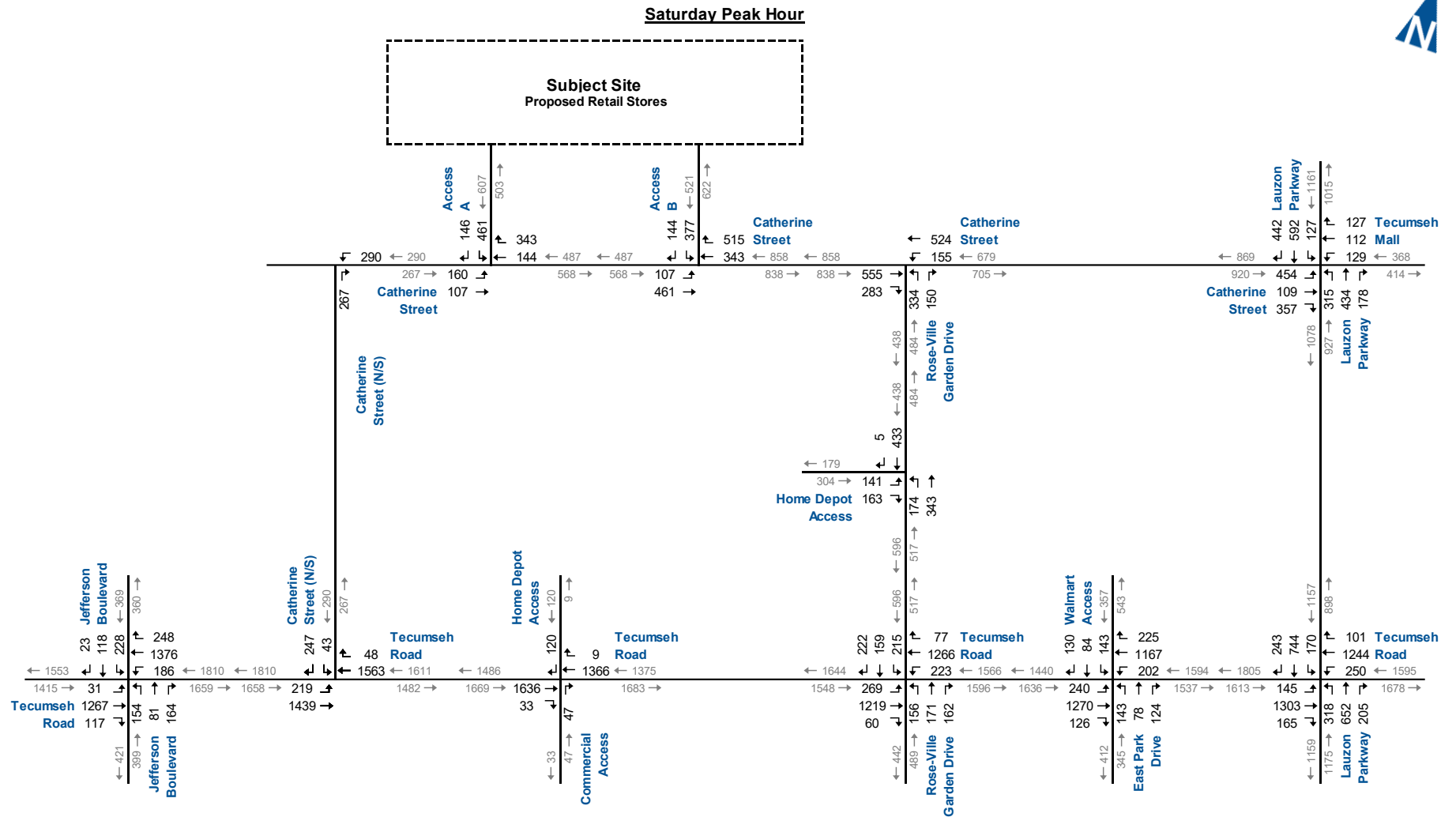
Figure 4.5a



PM Peak Hour



2030 Total Traffic Volumes PM Peak Hour



2030 Total Traffic Volumes Saturday Peak Hour

TABLE 4.4A: 2030 TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 0.18 1 55 54	B 0.35 14 -> ->	> > > >	B 15	B 0.25 1 95 94	C 0.48 40 -> ->	C 0.26 21 -> ->	C 28	D 0.38 18 65 47	D 0.49 22 -> ->	D 0.65 28 60 32	D 0.42	D 0.76 44 56 45 -11	D 0.69 44 41 -> ->	> > > > >	D 44	C 29
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	C 0.29 8 45 37	D 0.53 63 -> ->	> > > >	C 35	C 0.69 57 -> ->	> > > >	C 32					B 0.01 1 -> ->		B 0.14 37 -> ->	B 14	C 33	
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.		A 0.00 0 -> ->	> > > >	A 0	A 0.00 0 -> ->	> > > >	A 0				C 0.06 2 -> ->	C 15			B 0.16 4 -> ->	B 15	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 0.42 11 25 14	B 0.35 11 -> ->	> > > >	B 15	A 0.34 1 50 49	A 0.24 1 -> ->	> > > >	A 2	D 0.51 23 50 27	C 0.43 30 -> ->	> > > >	D 0.37	D 0.26 14 120 106	D 0.62 47 -> ->	> > > >	D 36	B 15
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 0.31 1 65 64	A 0.30 2 -> ->	> > > >	A 9	A 0.21 0 40 40	A 0.33 2 -> ->	> > > >	A 1	D 0.37 16 25 9	D 0.32 18 -> ->	> > > >	D 0.41	D 0.33 16 20 4	D 0.37 20 -> ->	> > > >	D 41	A 9
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 0.21 2 90 88	C 0.34 32 -> ->	> > > >	C 28	B 0.33 4 120 116	B 0.33 16 -> ->	> > > >	B 17	D 0.81 56 90 34	D 0.52 29 -> ->	> > > >	D 0.42	C 0.47 18 70 52	C 0.55 22 70 61	C 0.25 9 -> ->	C 32	C 28
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 0.62 42 50 8	D 0.40 26 -> ->	> > > >	D 39	D 0.27 10 80 70	C 0.14 9 -> ->	> > > >	D 37	A 0.24 1 20 19	C 0.15 4 -> ->	B 0.10 2 -> ->	B 18	A 0.09 0 115 115	B 0.29 5 -> ->	> > > >	B 12	B 20
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	B 0.20 5		> > >	B 12					A 0.09 2	A 0.00 0		A 3		A 0.00 0	> > >	A 0	
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0.00 0 -> ->	> > > >	A 0	A 0.16 4 15 11	A 0.00 0 -> ->	> > > >	A 5	C 0.29 9 100 91		A 0.12 3 -> ->	B 14					
	Catherine Street & Access A	TWSC	LOS Delay V/C Q Stor. Avail.	A 0.04 1 15 14	A 0.00 0 -> ->	> > > >	A 5	A 0.00 0 -> ->	> > > >	A 0						B 0.14 4 -> ->	A 0.04 1 -> ->	> > > >	B 10	
Catherine Street & Access B	TWSC	LOS Delay V/C Q Stor. Avail.	A 0.03 1 15 14	A 0.00 0 -> ->	> > > >	A 2	A 0.00 0 -> ->	> > > >	A 0						B 0.13 4 -> ->	A 0.04 1 -> ->	> > > >	B 11		

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



TABLE 4.4B: 2030 TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
PM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 0.65 10 45	C 0.70 61 -	> > > >	C 26	C 0.70 10 95 85	D 0.85 168 -	D 0.57 80 -	D 42	D 0.63 37 65 28	D 0.55 41 -	D 0.66 45 60 15	D 41	F 1.22 176 45 -131	D 0.67 55 -	> > > >	F 98	D 45	
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	C 0.79 12 45 33	B 0.67 38 -	> > > >	B 18	C 0.78 78 -	> > > >	C 29						C 0.24 0.06 5 -	C 0.29 0.38 123 -	> > > >	C 28	C 23	
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.		A 0.00 0 -	> > > >	A 0	A 0.00 0 -	> > > >	A 0				D 0.28 0.25 7 -	D 28				D 0.28 0.38 13 -	D 28	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 0.68 16 25 9	C 0.78 78 -	> > > >	C 32	D 0.87 38 50 12	D 0.54 68 -	> > > >	D 39	E 0.81 59 50 -9	C 0.61 61 -	> > > >	D 44	E 0.75 56 120 64	C 0.68 70 -	> > > >	D 42	D 37	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 0.81 11 65 54	C 0.70 48 -	> > > >	C 24	C 0.79 12 40 28	C 0.65 66 -	> > > >	C 30	D 0.71 58 25 -33	C 0.48 43 -	> > > >	D 40	D 0.58 40 20 -20	C 0.38 33 -	> > > >	D 38	C 29	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 0.60 17 90 73	E 0.92 139 -	> > > >	D 54	E 0.91 49 120 71	C 0.62 59 -	> > > >	D 36	D 0.86 61 90 29	D 0.93 98 -	> > > >	E 57	D 0.87 48 70 22	D 0.48 50 70 53	D 0.20 17 -	D 45	D 49	
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 0.86 92 50 -42	C 0.57 52 -	> > > >	D 37	D 0.43 26 80 54	B 0.30 24 -	> > > >	C 26	C 0.87 26 20 -6	B 0.67 26 -	B 0.35 11 -	B 17	C 0.40 15 115 100	C 0.51 46 -	> > > >	D 48	C 32	
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	C 0.49 20		> > >	C 20					A 0.13 4	A 0.00 0		A 3		A 0.00 0	> > >	A 0		
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0.00 0 -	> > > >	A 0	B 0.25 8 15 7	A 0.00 0 -	> > > >	A 4	F 1.25 106 100 -6	B 0.25 8 -		F 135						
	Catherine Street & Access A	TWSC	LOS Delay V/C Q Stor. Avail.	A 0.13 3 15 12	A 0.00 0 -	> > > >	A 5	A 0.00 0 -	> > > >	A 0						E 0.84 62 -	B 0.17 5 -	> > >	D 34		
Catherine Street & Access B	TWSC	LOS Delay V/C Q Stor. Avail.	A 0.10 2 15 13	A 0.00 0 -	> > > >	A 2	A 0.00 0 -	> > > >	A 0						F 0.96 76 -	B 0.23 7 -	> > >	F 57			

MOE - Measure of Effectiveness
 LOS - Level of Service
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 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



TABLE 4.4C: 2030 TOTAL TRAFFIC OPERATIONS – SATURDAY PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
Saturday Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 11 0.11 4 51	B 18 0.52 78 -	> > > > >	B 18	B 13 0.60 20 95 75	A 1 0.72 4 -	A 0 0.29 2 -	A 2	C 35 0.44 44 65 21	D 39 0.15 12 -	D 47 0.67 57 60 3	D 41	D 40 0.63 70 45 -25	D 40 0.25 22 -	> > > > >	D 40	B 15	
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	C 28 0.85 39 45 6	A 0 0.55 1 -	> > > > >	A 4	C 30 0.80 130 -	> > > > >	C 31					C 24 0.07 10 -		C 30 0.48 148 -	> > > > >	C 29	B 18	
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > > >	A 0	A 0 0.00 0 -	> > > > >	A 0				C 23 0.20 5 -	C 23			C 24 0.41 14 -	> > > > >	C 24	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	D 42 0.89 68 25 -43	C 30 0.66 98 -	> > > > >	C 33	C 29 0.73 49 50 1	D 46 0.74 137 -	> > > > >	D 45	D 48 0.64 57 50 -7	C 26 0.53 79 -	> > > > >	C 33	D 54 0.78 82 120 38	C 29 0.63 94 -	> > > > >	D 38	D 38	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 17 0.73 26 65 39	A 1 0.53 2 -	> > > > >	A 3	B 12 0.53 26 40 14	C 27 0.55 102 -	> > > > >	C 25	D 47 0.58 50 25 -25	C 34 0.46 57 -	> > > > >	D 39	D 45 0.56 49 20 -29	C 34 0.48 61 -	> > > > >	D 38	B 18	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 28 0.62 33 90 57	D 52 0.86 160 -	> > > > >	D 51	F 83 1.00 94 120 26	C 32 0.72 109 -	> > > > >	D 41	E 79 1.00 117 90 -27	D 38 0.68 82 -	> > > > >	D 50	C 31 0.62 44 70 26	D 42 0.67 74 -	D 46 0.71 75 70 -5	> > > > >	D 42	D 46
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	F 96 1.08 145 50 -95	C 28 0.71 113 -	> > > > >	E 62	D 49 0.64 52 80 28	C 37 0.58 73 -	> > > > >	D 41	F 121 1.16 134 20 -114	B 17 0.39 34 -	B 18 0.38 30 -	D 52	C 26 0.36 31 115 84	D 38 0.68 87 -	> > > > >	E 65	E 58	
	Rose-Ville Gardens Drive & Rose-Ville Garden Access	TWSC	LOS Delay V/C Q Stor. Avail.	E 43 0.81 56		> > > > >	E 43			> > > > >		A 9 0.17 4	A 0 0.00 0		A 3		A 0 0.00 0	> > > > >	A 0		
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > > >	A 0	B 11 0.23 7 15 8	A 0 0.00 0 -	> > > > >	A 3	F 410 1.78 190 100 -90		C 20 0.40 14 -	F 289						
	Catherine Street & Access A	TWSC	LOS Delay V/C Q Stor. Avail.	A 9 0.17 4 15 11	A 0 0.00 0 -	> > > > >	A 6		A 0 0.00 0 -	> > > > >	A 0					F 146 1.21 152 -	B 12 0.23 7 -	> > > > >	F 114		
Catherine Street & Access B	TWSC	LOS Delay V/C Q Stor. Avail.	B 11 0.16 4 15 11	A 0 0.00 0 -	> > > > >	A 2		A 0 0.00 0 -	> > > > >	A 0					F 290 1.53 181 -	C 17 0.34 11 -	> > > > >	F 215			

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



4.7 2035 Background Traffic Operations

The traffic volumes have been grown to 10-years after development completion (2035) and include road traffic growth volumes and redistributed Home Depot site traffic volumes.

Figure 4.6a, **Figure 4.6b**, and **Figure 4.6c** illustrate the 2035 background traffic volumes, including road traffic growth and redistributed Home Depot site traffic volumes.

The 2035 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions. Signal timing splits have been optimized.

Table 4.5a, **Table 4.5b**, and **Table 4.5c** summarize the results of the 2035 background traffic operations. The results indicate that the study area intersections are forecast to operate at similar levels of service as under 2030 background traffic conditions, except for the following movements:

- ▶ Jefferson Boulevard and Tecumseh Road
 - The westbound through movement is forecast to operate at LOS D with a v/c ratio of 0.87 during the PM peak hour;
 - The 95th percentile queue length of the northbound right-turn movement is projected to marginally exceed the existing storage of 60 metres during the Saturday peak hour;
- ▶ Rose-Ville Garden Drive and Tecumseh Road
 - The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 25 metres during the Saturday peak hour;
 - The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage of 50 metres during the Saturday peak hour;
- ▶ Lauzon Parkway and Tecumseh Road
 - The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.95 during the PM peak hour and 0.88 during the Saturday peak hour;
 - The westbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour;
 - The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour; and



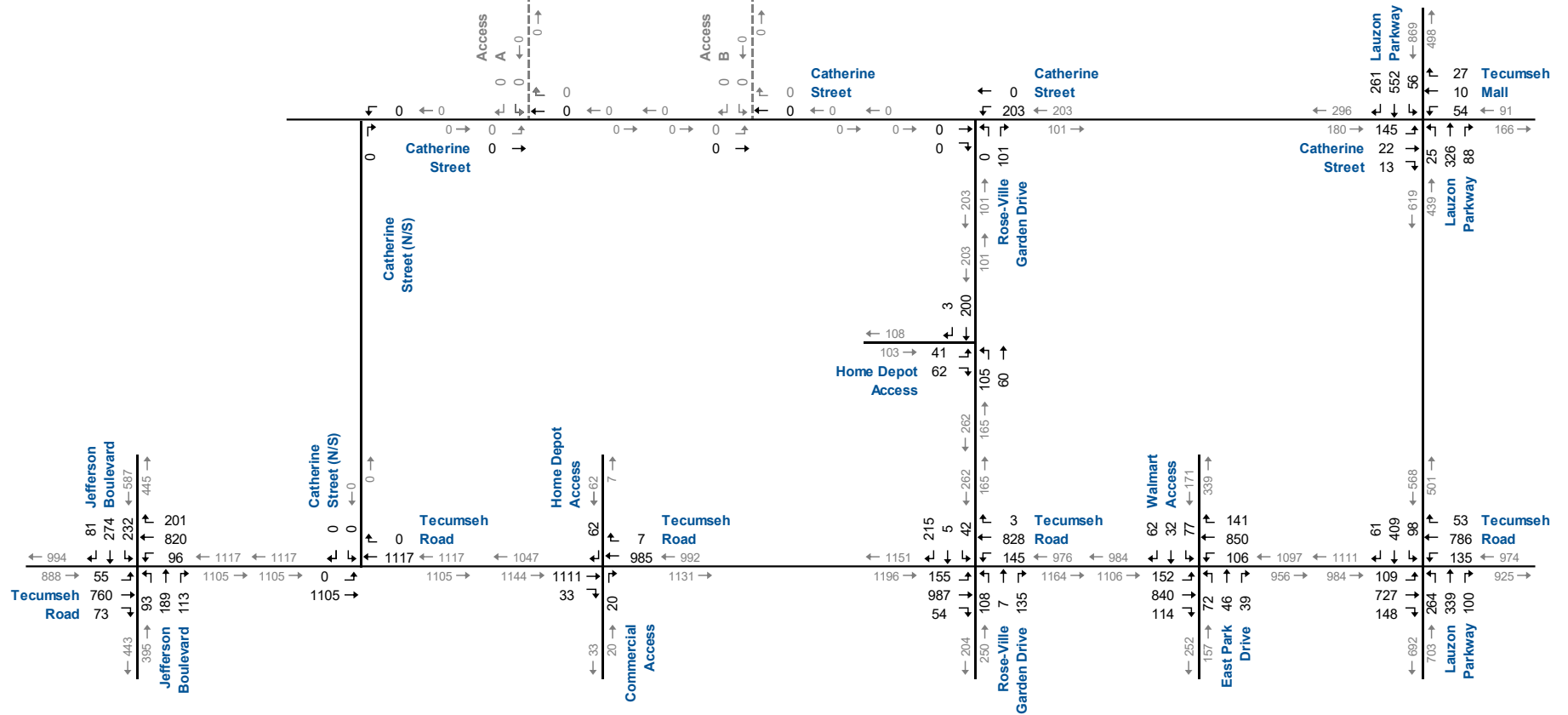
- The northbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.89 during the PM peak hour.

Appendix J contains the supporting detailed Synchro 11 reports.





AM Peak Hour

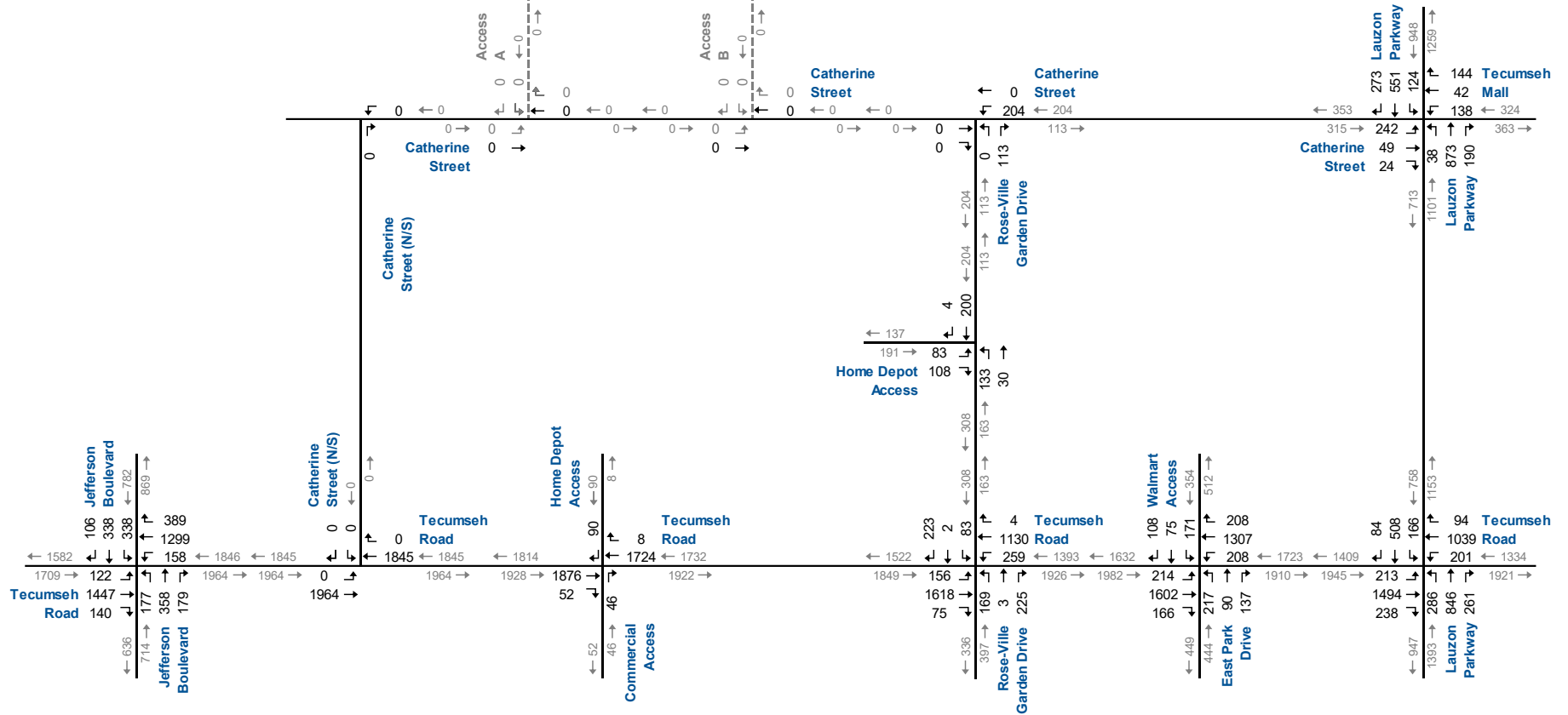


2035 Background Traffic Volumes AM Peak Hour

Figure 4.6a

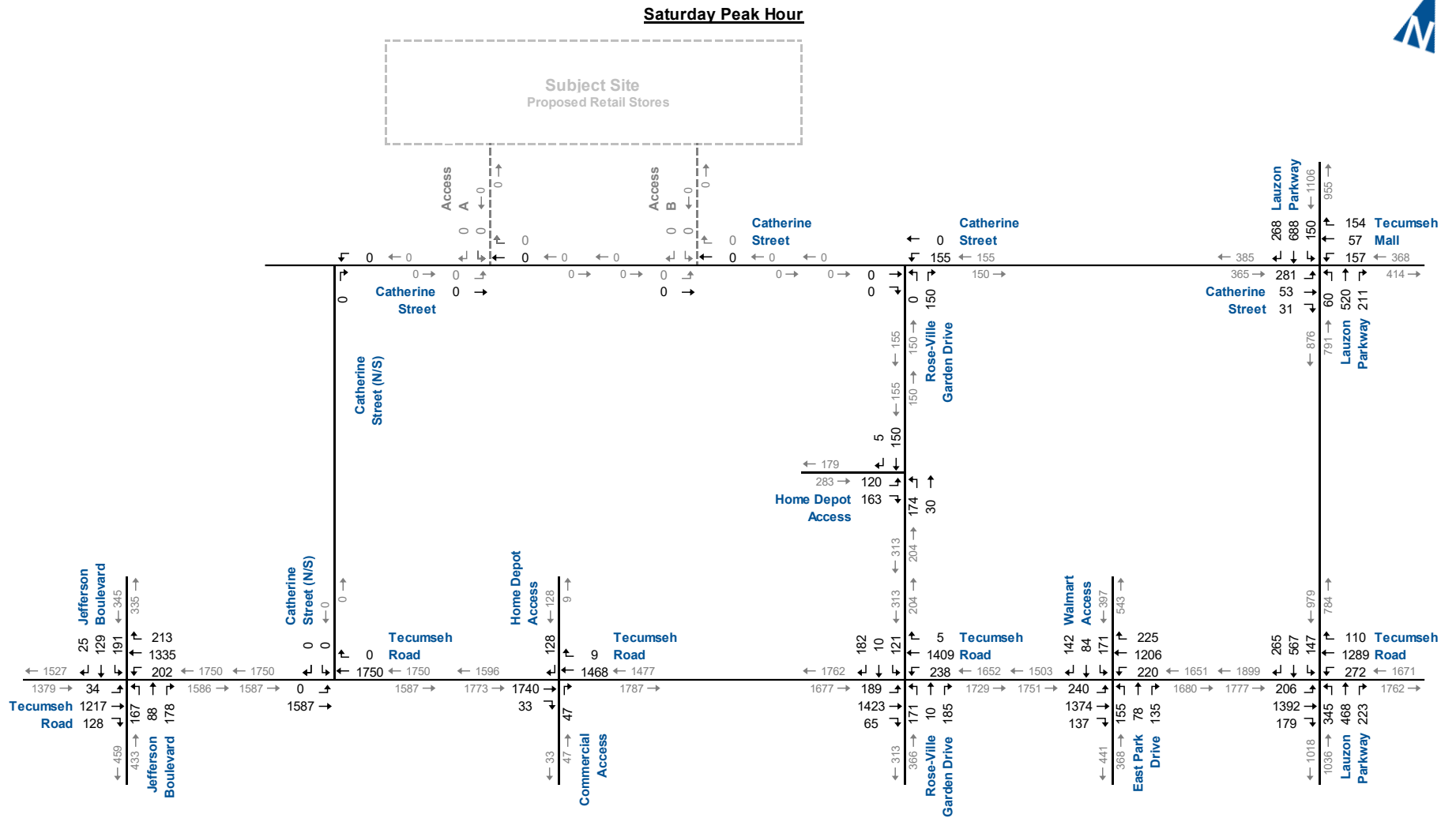


PM Peak Hour



2035 Background Traffic Volumes PM Peak Hour

Figure 4.6b



2035 Background Traffic Volumes Saturday Peak Hour

Figure 4.6c

TABLE 4.5A: 2035 BACKGROUND TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
AM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 11 0.18 2 55 53	B 16 0.37 16 -> ->	> > > > >	B 16	B 11 0.28 2 95 93	B 10 0.52 14 -> ->	A 9 0.28 8 -> ->	B 10	C 35 0.41 20 65 45	D D 0.48 23 -> ->	D D 0.64 30 60 30	D 41	D D 0.76 56 45 -11	> > > > > >	D 43	C 22		
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	A 0 0.00 0 45 45	D 39 0.64 75 -> ->	> > > > >	D 39	C 28 0.65 55 -> ->	> > > > >		C 28					A 0 0.00 0 -> ->	> > 0.00 0 -> ->	A 0 0 -> ->	A 0	C 33	
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -> ->	> > > > >	A 0	A 0 0.00 0 -> ->	> > > > >		A 0			C 16 0.07 2 -> ->	C 16			C 16 0.18 4 -> ->	C 16		
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 17 0.39 9 25 16	B 14 0.39 12 -> ->	> > > > >	B 14	A 9 0.39 1 50 49	A 0 0.25 1 -> ->	> > > > >		A 2	D 46 0.53 26 50 24	C 32 0.37 24 -> ->	> > > > >	D 38	D C 0.15 8 120 112	C 35 0.58 40 -> ->	> > > > >	D 35	B 14
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 6 0.33 1 65 64	A 10 0.34 2 -> ->	> > > > >	A 9	A 6 0.25 1 40 39	A 0 0.35 2 -> ->	> > > > >		A 1	D 44 0.39 18 25 7	D 38 0.33 19 -> ->	> > > > >	D 41	D D 0.39 19 20 1	D 39 0.38 21 -> ->	> > > > >	D 41	A 10
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 13 0.29 4 90 86	C 30 0.38 36 -> ->	> > > > >	C 28	B 14 0.39 4 120 116	B 17 0.36 19 -> ->	> > > > >		B 17	E 59 0.88 68 90 22	D 38 0.49 28 -> ->	> > > > >	D 46	C 31 0.41 16 70 54	C 32 0.55 22 -> ->	C 31 0.27 10 70 60	C 32	C 29
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 43 0.57 35 50 15	D 36 0.12 7 -> ->	> > > > >	D 42	D 40 0.28 12 80 68	D 36 0.14 8 -> ->	> > > > >		D 38	A 7 0.06 0 20 20	A 4 0.17 1 -> ->	A 4 0.10 1 -> ->	A 4	A 6 0.09 0 115 115	A 9 0.29 2 -> ->	> > > > >	A 9	B 13
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	B 11 0.16 4		> > >	B 11						A 8 0.09 2	A 0 0.00 0		A 5		A 0 0.00 0	> > >	A 0	
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -> ->	> > > > >	A 0	A 8 0.14 4 15 11	A 0 0.00 0 -> ->			A 8	A 0 0.00 0 100 100		A 9 0.10 2 -> ->	A 9					

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



TABLE 4.5B: 2035 BACKGROUND TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
PM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	D 36 0.72 15 55 40	C 27 0.74 67 -> ->	> > > > >	C 29	C 30 0.76 14 95 81	D 48 0.87 177 -> ->	D 38 0.58 84 -> ->	D 44	D 43 0.71 44 65 21	D 41 0.57 48 -> ->	D 45 0.68 48 60 12	D 42	F 154 1.20 167 45 -122	D 42 0.67 58 -> ->	> > > > >	F 91	D 46	
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	A 0 0.00 0 45 45	C 22 0.66 31 -> ->	> > > > >	C 22	B 13 0.62 12 -> ->	> > > > >	B 13						A 0 0.00 0 -> ->		A 0 0.00 0 -> ->	A 0	B 18	
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -> ->	> > > > >	A 0	A 0 0.00 0 -> ->	> > > > >	A 0				D 32 0.28 8 -> ->	D 32				D 35 0.46 16 -> ->	D 35	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 17 0.53 10 25 15	C 30 0.80 76 -> ->	> > > > >	C 30	D 46 0.88 44 50 6	C 32 0.47 52 -> ->	> > > > >	C 35	E 65 0.80 62 50 -12	D 36 0.58 51 -> ->	> > > > >	D 48	D 46 0.40 22 120 98	D 35 0.55 47 -> ->	> > > > >	D 38	C 34	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 27 0.84 14 65 51	B 19 0.81 44 -> ->	> > > > >	C 21	D 35 0.86 22 40 18	C 33 0.70 75 -> ->	> > > > >	C 34	D 51 0.74 64 25 -39	C 31 0.48 44 -> ->	> > > > >	D 41	D 49 0.67 50 20 -30	C 30 0.38 34 -> ->	> > > > >	D 39	C 29	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 26 0.73 22 90 68	D 55 0.95 148 -> ->	> > > > >	D 54	E 72 0.94 59 120 61	C 30 0.63 61 -> ->	> > > > >	D 37	E 76 0.96 84 90 6	D 50 0.89 88 -> ->	> > > > >	E 58	E 68 0.89 52 70 18	D 42 0.40 40 -> ->	D 40 0.22 19 70 51	D 47	D 50	
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 48 0.74 65 50 -15	C 25 0.13 11 -> ->	> > > > >	D 43	C 31 0.36 26 80 54	C 28 0.36 32 -> ->	> > > > >	C 29	B 14 0.12 2 20 18	A 4 0.59 8 -> ->	A 3 0.31 4 -> ->	A 4	B 15 0.38 8 115 107	B 19 0.37 26 -> ->	> > > > >	B 19	B 17	
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	B 13 0.31 10		> > >	B 13						A 8 0.11 3	A 0 0.00 0		A 6		A 0 0.00 0	> > >	A 0	
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -> ->	> > > > >	A 0	A 8 0.14 4 15 11	A 0 0.00 0 -> ->		A 8	A 0 0.00 0 100 100		A 9 0.11 3 -> ->	A 9						

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



TABLE 4.5C: 2035 BACKGROUND TRAFFIC OPERATIONS – SATURDAY PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Saturday Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay 11 V/C Q 4 Stor. 55 Avail. 51	B 19 > 0.53 > 79 > -	> > > > >	B 19	B 14 0.63 22 95 73	A 1 0.71 5 -	A 0 0.26 2 -	A 3	C 35 0.46 47 65 18	D 39 0.15 14 -	D 47 0.69 61 60 -1	D 40	D 36 0.52 56 45 -11	D 40 0.26 23 -	> > > > >	D 38	B 16	
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay 0 V/C Q 0 Stor. 45 Avail. 45	A 0 0.64 1 -	> > > > >	A 0	B 20 0.71 114 -	> > > > >	B 20					A 0 0.00 0 -	> > > > >	A 0 0.00 0 -	> > > > >	A 0	B 11	
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.	A 0 0.00 0 -	> > > > >	A 0	A 0 0.00 0 -	> > > > >	A 0			D 25 0.22 6 -	D 25				D 28 0.47 18 -	D 28		
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay 17 V/C Q 26 Stor. 25 Avail. -1	C 21 0.59 90 -	> > > > >	C 21	C 21 0.75 32 50 18	B 19 0.54 76 -	> > > > >	B 19	D 49 0.66 61 50 -11	C 33 0.46 56 -	> > > > >	D 40	D 44 0.49 43 120 77	C 33 0.47 58 -	> > > > >	D 37	C 23	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay 19 V/C Q 28 Stor. 65 Avail. 37	A 1 0.59 4 -	> > > > >	A 4	B 12 0.59 29 40 11	C 28 0.58 106 -	> > > > >	C 26	D 48 0.62 56 25 -31	C 33 0.46 59 -	> > > > >	D 39	D 49 0.65 61 20 -41	C 33 0.49 62 -	> > > > >	D 40	B 19	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay 38 V/C Q 51 Stor. 90 Avail. 39	D 52 0.88 168 -	> > > > >	D 52	F 114 1.10 120 120 0	C 34 0.76 116 -	> > > > >	D 48	F 109 1.09 115 90 -25	D 35 0.56 66 -	> > > > >	E 60	C 31 0.52 40 70 30	D 44 0.50 64 70 -	D 53 0.76 97 70 -27	D 45	D 51	
	Lauzon Parkway & Catherine Street	TCS	LOS Delay 36 V/C Q 80 Stor. 50 Avail. -30	D 22 0.14 20 -	> > > > >	C 33	D 44 0.58 57 80 23	D 47 0.74 74 -	> > > > >	D 46	B 17 0.22 10 20 10	A 8 0.40 20 -	A 8 0.38 17 -	A 8	B 17 0.39 28 115 87	C 24 0.50 74 -	> > > > >	C 24	C 24	
	Rose-Ville Gardens Drive & Rose-Ville Garden Access	TWSC	LOS Delay 15 V/C Q 18	B 0.46 18	> > > > >	B 15					A 8 0.13 4	A 0 0.00 0		A 7		A 0 0.00 0	> > > > >	A 0		
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.	A 0 0.00 0 -	> > > > >	A 0	A 8 0.10 2 15 13	A 0 0.00 0 -		A 8	A 0 0.00 0 100 100		A 9 0.15 4 -	A 9						

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



4.8 2035 Total Traffic Operations

Figure 4.7a, **Figure 4.7b**, and **Figure 4.7c** illustrate the 2035 total traffic volumes, including trips generated by the proposed development.

The 2035 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions. Signal timing splits have been optimized.

Table 4.6a, **Table 4.6b**, and **Table 4.6c** summarize the results of the 2035 total traffic operations. The results indicate that the study area intersections are forecast to operate at similar levels of service as under 2030 total and 2035 background traffic conditions, except for the following movements:

- ▶ Tecumseh Road and Catherine Street (North-South)
 - The 95th percentile queue length of the eastbound left-turn movement is projected to marginally exceed the existing storage of 45 metres during the Saturday peak hour;
- ▶ Rose-Ville Garden Drive and Tecumseh Road
 - The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.88 during the PM peak hour;
 - The 95th percentile queue length of the westbound left-turn movement is projected to exceed the existing storage of 50 metres during the weekday PM and Saturday peak hours; and
- ▶ Lauzon Parkway and Tecumseh Road
 - The 95th percentile queue length of the westbound left-turn movement is projected to exceed the existing storage of 120 metres during the Saturday peak hour.

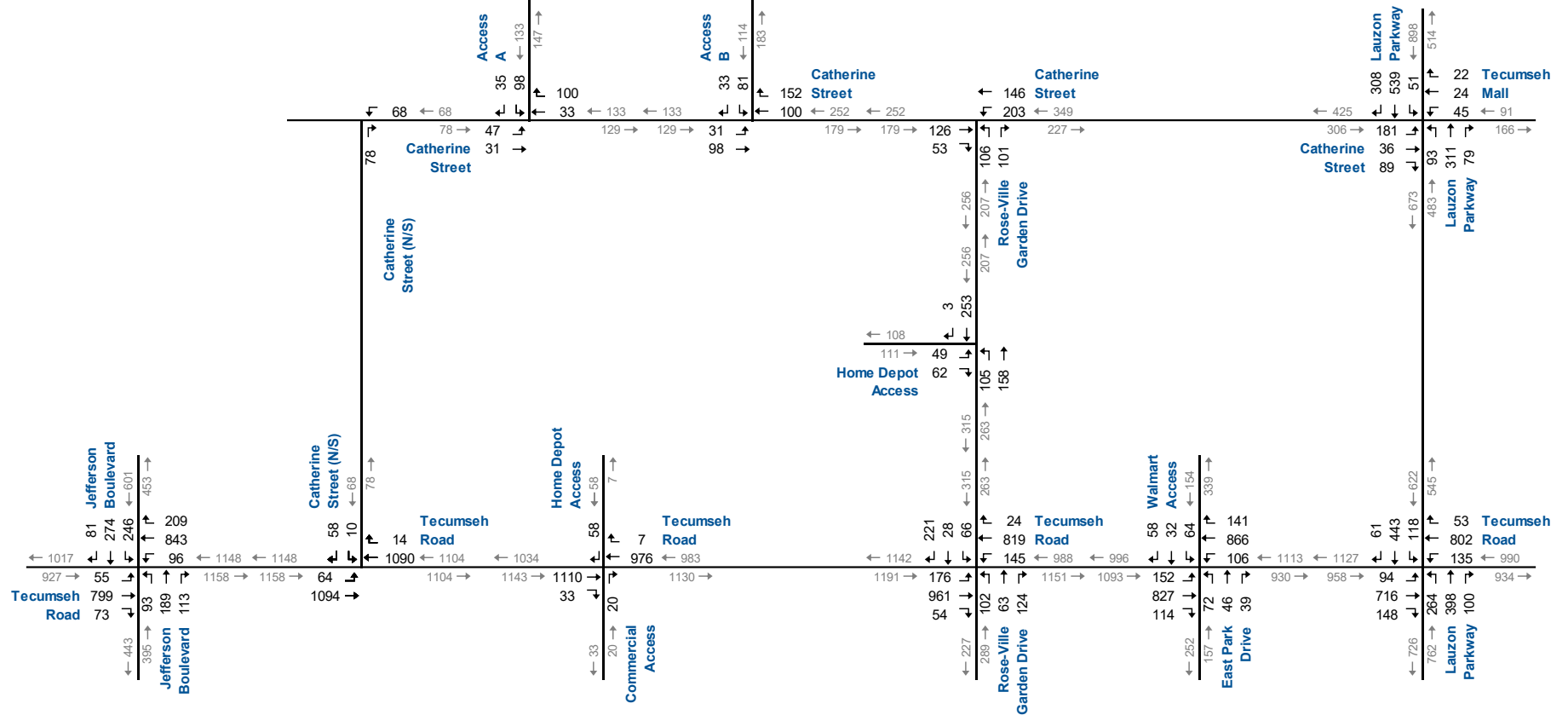
The site access intersections on Catherine Street are forecast to operate at acceptable levels of service during the weekday AM and PM and Saturday peak hours, except for the southbound (outbound) left-turn movements at both site access intersections. Both outbound left-turn movements are forecast to operate with extended delays during the Saturday peak hour, and the easterly access (Access B) is forecast to operate with extended delays during the PM peak hour.

Appendix K contains the supporting detailed Synchro 11 reports.





AM Peak Hour

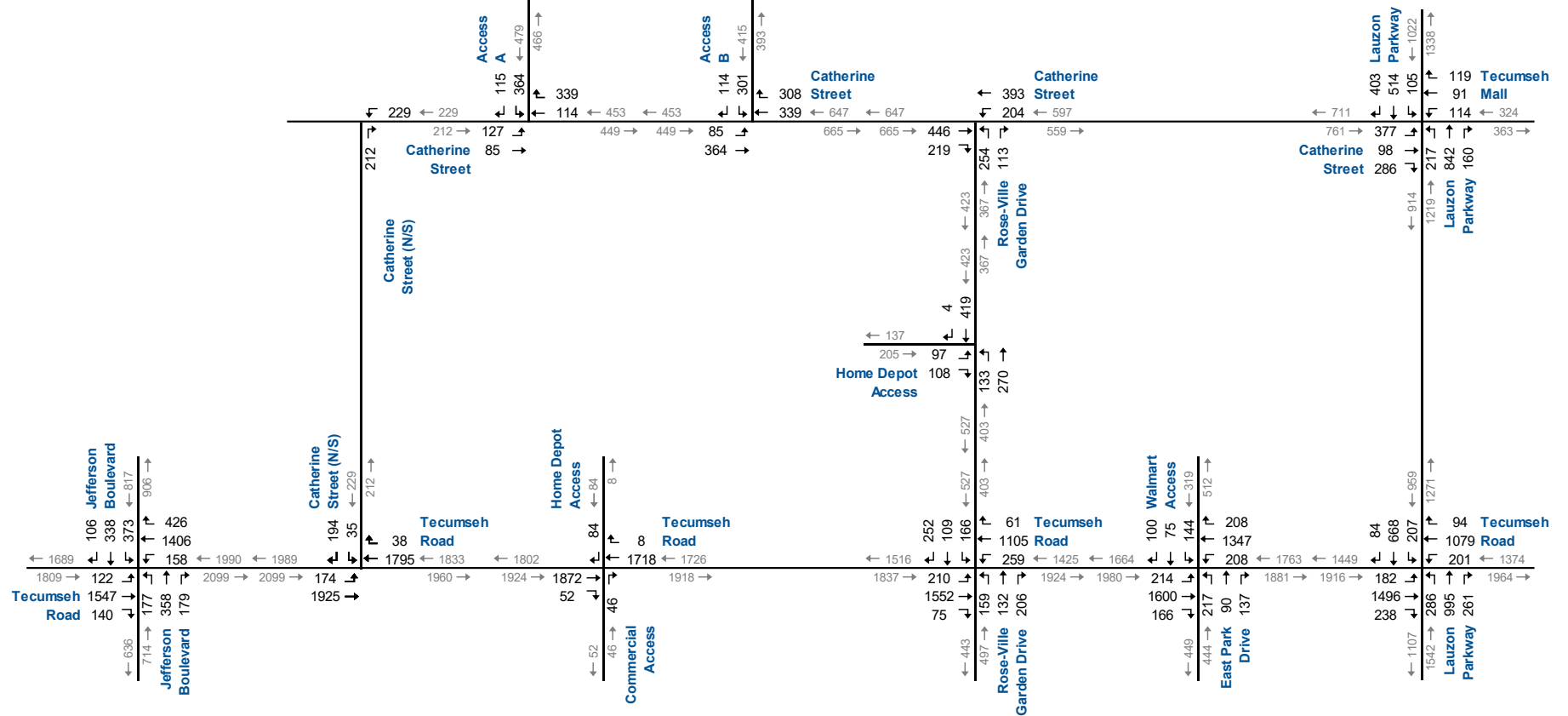


2035 Total Traffic Volumes AM Peak Hour

Figure 4.7a



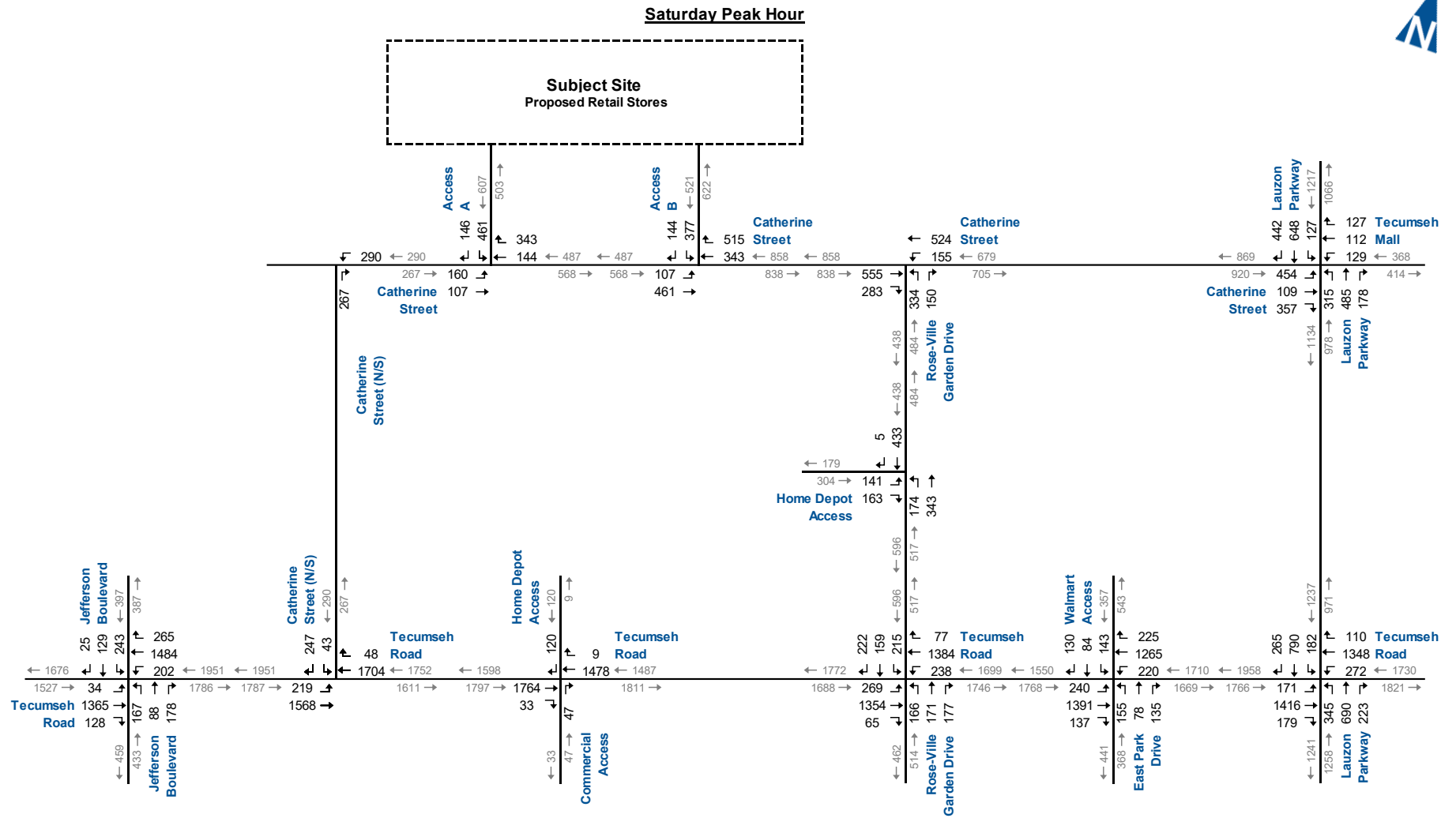
PM Peak Hour



2035 Total Traffic Volumes PM Peak Hour



Figure 4.7b



2035 Total Traffic Volumes Saturday Peak Hour

Major Retail Development, Catherine Street, Windsor TIS
230538

Figure 4.7c

TABLE 4.6A: 2035 TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 13 0.21 2 55 53	B 16 0.39 16 -	> > > > >	B 16	B 11 0.29 2 95 93	C 24 0.54 37 -	C 20 0.29 19 -	C 22	C 34 0.42 18 65 47	D 40 0.42 22 -	D 42 0.56 28 60 32	D 39	D 53 0.83 67 45 -22	D 44 0.71 45 -	> > > > >	D 48	C 28
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	C 23 0.30 7 45 38	C 35 0.54 65 -	> > > > >	C 34	C 30 0.69 58 -	> > > > >	C 31						B 14 0.01 1 -		B 15 0.08 38 -	B 15	C 32
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > > >	A 0	A 0 0.00 0 -	> > > > >	A 0				C 16 0.07 2 -	C 16			C 16 0.17 4 -	C 16	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 19 0.45 12 25 13	B 15 0.39 14 -	> > > > >	B 15	A 9 0.39 1 50 49	A 0 0.26 2 -	> > > > >	A 2	D 46 0.52 24 50 26	C 32 0.45 32 -	> > > > >	D 37	D 38 0.26 14 120 106	D 35 0.61 46 -	> > > > >	D 36	B 15
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	A 6 0.33 1 65 64	A 10 0.33 2 -	> > > > >	A 9	A 5 0.24 1 40 39	A 0 0.36 2 -	> > > > >	A 1	D 44 0.39 18 25 7	D 38 0.33 19 -	> > > > >	D 41	D 43 0.32 16 20 4	D 39 0.36 20 -	> > > > >	D 40	A 10
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 13 0.26 4 90 86	C 30 0.38 37 -	> > > > >	C 29	B 14 0.39 4 120 116	B 18 0.37 20 -	> > > > >	B 18	E 59 0.88 68 90 22	D 38 0.54 32 -	> > > > >	D 45	C 32 0.51 20 70 50	C 31 0.57 23 -	C 30 0.26 10 70 60	C 31	C 30
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 42 0.62 42 50 8	D 36 0.40 26 -	> > > > >	D 39	D 41 0.27 10 80 70	C 33 0.14 9 -	> > > > >	D 37	A 9 0.24 1 20 19	C 21 0.17 4 -	B 19 0.10 2 -	B 18	A 8 0.09 0 115 115	B 12 0.31 6 -	> > > > >	B 12	B 20
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	B 12 0.20 5		> > >	B 12					A 8 0.09 2	A 0 0.00 0		A 3		A 0 0.00 0	> > >	A 0	
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > > >	A 0	A 8 0.16 4 15 11	A 0 0.00 0 -	> > > > >	A 5	C 18 0.29 9 100 91		A 10 0.12 3 -	B 14					
	Catherine Street & Access A	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.04 1 15 14	A 0 0.00 0 -	> > > > >	A 5	A 0 0.00 0 -	> > > > >	A 0						B 11 0.14 4 -	A 9 0.04 1 -	> > > > >	B 10	
Catherine Street & Access B	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.03 1 15 14	A 0 0.00 0 -	> > > > >	A 2	A 0 0.00 0 -	> > > > >	A 0						B 11 0.13 4 -	A 9 0.04 1 -	> > > > >	B 11		

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



TABLE 4.6B: 2035 TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
PM Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	D 0.76 18 55 37	C 0.79 75 - -	> > > > >	C 31	D 0.81 17 95 78	D 0.95 212 -	D 0.64 93 -	D 49	D 0.67 39 65 26	D 0.56 44 -	D 0.66 48 60 12	D 40	F 1.31 212 45 -167	D 0.71 60 -	> > > > >	F 115	D 52	
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	C 0.82 10 45 35	B 0.70 30 -	> > > > >	B 17		C 0.80 77 -	> > > > >	C 28					C 0.07 6 -		C 0.41 125 -	C 31	C 22	
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.		A 0.00 0 -	> > > > >	A 0		A 0.00 0 -	> > > > >	A 0			D 0.28 8 -	D 32				D 0.43 15 -	D 33	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 0.71 20 25 5	D 0.88 95 -	> > > > >	D 39	D 0.91 55 50 -5	D 0.57 73 -	> > > > >	D 42	F 0.92 74 50 -24	C 0.67 67 -	> > > > >	D 53	E 0.86 66 120 54	D 0.70 72 -	> > > > >	D 49	D 43	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 0.87 15 65 50	C 0.78 54 -	> > > > >	C 26	D 0.86 25 40 15	D 0.69 100 -	> > > > >	D 40	D 0.77 67 25 -42	C 0.50 46 -	> > > > >	D 44	D 0.61 41 20 -21	C 0.38 33 -	> > > > >	D 39	C 34	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	C 0.70 22 90 68	E 1.03 177 -	> > > > >	E 73	E 0.96 60 120 60	C 0.69 68 -	> > > > >	D 41	E 0.93 75 90 15	E 1.00 120 -	> > > > >	E 72	E 0.97 62 70 8	D 0.52 52 -	D 0.22 19 70 51	D 50	E 61	
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	D 0.86 92 50 -42	C 0.57 52 -	> > > > >	D 37	D 0.43 26 80 54	B 0.30 24 -	> > > > >	C 26	C 0.87 20 0	B 0.74 24 -	B 0.35 10 -	B 16	C 0.43 15 115 100	D 0.56 52 -	> > > > >	D 48	C 32	
	Rose-Ville Gardens Drive & Home Depot Access	TWSC	LOS Delay V/C Q	C 0.49 20		> > >	C 20					A 0.13 4	A 0.00 0		A 3		A 0.00 0	> > >	A 0		
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0.00 0 -	> > > > >	A 0	B 0.25 8 15 7	A 0.00 0 -	> > > > >	A 4	F 1.25 106 100 -6		B 0.25 8 -	F 135						
	Catherine Street & Access A	TWSC	LOS Delay V/C Q Stor. Avail.	A 0.13 3 15 12	A 0.00 0 -	> > > > >	A 5		A 0.00 0 -	> > > > >	A 0					E 0.84 62 -	B 0.17 5 -	> > > > >	D 34		
Catherine Street & Access B	TWSC	LOS Delay V/C Q Stor. Avail.	A 0.10 2 15 13	A 0.00 0 -	> > > > >	A 2		A 0.00 0 -	> > > > >	A 0					F 0.96 76 -	B 0.23 7 -	> > > > >	F 57			

MOE - Measure of Effectiveness
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 Q - 95th Percentile Queue Length (m)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



TABLE 4.6C: 2035 TOTAL TRAFFIC OPERATIONS – SATURDAY PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
Saturday Peak Hour	Jefferson Boulevard & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 11 0.13 4 51	C 20 0.58 88 -	> > > > >	C 20	B 17 0.68 22 95 73	A 2 0.79 7 -	A 0 0.32 2 -	A 3	C 35 0.46 47 65 18	D 39 0.15 14 -	D 47 0.69 61 60 -1	D 40	D 41 0.66 75 45 -30	D 40 0.26 23 -	> > > > >	D 40	B 16	
	Tecumseh Road & Catherine Street (N/S)	TCS	LOS Delay V/C Q Stor. Avail.	D 37 0.85 49 45 -4	C 32 0.57 149 -	> > > > >	C 32	C 30 0.82 132 -	> > > > >	C 30						C 26 0.08 11 -	C 33 0.52 151 -	> > > > >	C 32	C 31	
	Commercial Access/Home Depot Access & Tecumseh Road	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > > >	A 0	A 0 0.00 0 -	> > > > >	A 0				D 26 0.22 6 -	D 26				D 28 0.45 16 -	D 28	
	Rose-Ville Gardens Drive & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	D 50 0.90 76 25 -51	C 33 0.75 112 -	> > > > >	D 37	C 34 0.81 53 50 -3	D 43 0.82 134 -	> > > > >	D 43	D 50 0.68 61 50 -11	C 27 0.56 82 -	> > > > >	C 34	E 59 0.81 86 120 34	C 29 0.63 94 -	> > > > >	D 40	D 39	
	East Park Drive/Walmart Access & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	B 19 0.77 27 65 38	A 1 0.59 2 -	> > > > >	A 4	B 12 0.59 27 40 13	C 27 0.59 106 -	> > > > >	C 26	D 48 0.63 56 25 -31	C 34 0.48 60 -	> > > > >	D 40	D 46 0.57 50 20 -30	C 34 0.48 60 -	> > > > >	D 39	B 19	
	Lauzon Parkway & Tecumseh Road	TCS	LOS Delay V/C Q Stor. Avail.	D 41 0.79 47 90 43	E 63 0.96 184 -	> > > > >	E 64	F 132 1.15 132 120 -12	D 36 0.81 125 -	> > > > >	D 53	F 107 1.09 146 90 -56	D 38 0.71 86 -	> > > > >	E 57	C 33 0.66 46 70 24	D 46 0.68 84 -	D 50 0.74 89 70 -19	D 45	E 55	
	Lauzon Parkway & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	F 96 1.08 145 50 -95	C 28 0.71 113 -	> > > > >	E 62	D 49 0.64 52 80 28	D 37 0.58 73 -	> > > > >	D 41	F 119 1.16 130 20 -110	B 18 0.44 38 -	B 18 0.39 31 -	D 51	C 25 0.38 30 115 85	D 40 0.75 97 -	> > > > >	E 65	E 57	
	Rose-Ville Gardens Drive & Rose-Ville Garden Access	TWSC	LOS Delay V/C Q Stor. Avail.	E 43 0.81 56		> > > > >	E 43			> > > > >		A 9 0.17 4	A 0 0.00 0		A 3		A 0 0.00 0	> > > > >	A 0		
	Rose-Ville Gardens Drive & Catherine Street	TWSC	LOS Delay V/C Q Stor. Avail.		A 0 0.00 0 -	> > > > >	A 0	B 11 0.23 7 15 8	A 0 0.00 0 -	> > > > >	A 0	F 410 1.78 190 100 -90		C 20 0.40 14 -	F 289						
	Catherine Street & Access A	TWSC	LOS Delay V/C Q Stor. Avail.	A 9 0.17 4 15 11	A 0 0.00 0 -	> > > > >	A 6		A 0 0.00 0 -	> > > > >	A 0					F 146 1.21 152 -	B 12 0.23 7 -	> > > > >	F 114		
Catherine Street & Access B	TWSC	LOS Delay V/C Q Stor. Avail.	B 11 0.16 4 15 11	A 0 0.00 0 -	> > > > >	A 2		A 0 0.00 0 -	> > > > >	A 0					F 290 1.53 181 -	C 17 0.34 11 -	> > > > >	F 215			

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
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 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



4.9 Projected Queueing & Storage

Section 4.8 and LOS Tables (**4.6a**, **4.6b**, and **4.6c**) summarize the operational performance of study area intersections under 2035 total traffic conditions.

Overall, the operational performance at the study area intersections is reasonably acceptable. The problem movements generally involve left-turn movements with projected 95th percentile queue lengths exceeding the existing storage lengths.

Table 4.7 provides a summary comparison of the existing storage lengths and projected queue lengths under existing and future traffic conditions. The Table also includes recommendations for potential storage modification subject to future monitoring as appropriate.



TABLE 4.7: PROJECTED QUEUEING AND STORAGE LENGTHS

Intersection	Movement	Existing/Proposed Storage (m) ¹	Queue Length (m) ²			Potential Storage Modification
			Existing	2035 BG	2035 Total	
Tecumseh Road & Catherine Street (N/S)	EBL	45	-	0 (0)	10 (49)	No change
	SBL	-	-	-	6 (11)	Centre-turn lane
	SBR	-	-	-	125 (151)	n/a
Rose-Ville Garden Drive & Tecumseh Road	EBL	25	-	10 (26)	5 (76)	No immediate change required
	SBL	120	-	22 (43)	66 (86)	Centre-turn lane
	SBTR	-	-	47 (58)	72 (94)	n/a
Rose-Ville Garden Drive & Catherine Street	WBL	15	-	4 (2)	8 (7)	Centre-turn lane
	NBL	100	-	0 (0)	106 (190)	Centre-turn lane
Lauzon Parkway & Catherine Street	EBL	50	20 (20)	65 (80)	92 (145)	Centre-turn lane
	NBL	20	1 (1)	2 (10)	20 (130)	No immediate change required
Jefferson Boulevard & Tecumseh Road	SBL	45	69 (17)	167 (56)	212 (75)	To be monitored for potential future modifications.
	NBR	60	22 (21)	48 (61)	48 (61)	No change
East Park Drive & Tecumseh Road	NBL	25	27 (18)	64 (56)	67 (56)	70 metres, subject to monitoring
Lauzon Parkway & Tecumseh Road	WBL	120	14 (24)	59 (120)	60 (132)	No change
	NBL	90	23 (27)	84 (115)	75 (146)	No change
	SBR	70	50 (85)	19 (97)	19 (89)	No change

¹Existing **Proposed**²PM (Sat)

4.10 Site Driveways

The need for auxiliary left-turn turning lanes were assessed based on the requirements and procedures detailed in the Ministry of Transportation Design Supplement for the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads⁵ at the following intersection turning movements under stop-sign control:

- ▶ Eastbound on Catherine Street at Access A; and
- ▶ Eastbound on Catherine Street at Access B.

The assessments are based on the nomographs for left-turn lanes on a two-lane undivided highway at an unsignalized intersection with a design speed of 10 kilometres per hour over the assumed speed limit on Catherine Street (60 km/h).

It is noted that there is no background growth rate applied to the traffic volumes on Catherine Street in vicinity of the site driveways or at Rose-Ville Garden Drive; therefore, the volumes and left-turn lane warrant nomographs are the same for 2025, 2030, and 2035 total traffic conditions.

The eastbound left-turn turning lanes were assessed on Catherine Street at the proposed site accesses as noted above.

Based on these criteria, an eastbound left-turn lane is identified as warranted with 15 meters of storage on Catherine Street at Access A, and an eastbound left-turn lane is identified to be warranted with 50 meters of storage on Catherine Street at Access B.

However, the storage requirements for eastbound left-turn lanes at Access A and Access B can be accommodated in the two-way centre turn lane.

Appendix L contains the left-turn lane warrant nomographs.

Westbound right-turn lanes are not identified as required at either access point, under 2035 traffic conditions, as well as under 2045 traffic conditions, as noted in the EA Transportation Study.

⁵ MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads, June 2017.



4.11 Rose-Ville Garden Drive and Catherine Street Traffic Signal Control

The future intersection of Rose-Ville Garden Drive and Catherine Street has been assessed under 2035 total traffic conditions with the provision of traffic signal control. The cycle length and signal timing splits have been optimized.

Table 4.8 summarizes the results of the 2035 total traffic operations for the intersection operating with traffic signal control. The results indicate that the intersection of Rose-Ville Garden Drive and Catherine Street is forecast to operate at acceptable levels of service during the weekday AM and PM and Saturday peak hours with traffic signals in place.

Appendix M contains the supporting detailed Synchro 11 reports.



TABLE 4.8: ROSE-VILLE GARDEN DRIVE AND CATHERINE STREET – TRAFFIC SIGNAL CONTROL

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Rose-Ville Gardens Drive & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	B 10 0.33 1 - -	> > > > > >	B 10	B 15 0.47 2 35 33	B 10 0.26 1 - -		B 13	A 7 0.14 2 100 98	A 7 0.16 - -	A 7						B 11	
PM Peak Hour	Rose-Ville Gardens Drive & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	B 11 0.68 8 - -	> > > > > >	B 11	C 25 0.64 13 35 22	A 7 0.38 1 - -		B 13	C 25 0.56 20 100 80	B 20 0.28 7 - -	C 23						B 14	
Peak Hour	Rose-Ville Gardens Drive & Catherine Street	TCS	LOS Delay V/C Q Stor. Avail.	B 12 0.79 68 - -	> > > > > >	B 12	C 28 0.60 33 35 2	A 6 0.46 26 - -		B 11	D 50 0.89 91 100 9	C 27 0.45 32 - -	D 43						B 19	

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 </> - Shared with through movement



5 Conclusions and Recommendations

5.1 Conclusions

Based on the investigations carried out, it is concluded that:

- ▶ **Existing Traffic Conditions:** The study area intersections are operating at acceptable levels of service. The following peak hour critical movements are identified based on operational parameters including volume-to-capacity (v/c) ratios, delays, and vehicle queuing:

Jefferson Boulevard and Tecumseh Road

- The southbound left-turn movement is operating at LOS F with a theoretical v/c ratio greater than 1.00 and a 95th percentile queue length that is exceeding the existing storage of 45 metres during the PM peak hour;

Tecumseh Road and Walmart Access/ East Park Drive

- The 95th percentile queue length of the northbound left-turn is exceeding the existing storage of 25 metres during the PM peak hour;
- The 95th percentile queue length of the southbound left-turn is exceeding the existing storage of 20 metres during the weekday PM and Saturday peak hours;

Lauzon Parkway and Tecumseh Road

- The eastbound left-turn movement is operating at LOS E with a theoretical v/c ratio greater than 1.00 during the Saturday peak hour;
 - The eastbound shared through/right-turn movement is operating at LOS D with a theoretical v/c ratio of 0.85 during the Saturday peak hour; and
 - The 95th percentile queue length of the southbound right-turn movement is exceeding the existing storage of 70 metres during the Saturday peak hour.
- ▶ **Development Trip Generation:** The development is forecast to generate 309 (196 inbound & 113 outbound) net new trips during the AM peak hour, 1031 (498 inbound & 533 outbound) net new trips during the PM peak hour, and 1483 (740 inbound & 743 outbound) net new trips during the Saturday peak hour.
 - ▶ **2025 Background Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under existing traffic conditions.



Jefferson Boulevard and Tecumseh Road

- The 95th percentile queue length of the southbound left-turn movement is projected to exceed the existing storage length of 45 metres during the weekday AM and Saturday peak hours;

East Park Drive/Walmart Access and Tecumseh Road

- The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage length of 25 metres during the Saturday peak hour;

Lauzon Parkway and Tecumseh Road

- The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage length of 90 metres during the Saturday peak hour; and

Lauzon Parkway and Catherine Street

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage length of 50 metres during the weekday PM and Saturday peak hours.

- ▶ **2025 Total Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under 2030 background traffic conditions, with additional critical movements at the following intersections:

Lauzon Parkway and Tecumseh Road

- The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.85 during the PM peak hour;
- The northbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.88 during the PM peak hour;

Lauzon Parkway and Catherine Street

- The eastbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour;
- The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour. The 95th percentile queue length is projected to exceed the existing storage of 20 metres during the weekday PM and Saturday peak hours;



- The southbound shared through/right-turn movement is forecast to operate at LOS E with a v/c ratio of 0.89 during the PM peak hour and at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour;

Rose-Ville Garden Drive and Catherine Street

- The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the weekday PM and Saturday peak hour;

Catherine Street and Access A

- The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour; and

Catherine Street and Access B

- The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour.

- ▶ **2030 Background Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under 2025 background traffic conditions except for the 95th percentile queue length of the northbound left-turn movement at the intersection of Rose-Ville Garden Drive and Tecumseh Road, which is projected to exceed the existing storage of 50 metres.

- ▶ **2030 Total Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under 2025 total and 2030 background traffic conditions, with additional critical movements at the following intersections:

Jefferson Boulevard and Tecumseh Road

- The westbound through movement is forecast to operate at LOS D with a v/c ratio of 0.85 during the PM peak hour;

Rose-Ville Garden Drive and Tecumseh Road

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 25 metres during the Saturday peak hour;
- The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage of 50 metres during the weekday PM and Saturday peak hours;



Lauzon Parkway and Tecumseh Road

- The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.86 during the Saturday peak hour;
 - The westbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 1.00 during the Saturday peak hour; and
 - The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 1.00 during the Saturday peak hour.
- **2035 Background Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under 2030 background traffic conditions, with the addition of the following critical movements:

Jefferson Boulevard and Tecumseh Road

- The westbound through movement is forecast to operate at LOS D with a v/c ratio of 0.87 during the PM peak hour;
- The 95th percentile queue length of the northbound right-turn movement is projected to marginally exceed the existing storage of 60 metres during the Saturday peak hour;

Rose-Ville Garden Drive and Tecumseh Road

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 25 metres during the Saturday peak hour;
- The 95th percentile queue length of the northbound left-turn movement is projected to exceed the existing storage of 50 metres during the Saturday peak hour;

Lauzon Parkway and Tecumseh Road

- The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.95 during the PM peak hour and 0.88 during the Saturday peak hour;
- The westbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour;
- The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the Saturday peak hour; and
- The northbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.89 during the PM peak hour.



- ▶ **2035 Total Traffic Conditions:** The study area intersections are forecast to operate at similar levels of service as under 2030 total traffic conditions, with the addition of the following critical movements:

Tecumseh Road and Catherine Street (North-South)

- The 95th percentile queue length of the eastbound left-turn movement is projected to marginally exceed the existing storage of 45 metres during the Saturday peak hour;

Rose-Ville Garden Drive and Tecumseh Road

- The eastbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.88 during the PM peak hour;
- The 95th percentile queue length of the westbound left-turn movement is projected to exceed the existing storage of 50 metres during the weekday PM and Saturday peak hours; and

Lauzon Parkway and Tecumseh Road

- The 95th percentile queue length of the westbound left-turn movement is projected to exceed the existing storage of 120 metres during the Saturday peak hour.

Summary of Impact Assessment

- ▶ **Site Accesses:** As noted, two all-moves access points (Access A and Access B) are proposed for the development on the extension of Catherine Street. Both access points are assumed to be under Stop Sign Control.

The two access intersections are projected to operate with reasonable levels of service for all inbound/outbound turning movements during weekday and Saturday peak hours. Delays and poor levels of service are noted for the outbound left-turn movement during the weekday PM and Saturday peak hours.

Eastbound left-turn lanes are identified as warranted on Catherine Street at both access points, with 15 meters of storage at Access A, and 50 meters of storage at Access B. However, these requirements can be accommodated by the two-way centre-turn lane that will be provided on Catherine Street.

Based on the operational analysis, auxiliary right-turn lanes are not identified as required on Catherine Street at Access A or Access B.



- ▶ **Study Area Intersections:** Overall, the study area road system can accommodate the future traffic increases assessed over the 10-year timeframe analysed in this study. The proposed extensions of Catherine Street and Rose-Ville Garden Drive, and the addition of a Catherine Street north-south road connection between Catherine Street and Tecumseh Road, are conducive to dispersing development traffic to multiple intersections and minimising their impacts.

A parallel comprehensive transportation study has been completed to assess all future developments in the study area over a 20-year (2025-2045) period, as part of the Environmental Assessment study for the proposed study area road improvements.

5.2 Recommendations

Based on the findings and conclusions of this study, it is recommended that the development be considered for approval as proposed.



Appendix A

Pre-Study Consultation



From: [Paramo, Juan](#)
To: [Rajan Philips](#); "Josh Way"
Cc: [Rocco Tullio](#); [Winterton, Mark](#); [Patrick Neal](#); [Winters, Patrick](#); [Szymczak, Adam](#)
Subject: RE: (230538) 6630 Tecumseh Road, Windsor TIS - Pre-Study Consultation
Date: February 15, 2024 3:51:22 PM
Attachments: [image005.jpg](#)
[image006.jpg](#)
[image007.png](#)
[image008.jpg](#)
[image009.jpg](#)
[image012.png](#)

Josh,

It's important to start the EA process soon. Certain initial decisions must be made that will shape the nature and details of supporting studies, like the traffic study. This will provide consultants working on the various supporting studies with a clearer picture of the preliminary conclusions, so that they can concentrate on the preliminary recommended solution.

Initiating a traffic study (or some of the other supporting studies) before starting the EA process may lead to additional work later on, as a proper framework hasn't been established.

Rajan,

I wasn't included in the email sent on January 17. Moving forward, please make sure I'm included in all future correspondence with the City to ensure a response is provided.

See below in green for notes on the preliminary scope of work.

Thanks,

Juan Paramo, P.Eng. | Development Engineer

Engineering Department - Development Division
350 City Hall Square West | Suite 210 | Windsor, ON | N9A 6S1
519-255-6267 Ext. 6353



www.citywindsor.ca

From: Rajan Philips <rphilips@ptsl.com>
Sent: February 14, 2024 6:23 PM
To: Paramo, Juan <jparamo@citywindsor.ca>; 'Josh Way' <josh@rockdevelopments.ca>; Winters, Patrick <pwinters@citywindsor.ca>
Cc: Rocco Tullio <rtullio@rockdevelopments.ca>; Winterton, Mark <mwinterton@citywindsor.ca>; Patrick Neal <pneal@ptsl.com>
Subject: RE: (230538) 6630 Tecumseh Road, Windsor TIS - Pre-Study Consultation

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Juan,

Below is the Scope of Work/Terms of Reference went sent to the City on January 17, per email chain below. The only additional requirement from the City's letter is to include 20-year horizon for future traffic conditions.

We have indicated Five year Horizon, but we can do Five-Year and Ten Year Horizons, as noted below. Twenty years are appropriate for long term demand modelling, but too long for projections based on compounded annual growth rate.

Kindly review the Scope below and let us know what additional requirements the City will need. In the meantime, we will proceed based on the scope below and incorporate additional requirements from the EA study when they available.

We will require the following from City staff:

- Signal timings for signalized intersections, as noted below;
- And any future developments in the area that we should include for background traffic estimates.

Both are highlighted below.

Thank you.

Updated (January 17) Scope of Work:

We have been retained to complete the Transportation Impact Study (TIS) in support of a proposed Mixed-Use Development at 6630 Tecumseh Road in the City of Windsor.

The subject lands are part of the Forest Glade North Planning Area, bounded by CN rail corridor to the north, Lauzon Parkway to the east, Tecumseh Road to the south, and Jefferson Boulevard to the west. The area includes significant commercial developments, including Walmart, Home Depot, Staples etc.

The roads internal to the area include Catherine Street that extends west from Lauzon Parkway, and Parkview Avenue (**This is a private drive and not a public right-of-way. Should be referred to as the "Serbian Centre Private Drive")** extending north from Tecumseh Road. Catherine Street is expected to be extended further west across Parkview Avenue, and ultimately to connect with ~~Empress Street at Jefferson Boulevard~~ **the new north-south 'Class I Collector Road' (. In accordance with Schedule FGN-2 of the Forest Glade North Secondary Plan.)** . A new north-south road to the west of Parkview Avenue is also identified to be built by extending Rose-Ville Gardens Drive north of Tecumseh Road to Catherine Street. **In addition, a new north-south 'Class I Collector Road' will be extended north of Tecumseh Road East to connect to the westerly limit of the Catherine Street extension.**

The subject site is specifically located to the north of the existing Home Depot and will be separated by the anticipated extension of Catherine Street. The proposed development will accommodate a mix of land uses, but primarily commercial uses. The extensions of Catherine Street, **the new NS Class I Collector**, and Rose-Ville Garden Drive are to be

undertaken in conjunction with the proposed development.

The concept site plan and aerial location map are attached.

Based on the above information, we have prepared the following scope of work for review/approval:

- Weekday AM/PM and Saturday peak hours of analysis.
- Study Area Intersections:
 - o *Existing Intersections:*
 - Catherine Street & Lauzon Parkway (signalized);
 - Lauzon Parkway & Tecumseh Road (signalized);
 - Tecumseh Road & Rose-Ville Garden Drive (signalized);
 - Tecumseh Road & ~~Parkview Avenue~~ Serbian Centre Private Drive (unsignalized) (To be potentially closed. TBC);
 - Tecumseh Road & Home Depot Access (signalized. To be removed and replaced);
 - Tecumseh Road & Walmart Access/ East Park Dr
 - Tecumseh Road & Jefferson St (signalized);
 - o *New Intersections:*
 - Catherine Street & ~~Parkview Avenue~~ Serbian Centre Private Drive (To be potentially closed. TBC)
 - Catherine Street & Rose-Ville Garden Drive
 - Catherine Street & the new NS Class I Collector
 - Tecumseh Road & the new NS Class I Collector
 - Access Intersections
 - Any new required local roads to facilitate access within the business park, if required.
- **Please advise if the City has recent traffic counts at the above intersections.** We will record traffic counts at the balance of the intersections. Please reach out to Dinesh at ddhamotharan@citywindsor.ca for any traffic data required.
- **Please provide the signal timing plans for (1) Catherine Street & Lauzon Parkway, (2) Lauzon Parkway & Tecumseh Road, and (3) Tecumseh Road & Rose-Ville Garden Drive.** Please reach out to Dinesh at ddhamotharan@citywindsor.ca for any traffic data required.

Horizon Year: five years and ten years from 2025. i.e. 2030 and 2035. A 20 year horizon must be used, unless properly justified. This planning period is consistent to what we used on other recent EAs.

- Background Growth: 2.0% compounded per annum, **please confirm.** You may adjust your growth rate to be more in line with long term planning. Typically we've used 1.5-1.7%. You may also do traffic forecasting to estimate growth in the study area traffic based on new developments and background growth for the area, and possibly justify a reduction in growth rate further.
- **Background Developments: Please confirm.** TBC
- Roadway Improvements: **Please confirm any planned changes at the above**

intersections. No changes based on the information available at the moment.

- Trip Generation: ITE Trip Generation Manual 11th Edition. **OK**
- Trip Distribution: Existing **and anticipated** traffic patterns.

Above covers some of the preliminary requirements for the traffic analysis. As the EA progresses, we'll share more specific requirements to address transportation planning components. This includes aspects like active transportation, transit, railway crossings, closures, road safety/collisions review, etc. This additional information will help in developing the Problem Opportunity statement for the EA.

Regards,

Rajan Philips, M.Sc. (PI), P.Eng.
Senior Transportation Consultant

Paradigm Transportation Solutions Limited

5A-150 Pinebush Road, Cambridge ON N1R 8J8
p: 519.896.3163 x207
e: rphilips@ptsl.com
w: www.ptsl.com

Office Hours: 07:30 – 17:30 M-T, closed Fridays



From: Paramo, Juan <jparamo@citywindsor.ca>
Sent: Wednesday, February 14, 2024 3:00 PM
To: 'Josh Way' <josh@rockdevelopments.ca>; Winters, Patrick <pwinters@citywindsor.ca>; Rajan Philips <rphilips@ptsl.com>
Cc: Rocco Tullio <rtullio@rockdevelopments.ca>; Winterton, Mark <mwinterton@citywindsor.ca>
Subject: RE: (230538) 6630 Tecumseh Road, Windsor TIS - Pre-Study Consultation

Hi Josh,

The Consultant for the EA will be responsible for defining the scope of the TIS.

Initially, we had planned to work with Odan Detech to outline the TIS scope, but this process is now currently on hold until a Consultant for the EA is selected.

In the meantime, we can prepare a draft TIS scope for the transportation consultant to start. However, please note that this draft is subject to approval from the EA consultant when selected. We'll have this available in the next couple of days.

Thanks,

Juan Paramo, P.Eng. | Development Engineer

Engineering Department - Development Division
350 City Hall Square West | Suite 210 | Windsor, ON | N9A 6S1
519-255-6267 Ext. 6353



www.citywindsor.ca

From: Josh Way <josh@rockdevelopments.ca>

Sent: February 14, 2024 9:35 AM

To: Paramo, Juan <jparamo@citywindsor.ca>; Winters, Patrick <pwinters@citywindsor.ca>; Rajan Philips <rphilips@ptsl.com>

Cc: Rocco Tullio <rtullio@rockdevelopments.ca>; Winterton, Mark <mwinterton@citywindsor.ca>

Subject: FW: (230538) 6630 Tecumseh Road, Windsor TIS - Pre-Study Consultation

Importance: High

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Good morning,

Can the city please advise on the questions Rajan sent back in January. He has the Stage 1 letter the city sent however it does not answer all of his questions in the email below.

Thanks,

Josh Way | Vice President



19 Amy Croft Unit 201

Lakeshore, ON. N9K 1C7

Tel: 519-739-3900 | **Cell:** 519-788-5738

Email: josh@rockdevelopments.ca

Web: www.rockdevelopments.ca

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From: Paramo, Juan <jparamo@citywindsor.ca>

Sent: Friday, January 19, 2024 11:39 AM

To: Patrick Neal <pneal@ptsl.com>

Cc: Dhiman, Siddharth <SDhiman@citywindsor.ca>; Transportation <Transportation@citywindsor.ca>; Winters, Patrick <pwinters@citywindsor.ca>; Rajan Philips <rphilips@ptsl.com>

Subject: RE: (230538) 6630 Tecumseh Road, Windsor TIS - Pre-Study Consultation

Good morning Patrick,

This development would be subject to the completion of an EA, which will include a TIS component. We are currently scoping the TIS requirements for the EA and will share it with you once available.

Thanks,

Juan Paramo, P.Eng. | Development Engineer

Engineering Department - Development Division
350 City Hall Square West | Suite 210 | Windsor, ON | N9A 6S1
519-255-6267 Ext. 6353



www.citywindsor.ca

From: Patrick Neal [<mailto:pneal@ptsl.com>]

Sent: Wednesday, January 17, 2024 9:50 AM

To: Dhiman, Siddharth <SDhiman@citywindsor.ca>

Cc: Rajan Philips <rphilips@ptsl.com>

Subject: (230538) 6630 Tecumseh Road, Windsor TIS - Pre-Study Consultation

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Siddharth,

We have been retained to complete the Transportation Impact Study (TIS) in support of a proposed Mixed-Use Development at 6630 Tecumseh Road in the City of Windsor.

The subject lands are part of the Forest Glade North Planning Area, bounded by CN rail corridor to the north, Lauzon Parkway to the east, Tecumseh Road to the south, and Jefferson Boulevard to the west. The area includes significant commercial developments, including Walmart, Home Depot, Staples etc.

The roads internal to the area include Catherine Street that extends west from Lauzon Parkway, and Parkview Avenue extending north from Tecumseh Road. Catherine Street is expected to be extended further west across Parkview Avenue, and ultimately to connect

with Empress Street at Jefferson Boulevard. A new north-south road to the west of Parkview Avenue is also identified to be built by extending Rose-Ville Gardens Drive north of Tecumseh Road to Catherine Street.

The subject site is specifically located to the north of the existing Home Depot and will be separated by the anticipated extension of Catherine Street. The proposed development will accommodate a mix of land uses, but primarily commercial uses. The extensions of Catherine Street and Rose-Ville Garden Drive are to be undertaken in conjunction with the proposed development.

The concept site plan and aerial location map are attached.

Based on the above information, we have prepared the following scope of work for review/approval:

- Weekday AM/PM and Saturday peak hours of analysis.
- Study Area Intersections:
 - o *Existing Intersections:*
 - Catherine Street & Lauzon Parkway (signalized);
 - Lauzon Parkway & Tecumseh Road (signalized);
 - Tecumseh Road & Rose-Ville Garden Drive (signalized);
 - Tecumseh Road & Parkview Avenue (unsignalized);
 - o *New Intersections:*
 - Catherine Street & Parkview Avenue
 - Catherine Street & Rose-Ville Garden Drive
 - Access Intersections
- **Please advise if the City has recent traffic counts at the above intersections.**
We will record traffic counts at the balance of the intersections.
- **Please provide the signal timing plans for (1) Catherine Street & Lauzon Parkway, (2) Lauzon Parkway & Tecumseh Road, and (3) Tecumseh Road & Rose-Ville Garden Drive.**
- Horizon Year: five years from development completion.
- Background Growth: 2.0% compounded per annum, **please confirm.**
- Background Developments: **Please confirm.**
- Roadway Improvements: **Please confirm any planned changes at the above intersections.**
- Trip Generation: ITE Trip Generation Manual 11th Edition.
- Trip Distribution: Existing traffic patterns.

Please let us know if you have any questions or comments.

Regards,

Patrick Neal, EIT

Transportation Consultant

cid:image007.png@01DA5FF4.DCE253D0



Paradigm Transportation Solutions Limited

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e: pneal@ptsl.com

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Appendix B

Existing Traffic Data





Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Lauzon Parkway & Catherine
Street - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 1

Turning Movement Data

Start Time	Catherine Street Eastbound						Plaza Driveway Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	23	20	1	0	2	44	33	15	23	0	0	71	13	117	49	1	0	180	41	148	29	0	1	218	513
11:15 AM	38	6	7	0	1	51	28	10	32	0	0	70	13	134	50	0	0	197	25	182	20	0	1	227	545
11:30 AM	35	13	4	0	0	52	30	8	24	0	0	62	15	145	54	0	0	214	37	185	22	0	0	244	572
11:45 AM	28	13	9	0	1	50	33	14	34	0	1	81	8	142	47	0	1	197	34	178	23	0	3	235	563
Hourly Total	124	52	21	0	4	197	124	47	113	0	1	284	49	538	200	1	1	788	137	693	94	0	5	924	2193
12:00 PM	23	15	8	0	2	46	35	17	44	0	1	96	15	137	56	0	1	208	36	187	24	0	0	247	597
12:15 PM	34	9	7	0	0	50	43	6	40	0	0	89	13	127	60	0	0	200	32	191	29	0	3	252	591
12:30 PM	33	11	6	0	1	50	31	18	36	0	0	85	17	168	45	1	1	231	47	177	24	0	1	248	614
12:45 PM	41	18	10	0	2	69	48	16	34	0	0	98	15	130	50	2	0	197	35	171	36	0	0	242	606
Hourly Total	131	53	31	0	5	215	157	57	154	0	1	368	60	562	211	3	2	836	150	726	113	0	4	989	2408
1:00 PM	27	14	6	0	0	47	55	11	33	0	0	99	13	105	31	1	0	150	28	177	22	0	1	227	523
1:15 PM	27	14	6	0	0	47	49	6	24	0	1	79	15	128	39	2	0	184	50	193	33	1	2	277	587
1:30 PM	32	19	7	0	0	58	40	12	41	0	0	93	7	120	43	3	0	173	31	160	23	0	0	214	538
1:45 PM	35	8	7	0	0	50	37	12	40	0	0	89	15	120	40	1	0	176	23	166	22	0	2	211	526
Hourly Total	121	55	26	0	0	202	181	41	138	0	1	360	50	473	153	7	0	683	132	696	100	1	5	929	2174
2:00 PM	32	11	10	1	0	54	52	21	35	0	1	108	21	127	42	1	0	191	31	158	17	1	1	207	560
2:15 PM	31	17	7	0	1	55	46	11	40	0	1	97	8	126	52	0	2	186	23	172	20	0	3	215	553
2:30 PM	31	25	4	0	0	60	35	10	46	0	0	91	8	124	49	0	2	181	34	185	30	0	2	249	581
2:45 PM	43	16	6	0	1	65	31	9	43	0	2	83	17	124	50	0	1	191	27	176	23	0	1	226	565
Hourly Total	137	69	27	1	2	234	164	51	164	0	4	379	54	501	193	1	5	749	115	691	90	1	7	897	2259
Grand Total	513	229	105	1	11	848	626	196	569	0	7	1391	213	2074	757	12	8	3056	534	2806	397	2	21	3739	9034
Approach %	60.5	27.0	12.4	0.1	-	-	45.0	14.1	40.9	0.0	-	-	7.0	67.9	24.8	0.4	-	-	14.3	75.0	10.6	0.1	-	-	-
Total %	5.7	2.5	1.2	0.0	-	9.4	6.9	2.2	6.3	0.0	-	15.4	2.4	23.0	8.4	0.1	-	33.8	5.9	31.1	4.4	0.0	-	41.4	-
Motorcycles	0	0	0	0	0	0	1	1	0	0	-	2	0	1	1	0	-	2	0	0	1	0	-	1	5
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.2	0.5	0.0	-	-	0.1	0.0	0.0	0.1	0.0	-	0.1	0.0	0.0	0.3	0.0	-	0.0	0.1
Cars & Light Goods	512	229	105	1	-	847	575	194	552	0	-	1321	213	2056	703	12	-	2984	519	2794	396	2	-	3711	8863
% Cars & Light Goods	99.8	100.0	100.0	100.0	-	99.9	91.9	99.0	97.0	-	-	95.0	100.0	99.1	92.9	100.0	-	97.6	97.2	99.6	99.7	100.0	-	99.3	98.1
Buses	1	0	0	0	-	1	48	0	14	0	-	62	0	1	48	0	-	49	15	0	0	0	-	15	127
% Buses	0.2	0.0	0.0	0.0	-	0.1	7.7	0.0	2.5	-	-	4.5	0.0	0.0	6.3	0.0	-	1.6	2.8	0.0	0.0	0.0	-	0.4	1.4
Single-Unit Trucks	0	0	0	0	-	0	2	1	2	0	-	5	0	14	4	0	-	18	0	9	0	0	-	9	32
% Single-Unit Trucks	0.0	0.0	0.0	0.0	-	0.0	0.3	0.5	0.4	-	-	0.4	0.0	0.7	0.5	0.0	-	0.6	0.0	0.3	0.0	0.0	-	0.2	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	2	0	0	-	2	0	3	0	0	-	3	6
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.2	-	-	0.1	0.0	0.1	0.0	0.0	-	0.1	0.0	0.1	0.0	0.0	-	0.1	0.1

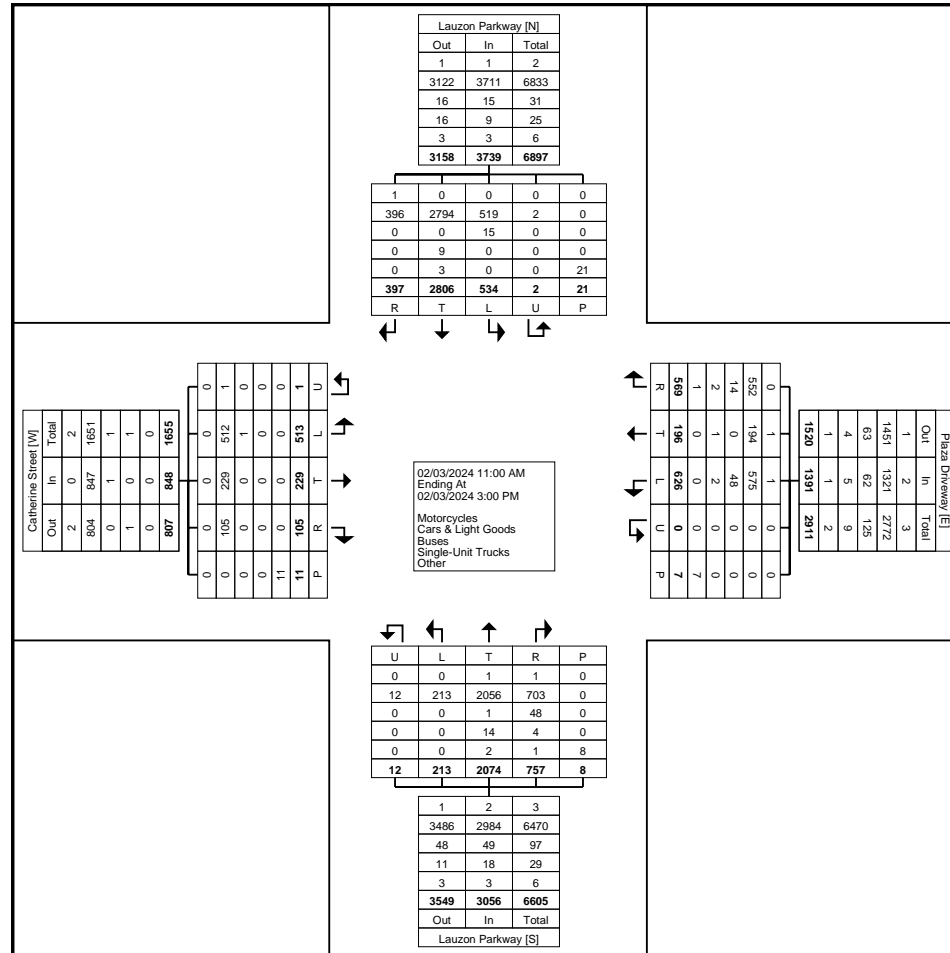
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.1	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	4	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	36.4	-	-	-	-	-	42.9	-	-	-	-	-	37.5	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	4	-	-	-	-	-	5	-	-	-	-	-	21	-	-
% Pedestrians	-	-	-	-	63.6	-	-	-	-	-	57.1	-	-	-	-	-	62.5	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts.com

Count Name: Lauzon Parkway & Catherine
Street - Saturday
Site Code: 230538
Start Date: 02/03/2024
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Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Lauzon Parkway & Catherine
Street - Saturday
Site Code: 230538
Start Date: 02/03/2024
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Turning Movement Peak Hour Data (12:00 PM)

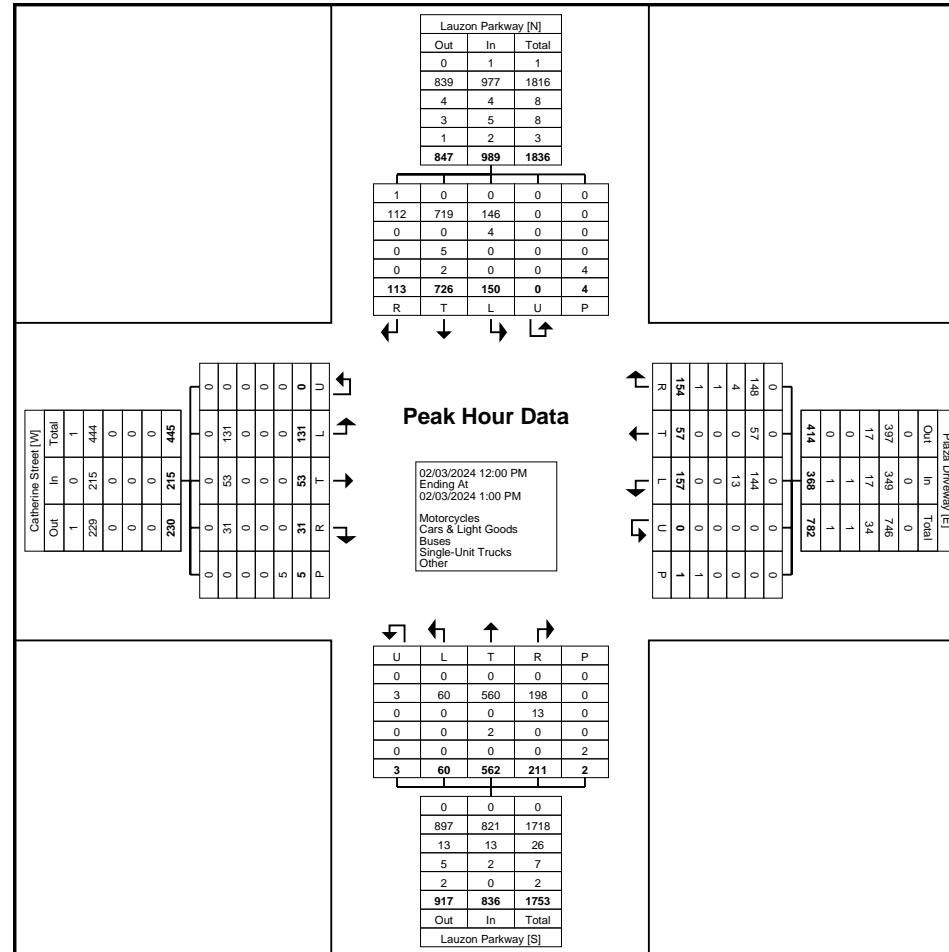
Start Time	Catherine Street Eastbound						Plaza Driveway Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	23	15	8	0	2	46	35	17	44	0	1	96	15	137	56	0	1	208	36	187	24	0	0	247	597
12:15 PM	34	9	7	0	0	50	43	6	40	0	0	89	13	127	60	0	0	200	32	191	29	0	3	252	591
12:30 PM	33	11	6	0	1	50	31	18	36	0	0	85	17	168	45	1	1	231	47	177	24	0	1	248	614
12:45 PM	41	18	10	0	2	69	48	16	34	0	0	98	15	130	50	2	0	197	35	171	36	0	0	242	606
Total	131	53	31	0	5	215	157	57	154	0	1	368	60	562	211	3	2	836	150	726	113	0	4	989	2408
Approach %	60.9	24.7	14.4	0.0	-	-	42.7	15.5	41.8	0.0	-	-	7.2	67.2	25.2	0.4	-	-	15.2	73.4	11.4	0.0	-	-	-
Total %	5.4	2.2	1.3	0.0	-	8.9	6.5	2.4	6.4	0.0	-	15.3	2.5	23.3	8.8	0.1	-	34.7	6.2	30.1	4.7	0.0	-	41.1	-
PHF	0.799	0.736	0.775	0.000	-	0.779	0.818	0.792	0.875	0.000	-	0.939	0.882	0.836	0.879	0.375	-	0.905	0.798	0.950	0.785	0.000	-	0.981	0.980
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.9	-	-	0.1	0.0
Cars & Light Goods	131	53	31	0	-	215	144	57	148	0	-	349	60	560	198	3	-	821	146	719	112	0	-	977	2362
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	91.7	100.0	96.1	-	-	94.8	100.0	99.6	93.8	100.0	-	98.2	97.3	99.0	99.1	-	-	98.8	98.1
Buses	0	0	0	0	-	0	13	0	4	0	-	17	0	0	13	0	-	13	4	0	0	0	-	4	34
% Buses	0.0	0.0	0.0	-	-	0.0	8.3	0.0	2.6	-	-	4.6	0.0	0.0	6.2	0.0	-	1.6	2.7	0.0	0.0	-	-	0.4	1.4
Single-Unit Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	2	0	0	-	2	0	5	0	0	-	5	8
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.6	-	-	0.3	0.0	0.4	0.0	0.0	-	0.2	0.0	0.7	0.0	-	-	0.5	0.3
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	2	0	0	-	2	3
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.6	-	-	0.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	-	-	0.2	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	20.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	80.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Lauzon Parkway & Catherine
Street - Saturday
Site Code: 230538
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Turning Movement Peak Hour Data Plot (12:00 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Lauzon Parkway & Tecumseh
Road - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 1

Turning Movement Data

Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	64	199	33	2	2	298	42	219	23	3	0	287	52	84	38	0	5	174	32	104	75	0	0	211	970
11:15 AM	91	247	41	0	3	379	57	234	18	2	5	311	57	86	49	0	7	192	33	106	80	1	4	220	1102
11:30 AM	70	266	37	1	1	374	48	241	13	1	0	303	60	107	45	0	2	212	26	105	74	0	0	205	1094
11:45 AM	72	221	35	1	3	329	42	245	15	2	1	304	55	109	40	0	3	204	31	104	93	0	4	228	1065
Hourly Total	297	933	146	4	9	1380	189	939	69	8	6	1205	224	386	172	0	17	782	122	419	322	1	8	864	4231
12:00 PM	87	292	54	0	1	433	62	253	15	4	0	334	60	119	48	2	0	229	37	116	74	0	3	227	1223
12:15 PM	82	262	45	2	1	391	34	245	10	6	0	295	49	113	54	0	5	216	28	117	85	0	4	230	1132
12:30 PM	81	251	30	0	1	362	54	217	10	0	3	281	67	130	50	0	2	247	33	110	93	0	2	236	1126
12:45 PM	79	290	38	0	1	407	65	247	17	5	4	334	59	97	48	0	5	204	31	97	97	0	5	225	1170
Hourly Total	329	1095	167	2	4	1593	215	962	52	15	7	1244	235	459	200	2	12	896	129	440	349	0	14	918	4651
1:00 PM	65	275	42	0	0	382	61	247	24	7	1	339	69	101	45	0	5	215	29	109	103	0	1	241	1177
1:15 PM	68	288	24	0	1	380	51	252	22	5	1	330	77	104	57	0	7	238	26	154	92	0	4	272	1220
1:30 PM	96	273	42	3	1	414	57	274	22	8	0	361	81	84	42	0	5	207	38	107	85	0	4	230	1212
1:45 PM	72	320	41	0	1	433	57	298	23	2	0	380	60	100	41	0	6	201	29	101	94	1	3	225	1239
Hourly Total	301	1156	149	3	3	1609	226	1071	91	22	2	1410	287	389	185	0	23	861	122	471	374	1	12	968	4848
2:00 PM	63	267	42	1	5	373	53	245	20	6	0	324	62	101	36	0	4	199	45	116	66	0	4	227	1123
2:15 PM	81	281	40	2	3	404	48	273	20	5	1	346	49	94	35	0	0	178	28	108	91	0	9	227	1155
2:30 PM	76	259	51	3	2	389	52	245	9	3	3	309	70	92	44	0	7	206	38	88	98	0	8	224	1128
2:45 PM	73	226	43	0	1	342	51	241	16	4	7	312	72	108	41	1	7	222	29	100	101	0	4	230	1106
Hourly Total	293	1033	176	6	11	1508	204	1004	65	18	11	1291	253	395	156	1	18	805	140	412	356	0	25	908	4512
Grand Total	1220	4217	638	15	27	6090	834	3976	277	63	26	5150	999	1629	713	3	70	3344	513	1742	1401	2	59	3658	18242
Approach %	20.0	69.2	10.5	0.2	-	-	16.2	77.2	5.4	1.2	-	-	29.9	48.7	21.3	0.1	-	-	14.0	47.6	38.3	0.1	-	-	-
Total %	6.7	23.1	3.5	0.1	-	33.4	4.6	21.8	1.5	0.3	-	28.2	5.5	8.9	3.9	0.0	-	18.3	2.8	9.5	7.7	0.0	-	20.1	-
Motorcycles	1	0	0	0	-	1	0	1	0	0	-	1	0	1	0	0	-	1	0	0	1	0	-	1	4
% Motorcycles	0.1	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	0.0	-	0.0	0.0	0.0	0.1	0.0	-	0.0	0.0
Cars & Light Goods	1196	4199	633	15	-	6043	829	3963	255	63	-	5110	991	1605	707	3	-	3306	488	1726	1376	2	-	3592	18051
% Cars & Light Goods	98.0	99.6	99.2	100.0	-	99.2	99.4	99.7	92.1	100.0	-	99.2	99.2	98.5	99.2	100.0	-	98.9	95.1	99.1	98.2	100.0	-	98.2	99.0
Buses	19	1	0	0	-	20	0	2	21	0	-	23	1	9	0	0	-	10	22	10	20	0	-	52	105
% Buses	1.6	0.0	0.0	0.0	-	0.3	0.0	0.1	7.6	0.0	-	0.4	0.1	0.6	0.0	0.0	-	0.3	4.3	0.6	1.4	0.0	-	1.4	0.6
Single-Unit Trucks	3	13	2	0	-	18	4	8	1	0	-	13	2	12	5	0	-	19	2	3	4	0	-	9	59
% Single-Unit Trucks	0.2	0.3	0.3	0.0	-	0.3	0.5	0.2	0.4	0.0	-	0.3	0.2	0.7	0.7	0.0	-	0.6	0.4	0.2	0.3	0.0	-	0.2	0.3
Articulated Trucks	1	3	3	0	-	7	1	0	0	0	-	1	5	2	0	0	-	7	1	3	0	0	-	4	19
% Articulated Trucks	0.1	0.1	0.5	0.0	-	0.1	0.1	0.0	0.0	0.0	-	0.0	0.5	0.1	0.0	0.0	-	0.2	0.2	0.2	0.0	0.0	-	0.1	0.1

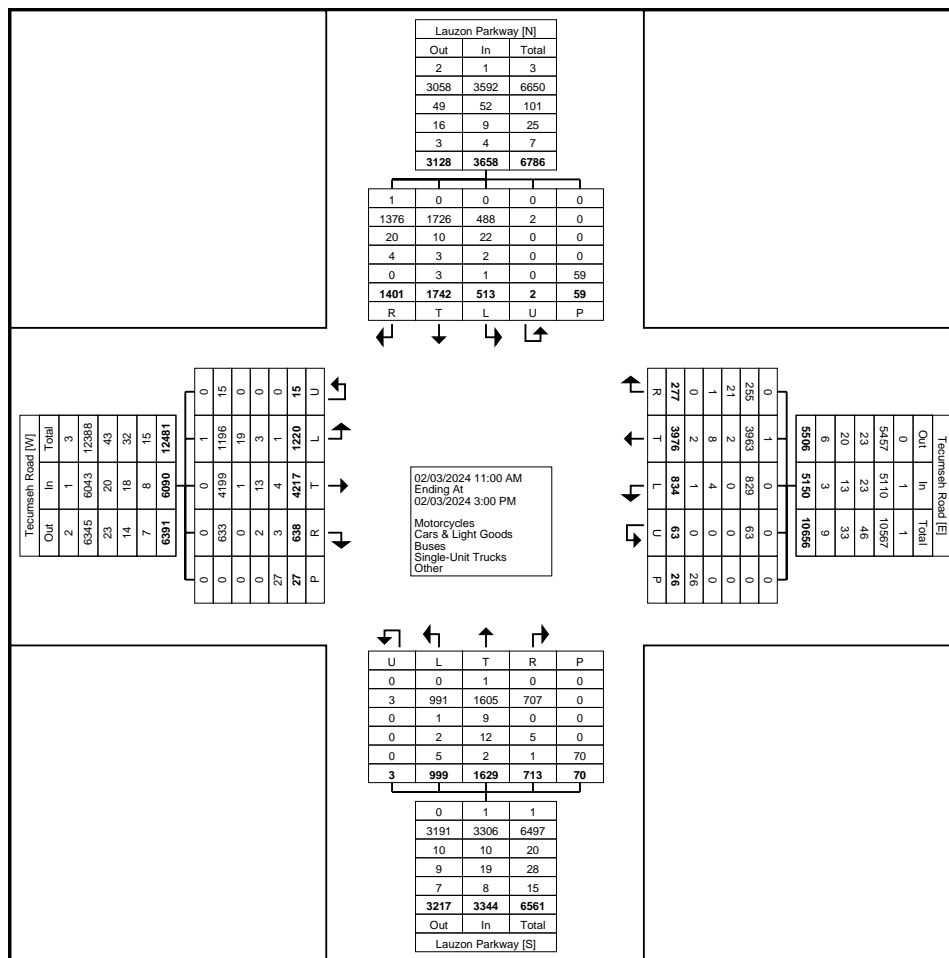
Bicycles on Road	0	1	0	0	-	1	0	2	0	0	-	2	0	0	1	0	-	1	0	0	0	0	-	0	4
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	0.0	-	0.0	0.0	0.0	0.1	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	8	-	-	-	-	-	10	-	-
% Bicycles on Crosswalk	-	-	-	-	11.1	-	-	-	-	-	15.4	-	-	-	-	-	11.4	-	-	-	-	-	16.9	-	-
Pedestrians	-	-	-	-	24	-	-	-	-	-	22	-	-	-	-	-	62	-	-	-	-	-	49	-	-
% Pedestrians	-	-	-	-	88.9	-	-	-	-	-	84.6	-	-	-	-	-	88.6	-	-	-	-	-	83.1	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Lauzon Parkway & Tecumseh Road - Saturday
Site Code: 230538
Start Date: 02/03/2024
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Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Lauzon Parkway & Tecumseh
Road - Saturday
Site Code: 230538
Start Date: 02/03/2024
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Turning Movement Peak Hour Data (1:00 PM)

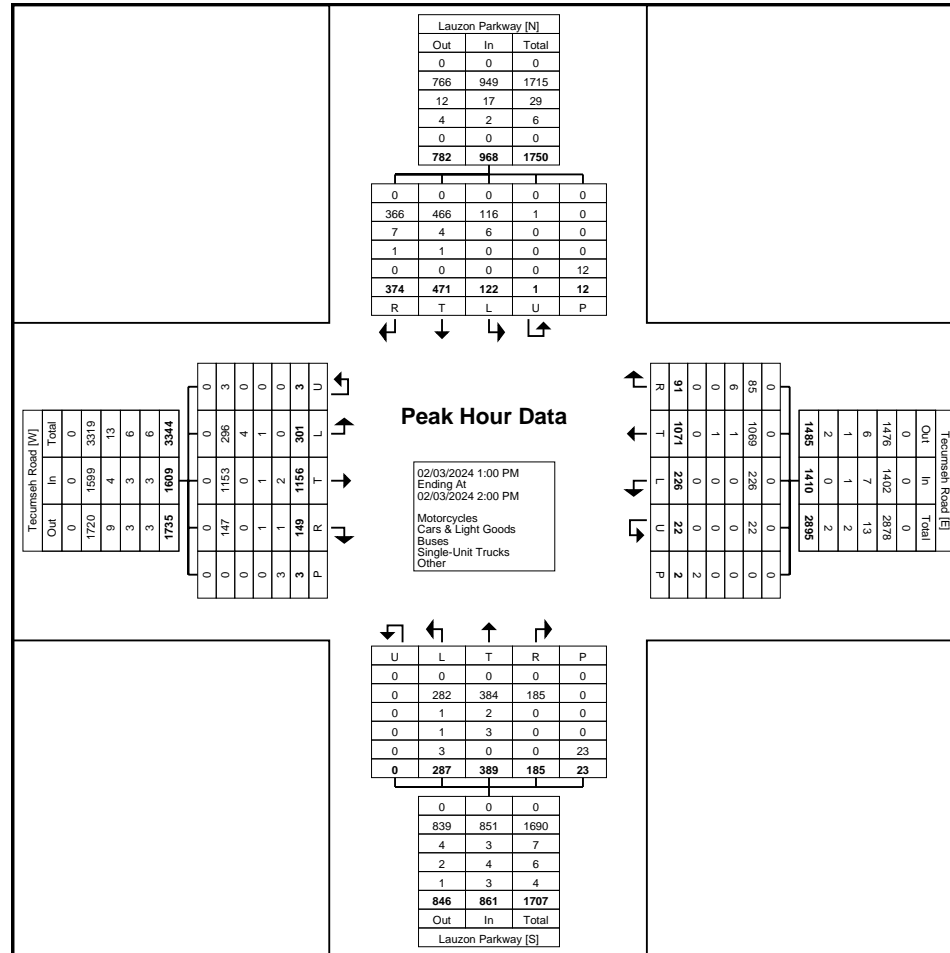
Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
1:00 PM	65	275	42	0	0	382	61	247	24	7	1	339	69	101	45	0	5	215	29	109	103	0	1	241	1177
1:15 PM	68	288	24	0	1	380	51	252	22	5	1	330	77	104	57	0	7	238	26	154	92	0	4	272	1220
1:30 PM	96	273	42	3	1	414	57	274	22	8	0	361	81	84	42	0	5	207	38	107	85	0	4	230	1212
1:45 PM	72	320	41	0	1	433	57	298	23	2	0	380	60	100	41	0	6	201	29	101	94	1	3	225	1239
Total	301	1156	149	3	3	1609	226	1071	91	22	2	1410	287	389	185	0	23	861	122	471	374	1	12	968	4848
Approach %	18.7	71.8	9.3	0.2	-	-	16.0	76.0	6.5	1.6	-	-	33.3	45.2	21.5	0.0	-	-	12.6	48.7	38.6	0.1	-	-	-
Total %	6.2	23.8	3.1	0.1	-	33.2	4.7	22.1	1.9	0.5	-	29.1	5.9	8.0	3.8	0.0	-	17.8	2.5	9.7	7.7	0.0	-	20.0	-
PHF	0.784	0.903	0.887	0.250	-	0.929	0.926	0.898	0.948	0.688	-	0.928	0.886	0.935	0.811	0.000	-	0.904	0.803	0.765	0.908	0.250	-	0.890	0.978
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	296	1153	147	3	-	1599	226	1069	85	22	-	1402	282	384	185	0	-	851	116	466	366	1	-	949	4801
% Cars & Light Goods	98.3	99.7	98.7	100.0	-	99.4	100.0	99.8	93.4	100.0	-	99.4	98.3	98.7	100.0	-	-	98.8	95.1	98.9	97.9	100.0	-	98.0	99.0
Buses	4	0	0	0	-	4	0	1	6	0	-	7	1	2	0	0	-	3	6	4	7	0	-	17	31
% Buses	1.3	0.0	0.0	0.0	-	0.2	0.0	0.1	6.6	0.0	-	0.5	0.3	0.5	0.0	-	-	0.3	4.9	0.8	1.9	0.0	-	1.8	0.6
Single-Unit Trucks	1	1	1	0	-	3	0	1	0	0	-	1	1	3	0	0	-	4	0	1	1	0	-	2	10
% Single-Unit Trucks	0.3	0.1	0.7	0.0	-	0.2	0.0	0.1	0.0	0.0	-	0.1	0.3	0.8	0.0	-	-	0.5	0.0	0.2	0.3	0.0	-	0.2	0.2
Articulated Trucks	0	1	1	0	-	2	0	0	0	0	-	0	3	0	0	0	-	3	0	0	0	0	-	0	5
% Articulated Trucks	0.0	0.1	0.7	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	1.0	0.0	0.0	-	-	0.3	0.0	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.1	0.0	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	8.7	-	-	-	-	-	25.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	21	-	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	91.3	-	-	-	-	-	75.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts.com

Count Name: Lauzon Parkway & Tecumseh Road - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 5



Turning Movement Peak Hour Data Plot (1:00 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Lauzon Parkway & Catherine Street
Site Code: 230538
Start Date: 02/01/2024
Page No: 1

Turning Movement Data

Start Time	Catherine Street Eastbound						Plaza Driveway Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	1	0	2	0	0	3	7	1	8	0	0	16	0	55	15	1	0	71	6	122	10	0	1	138	228
7:15 AM	8	2	2	0	0	12	10	1	3	0	1	14	3	64	13	0	1	80	4	135	8	0	0	147	253
7:30 AM	5	2	0	0	2	7	7	1	6	0	0	14	4	75	12	0	0	91	8	199	8	0	1	215	327
7:45 AM	10	0	2	0	0	12	12	1	3	0	0	16	4	88	19	2	0	113	10	208	10	0	0	228	369
Hourly Total	24	4	6	0	2	34	36	4	20	0	1	60	11	282	59	3	1	355	28	664	36	0	2	728	1177
8:00 AM	6	0	3	0	3	9	9	1	3	0	0	13	3	68	15	0	0	86	13	193	7	0	0	213	321
8:15 AM	6	1	3	0	1	10	12	4	8	0	0	24	3	75	10	0	0	88	6	180	9	0	0	195	317
8:30 AM	10	3	4	0	1	17	8	0	6	0	0	14	8	78	12	0	0	98	13	217	11	0	0	241	370
8:45 AM	11	4	1	0	0	16	16	3	8	0	0	27	9	103	24	1	0	137	10	193	15	0	0	218	398
Hourly Total	33	8	11	0	5	52	45	8	25	0	0	78	23	324	61	1	0	409	42	783	42	0	0	867	1406
9:00 AM	7	6	4	0	0	17	16	1	7	0	0	24	3	91	23	1	0	118	18	141	17	0	0	176	335
9:15 AM	16	9	4	0	2	29	14	6	6	0	1	26	5	93	29	0	4	127	15	110	15	0	0	140	322
9:30 AM	13	2	5	0	0	20	11	3	11	0	1	25	4	91	28	2	0	125	16	154	22	1	0	193	363
9:45 AM	20	6	1	0	1	27	13	9	7	0	0	29	2	82	38	0	0	122	22	131	20	1	0	174	352
Hourly Total	56	23	14	0	3	93	54	19	31	0	2	104	14	357	118	3	4	492	71	536	74	2	0	683	1372
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	21	17	3	0	0	41	28	6	29	0	1	63	8	126	42	0	0	176	26	145	14	0	0	185	465
11:45 AM	22	14	4	0	0	40	28	9	37	0	2	74	12	129	55	1	2	197	29	156	21	0	1	206	517
Hourly Total	43	31	7	0	0	81	56	15	66	0	3	137	20	255	97	1	2	373	55	301	35	0	1	391	982
12:00 PM	19	11	7	0	1	37	32	7	31	0	0	70	7	144	45	1	1	197	24	189	22	0	1	235	539
12:15 PM	28	16	3	0	0	47	30	14	27	0	1	71	12	107	44	1	2	164	29	165	23	0	0	217	499
12:30 PM	22	14	8	0	0	44	32	9	27	0	0	68	8	109	35	2	0	154	22	158	14	0	2	194	460
12:45 PM	38	13	9	0	0	60	38	13	41	0	0	92	5	123	56	0	1	184	21	159	17	0	1	197	533
Hourly Total	107	54	27	0	1	188	132	43	126	0	1	301	32	483	180	4	4	699	96	671	76	0	4	843	2031
1:00 PM	37	7	4	0	0	48	34	10	22	0	0	66	6	117	27	4	0	154	17	183	17	0	1	217	485
1:15 PM	25	10	3	0	2	38	32	8	25	0	2	65	5	120	45	0	1	170	28	179	20	0	1	227	500
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	62	17	7	0	2	86	66	18	47	0	2	131	11	237	72	4	1	324	45	362	37	0	2	444	985
4:00 PM	41	11	1	0	0	53	34	10	37	0	1	81	6	196	52	1	1	255	27	192	20	0	1	239	628
4:15 PM	31	14	3	0	0	48	27	7	45	0	0	79	12	220	50	1	0	283	24	167	19	0	0	210	620
4:30 PM	30	8	3	0	2	41	36	11	34	0	0	81	4	192	45	0	2	241	30	151	20	0	2	201	564
4:45 PM	30	12	6	0	0	48	23	7	36	0	0	66	11	202	47	2	0	262	29	138	21	0	3	188	564
Hourly Total	132	45	13	0	2	190	120	35	152	0	1	307	33	810	194	4	3	1041	110	648	80	0	6	838	2376
5:00 PM	35	14	5	1	0	55	37	8	37	0	1	82	10	217	53	1	5	281	38	198	16	0	1	252	670
5:15 PM	32	13	7	0	1	52	41	16	39	0	0	96	10	198	39	2	2	249	35	167	15	1	0	218	615

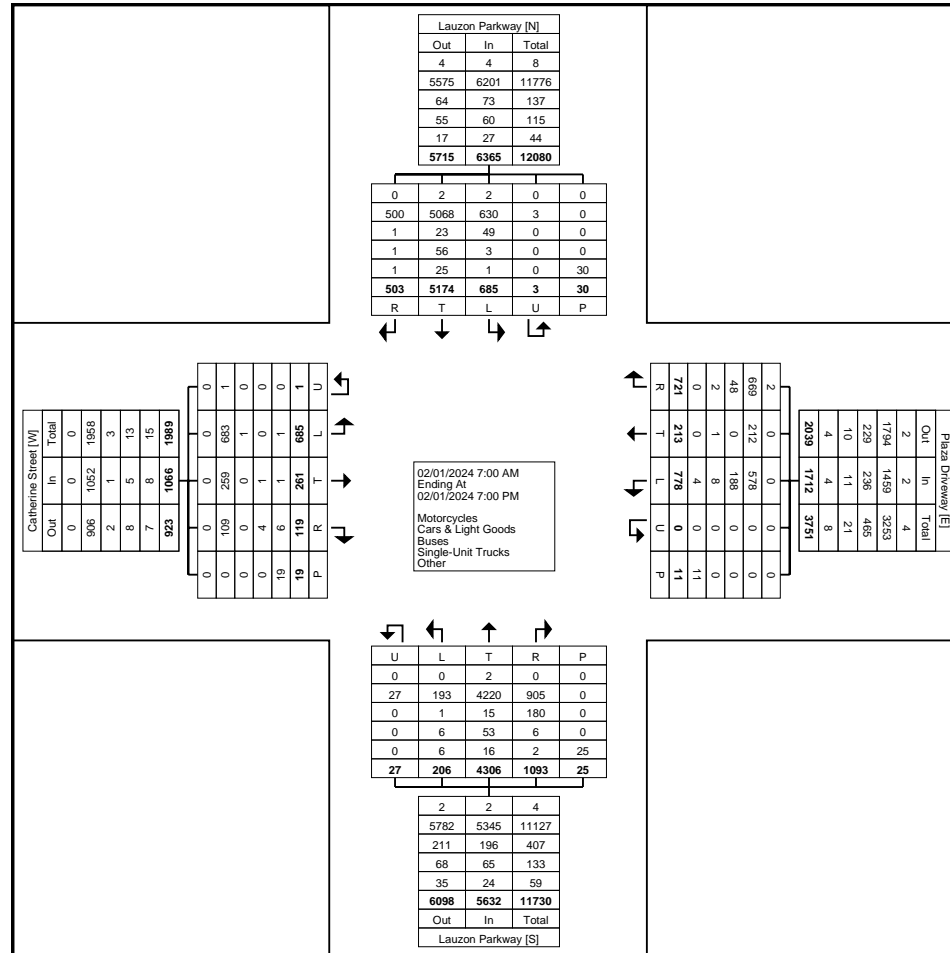
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5:45 PM	33	10	4	0	1	47	31	10	31	0	0	72	8	189	39	2	2	238	22	101	11	0	3	134	491
Hourly Total	132	47	22	1	2	202	146	45	139	0	1	330	35	811	182	5	10	1033	117	624	59	1	7	801	2366
6:00 PM	25	13	4	0	0	42	30	5	35	0	0	70	9	180	34	0	0	223	39	174	22	0	3	235	570
6:15 PM	27	7	4	0	1	38	31	8	34	0	0	73	4	208	30	0	0	242	23	140	11	0	1	174	527
6:30 PM	22	4	1	0	1	27	36	8	38	0	0	82	10	184	35	1	0	230	32	145	15	0	1	192	531
6:45 PM	22	8	3	0	0	33	26	5	8	0	0	39	4	175	31	1	0	211	27	126	16	0	3	169	452
Hourly Total	96	32	12	0	2	140	123	26	115	0	0	264	27	747	130	2	0	906	121	585	64	0	8	770	2080
Grand Total	685	261	119	1	19	1066	778	213	721	0	11	1712	206	4306	1093	27	25	5632	685	5174	503	3	30	6365	14775
Approach %	64.3	24.5	11.2	0.1	-	-	45.4	12.4	42.1	0.0	-	-	3.7	76.5	19.4	0.5	-	-	10.8	81.3	7.9	0.0	-	-	-
Total %	4.6	1.8	0.8	0.0	-	7.2	5.3	1.4	4.9	0.0	-	11.6	1.4	29.1	7.4	0.2	-	38.1	4.6	35.0	3.4	0.0	-	43.1	-
Motorcycles	0	0	0	0	-	0	0	0	2	0	-	2	0	2	0	0	-	2	2	2	0	0	-	4	8
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.3	-	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.3	0.0	0.0	0.0	-	0.1	0.1
Cars & Light Goods	683	259	109	1	-	1052	578	212	669	0	-	1459	193	4220	905	27	-	5345	630	5068	500	3	-	6201	14057
% Cars & Light Goods	99.7	99.2	91.6	100.0	-	98.7	74.3	99.5	92.8	-	-	85.2	93.7	98.0	82.8	100.0	-	94.9	92.0	98.0	99.4	100.0	-	97.4	95.1
Buses	1	0	0	0	-	1	188	0	48	0	-	236	1	15	180	0	-	196	49	23	1	0	-	73	506
% Buses	0.1	0.0	0.0	0.0	-	0.1	24.2	0.0	6.7	-	-	13.8	0.5	0.3	16.5	0.0	-	3.5	7.2	0.4	0.2	0.0	-	1.1	3.4
Single-Unit Trucks	0	1	4	0	-	5	8	1	2	0	-	11	6	53	6	0	-	65	3	56	1	0	-	60	141
% Single-Unit Trucks	0.0	0.4	3.4	0.0	-	0.5	1.0	0.5	0.3	-	-	0.6	2.9	1.2	0.5	0.0	-	1.2	0.4	1.1	0.2	0.0	-	0.9	1.0
Articulated Trucks	1	0	6	0	-	7	3	0	0	0	-	3	6	16	1	0	-	23	1	24	1	0	-	26	59
% Articulated Trucks	0.1	0.0	5.0	0.0	-	0.7	0.4	0.0	0.0	-	-	0.2	2.9	0.4	0.1	0.0	-	0.4	0.1	0.5	0.2	0.0	-	0.4	0.4
Bicycles on Road	0	1	0	0	-	1	1	0	0	0	-	1	0	0	1	0	-	1	0	1	0	0	-	1	4
% Bicycles on Road	0.0	0.4	0.0	0.0	-	0.1	0.1	0.0	0.0	-	-	0.1	0.0	0.0	0.1	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	15.8	-	-	-	-	-	18.2	-	-	-	-	-	12.0	-	-	-	-	-	3.3	-	-
Pedestrians	-	-	-	-	16	-	-	-	-	-	9	-	-	-	-	-	22	-	-	-	-	-	29	-	-
% Pedestrians	-	-	-	-	84.2	-	-	-	-	-	81.8	-	-	-	-	-	88.0	-	-	-	-	-	96.7	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Lauzon Parkway & Catherine Street
Site Code: 230538
Start Date: 02/01/2024
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts1.com

Count Name: Lauzon Parkway & Catherine Street
Site Code: 230538
Start Date: 02/01/2024
Page No: 4

Turning Movement Peak Hour Data (8:30 AM)

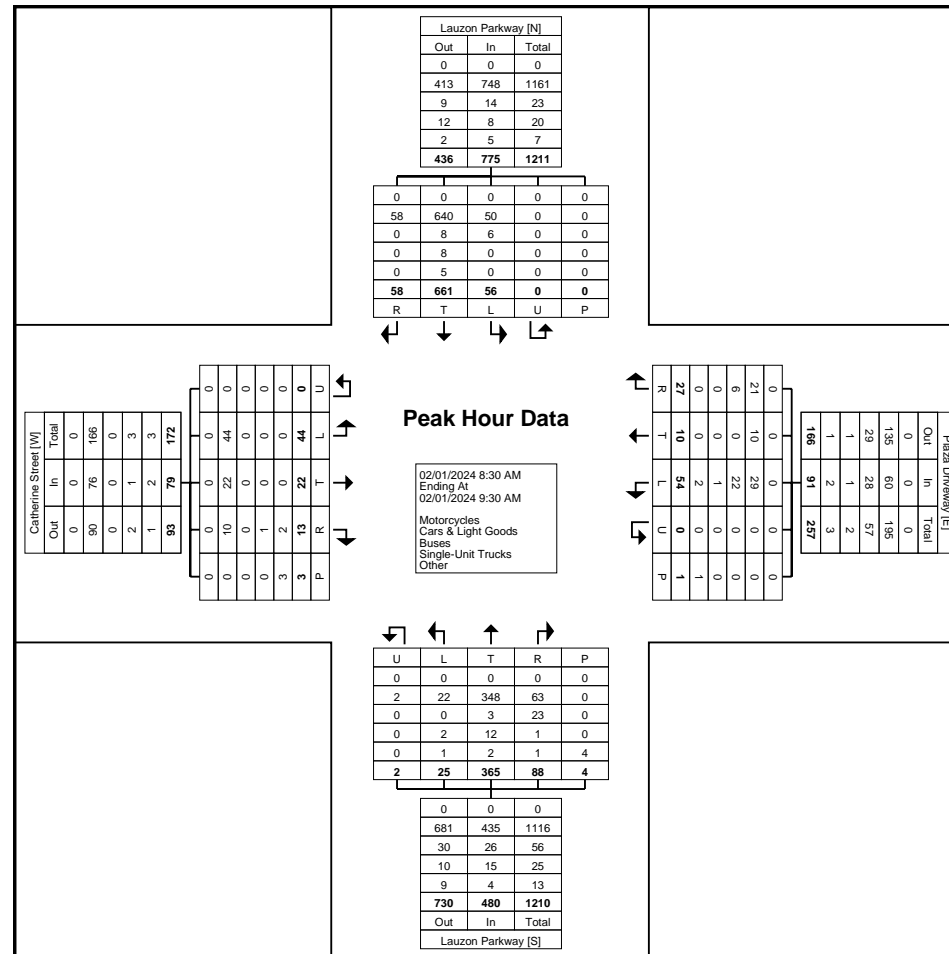
Start Time	Catherine Street Eastbound						Plaza Driveway Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:30 AM	10	3	4	0	1	17	8	0	6	0	0	14	8	78	12	0	0	98	13	217	11	0	0	241	370
8:45 AM	11	4	1	0	0	16	16	3	8	0	0	27	9	103	24	1	0	137	10	193	15	0	0	218	398
9:00 AM	7	6	4	0	0	17	16	1	7	0	0	24	3	91	23	1	0	118	18	141	17	0	0	176	335
9:15 AM	16	9	4	0	2	29	14	6	6	0	1	26	5	93	29	0	4	127	15	110	15	0	0	140	322
Total	44	22	13	0	3	79	54	10	27	0	1	91	25	365	88	2	4	480	56	661	58	0	0	775	1425
Approach %	55.7	27.8	16.5	0.0	-	-	59.3	11.0	29.7	0.0	-	-	5.2	76.0	18.3	0.4	-	-	7.2	85.3	7.5	0.0	-	-	-
Total %	3.1	1.5	0.9	0.0	-	5.5	3.8	0.7	1.9	0.0	-	6.4	1.8	25.6	6.2	0.1	-	33.7	3.9	46.4	4.1	0.0	-	54.4	-
PHF	0.688	0.611	0.813	0.000	-	0.681	0.844	0.417	0.844	0.000	-	0.843	0.694	0.886	0.759	0.500	-	0.876	0.778	0.762	0.853	0.000	-	0.804	0.895
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	44	22	10	0	-	76	29	10	21	0	-	60	22	348	63	2	-	435	50	640	58	0	-	748	1319
% Cars & Light Goods	100.0	100.0	76.9	-	-	96.2	53.7	100.0	77.8	-	-	65.9	88.0	95.3	71.6	100.0	-	90.6	89.3	96.8	100.0	-	-	96.5	92.6
Buses	0	0	0	0	-	0	22	0	6	0	-	28	0	3	23	0	-	26	6	8	0	0	-	14	68
% Buses	0.0	0.0	0.0	-	-	0.0	40.7	0.0	22.2	-	-	30.8	0.0	0.8	26.1	0.0	-	5.4	10.7	1.2	0.0	-	-	1.8	4.8
Single-Unit Trucks	0	0	1	0	-	1	1	0	0	0	-	1	2	12	1	0	-	15	0	8	0	0	-	8	25
% Single-Unit Trucks	0.0	0.0	7.7	-	-	1.3	1.9	0.0	0.0	-	-	1.1	8.0	3.3	1.1	0.0	-	3.1	0.0	1.2	0.0	-	-	1.0	1.8
Articulated Trucks	0	0	2	0	-	2	1	0	0	0	-	1	1	2	1	0	-	4	0	5	0	0	-	5	12
% Articulated Trucks	0.0	0.0	15.4	-	-	2.5	1.9	0.0	0.0	-	-	1.1	4.0	0.5	1.1	0.0	-	0.8	0.0	0.8	0.0	-	-	0.6	0.8
Bicycles on Road	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	1.9	0.0	0.0	-	-	1.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Lauzon Parkway & Catherine Street
Site Code: 230538
Start Date: 02/01/2024
Page No: 5



Turning Movement Peak Hour Data Plot (8:30 AM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Lauzon Parkway & Catherine Street
Site Code: 230538
Start Date: 02/01/2024
Page No: 6

Turning Movement Peak Hour Data (12:00 PM)

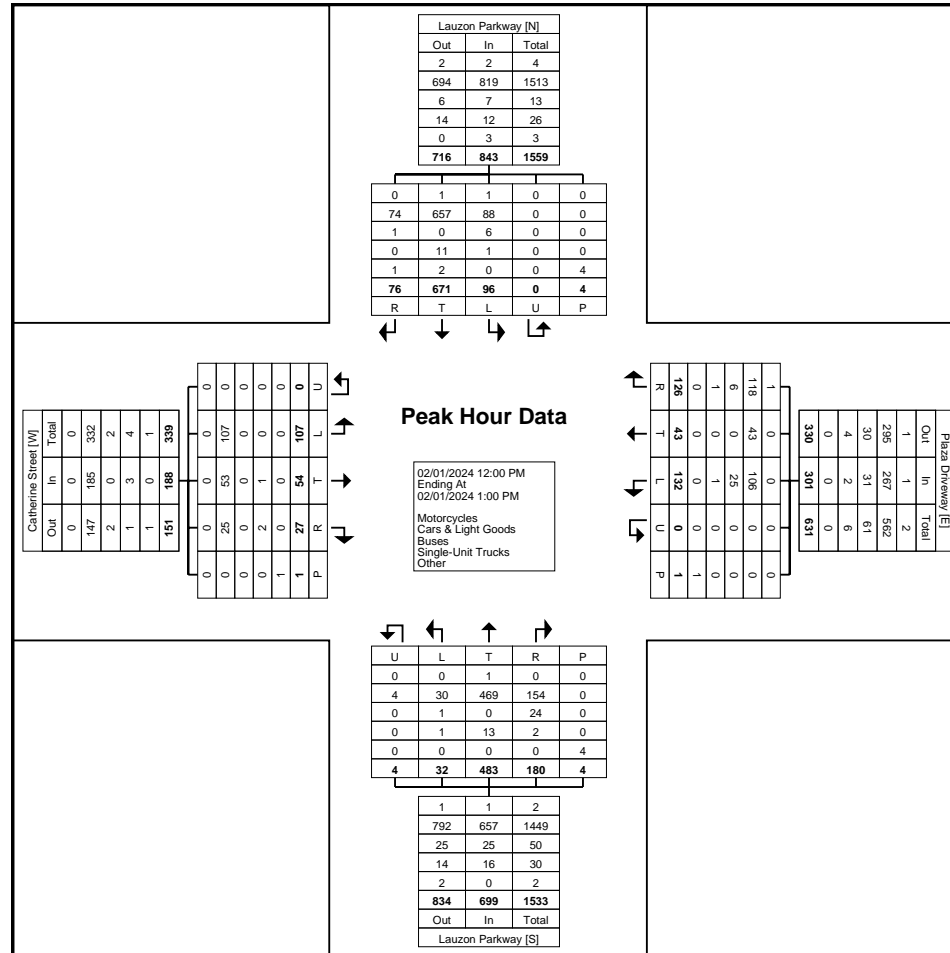
Start Time	Catherine Street Eastbound						Plaza Driveway Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	19	11	7	0	1	37	32	7	31	0	0	70	7	144	45	1	1	197	24	189	22	0	1	235	539
12:15 PM	28	16	3	0	0	47	30	14	27	0	1	71	12	107	44	1	2	164	29	165	23	0	0	217	499
12:30 PM	22	14	8	0	0	44	32	9	27	0	0	68	8	109	35	2	0	154	22	158	14	0	2	194	460
12:45 PM	38	13	9	0	0	60	38	13	41	0	0	92	5	123	56	0	1	184	21	159	17	0	1	197	533
Total	107	54	27	0	1	188	132	43	126	0	1	301	32	483	180	4	4	699	96	671	76	0	4	843	2031
Approach %	56.9	28.7	14.4	0.0	-	-	43.9	14.3	41.9	0.0	-	-	4.6	69.1	25.8	0.6	-	-	11.4	79.6	9.0	0.0	-	-	-
Total %	5.3	2.7	1.3	0.0	-	9.3	6.5	2.1	6.2	0.0	-	14.8	1.6	23.8	8.9	0.2	-	34.4	4.7	33.0	3.7	0.0	-	41.5	-
PHF	0.704	0.844	0.750	0.000	-	0.783	0.868	0.768	0.768	0.000	-	0.818	0.667	0.839	0.804	0.500	-	0.887	0.828	0.888	0.826	0.000	-	0.897	0.942
Motorcycles	0	0	0	0	-	0	0	0	1	0	-	1	0	1	0	0	-	1	1	1	0	0	-	2	4
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.8	-	-	0.3	0.0	0.2	0.0	0.0	-	0.1	1.0	0.1	0.0	-	-	0.2	0.2
Cars & Light Goods	107	53	25	0	-	185	106	43	118	0	-	267	30	469	154	4	-	657	88	657	74	0	-	819	1928
% Cars & Light Goods	100.0	98.1	92.6	-	-	98.4	80.3	100.0	93.7	-	-	88.7	93.8	97.1	85.6	100.0	-	94.0	91.7	97.9	97.4	-	-	97.2	94.9
Buses	0	0	0	0	-	0	25	0	6	0	-	31	1	0	24	0	-	25	6	0	1	0	-	7	63
% Buses	0.0	0.0	0.0	-	-	0.0	18.9	0.0	4.8	-	-	10.3	3.1	0.0	13.3	0.0	-	3.6	6.3	0.0	1.3	-	-	0.8	3.1
Single-Unit Trucks	0	1	2	0	-	3	1	0	1	0	-	2	1	13	2	0	-	16	1	11	0	0	-	12	33
% Single-Unit Trucks	0.0	1.9	7.4	-	-	1.6	0.8	0.0	0.8	-	-	0.7	3.1	2.7	1.1	0.0	-	2.3	1.0	1.6	0.0	-	-	1.4	1.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	2	1	0	-	3	3
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	1.3	-	-	0.4	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	25.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	75.0	-	-



Paradigm Transportation Solutions Limited
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Count Name: Lauzon Parkway & Catherine Street
Site Code: 230538
Start Date: 02/01/2024
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Turning Movement Peak Hour Data Plot (12:00 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Lauzon Parkway & Catherine Street
Site Code: 230538
Start Date: 02/01/2024
Page No: 8

Turning Movement Peak Hour Data (4:45 PM)

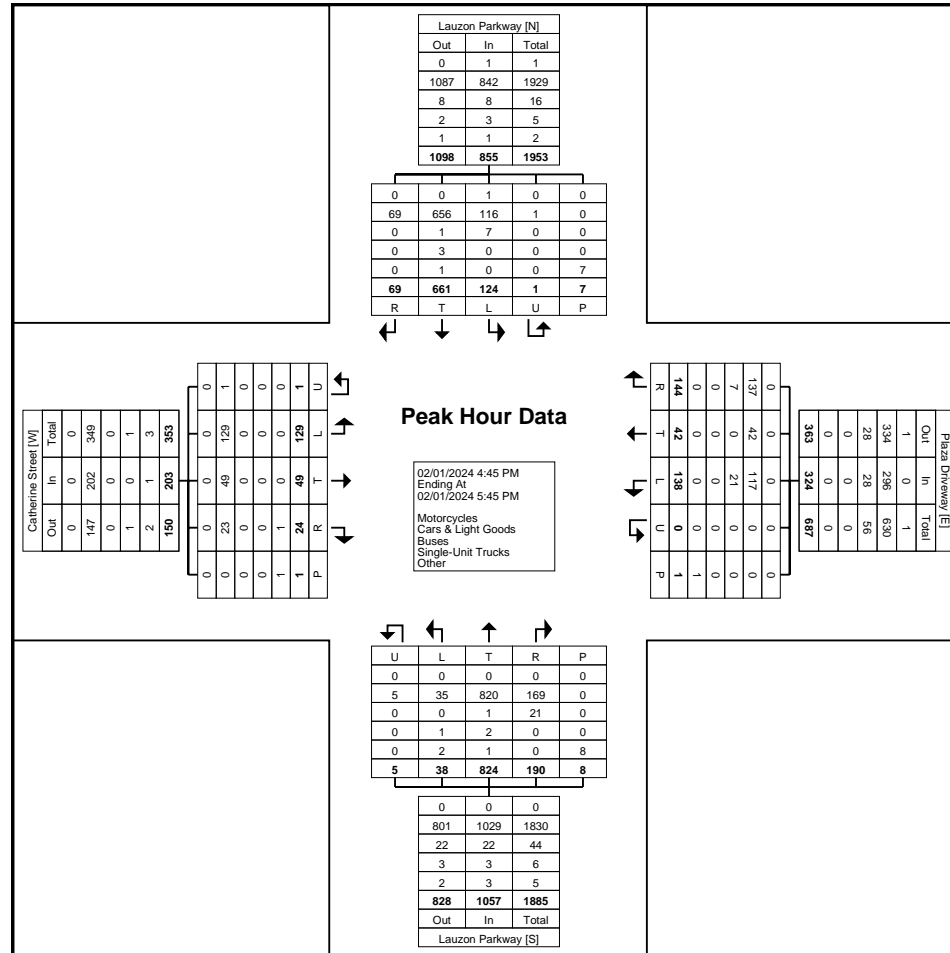
Start Time	Catherine Street Eastbound						Plaza Driveway Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:45 PM	30	12	6	0	0	48	23	7	36	0	0	66	11	202	47	2	0	262	29	138	21	0	3	188	564
5:00 PM	35	14	5	1	0	55	37	8	37	0	1	82	10	217	53	1	5	281	38	198	16	0	1	252	670
5:15 PM	32	13	7	0	1	52	41	16	39	0	0	96	10	198	39	2	2	249	35	167	15	1	0	218	615
5:30 PM	32	10	6	0	0	48	37	11	32	0	0	80	7	207	51	0	1	265	22	158	17	0	3	197	590
Total	129	49	24	1	1	203	138	42	144	0	1	324	38	824	190	5	8	1057	124	661	69	1	7	855	2439
Approach %	63.5	24.1	11.8	0.5	-	-	42.6	13.0	44.4	0.0	-	-	3.6	78.0	18.0	0.5	-	-	14.5	77.3	8.1	0.1	-	-	-
Total %	5.3	2.0	1.0	0.0	-	8.3	5.7	1.7	5.9	0.0	-	13.3	1.6	33.8	7.8	0.2	-	43.3	5.1	27.1	2.8	0.0	-	35.1	-
PHF	0.921	0.875	0.857	0.250	-	0.923	0.841	0.656	0.923	0.000	-	0.844	0.864	0.949	0.896	0.625	-	0.940	0.816	0.835	0.821	0.250	-	0.848	0.910
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	1
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.8	0.0	0.0	0.0	-	0.1	0.0
Cars & Light Goods	129	49	23	1	-	202	117	42	137	0	-	296	35	820	169	5	-	1029	116	656	69	1	-	842	2369
% Cars & Light Goods	100.0	100.0	95.8	100.0	-	99.5	84.8	100.0	95.1	-	-	91.4	92.1	99.5	88.9	100.0	-	97.4	93.5	99.2	100.0	100.0	-	98.5	97.1
Buses	0	0	0	0	-	0	21	0	7	0	-	28	0	1	21	0	-	22	7	1	0	0	-	8	58
% Buses	0.0	0.0	0.0	0.0	-	0.0	15.2	0.0	4.9	-	-	8.6	0.0	0.1	11.1	0.0	-	2.1	5.6	0.2	0.0	0.0	-	0.9	2.4
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	1	2	0	0	-	3	0	3	0	0	-	3	6
% Single-Unit Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	2.6	0.2	0.0	0.0	-	0.3	0.0	0.5	0.0	0.0	-	0.4	0.2
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	2	1	0	0	-	3	0	1	0	0	-	1	5
% Articulated Trucks	0.0	0.0	4.2	0.0	-	0.5	0.0	0.0	0.0	-	-	0.0	5.3	0.1	0.0	0.0	-	0.3	0.0	0.2	0.0	0.0	-	0.1	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	12.5	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	87.5	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
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Count Name: Lauzon Parkway & Catherine Street
Site Code: 230538
Start Date: 02/01/2024
Page No: 9



Turning Movement Peak Hour Data Plot (4:45 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Tecumseh Road & Rose Ville
Garden Drive
Site Code: 230538
Start Date: 02/01/2024
Page No: 1

Turning Movement Data

Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Rose Ville Garden Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	141	3	1	0	145	8	124	0	0	132	4	11	0	1	15	292
7:15 AM	159	5	2	0	166	10	151	0	0	161	3	7	0	2	10	337
7:30 AM	171	2	1	0	174	16	208	0	0	224	5	15	0	1	20	418
7:45 AM	213	7	0	0	220	25	251	0	1	276	6	11	0	3	17	513
Hourly Total	684	17	4	0	705	59	734	0	1	793	18	44	0	7	62	1560
8:00 AM	170	4	0	0	174	15	241	0	1	256	9	21	1	2	31	461
8:15 AM	187	5	2	1	194	14	229	1	2	244	11	26	0	1	37	475
8:30 AM	221	8	0	1	229	23	267	2	0	292	17	19	0	0	36	557
8:45 AM	234	18	4	0	256	24	237	0	0	261	16	35	0	3	51	568
Hourly Total	812	35	6	2	853	76	974	3	3	1053	53	101	1	6	155	2061
9:00 AM	229	11	3	0	243	23	215	0	1	238	12	34	0	3	46	527
9:15 AM	265	8	2	2	275	22	202	1	4	225	11	24	0	4	35	535
9:30 AM	225	7	5	0	237	36	250	0	1	286	14	19	0	2	33	556
9:45 AM	204	13	1	0	218	24	219	2	0	245	15	26	0	0	41	504
Hourly Total	923	39	11	2	973	105	886	3	6	994	52	103	0	9	155	2122
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	276	12	2	2	290	43	259	1	1	303	17	45	0	8	62	655
11:45 AM	331	15	3	3	349	48	249	1	4	298	27	41	0	7	68	715
Hourly Total	607	27	5	5	639	91	508	2	5	601	44	86	0	15	130	1370
12:00 PM	316	15	3	0	334	45	246	2	4	293	46	46	0	4	92	719
12:15 PM	345	31	3	0	379	43	253	3	0	299	34	48	0	3	82	760
12:30 PM	307	15	3	2	325	30	308	3	2	341	33	49	0	0	82	748
12:45 PM	362	9	2	1	373	31	258	1	4	290	29	38	0	4	67	730
Hourly Total	1330	70	11	3	1411	149	1065	9	10	1223	142	181	0	11	323	2957
1:00 PM	341	19	0	2	360	53	314	1	0	368	35	41	0	1	76	804
1:15 PM	347	23	2	2	372	44	320	2	1	366	36	40	0	1	76	814
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	688	42	2	4	732	97	634	3	1	734	71	81	0	2	152	1618
4:00 PM	404	26	0	2	430	34	304	2	3	340	20	39	0	7	59	829
4:15 PM	404	11	1	1	416	26	255	1	1	282	31	61	0	10	92	790
4:30 PM	345	13	2	3	360	48	303	1	1	352	26	34	0	3	60	772
4:45 PM	271	10	3	0	284	53	276	3	1	332	22	45	0	4	67	683
Hourly Total	1424	60	6	6	1490	161	1138	7	6	1306	99	179	0	24	278	3074
5:00 PM	448	17	2	0	467	48	312	1	0	361	28	61	0	2	89	917
5:15 PM	448	22	6	0	476	49	272	0	1	321	24	47	0	4	71	868
5:30 PM	352	11	2	0	365	40	291	1	0	332	30	40	0	1	70	767

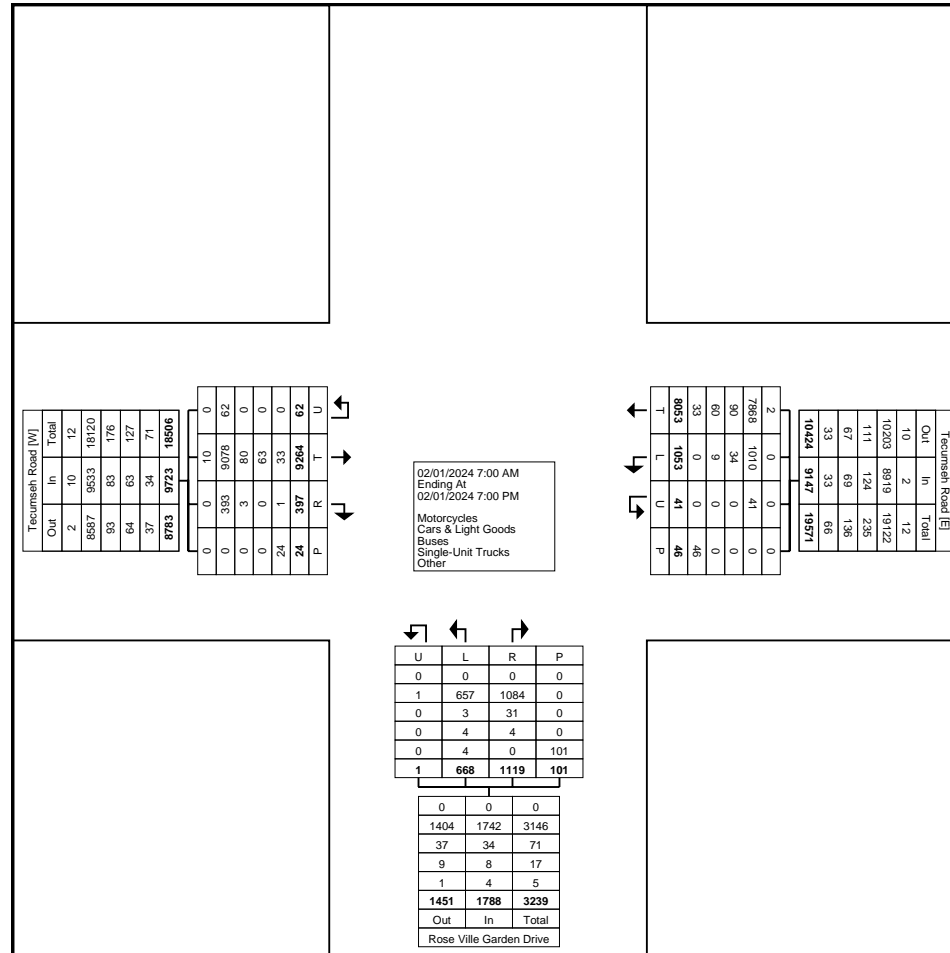
5:45 PM	269	13	3	0	285	47	261	5	5	313	27	42	0	7	69	667
Hourly Total	1517	63	13	0	1593	184	1136	7	6	1327	109	190	0	14	299	3219
6:00 PM	378	13	0	1	391	34	259	0	4	293	18	38	0	5	56	740
6:15 PM	346	7	1	1	354	33	269	1	1	303	16	42	0	2	58	715
6:30 PM	299	9	2	0	310	31	234	2	3	267	24	35	0	5	59	636
6:45 PM	256	15	1	0	272	33	216	4	0	253	22	39	0	1	61	586
Hourly Total	1279	44	4	2	1327	131	978	7	8	1116	80	154	0	13	234	2677
Grand Total	9264	397	62	24	9723	1053	8053	41	46	9147	668	1119	1	101	1788	20658
Approach %	95.3	4.1	0.6	-	-	11.5	88.0	0.4	-	-	37.4	62.6	0.1	-	-	-
Total %	44.8	1.9	0.3	-	47.1	5.1	39.0	0.2	-	44.3	3.2	5.4	0.0	-	8.7	-
Motorcycles	10	0	0	-	10	0	2	0	-	2	0	0	0	-	0	12
% Motorcycles	0.1	0.0	0.0	-	0.1	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1
Cars & Light Goods	9078	393	62	-	9533	1010	7868	41	-	8919	657	1084	1	-	1742	20194
% Cars & Light Goods	98.0	99.0	100.0	-	98.0	95.9	97.7	100.0	-	97.5	98.4	96.9	100.0	-	97.4	97.8
Buses	80	3	0	-	83	34	90	0	-	124	3	31	0	-	34	241
% Buses	0.9	0.8	0.0	-	0.9	3.2	1.1	0.0	-	1.4	0.4	2.8	0.0	-	1.9	1.2
Single-Unit Trucks	63	0	0	-	63	9	60	0	-	69	4	4	0	-	8	140
% Single-Unit Trucks	0.7	0.0	0.0	-	0.6	0.9	0.7	0.0	-	0.8	0.6	0.4	0.0	-	0.4	0.7
Articulated Trucks	31	0	0	-	31	0	31	0	-	31	4	0	0	-	4	66
% Articulated Trucks	0.3	0.0	0.0	-	0.3	0.0	0.4	0.0	-	0.3	0.6	0.0	0.0	-	0.2	0.3
Bicycles on Road	2	1	0	-	3	0	2	0	-	2	0	0	0	-	0	5
% Bicycles on Road	0.0	0.3	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	4	-	-	-	-	11	-	-
% Bicycles on Crosswalk	-	-	-	4.2	-	-	-	-	8.7	-	-	-	-	10.9	-	-
Pedestrians	-	-	-	23	-	-	-	-	42	-	-	-	-	90	-	-
% Pedestrians	-	-	-	95.8	-	-	-	-	91.3	-	-	-	-	89.1	-	-



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Count Name: Tecumseh Road & Rose Ville
Garden Drive
Site Code: 230538
Start Date: 02/01/2024
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Tecumseh Road & Rose Ville
Garden Drive
Site Code: 230538
Start Date: 02/01/2024
Page No: 4

Turning Movement Peak Hour Data (8:30 AM)

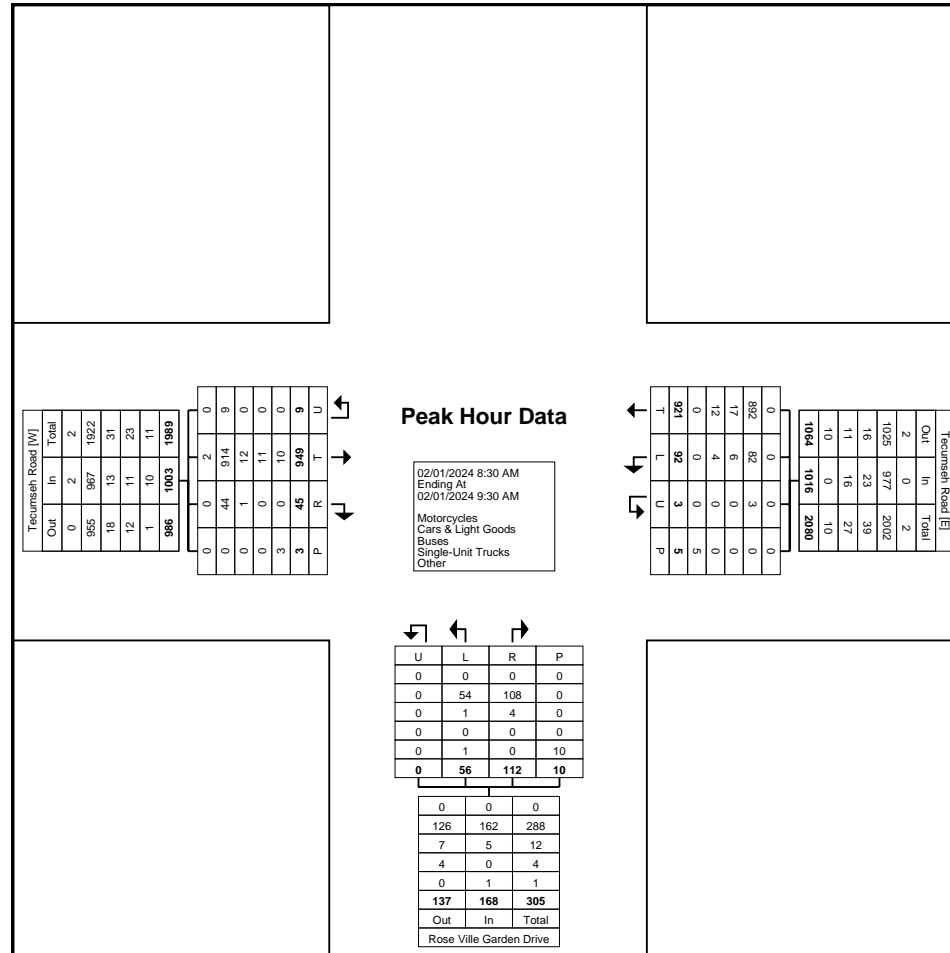
Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Rose Ville Garden Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
8:30 AM	221	8	0	1	229	23	267	2	0	292	17	19	0	0	36	557
8:45 AM	234	18	4	0	256	24	237	0	0	261	16	35	0	3	51	568
9:00 AM	229	11	3	0	243	23	215	0	1	238	12	34	0	3	46	527
9:15 AM	265	8	2	2	275	22	202	1	4	225	11	24	0	4	35	535
Total	949	45	9	3	1003	92	921	3	5	1016	56	112	0	10	168	2187
Approach %	94.6	4.5	0.9	-	-	9.1	90.6	0.3	-	-	33.3	66.7	0.0	-	-	-
Total %	43.4	2.1	0.4	-	45.9	4.2	42.1	0.1	-	46.5	2.6	5.1	0.0	-	7.7	-
PHF	0.895	0.625	0.563	-	0.912	0.958	0.862	0.375	-	0.870	0.824	0.800	0.000	-	0.824	0.963
Motorcycles	2	0	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Motorcycles	0.2	0.0	0.0	-	0.2	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	914	44	9	-	967	82	892	3	-	977	54	108	0	-	162	2106
% Cars & Light Goods	96.3	97.8	100.0	-	96.4	89.1	96.9	100.0	-	96.2	96.4	96.4	-	-	96.4	96.3
Buses	12	1	0	-	13	6	17	0	-	23	1	4	0	-	5	41
% Buses	1.3	2.2	0.0	-	1.3	6.5	1.8	0.0	-	2.3	1.8	3.6	-	-	3.0	1.9
Single-Unit Trucks	11	0	0	-	11	4	12	0	-	16	0	0	0	-	0	27
% Single-Unit Trucks	1.2	0.0	0.0	-	1.1	4.3	1.3	0.0	-	1.6	0.0	0.0	-	-	0.0	1.2
Articulated Trucks	10	0	0	-	10	0	0	0	-	0	1	0	0	-	1	11
% Articulated Trucks	1.1	0.0	0.0	-	1.0	0.0	0.0	0.0	-	0.0	1.8	0.0	-	-	0.6	0.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	20.0	-	-	-	-	10.0	-	-
Pedestrians	-	-	-	3	-	-	-	-	4	-	-	-	-	9	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	80.0	-	-	-	-	90.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Tecumseh Road & Rose Ville
Garden Drive
Site Code: 230538
Start Date: 02/01/2024
Page No: 5



Turning Movement Peak Hour Data Plot (8:30 AM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Tecumseh Road & Rose Ville
Garden Drive
Site Code: 230538
Start Date: 02/01/2024
Page No: 6

Turning Movement Peak Hour Data (12:30 PM)

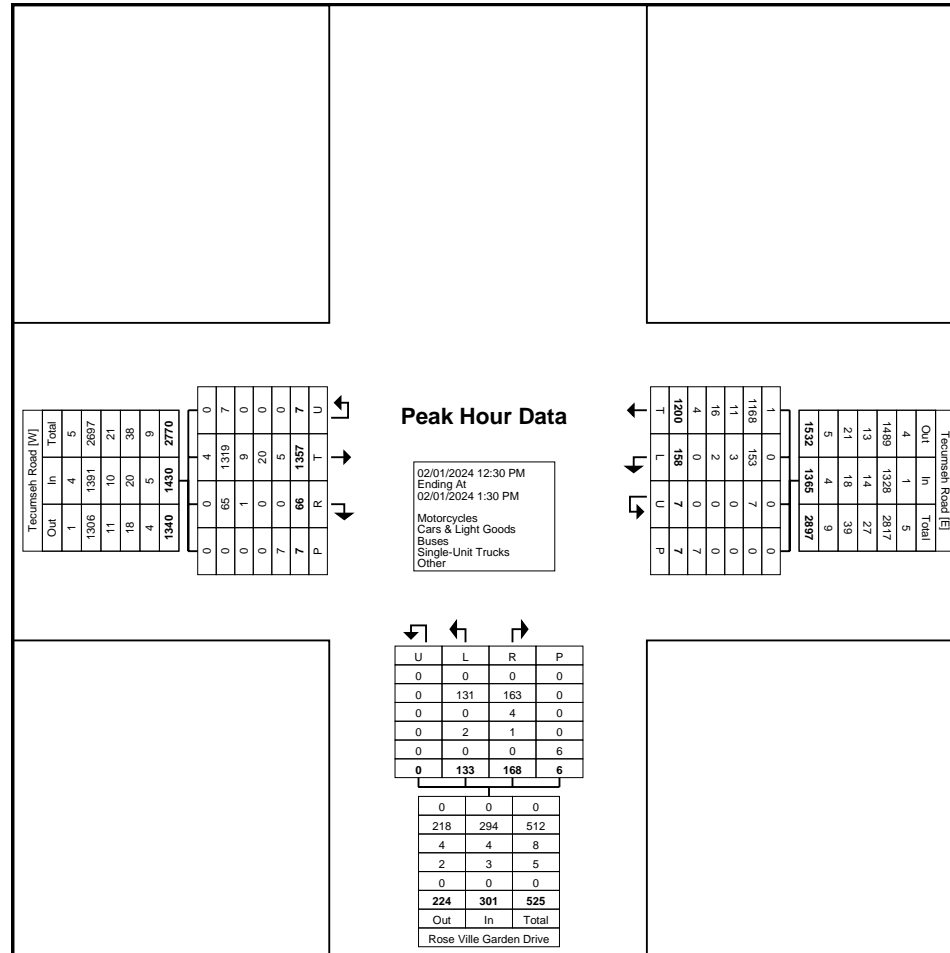
Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Rose Ville Garden Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
12:30 PM	307	15	3	2	325	30	308	3	2	341	33	49	0	0	82	748
12:45 PM	362	9	2	1	373	31	258	1	4	290	29	38	0	4	67	730
1:00 PM	341	19	0	2	360	53	314	1	0	368	35	41	0	1	76	804
1:15 PM	347	23	2	2	372	44	320	2	1	366	36	40	0	1	76	814
Total	1357	66	7	7	1430	158	1200	7	7	1365	133	168	0	6	301	3096
Approach %	94.9	4.6	0.5	-	-	11.6	87.9	0.5	-	-	44.2	55.8	0.0	-	-	-
Total %	43.8	2.1	0.2	-	46.2	5.1	38.8	0.2	-	44.1	4.3	5.4	0.0	-	9.7	-
PHF	0.937	0.717	0.583	-	0.958	0.745	0.938	0.583	-	0.927	0.924	0.857	0.000	-	0.918	0.951
Motorcycles	4	0	0	-	4	0	1	0	-	1	0	0	0	-	0	5
% Motorcycles	0.3	0.0	0.0	-	0.3	0.0	0.1	0.0	-	0.1	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	1319	65	7	-	1391	153	1168	7	-	1328	131	163	0	-	294	3013
% Cars & Light Goods	97.2	98.5	100.0	-	97.3	96.8	97.3	100.0	-	97.3	98.5	97.0	-	-	97.7	97.3
Buses	9	1	0	-	10	3	11	0	-	14	0	4	0	-	4	28
% Buses	0.7	1.5	0.0	-	0.7	1.9	0.9	0.0	-	1.0	0.0	2.4	-	-	1.3	0.9
Single-Unit Trucks	20	0	0	-	20	2	16	0	-	18	2	1	0	-	3	41
% Single-Unit Trucks	1.5	0.0	0.0	-	1.4	1.3	1.3	0.0	-	1.3	1.5	0.6	-	-	1.0	1.3
Articulated Trucks	5	0	0	-	5	0	3	0	-	3	0	0	0	-	0	8
% Articulated Trucks	0.4	0.0	0.0	-	0.3	0.0	0.3	0.0	-	0.2	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	-	0.1	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	14.3	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	7	-	-	-	-	6	-	-	-	-	6	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	85.7	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Tecumseh Road & Rose Ville
Garden Drive
Site Code: 230538
Start Date: 02/01/2024
Page No: 7



Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Tecumseh Road & Rose Ville
Garden Drive
Site Code: 230538
Start Date: 02/01/2024
Page No: 8

Turning Movement Peak Hour Data (4:30 PM)

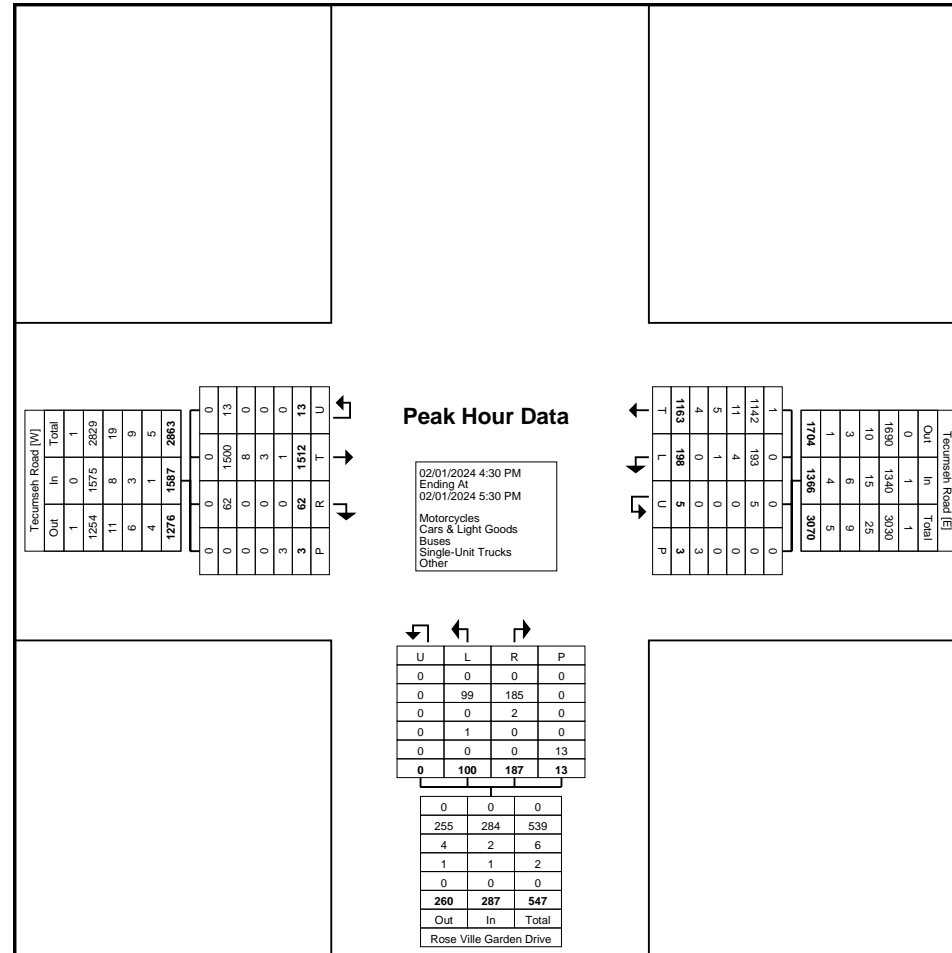
Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Rose Ville Garden Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
4:30 PM	345	13	2	3	360	48	303	1	1	352	26	34	0	3	60	772
4:45 PM	271	10	3	0	284	53	276	3	1	332	22	45	0	4	67	683
5:00 PM	448	17	2	0	467	48	312	1	0	361	28	61	0	2	89	917
5:15 PM	448	22	6	0	476	49	272	0	1	321	24	47	0	4	71	868
Total	1512	62	13	3	1587	198	1163	5	3	1366	100	187	0	13	287	3240
Approach %	95.3	3.9	0.8	-	-	14.5	85.1	0.4	-	-	34.8	65.2	0.0	-	-	-
Total %	46.7	1.9	0.4	-	49.0	6.1	35.9	0.2	-	42.2	3.1	5.8	0.0	-	8.9	-
PHF	0.844	0.705	0.542	-	0.834	0.934	0.932	0.417	-	0.946	0.893	0.766	0.000	-	0.806	0.883
Motorcycles	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	-	0.1	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	1500	62	13	-	1575	193	1142	5	-	1340	99	185	0	-	284	3199
% Cars & Light Goods	99.2	100.0	100.0	-	99.2	97.5	98.2	100.0	-	98.1	99.0	98.9	-	-	99.0	98.7
Buses	8	0	0	-	8	4	11	0	-	15	0	2	0	-	2	25
% Buses	0.5	0.0	0.0	-	0.5	2.0	0.9	0.0	-	1.1	0.0	1.1	-	-	0.7	0.8
Single-Unit Trucks	3	0	0	-	3	1	5	0	-	6	1	0	0	-	1	10
% Single-Unit Trucks	0.2	0.0	0.0	-	0.2	0.5	0.4	0.0	-	0.4	1.0	0.0	-	-	0.3	0.3
Articulated Trucks	1	0	0	-	1	0	3	0	-	3	0	0	0	-	0	4
% Articulated Trucks	0.1	0.0	0.0	-	0.1	0.0	0.3	0.0	-	0.2	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	-	0.1	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	15.4	-	-
Pedestrians	-	-	-	3	-	-	-	-	3	-	-	-	-	11	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	84.6	-	-



Paradigm Transportation Solutions Limited
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Count Name: Tecumseh Road & Rose Ville
Garden Drive
Site Code: 230538
Start Date: 02/01/2024
Page No: 9



Turning Movement Peak Hour Data Plot (4:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Tecumseh Road & Rose Ville
Garden Drive - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 1

Turning Movement Data

Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Rose Ville Garden Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
11:00 AM	340	7	3	0	350	31	306	0	0	337	19	24	0	0	43	730
11:15 AM	353	13	3	1	369	40	294	1	2	335	21	38	0	0	59	763
11:30 AM	321	11	2	0	334	37	342	0	2	379	23	42	0	0	65	778
11:45 AM	366	11	0	1	377	45	339	0	3	384	24	33	0	4	57	818
Hourly Total	1380	42	8	2	1430	153	1281	1	7	1435	87	137	0	4	224	3089
12:00 PM	354	19	5	1	378	29	297	0	2	326	25	42	0	1	67	771
12:15 PM	347	19	0	1	366	40	324	0	0	364	28	40	0	2	68	798
12:30 PM	336	19	4	0	359	40	301	1	2	342	29	36	0	3	65	766
12:45 PM	285	11	2	0	298	50	315	1	1	366	36	36	0	3	72	736
Hourly Total	1322	68	11	2	1401	159	1237	2	5	1398	118	154	0	9	272	3071
1:00 PM	332	16	3	0	351	48	367	1	0	416	20	26	0	7	46	813
1:15 PM	372	15	3	2	390	42	307	2	2	351	29	45	0	6	74	815
1:30 PM	330	14	3	0	347	44	307	0	4	351	27	42	0	3	69	767
1:45 PM	390	13	1	2	404	32	324	0	2	356	29	43	0	2	72	832
Hourly Total	1424	58	10	4	1492	166	1305	3	8	1474	105	156	0	18	261	3227
2:00 PM	323	16	3	1	342	51	344	2	4	397	27	37	0	2	64	803
2:15 PM	349	12	4	3	365	39	348	1	1	388	25	42	0	3	67	820
2:30 PM	350	13	1	1	364	37	352	2	1	391	17	32	0	2	49	804
2:45 PM	338	7	1	2	346	49	358	5	6	412	30	31	0	5	61	819
Hourly Total	1360	48	9	7	1417	176	1402	10	12	1588	99	142	0	12	241	3246
Grand Total	5486	216	38	15	5740	654	5225	16	32	5895	409	589	0	43	998	12633
Approach %	95.6	3.8	0.7	-	-	11.1	88.6	0.3	-	-	41.0	59.0	0.0	-	-	-
Total %	43.4	1.7	0.3	-	45.4	5.2	41.4	0.1	-	46.7	3.2	4.7	0.0	-	7.9	-
Motorcycles	2	0	0	-	2	0	1	0	-	1	0	0	0	-	0	3
% Motorcycles	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	5451	214	38	-	5703	645	5189	16	-	5850	407	576	0	-	983	12536
% Cars & Light Goods	99.4	99.1	100.0	-	99.4	98.6	99.3	100.0	-	99.2	99.5	97.8	-	-	98.5	99.2
Buses	13	0	0	-	13	7	12	0	-	19	0	7	0	-	7	39
% Buses	0.2	0.0	0.0	-	0.2	1.1	0.2	0.0	-	0.3	0.0	1.2	-	-	0.7	0.3
Single-Unit Trucks	10	2	0	-	12	1	17	0	-	18	1	3	0	-	4	34
% Single-Unit Trucks	0.2	0.9	0.0	-	0.2	0.2	0.3	0.0	-	0.3	0.2	0.5	-	-	0.4	0.3
Articulated Trucks	9	0	0	-	9	0	6	0	-	6	0	2	0	-	2	17
% Articulated Trucks	0.2	0.0	0.0	-	0.2	0.0	0.1	0.0	-	0.1	0.0	0.3	-	-	0.2	0.1
Bicycles on Road	1	0	0	-	1	1	0	0	-	1	1	1	0	-	2	4
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.2	0.0	0.0	-	0.0	0.2	0.2	-	-	0.2	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	7	-	-

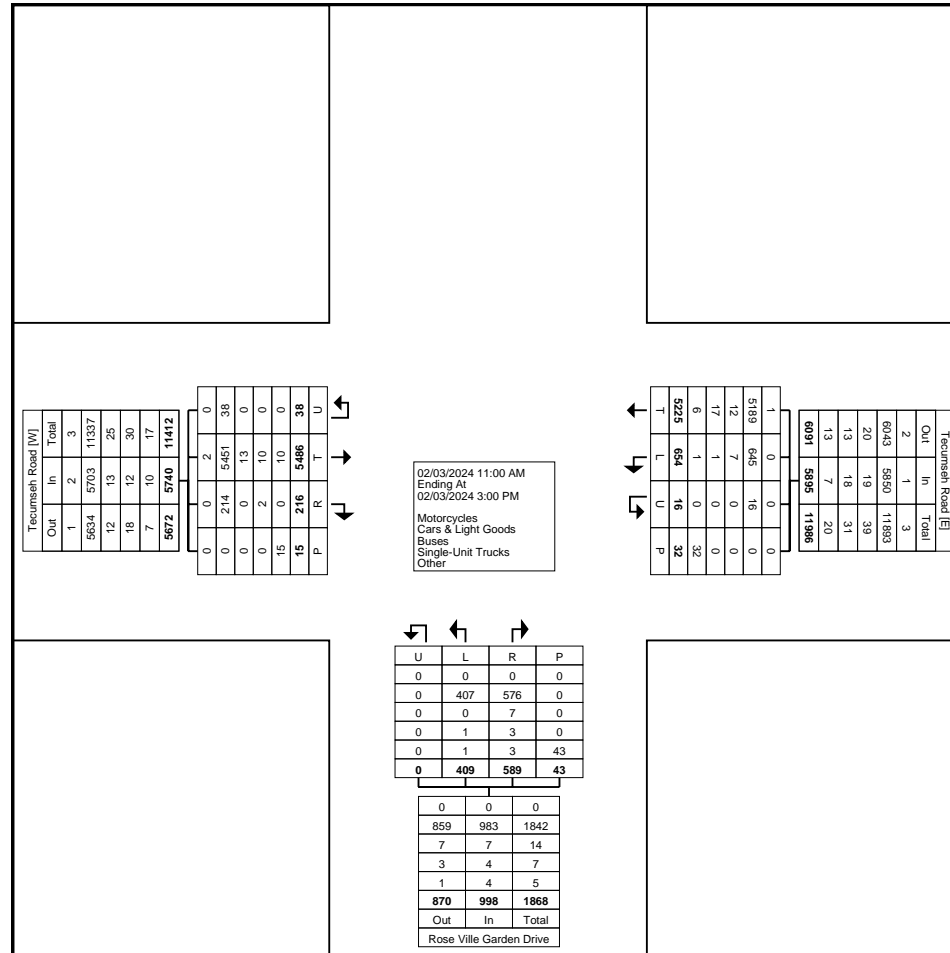
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	16.3	-	-
Pedestrians	-	-	-	15	-	-	-	-	32	-	-	-	-	36	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	83.7	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Tecumseh Road & Rose Ville
Garden Drive - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Tecumseh Road & Rose Ville
Garden Drive - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 4

Turning Movement Peak Hour Data (1:45 PM)

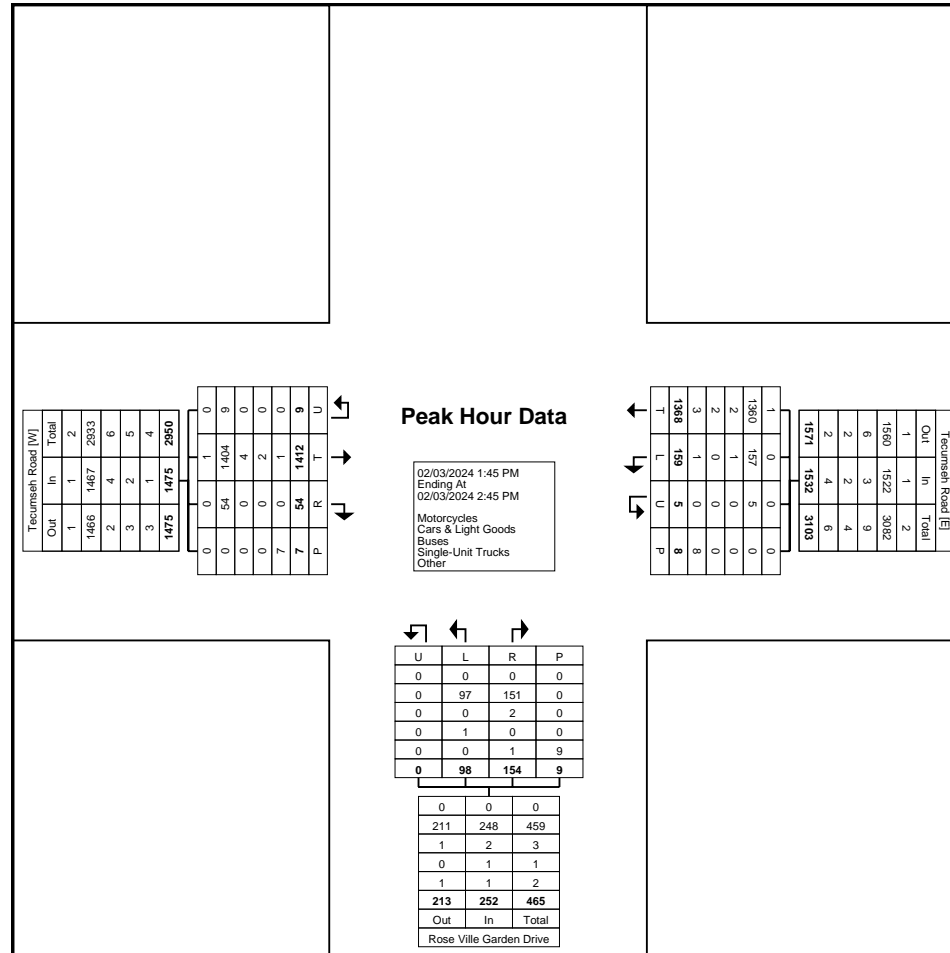
Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Rose Ville Garden Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
1:45 PM	390	13	1	2	404	32	324	0	2	356	29	43	0	2	72	832
2:00 PM	323	16	3	1	342	51	344	2	4	397	27	37	0	2	64	803
2:15 PM	349	12	4	3	365	39	348	1	1	388	25	42	0	3	67	820
2:30 PM	350	13	1	1	364	37	352	2	1	391	17	32	0	2	49	804
Total	1412	54	9	7	1475	159	1368	5	8	1532	98	154	0	9	252	3259
Approach %	95.7	3.7	0.6	-	-	10.4	89.3	0.3	-	-	38.9	61.1	0.0	-	-	-
Total %	43.3	1.7	0.3	-	45.3	4.9	42.0	0.2	-	47.0	3.0	4.7	0.0	-	7.7	-
PHF	0.905	0.844	0.563	-	0.913	0.779	0.972	0.625	-	0.965	0.845	0.895	0.000	-	0.875	0.979
Motorcycles	1	0	0	-	1	0	1	0	-	1	0	0	0	-	0	2
% Motorcycles	0.1	0.0	0.0	-	0.1	0.0	0.1	0.0	-	0.1	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	1404	54	9	-	1467	157	1360	5	-	1522	97	151	0	-	248	3237
% Cars & Light Goods	99.4	100.0	100.0	-	99.5	98.7	99.4	100.0	-	99.3	99.0	98.1	-	-	98.4	99.3
Buses	4	0	0	-	4	1	2	0	-	3	0	2	0	-	2	9
% Buses	0.3	0.0	0.0	-	0.3	0.6	0.1	0.0	-	0.2	0.0	1.3	-	-	0.8	0.3
Single-Unit Trucks	2	0	0	-	2	0	2	0	-	2	1	0	0	-	1	5
% Single-Unit Trucks	0.1	0.0	0.0	-	0.1	0.0	0.1	0.0	-	0.1	1.0	0.0	-	-	0.4	0.2
Articulated Trucks	1	0	0	-	1	0	3	0	-	3	0	0	0	-	0	4
% Articulated Trucks	0.1	0.0	0.0	-	0.1	0.0	0.2	0.0	-	0.2	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	1	0	0	-	1	0	1	0	-	1	2
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.6	0.0	0.0	-	0.1	0.0	0.6	-	-	0.4	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	-	1	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	11.1	-	-
Pedestrians	-	-	-	7	-	-	-	-	8	-	-	-	-	8	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	88.9	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Tecumseh Road & Rose Ville
Garden Drive - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 5



Turning Movement Peak Hour Data Plot (1:45 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Tecumseh Road & Parkview Avenue
Site Code: 230538
Start Date: 02/01/2024
Page No: 1

Turning Movement Data

Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Parkview Avenue Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	0	158	0	0	158	137	0	0	0	137	0	0	0	1	0	295
7:15 AM	0	165	0	0	165	166	0	0	0	166	0	0	0	0	0	331
7:30 AM	0	183	0	0	183	228	0	0	0	228	0	0	0	2	0	411
7:45 AM	0	236	0	0	236	280	0	0	0	280	0	0	0	2	0	516
Hourly Total	0	742	0	0	742	811	0	0	0	811	0	0	0	5	0	1553
8:00 AM	0	186	0	0	186	267	0	0	0	267	0	0	0	1	0	453
8:15 AM	0	214	0	0	214	263	0	0	0	263	0	0	0	2	0	477
8:30 AM	0	232	0	0	232	315	0	0	0	315	0	0	0	2	0	547
8:45 AM	0	266	0	0	266	301	1	0	0	302	0	0	0	2	0	568
Hourly Total	0	898	0	0	898	1146	1	0	0	1147	0	0	0	7	0	2045
9:00 AM	0	264	0	0	264	268	0	0	0	268	0	0	0	0	0	532
9:15 AM	0	280	0	0	280	256	2	0	0	258	0	1	0	2	1	539
9:30 AM	0	239	0	0	239	312	1	0	0	313	0	0	0	1	0	552
9:45 AM	0	231	0	0	231	279	1	0	0	280	0	0	0	1	0	511
Hourly Total	0	1014	0	0	1014	1115	4	0	0	1119	0	1	0	4	1	2134
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	301	0	0	301	333	0	0	0	333	0	2	0	4	2	636
11:45 AM	0	361	0	0	361	332	0	0	0	332	0	1	0	7	1	694
Hourly Total	0	662	0	0	662	665	0	0	0	665	0	3	0	11	3	1330
12:00 PM	0	349	0	0	349	347	3	0	0	350	0	0	0	6	0	699
12:15 PM	0	377	0	0	377	346	1	0	0	347	0	0	0	1	0	724
12:30 PM	0	343	0	0	343	348	0	0	1	348	0	0	0	5	0	691
12:45 PM	0	383	0	0	383	317	1	0	0	318	0	0	0	8	0	701
Hourly Total	0	1452	0	0	1452	1358	5	0	1	1363	0	0	0	20	0	2815
1:00 PM	0	364	0	0	364	358	0	0	0	358	0	0	0	2	0	722
1:15 PM	0	374	0	0	374	375	0	0	0	375	0	1	0	5	1	750
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	738	0	0	738	733	0	0	0	733	0	1	0	7	1	1472
4:00 PM	0	434	0	0	434	378	11	0	0	389	0	2	0	7	2	825
4:15 PM	0	463	0	0	463	327	7	0	0	334	0	0	0	6	0	797
4:30 PM	0	370	0	1	370	377	0	0	0	377	0	0	0	8	0	747
4:45 PM	0	314	0	0	314	353	5	0	0	358	0	0	0	3	0	672
Hourly Total	0	1581	0	1	1581	1435	23	0	0	1458	0	2	0	24	2	3041
5:00 PM	0	493	0	0	493	364	4	0	0	368	0	2	0	3	2	863
5:15 PM	0	495	0	0	495	345	5	0	0	350	0	0	0	3	0	845
5:30 PM	0	409	0	0	409	348	5	0	0	353	0	2	0	5	2	764

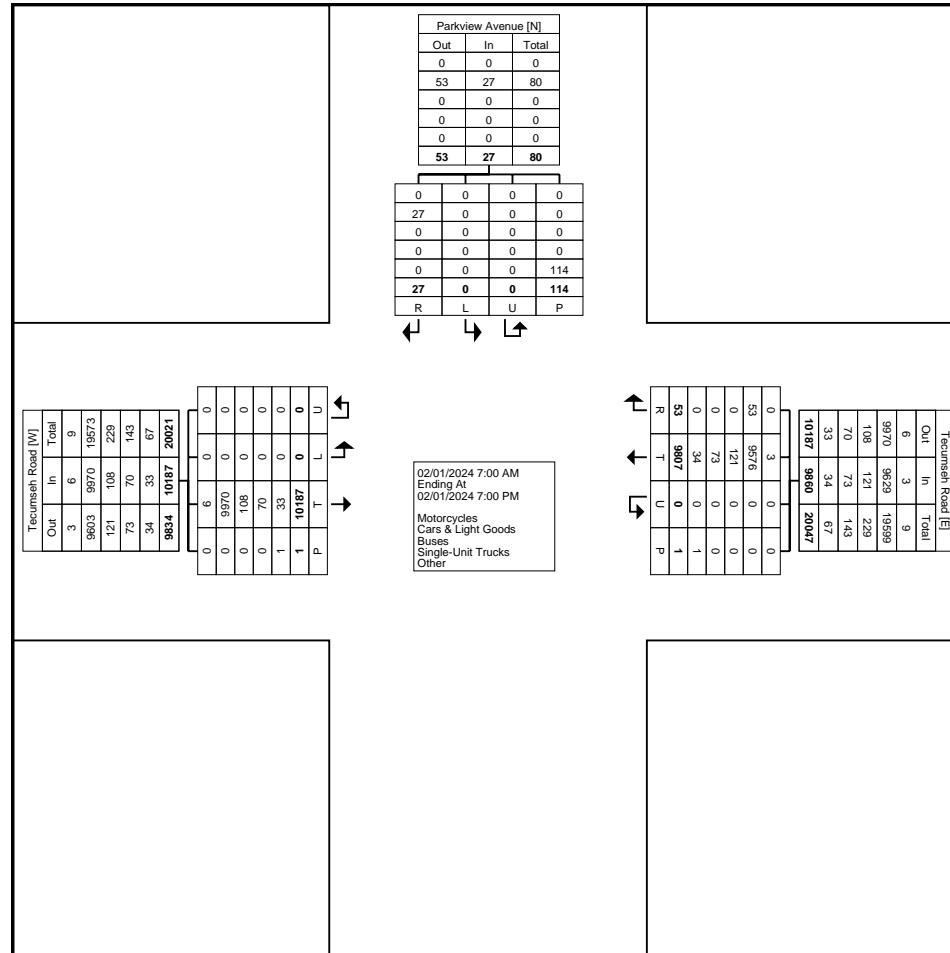
5:45 PM	0	308	0	0	308	302	2	0	0	304	0	4	0	6	4	616
Hourly Total	0	1705	0	0	1705	1359	16	0	0	1375	0	8	0	17	8	3088
6:00 PM	0	391	0	0	391	312	2	0	0	314	0	1	0	10	1	706
6:15 PM	0	362	0	0	362	332	1	0	0	333	0	0	0	4	0	695
6:30 PM	0	336	0	0	336	283	0	0	0	283	0	3	0	5	3	622
6:45 PM	0	306	0	0	306	258	1	0	0	259	0	8	0	0	8	573
Hourly Total	0	1395	0	0	1395	1185	4	0	0	1189	0	12	0	19	12	2596
Grand Total	0	10187	0	1	10187	9807	53	0	1	9860	0	27	0	114	27	20074
Approach %	0.0	100.0	0.0	-	-	99.5	0.5	0.0	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	50.7	0.0	-	50.7	48.9	0.3	0.0	-	49.1	0.0	0.1	0.0	-	0.1	-
Motorcycles	0	6	0	-	6	3	0	0	-	3	0	0	0	-	0	9
% Motorcycles	-	0.1	-	-	0.1	0.0	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	0	9970	0	-	9970	9576	53	0	-	9629	0	27	0	-	27	19626
% Cars & Light Goods	-	97.9	-	-	97.9	97.6	100.0	-	-	97.7	-	100.0	-	-	100.0	97.8
Buses	0	108	0	-	108	121	0	0	-	121	0	0	0	-	0	229
% Buses	-	1.1	-	-	1.1	1.2	0.0	-	-	1.2	-	0.0	-	-	0.0	1.1
Single-Unit Trucks	0	70	0	-	70	73	0	0	-	73	0	0	0	-	0	143
% Single-Unit Trucks	-	0.7	-	-	0.7	0.7	0.0	-	-	0.7	-	0.0	-	-	0.0	0.7
Articulated Trucks	0	32	0	-	32	31	0	0	-	31	0	0	0	-	0	63
% Articulated Trucks	-	0.3	-	-	0.3	0.3	0.0	-	-	0.3	-	0.0	-	-	0.0	0.3
Bicycles on Road	0	1	0	-	1	3	0	0	-	3	0	0	0	-	0	4
% Bicycles on Road	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	20	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	17.5	-	-
Pedestrians	-	-	-	1	-	-	-	-	1	-	-	-	-	94	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	82.5	-	-



Paradigm Transportation Solutions Limited
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Count Name: Tecumseh Road & Parkview Avenue
Site Code: 230538
Start Date: 02/01/2024
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Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Tecumseh Road & Parkview Avenue
Site Code: 230538
Start Date: 02/01/2024
Page No: 4

Turning Movement Peak Hour Data (8:45 AM)

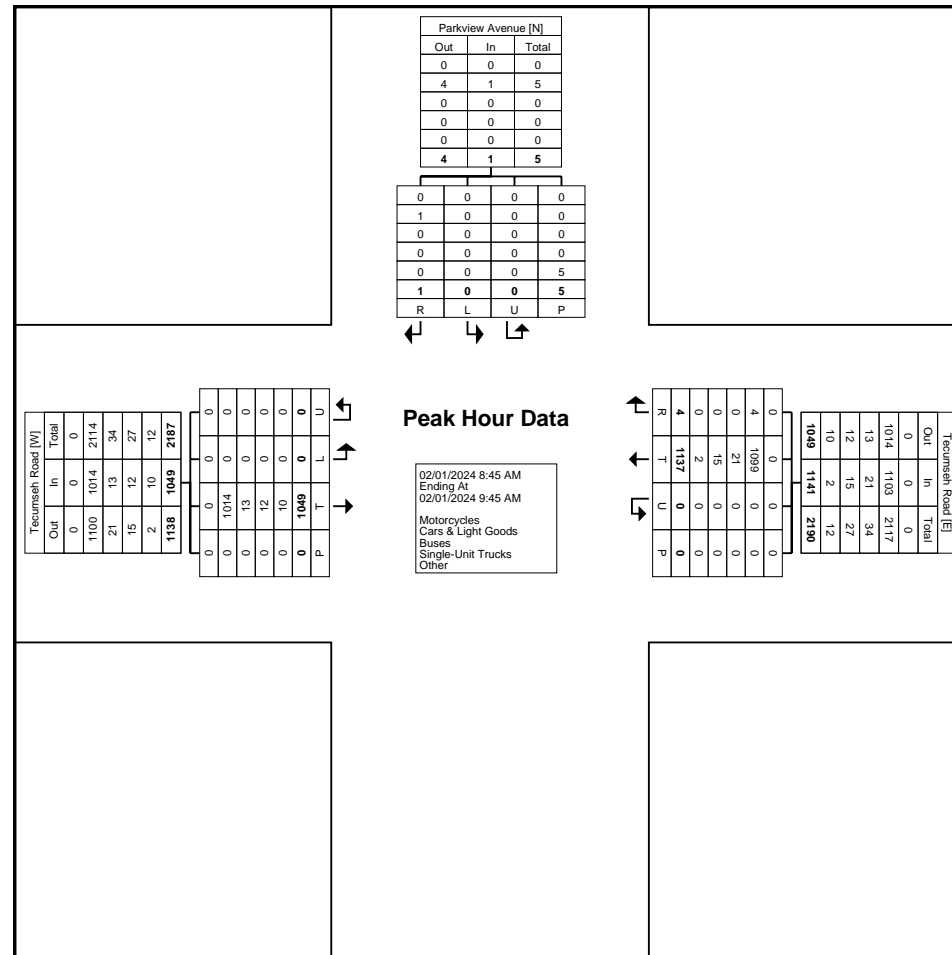
Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Parkview Avenue Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
8:45 AM	0	266	0	0	266	301	1	0	0	302	0	0	0	2	0	568
9:00 AM	0	264	0	0	264	268	0	0	0	268	0	0	0	0	0	532
9:15 AM	0	280	0	0	280	256	2	0	0	258	0	1	0	2	1	539
9:30 AM	0	239	0	0	239	312	1	0	0	313	0	0	0	1	0	552
Total	0	1049	0	0	1049	1137	4	0	0	1141	0	1	0	5	1	2191
Approach %	0.0	100.0	0.0	-	-	99.6	0.4	0.0	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	47.9	0.0	-	47.9	51.9	0.2	0.0	-	52.1	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.937	0.000	-	0.937	0.911	0.500	0.000	-	0.911	0.000	0.250	0.000	-	0.250	0.964
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	0	1014	0	-	1014	1099	4	0	-	1103	0	1	0	-	1	2118
% Cars & Light Goods	-	96.7	-	-	96.7	96.7	100.0	-	-	96.7	-	100.0	-	-	100.0	96.7
Buses	0	13	0	-	13	21	0	0	-	21	0	0	0	-	0	34
% Buses	-	1.2	-	-	1.2	1.8	0.0	-	-	1.8	-	0.0	-	-	0.0	1.6
Single-Unit Trucks	0	12	0	-	12	15	0	0	-	15	0	0	0	-	0	27
% Single-Unit Trucks	-	1.1	-	-	1.1	1.3	0.0	-	-	1.3	-	0.0	-	-	0.0	1.2
Articulated Trucks	0	10	0	-	10	2	0	0	-	2	0	0	0	-	0	12
% Articulated Trucks	-	1.0	-	-	1.0	0.2	0.0	-	-	0.2	-	0.0	-	-	0.0	0.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	20.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	80.0	-	-



Paradigm Transportation Solutions Limited
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Count Name: Tecumseh Road & Parkview Avenue
Site Code: 230538
Start Date: 02/01/2024
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Turning Movement Peak Hour Data Plot (8:45 AM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Tecumseh Road & Parkview Avenue
Site Code: 230538
Start Date: 02/01/2024
Page No: 6

Turning Movement Peak Hour Data (12:30 PM)

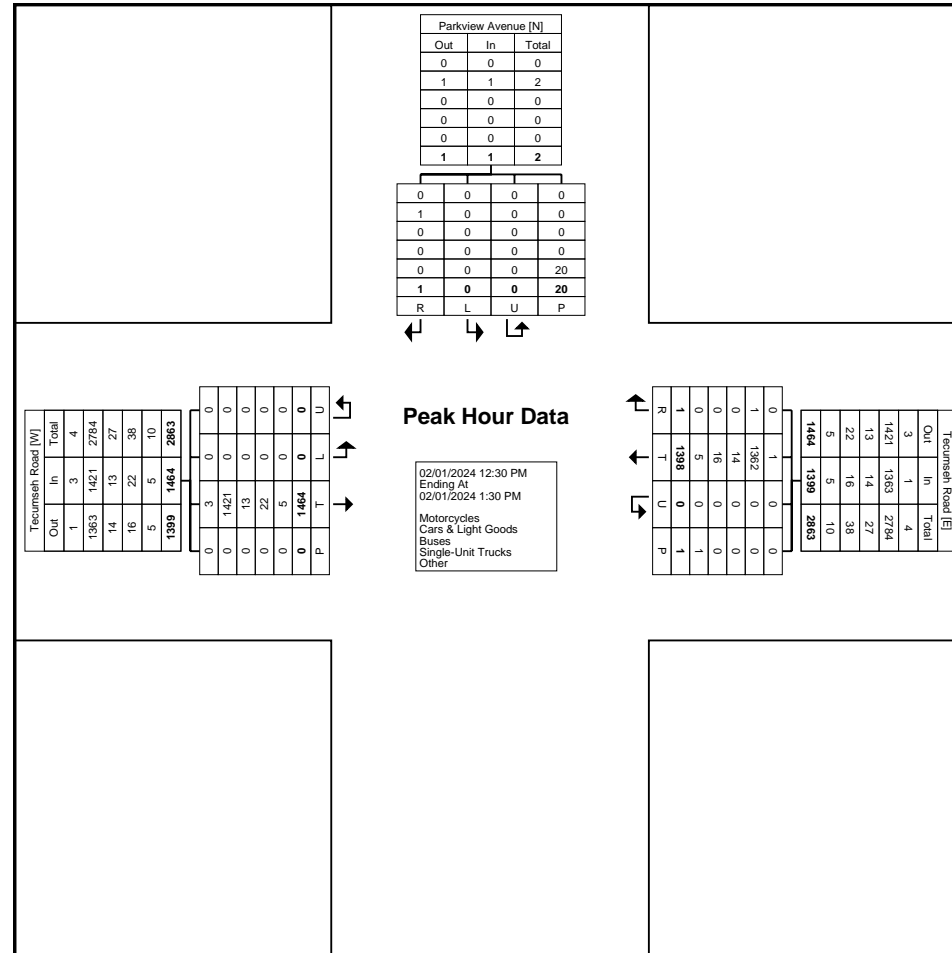
Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Parkview Avenue Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
12:30 PM	0	343	0	0	343	348	0	0	1	348	0	0	0	5	0	691
12:45 PM	0	383	0	0	383	317	1	0	0	318	0	0	0	8	0	701
1:00 PM	0	364	0	0	364	358	0	0	0	358	0	0	0	2	0	722
1:15 PM	0	374	0	0	374	375	0	0	0	375	0	1	0	5	1	750
Total	0	1464	0	0	1464	1398	1	0	1	1399	0	1	0	20	1	2864
Approach %	0.0	100.0	0.0	-	-	99.9	0.1	0.0	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	51.1	0.0	-	51.1	48.8	0.0	0.0	-	48.8	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.956	0.000	-	0.956	0.932	0.250	0.000	-	0.933	0.000	0.250	0.000	-	0.250	0.955
Motorcycles	0	3	0	-	3	1	0	0	-	1	0	0	0	-	0	4
% Motorcycles	-	0.2	-	-	0.2	0.1	0.0	-	-	0.1	-	0.0	-	-	0.0	0.1
Cars & Light Goods	0	1421	0	-	1421	1362	1	0	-	1363	0	1	0	-	1	2785
% Cars & Light Goods	-	97.1	-	-	97.1	97.4	100.0	-	-	97.4	-	100.0	-	-	100.0	97.2
Buses	0	13	0	-	13	14	0	0	-	14	0	0	0	-	0	27
% Buses	-	0.9	-	-	0.9	1.0	0.0	-	-	1.0	-	0.0	-	-	0.0	0.9
Single-Unit Trucks	0	22	0	-	22	16	0	0	-	16	0	0	0	-	0	38
% Single-Unit Trucks	-	1.5	-	-	1.5	1.1	0.0	-	-	1.1	-	0.0	-	-	0.0	1.3
Articulated Trucks	0	5	0	-	5	3	0	0	-	3	0	0	0	-	0	8
% Articulated Trucks	-	0.3	-	-	0.3	0.2	0.0	-	-	0.2	-	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	0	-	0	2	0	0	-	2	0	0	0	-	0	2
% Bicycles on Road	-	0.0	-	-	0.0	0.1	0.0	-	-	0.1	-	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	15.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	17	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	85.0	-	-



Paradigm Transportation Solutions Limited
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Count Name: Tecumseh Road & Parkview Avenue
Site Code: 230538
Start Date: 02/01/2024
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Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Tecumseh Road & Parkview Avenue
Site Code: 230538
Start Date: 02/01/2024
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Turning Movement Peak Hour Data (4:45 PM)

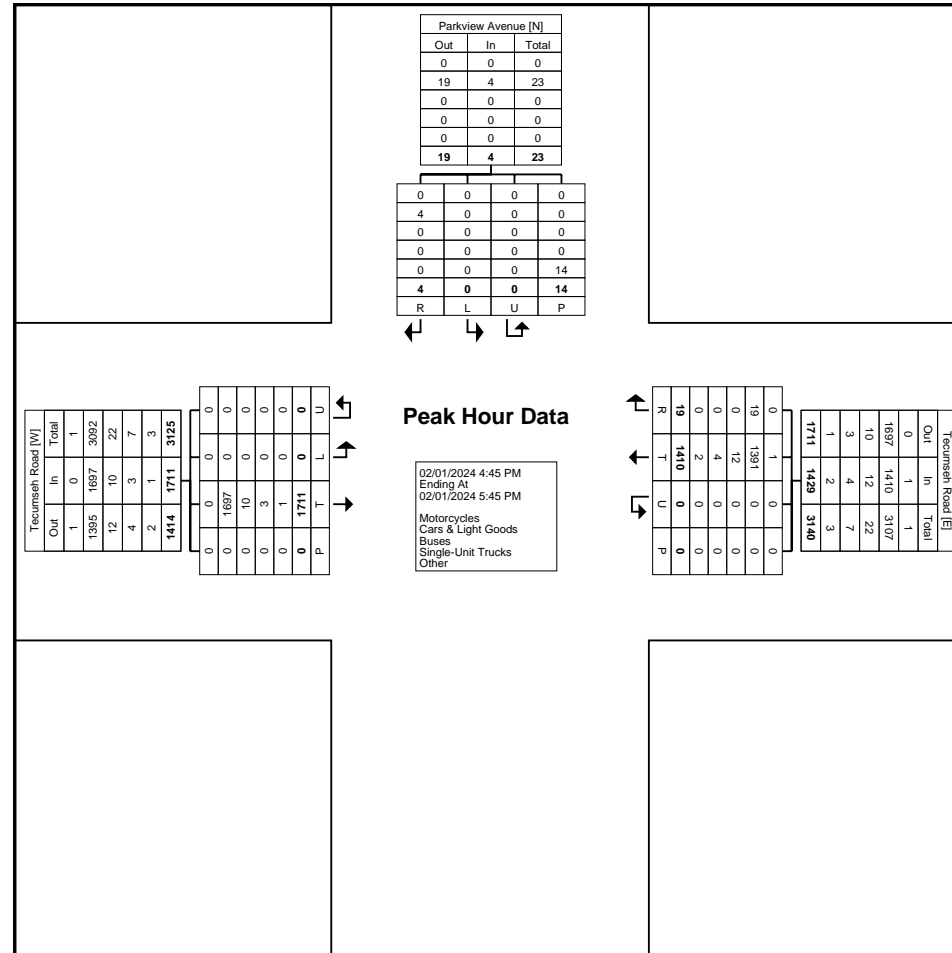
Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Parkview Avenue Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
4:45 PM	0	314	0	0	314	353	5	0	0	358	0	0	0	3	0	672
5:00 PM	0	493	0	0	493	364	4	0	0	368	0	2	0	3	2	863
5:15 PM	0	495	0	0	495	345	5	0	0	350	0	0	0	3	0	845
5:30 PM	0	409	0	0	409	348	5	0	0	353	0	2	0	5	2	764
Total	0	1711	0	0	1711	1410	19	0	0	1429	0	4	0	14	4	3144
Approach %	0.0	100.0	0.0	-	-	98.7	1.3	0.0	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	54.4	0.0	-	54.4	44.8	0.6	0.0	-	45.5	0.0	0.1	0.0	-	0.1	-
PHF	0.000	0.864	0.000	-	0.864	0.968	0.950	0.000	-	0.971	0.000	0.500	0.000	-	0.500	0.911
Motorcycles	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Motorcycles	-	0.0	-	-	0.0	0.1	0.0	-	-	0.1	-	0.0	-	-	0.0	0.0
Cars & Light Goods	0	1697	0	-	1697	1391	19	0	-	1410	0	4	0	-	4	3111
% Cars & Light Goods	-	99.2	-	-	99.2	98.7	100.0	-	-	98.7	-	100.0	-	-	100.0	99.0
Buses	0	10	0	-	10	12	0	0	-	12	0	0	0	-	0	22
% Buses	-	0.6	-	-	0.6	0.9	0.0	-	-	0.8	-	0.0	-	-	0.0	0.7
Single-Unit Trucks	0	3	0	-	3	4	0	0	-	4	0	0	0	-	0	7
% Single-Unit Trucks	-	0.2	-	-	0.2	0.3	0.0	-	-	0.3	-	0.0	-	-	0.0	0.2
Articulated Trucks	0	1	0	-	1	2	0	0	-	2	0	0	0	-	0	3
% Articulated Trucks	-	0.1	-	-	0.1	0.1	0.0	-	-	0.1	-	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	5	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	35.7	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	64.3	-	-



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Count Name: Tecumseh Road & Parkview Avenue
Site Code: 230538
Start Date: 02/01/2024
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Turning Movement Peak Hour Data Plot (4:45 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Tecumseh Road & Parkview
Avenue - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 1

Turning Movement Data

Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Parkview Avenue Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
11:00 AM	0	370	0	0	370	332	1	0	1	333	0	2	0	2	2	705
11:15 AM	0	422	0	0	422	341	3	0	0	344	0	4	0	2	4	770
11:30 AM	0	376	0	0	376	383	0	0	0	383	0	0	0	1	0	759
11:45 AM	0	457	0	0	457	385	4	0	0	389	0	2	0	4	2	848
Hourly Total	0	1625	0	0	1625	1441	8	0	1	1449	0	8	0	9	8	3082
12:00 PM	0	345	0	0	345	360	2	0	1	362	0	1	0	3	1	708
12:15 PM	0	326	0	0	326	393	0	0	0	393	0	4	1	3	5	724
12:30 PM	0	365	0	0	365	360	2	0	0	362	0	0	0	1	0	727
12:45 PM	0	350	0	0	350	395	0	0	0	395	0	1	0	1	1	746
Hourly Total	0	1386	0	0	1386	1508	4	0	1	1512	0	6	1	8	7	2905
1:00 PM	0	331	0	0	331	422	1	0	0	423	0	2	0	0	2	756
1:15 PM	0	372	0	0	372	356	3	0	0	359	0	0	0	3	0	731
1:30 PM	0	359	0	0	359	362	24	0	0	386	0	0	0	7	0	745
1:45 PM	0	397	0	0	397	356	5	0	0	361	0	0	0	1	0	758
Hourly Total	0	1459	0	0	1459	1496	33	0	0	1529	0	2	0	11	2	2990
2:00 PM	0	346	0	0	346	402	2	0	0	404	0	1	0	7	1	751
2:15 PM	0	390	0	0	390	400	0	0	0	400	0	2	0	3	2	792
2:30 PM	0	368	0	0	368	391	0	0	0	391	0	1	0	4	1	760
2:45 PM	0	342	0	0	342	418	1	0	0	419	0	2	0	11	2	763
Hourly Total	0	1446	0	0	1446	1611	3	0	0	1614	0	6	0	25	6	3066
Grand Total	0	5916	0	0	5916	6056	48	0	2	6104	0	22	1	53	23	12043
Approach %	0.0	100.0	0.0	-	-	99.2	0.8	0.0	-	-	0.0	95.7	4.3	-	-	-
Total %	0.0	49.1	0.0	-	49.1	50.3	0.4	0.0	-	50.7	0.0	0.2	0.0	-	0.2	-
Motorcycles	0	1	0	-	1	2	0	0	-	2	0	0	0	-	0	3
% Motorcycles	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.0
Cars & Light Goods	0	5867	0	-	5867	6008	48	0	-	6056	0	22	1	-	23	11946
% Cars & Light Goods	-	99.2	-	-	99.2	99.2	100.0	-	-	99.2	-	100.0	100.0	-	100.0	99.2
Buses	0	22	0	-	22	19	0	0	-	19	0	0	0	-	0	41
% Buses	-	0.4	-	-	0.4	0.3	0.0	-	-	0.3	-	0.0	0.0	-	0.0	0.3
Single-Unit Trucks	0	18	0	-	18	19	0	0	-	19	0	0	0	-	0	37
% Single-Unit Trucks	-	0.3	-	-	0.3	0.3	0.0	-	-	0.3	-	0.0	0.0	-	0.0	0.3
Articulated Trucks	0	7	0	-	7	6	0	0	-	6	0	0	0	-	0	13
% Articulated Trucks	-	0.1	-	-	0.1	0.1	0.0	-	-	0.1	-	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	1	0	-	1	2	0	0	-	2	0	0	0	-	0	3
% Bicycles on Road	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	9	-	-

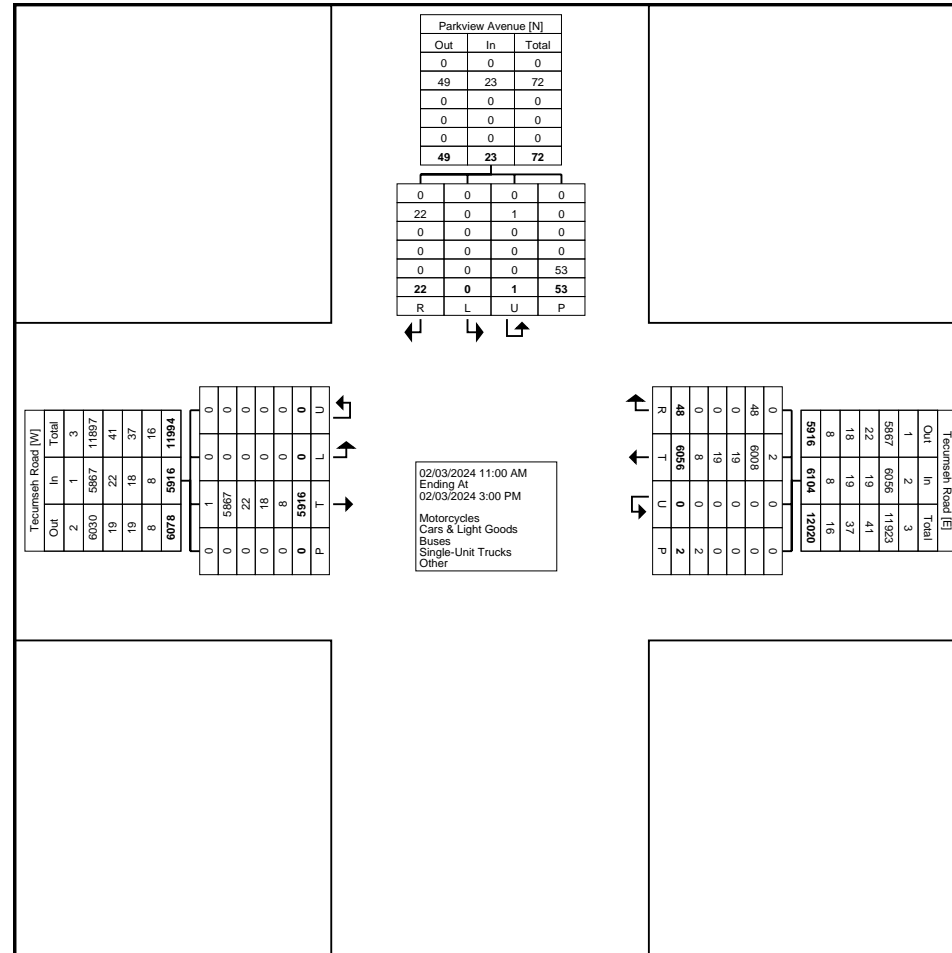
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	17.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	44	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	83.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsll.com

Count Name: Tecumseh Road & Parkview
Avenue - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Tecumseh Road & Parkview
Avenue - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 4

Turning Movement Peak Hour Data (11:15 AM)

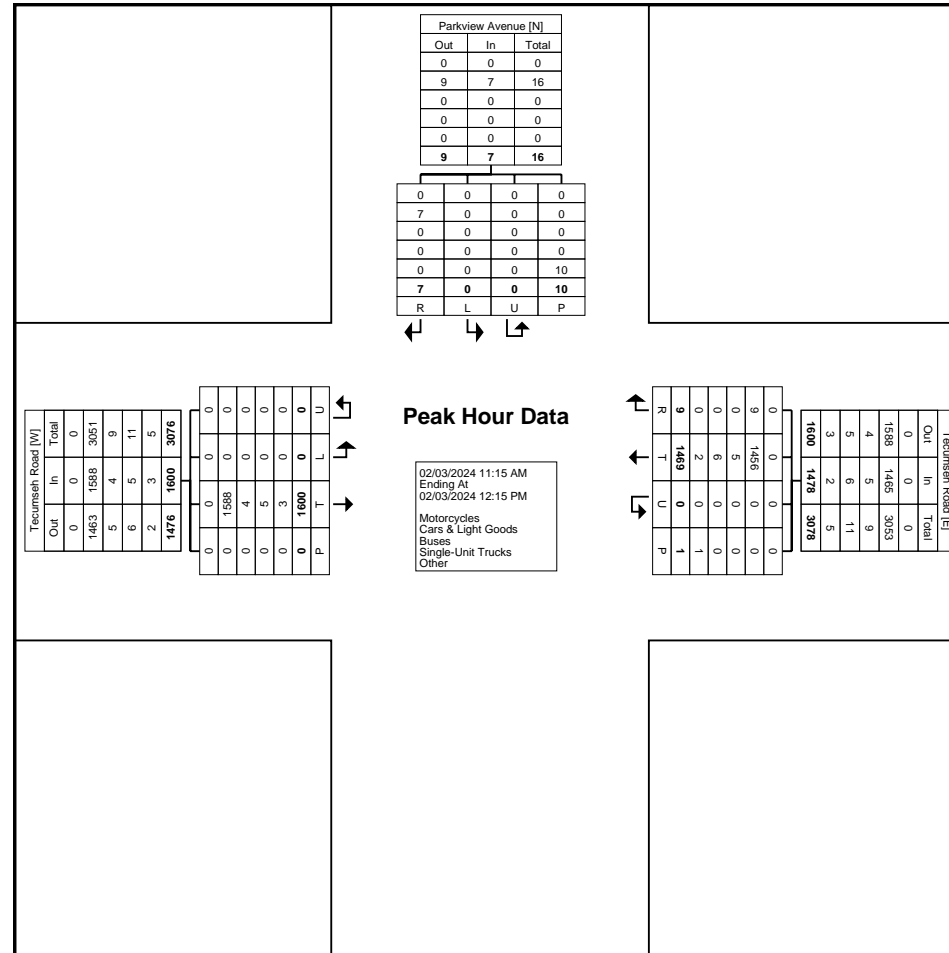
Start Time	Tecumseh Road Eastbound					Tecumseh Road Westbound					Parkview Avenue Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
11:15 AM	0	422	0	0	422	341	3	0	0	344	0	4	0	2	4	770
11:30 AM	0	376	0	0	376	383	0	0	0	383	0	0	0	1	0	759
11:45 AM	0	457	0	0	457	385	4	0	0	389	0	2	0	4	2	848
12:00 PM	0	345	0	0	345	360	2	0	1	362	0	1	0	3	1	708
Total	0	1600	0	0	1600	1469	9	0	1	1478	0	7	0	10	7	3085
Approach %	0.0	100.0	0.0	-	-	99.4	0.6	0.0	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	51.9	0.0	-	51.9	47.6	0.3	0.0	-	47.9	0.0	0.2	0.0	-	0.2	-
PHF	0.000	0.875	0.000	-	0.875	0.954	0.563	0.000	-	0.950	0.000	0.438	0.000	-	0.438	0.909
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	0	1588	0	-	1588	1456	9	0	-	1465	0	7	0	-	7	3060
% Cars & Light Goods	-	99.3	-	-	99.3	99.1	100.0	-	-	99.1	-	100.0	-	-	100.0	99.2
Buses	0	4	0	-	4	5	0	0	-	5	0	0	0	-	0	9
% Buses	-	0.3	-	-	0.3	0.3	0.0	-	-	0.3	-	0.0	-	-	0.0	0.3
Single-Unit Trucks	0	5	0	-	5	6	0	0	-	6	0	0	0	-	0	11
% Single-Unit Trucks	-	0.3	-	-	0.3	0.4	0.0	-	-	0.4	-	0.0	-	-	0.0	0.4
Articulated Trucks	0	3	0	-	3	1	0	0	-	1	0	0	0	-	0	4
% Articulated Trucks	-	0.2	-	-	0.2	0.1	0.0	-	-	0.1	-	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Bicycles on Road	-	0.0	-	-	0.0	0.1	0.0	-	-	0.1	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	10.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	90.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Tecumseh Road & Parkview
Avenue - Saturday
Site Code: 230538
Start Date: 02/03/2024
Page No: 5



Turning Movement Peak Hour Data Plot (11:15 AM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Lauzon Parkway & Tecumseh Road
Site Code: 230538
Start Date: 02/01/2024
Page No: 1

Turning Movement Data

Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total	
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total		
7:00 AM	24	67	23	1	0	115	13	74	3	0	0	90	23	54	15	0	0	92	10	93	36	0	0	139	436	
7:15 AM	22	99	21	0	1	142	40	101	5	0	0	146	29	46	9	0	2	84	7	85	37	0	0	129	501	
7:30 AM	29	110	39	0	0	178	36	149	6	0	2	191	42	58	17	0	0	117	14	151	46	0	2	211	697	
7:45 AM	33	142	35	2	0	212	41	165	9	1	1	216	49	80	23	0	0	152	11	145	66	0	1	222	802	
Hourly Total	108	418	118	3	1	647	130	489	23	1	3	643	143	238	64	0	2	445	42	474	185	0	3	701	2436	
8:00 AM	27	90	37	0	5	154	30	130	6	2	0	168	52	53	16	0	1	121	10	128	66	0	2	204	647	
8:15 AM	34	126	30	1	2	191	42	154	8	0	0	204	34	50	11	0	2	95	18	107	66	0	1	191	681	
8:30 AM	32	140	29	0	0	201	31	184	10	0	0	225	48	54	19	0	0	121	19	118	66	0	0	203	750	
8:45 AM	44	150	36	2	0	232	32	166	8	0	1	206	59	84	21	0	1	164	16	106	83	0	0	205	807	
Hourly Total	137	506	132	3	7	778	135	634	32	2	1	803	193	241	67	0	4	501	63	459	281	0	3	803	2885	
9:00 AM	45	158	26	0	0	229	20	156	10	5	0	191	50	64	17	0	2	131	27	79	60	0	2	166	717	
9:15 AM	56	150	30	1	3	237	26	148	13	5	4	192	51	71	16	0	4	138	18	66	48	0	3	132	699	
9:30 AM	40	146	31	0	0	217	34	183	13	0	1	230	59	63	29	0	0	151	20	89	62	0	0	171	769	
9:45 AM	48	146	29	1	2	224	32	171	11	5	1	219	56	66	29	0	5	151	15	75	51	0	2	141	735	
Hourly Total	189	600	116	2	5	907	112	658	47	15	6	832	216	264	91	0	11	571	80	309	221	0	7	610	2920	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	70	197	30	0	1	297	52	202	28	3	2	285	64	87	35	0	5	186	24	72	61	0	4	157	925	
11:45 AM	78	210	32	1	2	321	52	166	14	11	0	243	55	105	59	0	6	219	24	96	71	0	2	191	974	
Hourly Total	148	407	62	1	3	618	104	368	42	14	2	528	119	192	94	0	11	405	48	168	132	0	6	348	1899	
12:00 PM	76	264	36	1	1	377	60	210	26	1	3	297	41	107	48	0	4	196	40	97	76	0	3	213	1083	
12:15 PM	71	279	39	1	3	390	42	186	19	2	2	249	54	78	42	0	2	174	34	89	71	0	4	194	1007	
12:30 PM	68	239	45	1	2	353	38	214	16	3	2	271	56	81	31	0	5	168	34	98	73	0	4	205	997	
12:45 PM	71	300	54	1	3	426	55	212	22	2	1	291	59	103	43	0	8	205	31	92	81	0	8	204	1126	
Hourly Total	286	1082	174	4	9	1546	195	822	83	8	8	1108	210	369	164	0	19	743	139	376	301	0	19	816	4213	
1:00 PM	62	261	39	0	10	362	43	214	12	6	3	275	53	79	45	1	8	178	34	90	81	0	9	205	1020	
1:15 PM	63	259	49	2	1	373	49	248	20	5	0	322	52	90	30	0	2	172	34	105	88	0	3	227	1094	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	125	520	88	2	11	735	92	462	32	11	3	597	105	169	75	1	10	350	68	195	169	0	12	432	2114	
4:00 PM	63	287	47	0	2	397	32	193	17	6	4	248	65	165	48	0	9	278	39	114	86	0	5	239	1162	
4:15 PM	65	309	39	6	1	419	48	183	27	3	1	261	58	180	39	0	4	277	31	96	79	0	6	206	1163	
4:30 PM	68	289	45	1	1	403	47	207	23	5	0	282	61	152	48	0	6	261	29	105	69	1	1	204	1150	
4:45 PM	60	255	30	0	3	345	46	212	21	8	5	287	54	175	51	1	4	281	34	81	68	0	7	183	1096	
Hourly Total	256	1140	161	7	7	1564	173	795	88	22	10	1078	238	672	186	1	23	1097	133	396	302	1	19	832	4571	
5:00 PM	72	297	60	0	0	429	47	239	20	3	1	309	42	189	58	2	4	291	40	131	74	0	1	245	1274	
5:15 PM	70	369	57	1	1	497	34	206	19	7	1	266	75	166	56	0	6	297	31	106	76	0	6	213	1273	

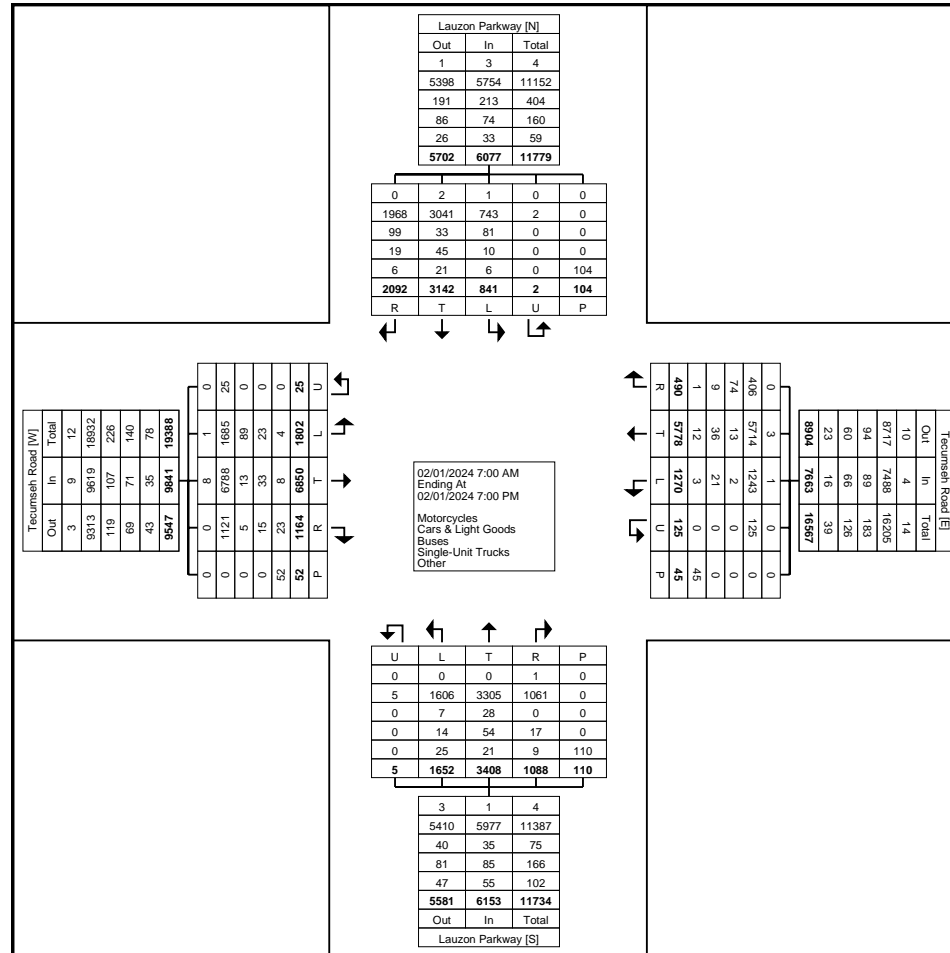
5:30 PM	74	320	51	0	4	445	40	206	18	5	2	269	67	173	52	0	5	292	33	104	55	0	7	192	1198
5:45 PM	66	235	44	0	2	345	43	184	15	2	2	244	64	163	35	1	5	263	30	65	51	0	5	146	998
Hourly Total	282	1221	212	1	7	1716	164	835	72	17	6	1088	248	691	201	3	20	1143	134	406	256	0	19	796	4743
6:00 PM	67	249	27	1	0	344	39	184	12	7	1	242	48	153	44	0	2	245	33	110	72	0	4	215	1046
6:15 PM	67	266	25	0	2	358	37	196	18	10	3	261	47	167	38	0	4	252	30	86	65	0	5	181	1052
6:30 PM	63	218	26	0	0	307	47	179	26	8	2	260	43	133	30	0	2	206	33	90	61	1	1	185	958
6:45 PM	74	223	23	1	0	321	42	156	15	10	0	223	42	119	34	0	2	195	38	73	47	0	6	158	897
Hourly Total	271	956	101	2	2	1330	165	715	71	35	6	986	180	572	146	0	10	898	134	359	245	1	16	739	3953
Grand Total	1802	6850	1164	25	52	9841	1270	5778	490	125	45	7663	1652	3408	1088	5	110	6153	841	3142	2092	2	104	6077	29734
Approach %	18.3	69.6	11.8	0.3	-	-	16.6	75.4	6.4	1.6	-	-	26.8	55.4	17.7	0.1	-	-	13.8	51.7	34.4	0.0	-	-	-
Total %	6.1	23.0	3.9	0.1	-	33.1	4.3	19.4	1.6	0.4	-	25.8	5.6	11.5	3.7	0.0	-	20.7	2.8	10.6	7.0	0.0	-	20.4	-
Motorcycles	1	8	0	0	-	9	1	3	0	0	-	4	0	0	1	0	-	1	1	2	0	0	-	3	17
% Motorcycles	0.1	0.1	0.0	0.0	-	0.1	0.1	0.1	0.0	0.0	-	0.1	0.0	0.0	0.1	0.0	-	0.0	0.1	0.1	0.0	0.0	-	0.0	0.1
Cars & Light Goods	1685	6788	1121	25	-	9619	1243	5714	406	125	-	7488	1606	3305	1061	5	-	5977	743	3041	1968	2	-	5754	28838
% Cars & Light Goods	93.5	99.1	96.3	100.0	-	97.7	97.9	98.9	82.9	100.0	-	97.7	97.2	97.0	97.5	100.0	-	97.1	88.3	96.8	94.1	100.0	-	94.7	97.0
Buses	89	13	5	0	-	107	2	13	74	0	-	89	7	28	0	0	-	35	81	33	99	0	-	213	444
% Buses	4.9	0.2	0.4	0.0	-	1.1	0.2	0.2	15.1	0.0	-	1.2	0.4	0.8	0.0	0.0	-	0.6	9.6	1.1	4.7	0.0	-	3.5	1.5
Single-Unit Trucks	23	33	15	0	-	71	21	36	9	0	-	66	14	54	17	0	-	85	10	45	19	0	-	74	296
% Single-Unit Trucks	1.3	0.5	1.3	0.0	-	0.7	1.7	0.6	1.8	0.0	-	0.9	0.8	1.6	1.6	0.0	-	1.4	1.2	1.4	0.9	0.0	-	1.2	1.0
Articulated Trucks	4	7	23	0	-	34	3	9	1	0	-	13	24	21	9	0	-	54	6	21	6	0	-	33	134
% Articulated Trucks	0.2	0.1	2.0	0.0	-	0.3	0.2	0.2	0.2	0.0	-	0.2	1.5	0.6	0.8	0.0	-	0.9	0.7	0.7	0.3	0.0	-	0.5	0.5
Bicycles on Road	0	1	0	0	-	1	0	3	0	0	-	3	1	0	0	0	-	1	0	0	0	0	-	0	5
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	9	-	-	-	-	-	3	-	-	-	-	-	12	-	-	-	-	-	15	-	-
% Bicycles on Crosswalk	-	-	-	-	17.3	-	-	-	-	-	6.7	-	-	-	-	-	10.9	-	-	-	-	-	14.4	-	-
Pedestrians	-	-	-	-	43	-	-	-	-	-	42	-	-	-	-	-	98	-	-	-	-	-	89	-	-
% Pedestrians	-	-	-	-	82.7	-	-	-	-	-	93.3	-	-	-	-	-	89.1	-	-	-	-	-	85.6	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Lauzon Parkway & Tecumseh Road
Site Code: 230538
Start Date: 02/01/2024
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Lauzon Parkway & Tecumseh Road
Site Code: 230538
Start Date: 02/01/2024
Page No: 4

Turning Movement Peak Hour Data (8:45 AM)

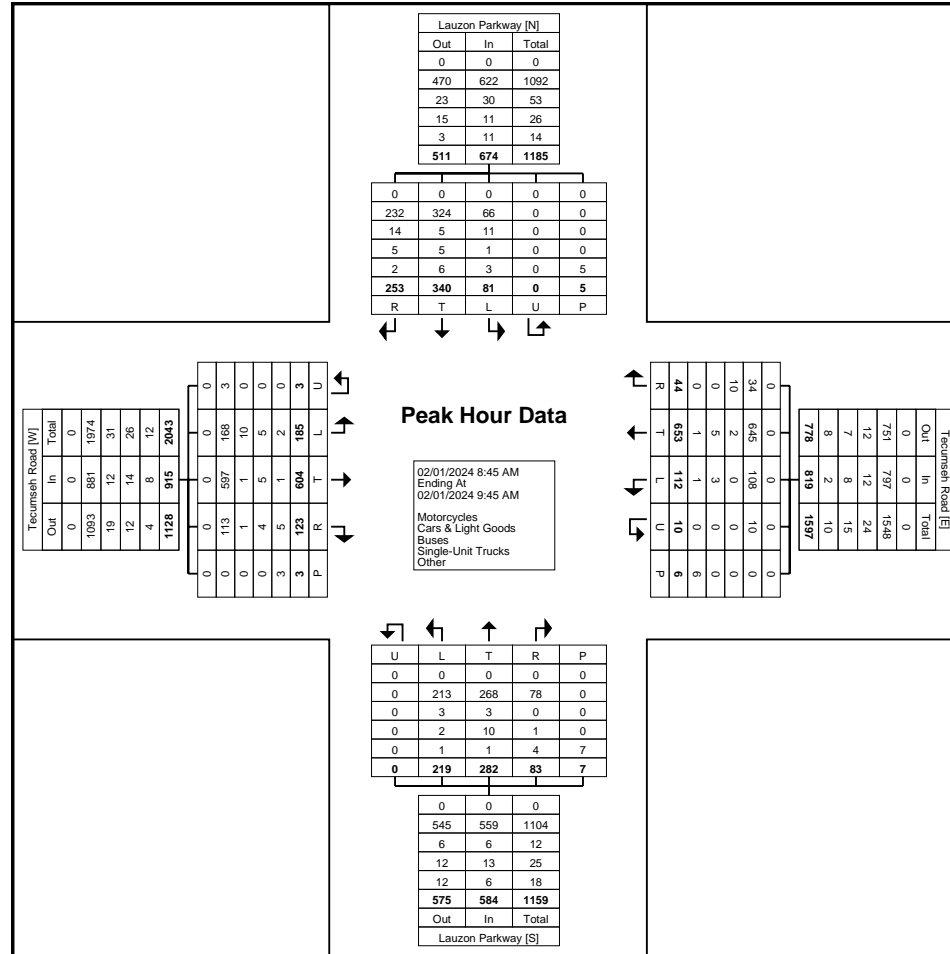
Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:45 AM	44	150	36	2	0	232	32	166	8	0	1	206	59	84	21	0	1	164	16	106	83	0	0	205	807
9:00 AM	45	158	26	0	0	229	20	156	10	5	0	191	50	64	17	0	2	131	27	79	60	0	2	166	717
9:15 AM	56	150	30	1	3	237	26	148	13	5	4	192	51	71	16	0	4	138	18	66	48	0	3	132	699
9:30 AM	40	146	31	0	0	217	34	183	13	0	1	230	59	63	29	0	0	151	20	89	62	0	0	171	769
Total	185	604	123	3	3	915	112	653	44	10	6	819	219	282	83	0	7	584	81	340	253	0	5	674	2992
Approach %	20.2	66.0	13.4	0.3	-	-	13.7	79.7	5.4	1.2	-	-	37.5	48.3	14.2	0.0	-	-	12.0	50.4	37.5	0.0	-	-	-
Total %	6.2	20.2	4.1	0.1	-	30.6	3.7	21.8	1.5	0.3	-	27.4	7.3	9.4	2.8	0.0	-	19.5	2.7	11.4	8.5	0.0	-	22.5	-
PHF	0.826	0.956	0.854	0.375	-	0.965	0.824	0.892	0.846	0.500	-	0.890	0.928	0.839	0.716	0.000	-	0.890	0.750	0.802	0.762	0.000	-	0.822	0.927
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	168	597	113	3	-	881	108	645	34	10	-	797	213	268	78	0	-	559	66	324	232	0	-	622	2859
% Cars & Light Goods	90.8	98.8	91.9	100.0	-	96.3	96.4	98.8	77.3	100.0	-	97.3	97.3	95.0	94.0	-	-	95.7	81.5	95.3	91.7	-	-	92.3	95.6
Buses	10	1	1	0	-	12	0	2	10	0	-	12	3	3	0	0	-	6	11	5	14	0	-	30	60
% Buses	5.4	0.2	0.8	0.0	-	1.3	0.0	0.3	22.7	0.0	-	1.5	1.4	1.1	0.0	-	-	1.0	13.6	1.5	5.5	-	-	4.5	2.0
Single-Unit Trucks	5	5	4	0	-	14	3	5	0	0	-	8	2	10	1	0	-	13	1	5	5	0	-	11	46
% Single-Unit Trucks	2.7	0.8	3.3	0.0	-	1.5	2.7	0.8	0.0	0.0	-	1.0	0.9	3.5	1.2	-	-	2.2	1.2	1.5	2.0	-	-	1.6	1.5
Articulated Trucks	2	1	5	0	-	8	1	1	0	0	-	2	1	1	4	0	-	6	3	6	2	0	-	11	27
% Articulated Trucks	1.1	0.2	4.1	0.0	-	0.9	0.9	0.2	0.0	0.0	-	0.2	0.5	0.4	4.8	-	-	1.0	3.7	1.8	0.8	-	-	1.6	0.9
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	16.7	-	-	-	-	-	0.0	-	-	-	-	-	20.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	5	-	-	-	-	-	7	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	83.3	-	-	-	-	-	100.0	-	-	-	-	-	80.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts1.com

Count Name: Lauzon Parkway & Tecumseh Road
Site Code: 230538
Start Date: 02/01/2024
Page No: 5



Turning Movement Peak Hour Data Plot (8:45 AM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Lauzon Parkway & Tecumseh Road
Site Code: 230538
Start Date: 02/01/2024
Page No: 6

Turning Movement Peak Hour Data (12:30 PM)

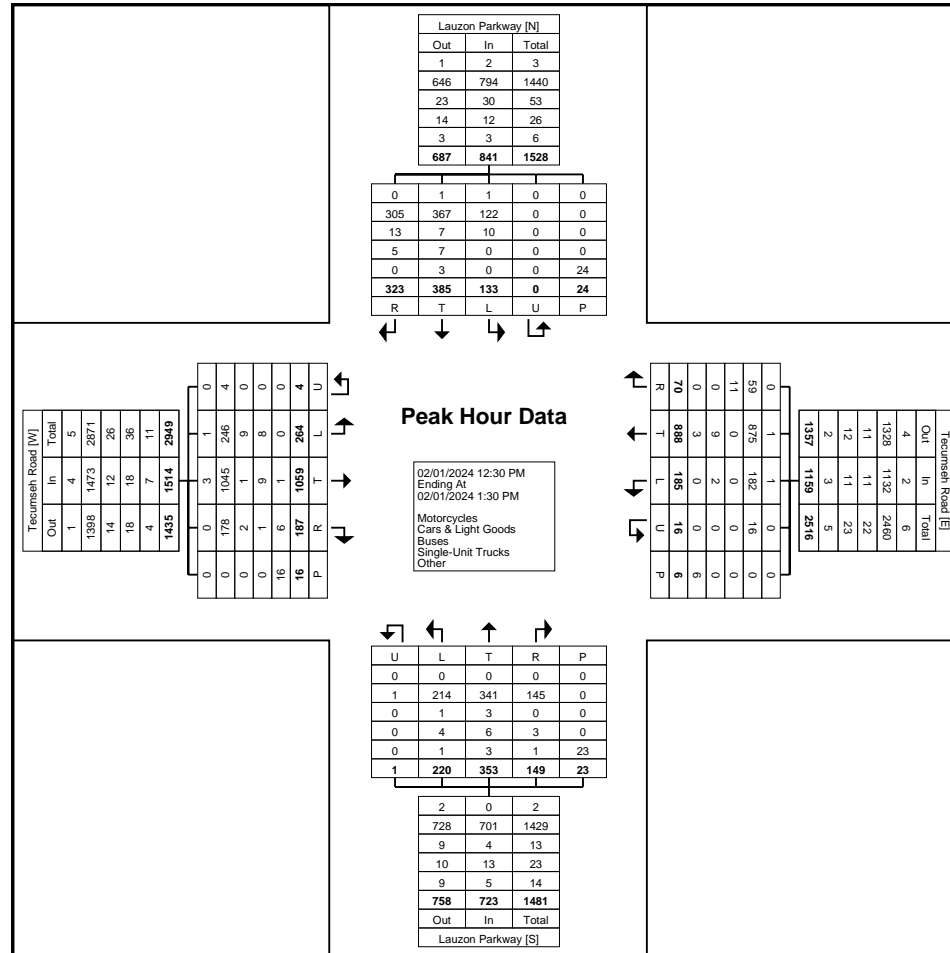
Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:30 PM	68	239	45	1	2	353	38	214	16	3	2	271	56	81	31	0	5	168	34	98	73	0	4	205	997
12:45 PM	71	300	54	1	3	426	55	212	22	2	1	291	59	103	43	0	8	205	31	92	81	0	8	204	1126
1:00 PM	62	261	39	0	10	362	43	214	12	6	3	275	53	79	45	1	8	178	34	90	81	0	9	205	1020
1:15 PM	63	259	49	2	1	373	49	248	20	5	0	322	52	90	30	0	2	172	34	105	88	0	3	227	1094
Total	264	1059	187	4	16	1514	185	888	70	16	6	1159	220	353	149	1	23	723	133	385	323	0	24	841	4237
Approach %	17.4	69.9	12.4	0.3	-	-	16.0	76.6	6.0	1.4	-	-	30.4	48.8	20.6	0.1	-	-	15.8	45.8	38.4	0.0	-	-	-
Total %	6.2	25.0	4.4	0.1	-	35.7	4.4	21.0	1.7	0.4	-	27.4	5.2	8.3	3.5	0.0	-	17.1	3.1	9.1	7.6	0.0	-	19.8	-
PHF	0.930	0.883	0.866	0.500	-	0.888	0.841	0.895	0.795	0.667	-	0.900	0.932	0.857	0.828	0.250	-	0.882	0.978	0.917	0.918	0.000	-	0.926	0.941
Motorcycles	1	3	0	0	-	4	1	1	0	0	-	2	0	0	0	0	-	0	1	1	0	0	-	2	8
% Motorcycles	0.4	0.3	0.0	0.0	-	0.3	0.5	0.1	0.0	0.0	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.8	0.3	0.0	-	-	0.2	0.2
Cars & Light Goods	246	1045	178	4	-	1473	182	875	59	16	-	1132	214	341	145	1	-	701	122	367	305	0	-	794	4100
% Cars & Light Goods	93.2	98.7	95.2	100.0	-	97.3	98.4	98.5	84.3	100.0	-	97.7	97.3	96.6	97.3	100.0	-	97.0	91.7	95.3	94.4	-	-	94.4	96.8
Buses	9	1	2	0	-	12	0	0	11	0	-	11	1	3	0	0	-	4	10	7	13	0	-	30	57
% Buses	3.4	0.1	1.1	0.0	-	0.8	0.0	0.0	15.7	0.0	-	0.9	0.5	0.8	0.0	0.0	-	0.6	7.5	1.8	4.0	-	-	3.6	1.3
Single-Unit Trucks	8	9	1	0	-	18	2	9	0	0	-	11	4	6	3	0	-	13	0	7	5	0	-	12	54
% Single-Unit Trucks	3.0	0.8	0.5	0.0	-	1.2	1.1	1.0	0.0	0.0	-	0.9	1.8	1.7	2.0	0.0	-	1.8	0.0	1.8	1.5	-	-	1.4	1.3
Articulated Trucks	0	1	6	0	-	7	0	1	0	0	-	1	1	3	1	0	-	5	0	3	0	0	-	3	16
% Articulated Trucks	0.0	0.1	3.2	0.0	-	0.5	0.0	0.1	0.0	0.0	-	0.1	0.5	0.8	0.7	0.0	-	0.7	0.0	0.8	0.0	-	-	0.4	0.4
Bicycles on Road	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	0.0	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	6.3	-	-	-	-	-	16.7	-	-	-	-	-	8.7	-	-	-	-	-	12.5	-	-
Pedestrians	-	-	-	-	15	-	-	-	-	-	5	-	-	-	-	-	21	-	-	-	-	-	21	-	-
% Pedestrians	-	-	-	-	93.8	-	-	-	-	-	83.3	-	-	-	-	-	91.3	-	-	-	-	-	87.5	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Lauzon Parkway & Tecumseh Road
Site Code: 230538
Start Date: 02/01/2024
Page No: 7



Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Lauzon Parkway & Tecumseh Road
Site Code: 230538
Start Date: 02/01/2024
Page No: 8

Turning Movement Peak Hour Data (4:45 PM)

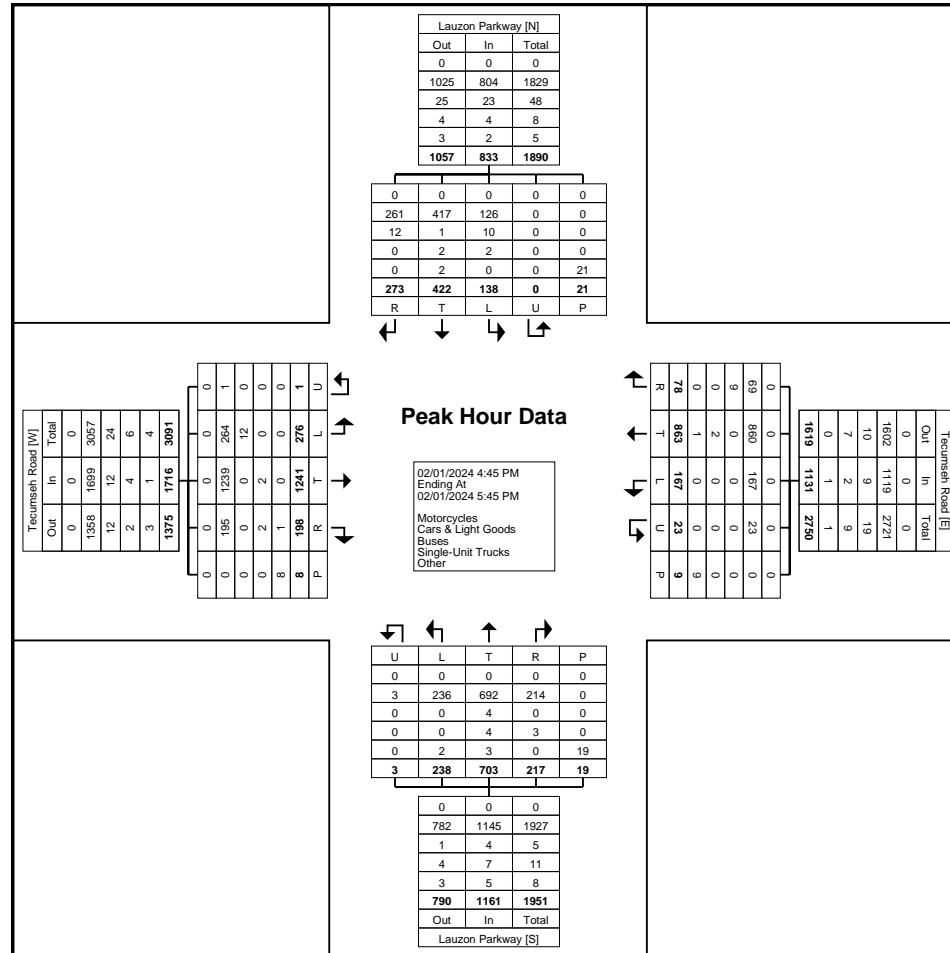
Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						Lauzon Parkway Northbound						Lauzon Parkway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:45 PM	60	255	30	0	3	345	46	212	21	8	5	287	54	175	51	1	4	281	34	81	68	0	7	183	1096
5:00 PM	72	297	60	0	0	429	47	239	20	3	1	309	42	189	58	2	4	291	40	131	74	0	1	245	1274
5:15 PM	70	369	57	1	1	497	34	206	19	7	1	266	75	166	56	0	6	297	31	106	76	0	6	213	1273
5:30 PM	74	320	51	0	4	445	40	206	18	5	2	269	67	173	52	0	5	292	33	104	55	0	7	192	1198
Total	276	1241	198	1	8	1716	167	863	78	23	9	1131	238	703	217	3	19	1161	138	422	273	0	21	833	4841
Approach %	16.1	72.3	11.5	0.1	-	-	14.8	76.3	6.9	2.0	-	-	20.5	60.6	18.7	0.3	-	-	16.6	50.7	32.8	0.0	-	-	-
Total %	5.7	25.6	4.1	0.0	-	35.4	3.4	17.8	1.6	0.5	-	23.4	4.9	14.5	4.5	0.1	-	24.0	2.9	8.7	5.6	0.0	-	17.2	-
PHF	0.932	0.841	0.825	0.250	-	0.863	0.888	0.903	0.929	0.719	-	0.915	0.793	0.930	0.935	0.375	-	0.977	0.863	0.805	0.898	0.000	-	0.850	0.950
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	264	1239	195	1	-	1699	167	860	69	23	-	1119	236	692	214	3	-	1145	126	417	261	0	-	804	4767
% Cars & Light Goods	95.7	99.8	98.5	100.0	-	99.0	100.0	99.7	88.5	100.0	-	98.9	99.2	98.4	98.6	100.0	-	98.6	91.3	98.8	95.6	-	-	96.5	98.5
Buses	12	0	0	0	-	12	0	0	9	0	-	9	0	4	0	0	-	4	10	1	12	0	-	23	48
% Buses	4.3	0.0	0.0	0.0	-	0.7	0.0	0.0	11.5	0.0	-	0.8	0.0	0.6	0.0	0.0	-	0.3	7.2	0.2	4.4	-	-	2.8	1.0
Single-Unit Trucks	0	2	2	0	-	4	0	2	0	0	-	2	0	4	3	0	-	7	2	2	0	0	-	4	17
% Single-Unit Trucks	0.0	0.2	1.0	0.0	-	0.2	0.0	0.2	0.0	0.0	-	0.2	0.0	0.6	1.4	0.0	-	0.6	1.4	0.5	0.0	-	-	0.5	0.4
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	2	3	0	0	-	5	0	2	0	0	-	2	8
% Articulated Trucks	0.0	0.0	0.5	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.8	0.4	0.0	0.0	-	0.4	0.0	0.5	0.0	-	-	0.2	0.2
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	25.0	-	-	-	-	-	0.0	-	-	-	-	-	15.8	-	-	-	-	-	9.5	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	9	-	-	-	-	-	16	-	-	-	-	-	19	-	-
% Pedestrians	-	-	-	-	75.0	-	-	-	-	-	100.0	-	-	-	-	-	84.2	-	-	-	-	-	90.5	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts.com

Count Name: Lauzon Parkway & Tecumseh Road
Site Code: 230538
Start Date: 02/01/2024
Page No: 9



Turning Movement Peak Hour Data Plot (4:45 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Tecumseh Road & Jefferson Blvd
Site Code: 230538
Start Date: 05/18/2024
Page No: 1

Turning Movement Data

Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						Jefferson Blvd Northbound						Jefferson Blvd Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	4	253	25	1	0	283	37	216	44	1	1	298	41	16	27	0	1	84	40	21	5	0	2	66	731
11:15 AM	5	256	30	2	2	293	44	264	41	0	0	349	40	15	40	0	0	95	31	23	4	0	3	58	795
11:30 AM	3	274	26	1	0	304	28	279	26	2	0	335	36	16	52	0	0	104	45	25	6	0	1	76	819
11:45 AM	4	264	23	0	0	291	31	297	44	0	0	372	34	10	59	0	1	103	41	28	8	0	0	77	843
Hourly Total	16	1047	104	4	2	1171	140	1056	155	3	1	1354	151	57	178	0	2	386	157	97	23	0	6	277	3188
12:00 PM	1	291	32	0	0	324	30	240	45	1	0	316	27	16	35	0	2	78	40	22	3	0	4	65	783
12:15 PM	3	269	21	0	1	293	30	263	36	0	1	329	21	18	43	0	1	82	32	26	7	0	3	65	769
12:30 PM	8	231	23	1	0	263	33	248	45	0	0	326	26	17	28	0	8	71	36	19	7	0	1	62	722
12:45 PM	7	279	19	1	1	306	37	269	47	0	0	353	27	19	42	0	2	88	45	31	9	0	3	85	832
Hourly Total	19	1070	95	2	2	1186	130	1020	173	1	1	1324	101	70	148	0	13	319	153	98	26	0	11	277	3106
1:00 PM	7	241	20	0	1	268	57	307	39	1	5	404	37	13	41	0	7	91	49	19	4	0	6	72	835
1:15 PM	5	247	32	1	0	285	27	278	47	0	0	352	39	24	34	0	5	97	34	27	2	0	2	63	797
1:30 PM	9	244	35	0	2	288	47	255	44	1	1	347	36	17	31	0	4	84	31	30	6	0	0	67	786
1:45 PM	2	254	17	0	0	273	31	246	38	1	1	316	37	33	39	0	3	109	41	18	10	0	0	69	767
Hourly Total	23	986	104	1	3	1114	162	1086	168	3	7	1419	149	87	145	0	19	381	155	94	22	0	8	271	3185
2:00 PM	6	263	24	1	0	294	38	287	36	0	1	361	26	22	56	0	3	104	33	28	6	0	0	67	826
2:15 PM	9	273	32	2	2	316	31	278	42	0	1	351	33	13	39	0	1	85	25	19	4	0	0	48	800
2:30 PM	4	292	36	0	0	332	37	249	37	0	0	323	35	15	30	0	0	80	27	22	4	0	3	53	788
2:45 PM	8	291	22	2	0	323	40	239	39	0	0	318	30	17	31	0	1	78	33	18	3	0	3	54	773
Hourly Total	27	1119	114	5	2	1265	146	1053	154	0	2	1353	124	67	156	0	5	347	118	87	17	0	6	222	3187
Grand Total	85	4222	417	12	9	4736	578	4215	650	7	11	5450	525	281	627	0	39	1433	583	376	88	0	31	1047	12666
Approach %	1.8	89.1	8.8	0.3	-	-	10.6	77.3	11.9	0.1	-	-	36.6	19.6	43.8	0.0	-	-	55.7	35.9	8.4	0.0	-	-	-
Total %	0.7	33.3	3.3	0.1	-	37.4	4.6	33.3	5.1	0.1	-	43.0	4.1	2.2	5.0	0.0	-	11.3	4.6	3.0	0.7	0.0	-	8.3	-
Motorcycles	0	11	3	0	-	14	0	18	2	0	-	20	1	0	1	0	-	2	0	1	1	0	-	2	38
% Motorcycles	0.0	0.3	0.7	0.0	-	0.3	0.0	0.4	0.3	0.0	-	0.4	0.2	0.0	0.2	-	-	0.1	0.0	0.3	1.1	-	-	0.2	0.3
Cars & Light Goods	83	4183	406	12	-	4684	574	4170	645	7	-	5396	514	278	625	0	-	1417	582	371	85	0	-	1038	12535
% Cars & Light Goods	97.6	99.1	97.4	100.0	-	98.9	99.3	98.9	99.2	100.0	-	99.0	97.9	98.9	99.7	-	-	98.9	99.8	98.7	96.6	-	-	99.1	99.0
Buses	0	13	0	0	-	13	0	12	0	0	-	12	0	0	0	0	-	0	0	0	0	0	-	0	25
% Buses	0.0	0.3	0.0	0.0	-	0.3	0.0	0.3	0.0	0.0	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	2	11	7	0	-	20	4	13	2	0	-	19	10	3	1	0	-	14	1	4	2	0	-	7	60
% Single-Unit Trucks	2.4	0.3	1.7	0.0	-	0.4	0.7	0.3	0.3	0.0	-	0.3	1.9	1.1	0.2	-	-	1.0	0.2	1.1	2.3	-	-	0.7	0.5
Articulated Trucks	0	3	0	0	-	3	0	2	1	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	6
% Articulated Trucks	0.0	0.1	0.0	0.0	-	0.1	0.0	0.0	0.2	0.0	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0

Bicycles on Road	0	1	1	0	-	2	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	2	
% Bicycles on Road	0.0	0.0	0.2	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	5	-	-	-	-	2	-	-	-	-	13	-	-	-	-	-	6	-	-	
% Bicycles on Crosswalk	-	-	-	-	55.6	-	-	-	-	18.2	-	-	-	-	33.3	-	-	-	-	-	19.4	-	-	
Pedestrians	-	-	-	-	4	-	-	-	-	9	-	-	-	-	26	-	-	-	-	-	25	-	-	
% Pedestrians	-	-	-	-	44.4	-	-	-	-	81.8	-	-	-	-	66.7	-	-	-	-	-	80.6	-	-	



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Tecumseh Road & Jefferson Blvd
Site Code: 230538
Start Date: 05/18/2024
Page No: 4

Turning Movement Peak Hour Data (12:45 PM)

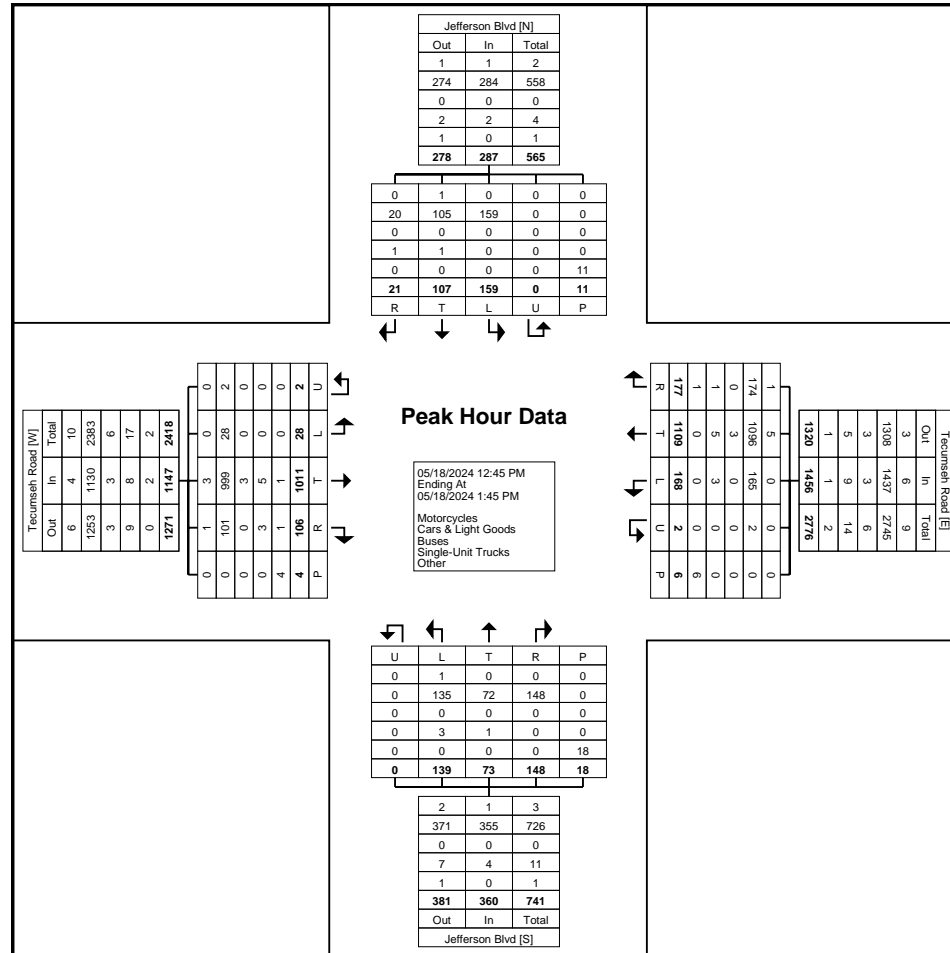
Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						Jefferson Blvd Northbound						Jefferson Blvd Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:45 PM	7	279	19	1	1	306	37	269	47	0	0	353	27	19	42	0	2	88	45	31	9	0	3	85	832
1:00 PM	7	241	20	0	1	268	57	307	39	1	5	404	37	13	41	0	7	91	49	19	4	0	6	72	835
1:15 PM	5	247	32	1	0	285	27	278	47	0	0	352	39	24	34	0	5	97	34	27	2	0	2	63	797
1:30 PM	9	244	35	0	2	288	47	255	44	1	1	347	36	17	31	0	4	84	31	30	6	0	0	67	786
Total	28	1011	106	2	4	1147	168	1109	177	2	6	1456	139	73	148	0	18	360	159	107	21	0	11	287	3250
Approach %	2.4	88.1	9.2	0.2	-	-	11.5	76.2	12.2	0.1	-	-	38.6	20.3	41.1	0.0	-	-	55.4	37.3	7.3	0.0	-	-	-
Total %	0.9	31.1	3.3	0.1	-	35.3	5.2	34.1	5.4	0.1	-	44.8	4.3	2.2	4.6	0.0	-	11.1	4.9	3.3	0.6	0.0	-	8.8	-
PHF	0.778	0.906	0.757	0.500	-	0.937	0.737	0.903	0.941	0.500	-	0.901	0.891	0.760	0.881	0.000	-	0.928	0.811	0.863	0.583	0.000	-	0.844	0.973
Motorcycles	0	3	1	0	-	4	0	5	1	0	-	6	1	0	0	0	-	1	0	1	0	0	-	1	12
% Motorcycles	0.0	0.3	0.9	0.0	-	0.3	0.0	0.5	0.6	0.0	-	0.4	0.7	0.0	0.0	-	-	0.3	0.0	0.9	0.0	-	-	0.3	0.4
Cars & Light Goods	28	999	101	2	-	1130	165	1096	174	2	-	1437	135	72	148	0	-	355	159	105	20	0	-	284	3206
% Cars & Light Goods	100.0	98.8	95.3	100.0	-	98.5	98.2	98.8	98.3	100.0	-	98.7	97.1	98.6	100.0	-	-	98.6	100.0	98.1	95.2	-	-	99.0	98.6
Buses	0	3	0	0	-	3	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	6
% Buses	0.0	0.3	0.0	0.0	-	0.3	0.0	0.3	0.0	0.0	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	0	5	3	0	-	8	3	5	1	0	-	9	3	1	0	0	-	4	0	1	1	0	-	2	23
% Single-Unit Trucks	0.0	0.5	2.8	0.0	-	0.7	1.8	0.5	0.6	0.0	-	0.6	2.2	1.4	0.0	-	-	1.1	0.0	0.9	4.8	-	-	0.7	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.6	0.0	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	1	1	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.1	0.9	0.0	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	50.0	-	-	-	-	-	0.0	-	-	-	-	-	44.4	-	-	-	-	-	18.2	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	6	-	-	-	-	-	10	-	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	50.0	-	-	-	-	-	100.0	-	-	-	-	-	55.6	-	-	-	-	-	81.8	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts.com

Count Name: Tecumseh Road & Jefferson Blvd
Site Code: 230538
Start Date: 05/18/2024
Page No: 5



Turning Movement Peak Hour Data Plot (12:45 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Tecumseh Road & Home Depot
Access
Site Code: 230538
Start Date: 05/18/2024
Page No: 1

Turning Movement Data

Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						Plaza Driveway Northbound						Home Depot Access Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	43	259	6	2	0	310	10	273	7	2	0	292	9	1	11	0	2	21	39	5	32	0	4	76	699
11:15 AM	29	308	13	1	0	351	8	279	5	9	2	301	14	4	10	0	1	28	60	0	42	0	5	102	782
11:30 AM	40	362	6	0	0	408	15	304	4	4	0	327	14	5	9	1	0	29	61	5	27	0	0	93	857
11:45 AM	39	328	16	0	1	383	11	312	0	8	2	331	12	2	10	0	4	24	54	1	42	0	1	97	835
Hourly Total	151	1257	41	3	1	1452	44	1168	16	23	4	1251	49	12	40	1	7	102	214	11	143	0	10	368	3173
12:00 PM	44	305	8	0	2	357	14	255	9	6	0	284	19	1	13	0	1	33	61	1	41	0	3	103	777
12:15 PM	36	318	3	0	0	357	7	278	6	3	0	294	8	2	15	0	3	25	65	3	50	0	1	118	794
12:30 PM	32	255	7	0	0	294	16	270	4	6	1	296	18	0	8	0	10	26	56	2	49	0	0	107	723
12:45 PM	49	266	9	0	0	324	15	301	1	2	2	319	15	2	6	0	9	23	67	1	30	0	4	98	764
Hourly Total	161	1144	27	0	2	1332	52	1104	20	17	3	1193	60	5	42	0	23	107	249	7	170	0	8	426	3058
1:00 PM	24	302	9	0	0	335	11	355	5	4	2	375	19	1	22	0	10	42	63	3	43	0	3	109	861
1:15 PM	40	269	6	0	2	315	11	316	2	5	2	334	9	2	13	0	6	24	60	2	30	0	1	92	765
1:30 PM	27	265	6	2	0	300	5	294	4	2	2	305	8	2	17	0	8	27	53	0	32	0	3	85	717
1:45 PM	39	290	9	1	0	339	15	287	2	3	0	307	5	0	10	0	5	15	52	0	40	0	0	92	753
Hourly Total	130	1126	30	3	2	1289	42	1252	13	14	6	1321	41	5	62	0	29	108	228	5	145	0	7	378	3096
2:00 PM	42	322	9	0	2	373	8	339	2	4	2	353	4	2	8	0	8	14	56	2	36	0	0	94	834
2:15 PM	34	286	7	0	0	327	9	293	5	4	0	311	13	1	6	1	1	21	71	2	40	0	1	113	772
2:30 PM	28	307	9	1	0	345	15	290	5	6	2	316	10	0	2	0	3	12	53	3	33	0	4	89	762
2:45 PM	32	312	10	0	0	354	7	274	8	3	1	292	7	1	8	0	2	16	61	1	45	0	6	107	769
Hourly Total	136	1227	35	1	2	1399	39	1196	20	17	5	1272	34	4	24	1	14	63	241	8	154	0	11	403	3137
Grand Total	578	4754	133	7	7	5472	177	4720	69	71	18	5037	184	26	168	2	73	380	932	31	612	0	36	1575	12464
Approach %	10.6	86.9	2.4	0.1	-	-	3.5	93.7	1.4	1.4	-	-	48.4	6.8	44.2	0.5	-	-	59.2	2.0	38.9	0.0	-	-	-
Total %	4.6	38.1	1.1	0.1	-	43.9	1.4	37.9	0.6	0.6	-	40.4	1.5	0.2	1.3	0.0	-	3.0	7.5	0.2	4.9	0.0	-	12.6	-
Motorcycles	0	8	0	0	-	8	2	18	0	0	-	20	0	1	0	0	-	1	0	0	1	0	-	1	30
% Motorcycles	0.0	0.2	0.0	0.0	-	0.1	1.1	0.4	0.0	0.0	-	0.4	0.0	3.8	0.0	0.0	-	0.3	0.0	0.0	0.2	-	-	0.1	0.2
Cars & Light Goods	575	4717	131	7	-	5430	173	4673	69	71	-	4986	184	25	167	2	-	378	928	31	605	0	-	1564	12358
% Cars & Light Goods	99.5	99.2	98.5	100.0	-	99.2	97.7	99.0	100.0	100.0	-	99.0	100.0	96.2	99.4	100.0	-	99.5	99.6	100.0	98.9	-	-	99.3	99.1
Buses	0	12	0	0	-	12	0	12	0	0	-	12	0	0	0	0	-	0	0	0	0	0	-	0	24
% Buses	0.0	0.3	0.0	0.0	-	0.2	0.0	0.3	0.0	0.0	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	2	15	0	0	-	17	2	16	0	0	-	18	0	0	1	0	-	1	4	0	4	0	-	8	44
% Single-Unit Trucks	0.3	0.3	0.0	0.0	-	0.3	1.1	0.3	0.0	0.0	-	0.4	0.0	0.0	0.6	0.0	-	0.3	0.4	0.0	0.7	-	-	0.5	0.4
Articulated Trucks	1	2	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	5
% Articulated Trucks	0.2	0.0	0.0	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.3	-	-	0.1	0.0

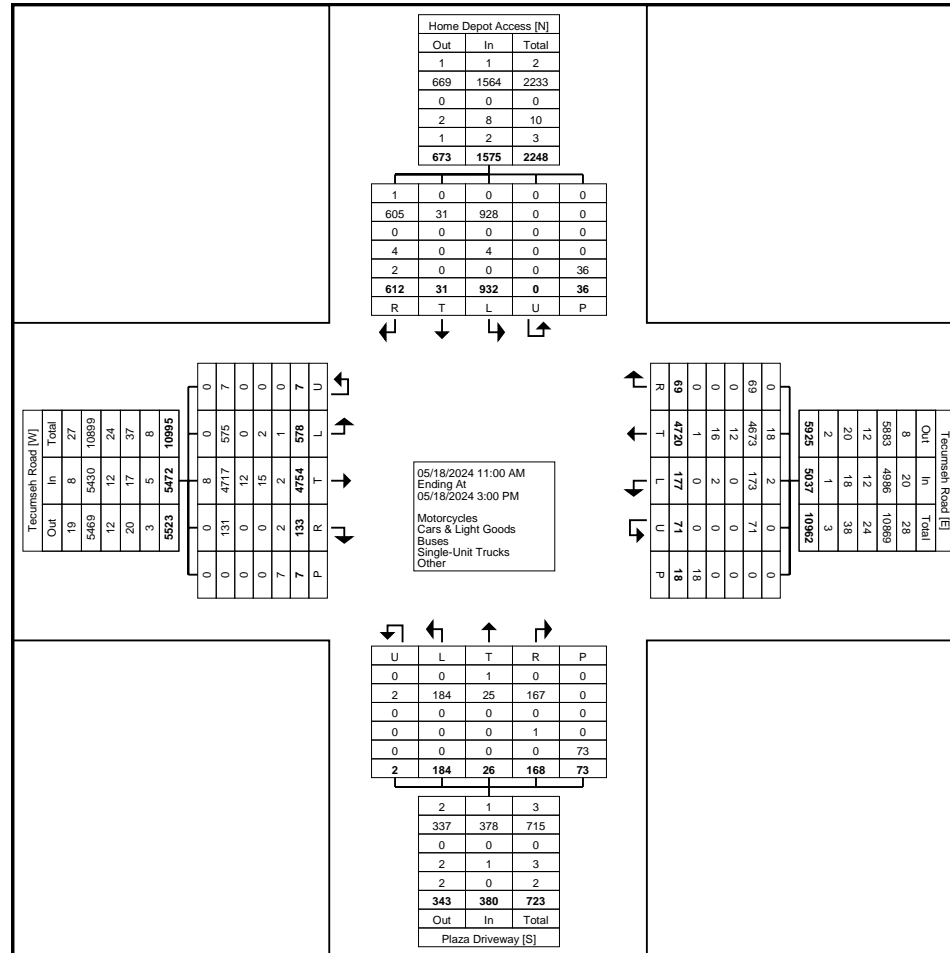
Bicycles on Road	0	0	2	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	1.5	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	0	-	-	-	-	-	-	7	-	-	-	-	11	-	-
% Bicycles on Crosswalk	-	-	-	-	28.6	-	-	-	-	0.0	-	-	-	-	-	9.6	-	-	-	-	-	30.6	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	18	-	-	-	-	-	66	-	-	-	-	-	25	-	-
% Pedestrians	-	-	-	-	71.4	-	-	-	-	100.0	-	-	-	-	-	90.4	-	-	-	-	-	69.4	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Tecumseh Road & Home Depot
Access
Site Code: 230538
Start Date: 05/18/2024
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Tecumseh Road & Home Depot
Access
Site Code: 230538
Start Date: 05/18/2024
Page No: 4

Turning Movement Peak Hour Data (11:30 AM)

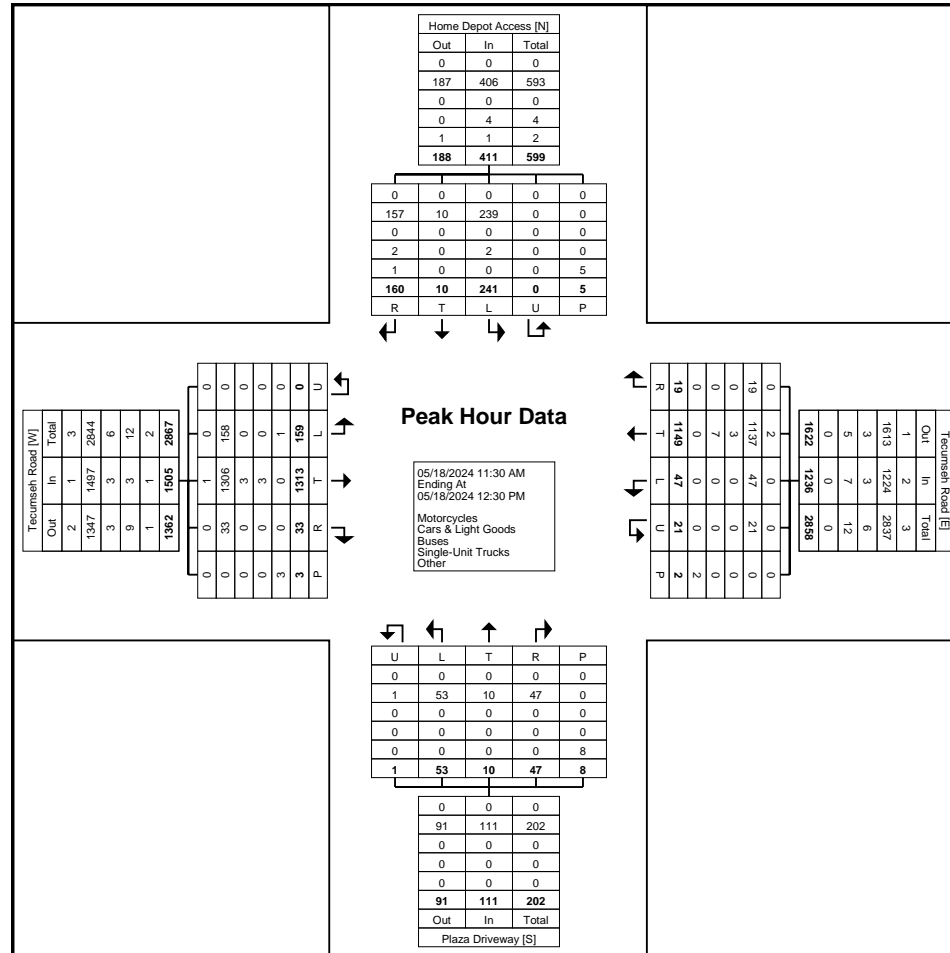
Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						Plaza Driveway Northbound						Home Depot Access Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:30 AM	40	362	6	0	0	408	15	304	4	4	0	327	14	5	9	1	0	29	61	5	27	0	0	93	857
11:45 AM	39	328	16	0	1	383	11	312	0	8	2	331	12	2	10	0	4	24	54	1	42	0	1	97	835
12:00 PM	44	305	8	0	2	357	14	255	9	6	0	284	19	1	13	0	1	33	61	1	41	0	3	103	777
12:15 PM	36	318	3	0	0	357	7	278	6	3	0	294	8	2	15	0	3	25	65	3	50	0	1	118	794
Total	159	1313	33	0	3	1505	47	1149	19	21	2	1236	53	10	47	1	8	111	241	10	160	0	5	411	3263
Approach %	10.6	87.2	2.2	0.0	-	-	3.8	93.0	1.5	1.7	-	-	47.7	9.0	42.3	0.9	-	-	58.6	2.4	38.9	0.0	-	-	-
Total %	4.9	40.2	1.0	0.0	-	46.1	1.4	35.2	0.6	0.6	-	37.9	1.6	0.3	1.4	0.0	-	3.4	7.4	0.3	4.9	0.0	-	12.6	-
PHF	0.903	0.907	0.516	0.000	-	0.922	0.783	0.921	0.528	0.656	-	0.934	0.697	0.500	0.783	0.250	-	0.841	0.927	0.500	0.800	0.000	-	0.871	0.952
Motorcycles	0	1	0	0	-	1	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	3
% Motorcycles	0.0	0.1	0.0	-	-	0.1	0.0	0.2	0.0	0.0	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	158	1306	33	0	-	1497	47	1137	19	21	-	1224	53	10	47	1	-	111	239	10	157	0	-	406	3238
% Cars & Light Goods	99.4	99.5	100.0	-	-	99.5	100.0	99.0	100.0	100.0	-	99.0	100.0	100.0	100.0	100.0	-	100.0	99.2	100.0	98.1	-	-	98.8	99.2
Buses	0	3	0	0	-	3	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	6
% Buses	0.0	0.2	0.0	-	-	0.2	0.0	0.3	0.0	0.0	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	0	3	0	0	-	3	0	7	0	0	-	7	0	0	0	0	-	0	2	0	2	0	-	4	14
% Single-Unit Trucks	0.0	0.2	0.0	-	-	0.2	0.0	0.6	0.0	0.0	-	0.6	0.0	0.0	0.0	0.0	-	0.0	0.8	0.0	1.3	-	-	1.0	0.4
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	2
% Articulated Trucks	0.6	0.0	0.0	-	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.6	-	-	0.2	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	33.3	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	20.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	66.7	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	80.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Tecumseh Road & Home Depot
Access
Site Code: 230538
Start Date: 05/18/2024
Page No: 5



Turning Movement Peak Hour Data Plot (11:30 AM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsI.com

Count Name: Tecumseh Road & Walmart
Access
Site Code: 230538
Start Date: 05/18/2024
Page No: 1

Turning Movement Data

Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						E Park Drive Northbound						Walmart Access Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	45	237	19	1	12	302	35	252	51	2	0	340	33	20	18	1	6	72	44	19	32	0	1	95	809
11:15 AM	57	310	28	0	2	395	29	276	65	0	3	370	31	21	26	0	2	78	36	13	32	0	0	81	924
11:30 AM	58	297	27	2	2	384	34	304	54	0	3	392	30	15	32	0	3	77	41	19	41	0	1	101	954
11:45 AM	44	290	27	3	4	364	35	278	76	0	1	389	43	23	24	0	0	90	46	30	30	0	1	106	949
Hourly Total	204	1134	101	6	20	1445	133	1110	246	2	7	1491	137	79	100	1	11	317	167	81	135	0	3	383	3636
12:00 PM	68	277	34	0	3	379	36	279	59	0	0	374	34	19	34	0	2	87	43	17	21	0	2	81	921
12:15 PM	56	286	23	2	4	367	54	283	64	1	1	402	28	17	30	0	1	75	36	21	33	0	2	90	934
12:30 PM	44	222	26	1	4	293	43	247	55	0	0	345	36	19	31	0	3	86	43	31	21	0	0	95	819
12:45 PM	52	266	30	2	5	350	38	289	64	0	0	391	39	28	33	0	3	100	43	19	30	0	1	92	933
Hourly Total	220	1051	113	5	16	1389	171	1098	242	1	1	1512	137	83	128	0	9	348	165	88	105	0	5	358	3607
1:00 PM	43	311	22	4	16	380	51	346	66	0	1	463	34	20	22	0	5	76	42	18	42	0	2	102	1021
1:15 PM	40	297	38	4	3	379	35	259	53	1	4	348	35	20	25	0	5	80	40	24	30	0	2	94	901
1:30 PM	53	309	26	2	13	390	29	292	64	1	2	386	36	11	27	1	8	75	34	12	26	0	1	72	923
1:45 PM	57	300	20	2	8	379	31	309	56	2	6	398	30	21	28	0	4	79	40	21	24	0	1	85	941
Hourly Total	193	1217	106	12	40	1528	146	1206	239	4	13	1595	135	72	102	1	22	310	156	75	122	0	6	353	3786
2:00 PM	59	317	27	1	6	404	47	300	60	0	1	407	31	21	31	0	3	83	46	23	41	0	0	110	1004
2:15 PM	63	328	36	1	11	428	45	315	55	1	4	416	26	15	19	1	4	61	46	15	28	0	2	89	994
2:30 PM	59	308	27	1	10	395	44	277	59	0	0	380	37	25	25	0	1	87	35	17	31	0	2	83	945
2:45 PM	59	318	24	2	12	403	47	264	51	0	0	362	35	17	37	0	4	89	44	29	42	0	0	115	969
Hourly Total	240	1271	114	5	39	1630	183	1156	225	1	5	1565	129	78	112	1	12	320	171	84	142	0	4	397	3912
Grand Total	857	4673	434	28	115	5992	633	4570	952	8	26	6163	538	312	442	3	54	1295	659	328	504	0	18	1491	14941
Approach %	14.3	78.0	7.2	0.5	-	-	10.3	74.2	15.4	0.1	-	-	41.5	24.1	34.1	0.2	-	-	44.2	22.0	33.8	0.0	-	-	-
Total %	5.7	31.3	2.9	0.2	-	40.1	4.2	30.6	6.4	0.1	-	41.2	3.6	2.1	3.0	0.0	-	8.7	4.4	2.2	3.4	0.0	-	10.0	-
Motorcycles	1	3	1	0	-	5	1	6	1	0	-	8	2	0	0	0	-	2	0	0	1	0	-	1	16
% Motorcycles	0.1	0.1	0.2	0.0	-	0.1	0.2	0.1	0.1	0.0	-	0.1	0.4	0.0	0.0	0.0	-	0.2	0.0	0.0	0.2	-	-	0.1	0.1
Cars & Light Goods	856	4627	431	28	-	5942	631	4521	950	8	-	6110	535	310	441	3	-	1289	659	326	502	0	-	1487	14828
% Cars & Light Goods	99.9	99.0	99.3	100.0	-	99.2	99.7	98.9	99.8	100.0	-	99.1	99.4	99.4	99.8	100.0	-	99.5	100.0	99.4	99.6	-	-	99.7	99.2
Buses	0	17	0	0	-	17	0	19	0	0	-	19	0	0	0	0	-	0	0	0	0	0	-	0	36
% Buses	0.0	0.4	0.0	0.0	-	0.3	0.0	0.4	0.0	0.0	-	0.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	0	20	0	0	-	20	1	22	1	0	-	24	1	0	1	0	-	2	0	0	0	0	-	0	46
% Single-Unit Trucks	0.0	0.4	0.0	0.0	-	0.3	0.2	0.5	0.1	0.0	-	0.4	0.2	0.0	0.2	0.0	-	0.2	0.0	0.0	0.0	-	-	0.0	0.3
Articulated Trucks	0	3	0	0	-	3	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	5
% Articulated Trucks	0.0	0.1	0.0	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0

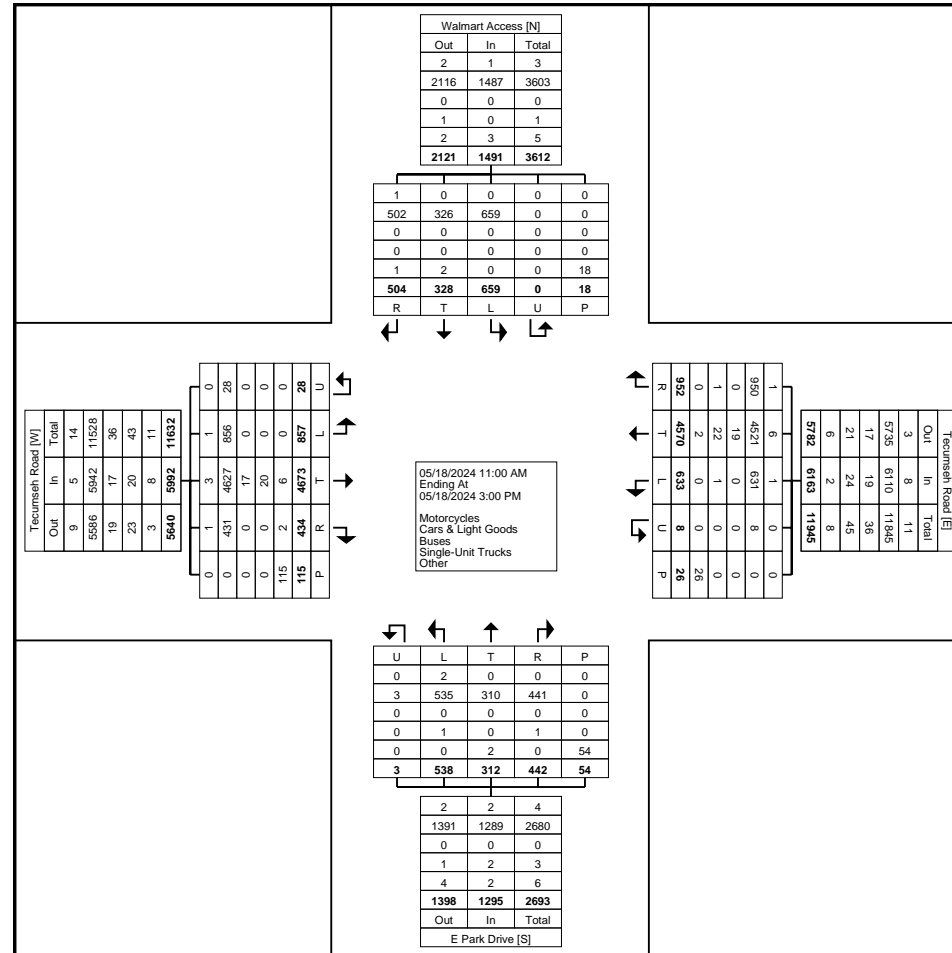
Bicycles on Road	0	3	2	0	-	5	0	0	0	0	-	0	0	2	0	0	-	2	0	2	1	0	-	3	10
% Bicycles on Road	0.0	0.1	0.5	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.6	0.0	0.0	-	0.2	0.0	0.6	0.2	-	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	8	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.9	-	-	-	-	7.7	-	-	-	-	-	-	14.8	-	-	-	-	-	16.7	-	-
Pedestrians	-	-	-	-	114	-	-	-	-	24	-	-	-	-	-	-	46	-	-	-	-	-	15	-	-
% Pedestrians	-	-	-	-	99.1	-	-	-	-	92.3	-	-	-	-	-	-	85.2	-	-	-	-	-	83.3	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts.com

Count Name: Tecumseh Road & Walmart
Access
Site Code: 230538
Start Date: 05/18/2024
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Tecumseh Road & Walmart
Access
Site Code: 230538
Start Date: 05/18/2024
Page No: 4

Turning Movement Peak Hour Data (2:00 PM)

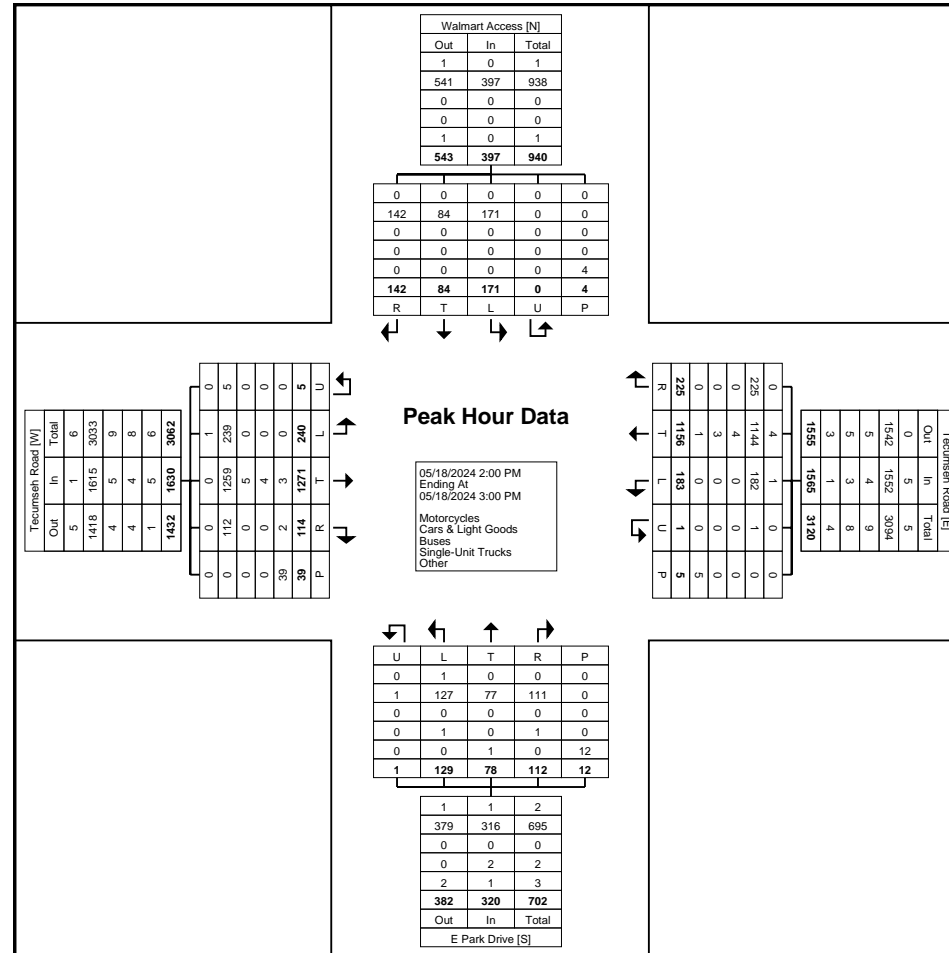
Start Time	Tecumseh Road Eastbound						Tecumseh Road Westbound						E Park Drive Northbound						Walmart Access Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
2:00 PM	59	317	27	1	6	404	47	300	60	0	1	407	31	21	31	0	3	83	46	23	41	0	0	110	1004
2:15 PM	63	328	36	1	11	428	45	315	55	1	4	416	26	15	19	1	4	61	46	15	28	0	2	89	994
2:30 PM	59	308	27	1	10	395	44	277	59	0	0	380	37	25	25	0	1	87	35	17	31	0	2	83	945
2:45 PM	59	318	24	2	12	403	47	264	51	0	0	362	35	17	37	0	4	89	44	29	42	0	0	115	969
Total	240	1271	114	5	39	1630	183	1156	225	1	5	1565	129	78	112	1	12	320	171	84	142	0	4	397	3912
Approach %	14.7	78.0	7.0	0.3	-	-	11.7	73.9	14.4	0.1	-	-	40.3	24.4	35.0	0.3	-	-	43.1	21.2	35.8	0.0	-	-	-
Total %	6.1	32.5	2.9	0.1	-	41.7	4.7	29.6	5.8	0.0	-	40.0	3.3	2.0	2.9	0.0	-	8.2	4.4	2.1	3.6	0.0	-	10.1	-
PHF	0.952	0.969	0.792	0.625	-	0.952	0.973	0.917	0.938	0.250	-	0.941	0.872	0.780	0.757	0.250	-	0.899	0.929	0.724	0.845	0.000	-	0.863	0.974
Motorcycles	1	0	0	0	-	1	1	4	0	0	-	5	1	0	0	0	-	1	0	0	0	0	-	0	7
% Motorcycles	0.4	0.0	0.0	0.0	-	0.1	0.5	0.3	0.0	0.0	-	0.3	0.8	0.0	0.0	0.0	-	0.3	0.0	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	239	1259	112	5	-	1615	182	1144	225	1	-	1552	127	77	111	1	-	316	171	84	142	0	-	397	3880
% Cars & Light Goods	99.6	99.1	98.2	100.0	-	99.1	99.5	99.0	100.0	100.0	-	99.2	98.4	98.7	99.1	100.0	-	98.8	100.0	100.0	100.0	-	-	100.0	99.2
Buses	0	5	0	0	-	5	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	9
% Buses	0.0	0.4	0.0	0.0	-	0.3	0.0	0.3	0.0	0.0	-	0.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	0	4	0	0	-	4	0	3	0	0	-	3	1	0	1	0	-	2	0	0	0	0	-	0	9
% Single-Unit Trucks	0.0	0.3	0.0	0.0	-	0.2	0.0	0.3	0.0	0.0	-	0.2	0.8	0.0	0.9	0.0	-	0.6	0.0	0.0	0.0	-	-	0.0	0.2
Articulated Trucks	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.1	0.0	0.0	-	0.1	0.0	0.1	0.0	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	2	2	0	-	4	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	5
% Bicycles on Road	0.0	0.2	1.8	0.0	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.0	1.3	0.0	0.0	-	0.3	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	6	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	20.0	-	-	-	-	-	50.0	-	-	-	-	-	25.0	-	-
Pedestrians	-	-	-	-	39	-	-	-	-	-	4	-	-	-	-	-	6	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	80.0	-	-	-	-	-	50.0	-	-	-	-	-	75.0	-	-



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519-896-3163 cbowness@ptsI.com

Count Name: Tecumseh Road & Walmart
Access
Site Code: 230538
Start Date: 05/18/2024
Page No: 5



Turning Movement Peak Hour Data Plot (2:00 PM)



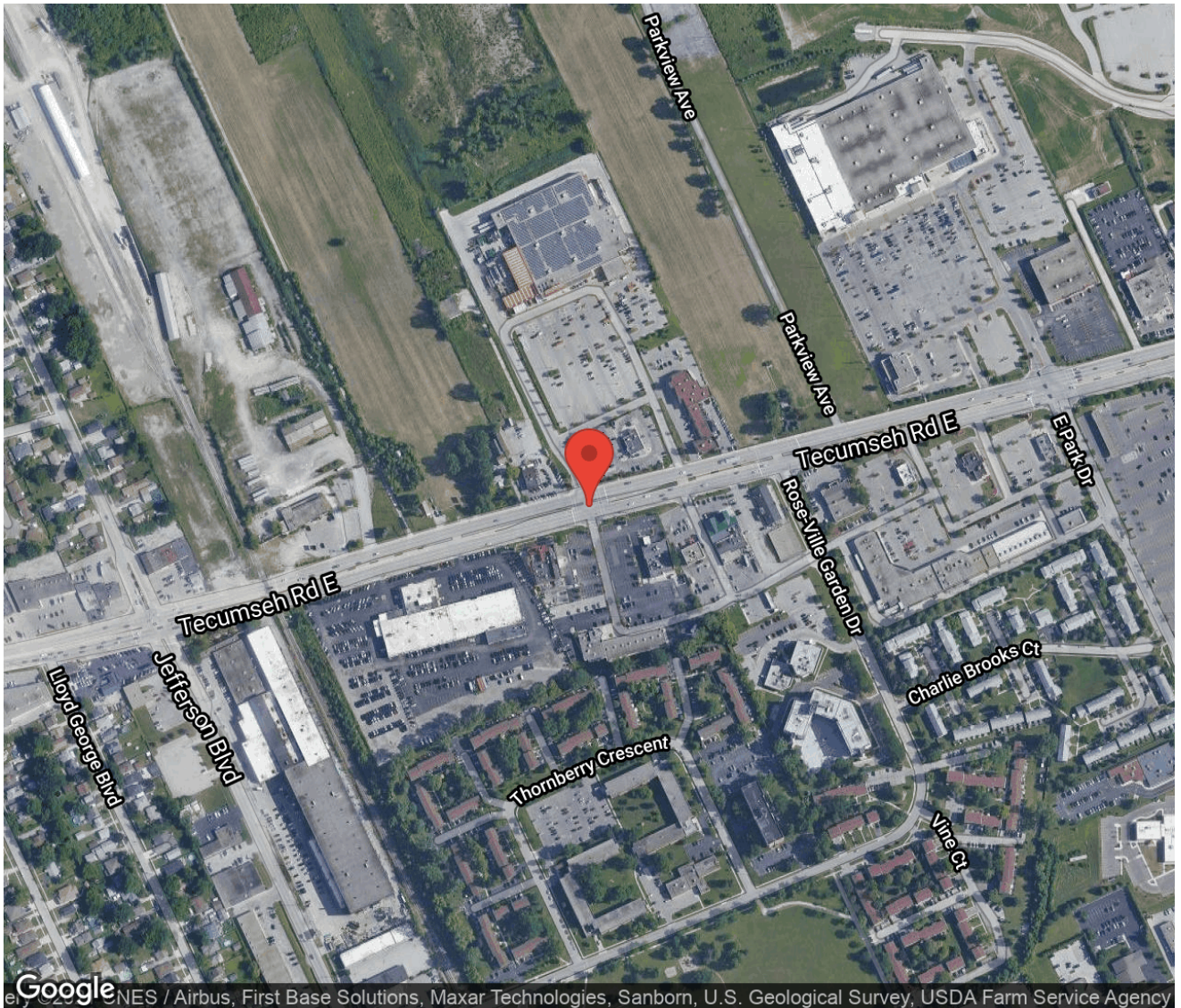
Project #21-037 - City of Windsor

Intersection Count Report

Intersection:	TECUMSEH RD E & HOME DEPOT ACCESS RD
Municipality:	Windsor
Count Date:	Mar 24, 2021
Site Code:	2103700088
Count Categories:	Cars, Medium Trucks + Buses, Heavy Trucks, Peds, Bicycles
Count Period:	07:00-10:00, 11:00-14:00, 15:00-18:00
Weather:	Clear

Traffic Count Map

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
Site Code: 2103700088
Municipality: Windsor
Count Date: Mar 24, 2021





Traffic Count Summary

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

HOME DEPOT ACCESS RD - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Includes Cars, Medium Trucks + Buses, Heavy Trucks, Bicycles						Includes Cars, Medium Trucks + Buses, Heavy Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	30	0	34	0	64	1	22	1	4	0	27	4	91
08:00 - 09:00	73	2	81	0	156	2	34	3	13	0	50	3	206
09:00 - 10:00	81	3	65	0	149	1	49	8	24	0	81	2	230
BREAK													
11:00 - 12:00	141	5	105	0	251	2	45	6	41	0	92	8	343
12:00 - 13:00	171	10	108	0	289	2	73	3	49	0	125	14	414
13:00 - 14:00	152	4	96	0	252	4	60	7	45	0	112	5	364
BREAK													
15:00 - 16:00	166	2	113	0	281	8	49	3	46	0	98	9	379
16:00 - 17:00	143	4	102	0	249	3	46	4	38	0	88	9	337
17:00 - 18:00	141	3	110	0	254	2	28	3	18	0	49	4	303
GRAND TOTAL	1098	33	814	0	1945	25	406	38	278	0	722	58	2667



Traffic Count Summary

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

TECUMSEH RD E - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total	
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds		
07:00 - 08:00	12	542	7	5	566	0	43	601	20	0	664	0	1230	
08:00 - 09:00	25	813	7	8	853	3	78	747	33	3	861	2	1714	
09:00 - 10:00	35	745	14	7	801	1	83	828	33	1	945	0	1746	
BREAK														
11:00 - 12:00	38	985	11	11	1045	1	108	1034	49	0	1191	2	2236	
12:00 - 13:00	44	1069	14	18	1145	1	127	1101	60	2	1290	0	2435	
13:00 - 14:00	36	1080	12	13	1141	3	111	1143	44	3	1301	3	2442	
BREAK														
15:00 - 16:00	21	1372	16	13	1422	1	126	1454	52	0	1632	1	3054	
16:00 - 17:00	22	1182	14	14	1232	5	92	1216	41	1	1350	2	2582	
17:00 - 18:00	26	1062	8	11	1107	2	35	1151	95	1	1282	0	2389	
GRAND TOTAL	259	8850	103	100	9312	17	803	9275	427	11	1051	6	10	19828



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

North Approach - HOME DEPOT ACCESS RD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds	
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total		
07:00	5	0	2	0	7	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
07:15	9	0	9	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30	3	0	12	0	15	0	0	0	0	0	1	0	0	0	1	2	0	0	0	0	2	0
07:45	10	0	9	0	19	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
08:00	8	0	17	0	25	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0
08:15	21	0	16	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	20	0	21	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45	22	2	25	0	49	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	1
09:00	11	1	13	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	28	2	18	0	48	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
09:30	20	0	20	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	21	0	14	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	178	5	176	0	359	1	0	3	0	4	3	0	1	0	4	2	0	0	0	2	4	4



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

North Approach - HOME DEPOT ACCESS RD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	39	0	26	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
15:15	46	0	32	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	43	2	31	0	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
15:45	37	0	24	0	61	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
16:00	35	1	30	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:15	32	0	28	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	46	3	27	0	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16:45	30	0	17	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	41	2	28	0	71	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
17:15	33	0	21	0	54	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
17:30	30	0	30	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	35	1	30	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	447	9	324	0	780	2	0	0	0	2	1	0	0	0	1	0	0	1	0	1	13
GRAND TOTAL	1089	33	808	0	1930	3	0	4	0	7	4	0	1	0	5	2	0	1	0	3	25



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

South Approach - HOME DEPOT ACCESS RD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	3	1	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	6	0	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
08:00	7	1	1	0	9	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
08:15	6	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30	9	1	6	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:45	12	1	4	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	12	4	2	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	7	0	7	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
09:30	10	2	7	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	20	2	8	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	105	12	40	0	157	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	9



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

South Approach - HOME DEPOT ACCESS RD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	15	4	9	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:15	9	0	11	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30	12	1	11	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:45	9	1	10	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
12:00	11	1	14	0	26	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4
12:15	12	2	9	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
12:30	30	0	12	0	42	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
12:45	18	0	14	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
13:00	9	4	13	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
13:15	17	1	11	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
13:30	20	1	13	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
13:45	14	1	8	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	176	16	135	0	327	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	27



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

South Approach - HOME DEPOT ACCESS RD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	14	1	8	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
15:15	15	1	8	0	24	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
15:30	11	0	16	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
15:45	9	1	13	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:00	20	0	11	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:15	9	1	12	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	4	2	5	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
16:45	13	1	10	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	12	0	8	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:15	6	0	4	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:30	8	1	4	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	2	2	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	123	10	101	0	234	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	22
GRAND TOTAL	404	38	276	0	718	1	0	0	0	1	0	0	1	0	1	1	0	1	0	2	58



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

East Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	1	111	4	1	117	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
07:15	1	99	2	1	103	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0
07:30	3	147	0	1	151	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
07:45	6	170	1	2	179	0	4	0	0	4	0	1	0	0	1	0	2	0	0	2	0
08:00	5	177	0	1	183	0	6	0	0	6	0	0	1	0	1	0	0	0	0	0	0
08:15	6	194	1	3	204	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	0
08:30	8	194	2	1	205	0	6	0	0	6	0	2	0	0	2	0	0	0	0	0	1
08:45	6	221	3	3	233	0	6	0	0	6	0	2	0	0	2	0	0	0	0	0	2
09:00	9	185	3	4	201	1	2	0	0	3	0	2	0	0	2	0	0	0	0	0	0
09:15	10	142	4	2	158	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	1
09:30	8	202	3	0	213	0	4	0	0	4	0	2	0	0	2	0	1	0	0	1	0
09:45	5	198	4	1	208	1	3	0	0	4	1	1	0	0	2	0	0	0	0	0	0
SUBTOTAL	68	2040	27	20	2155	3	43	0	0	46	1	14	1	0	16	0	3	0	0	3	4



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

East Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	7	215	3	1	226	0	5	0	0	5	0	2	0	0	2	0	2	0	0	2	1
11:15	13	217	0	2	232	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0
11:30	12	260	2	3	277	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	0
11:45	5	265	6	5	281	0	6	0	0	6	0	1	0	0	1	1	0	0	0	1	0
12:00	11	289	2	5	307	0	7	0	0	7	0	3	0	0	3	0	0	0	0	0	0
12:15	9	245	2	3	259	1	2	0	0	3	0	1	0	0	1	0	0	0	0	0	1
12:30	13	249	3	6	271	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	0
12:45	10	265	7	4	286	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0
13:00	7	280	3	2	292	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	2
13:15	10	251	4	5	270	0	3	0	0	3	0	2	0	0	2	0	0	0	0	0	0
13:30	13	260	3	3	279	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	1
13:45	6	269	2	3	280	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	116	3065	37	42	3260	1	47	0	0	48	0	17	0	0	17	1	5	0	0	6	5



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

East Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	6	383	5	3	397	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	0
15:15	5	335	6	0	346	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
15:30	9	343	2	4	358	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	1
15:45	1	297	3	6	307	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0
16:00	8	274	5	5	292	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
16:15	4	253	4	3	264	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
16:30	6	313	1	3	323	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
16:45	4	335	4	3	346	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0
17:00	10	292	1	1	304	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1
17:15	7	270	0	1	278	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:30	6	269	2	2	279	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0
17:45	3	225	5	7	240	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	69	3589	38	38	3734	0	19	0	0	19	0	5	0	0	5	0	3	0	0	3	8
GRAND TOTAL	253	8694	102	100	9149	4	109	0	0	113	1	36	1	0	38	1	11	0	0	12	17



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

West Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds	
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total		
07:00	9	106	1	0	116	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
07:15	8	134	6	0	148	0	2	0	0	2	0	2	1	0	3	0	0	0	0	0	0	0
07:30	13	168	3	0	184	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
07:45	12	179	8	0	199	0	2	0	0	2	1	0	1	0	2	0	0	0	0	0	0	0
08:00	10	164	8	0	182	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0
08:15	19	156	5	1	181	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	0	0
08:30	19	180	6	1	206	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	0	1
08:45	30	227	13	1	271	0	4	0	0	4	0	1	0	0	1	0	0	1	0	1	1	1
09:00	26	217	7	0	250	0	3	0	0	3	0	2	0	0	2	0	0	0	0	0	0	0
09:15	13	185	6	1	205	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0
09:30	26	194	6	0	226	0	2	0	0	2	0	2	0	0	2	0	1	0	0	1	0	0
09:45	18	214	14	0	246	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	203	2124	83	4	2414	0	36	0	0	36	1	15	2	0	18	0	1	1	0	2	2	2



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

West Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	23	204	10	0	237	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	1
11:15	25	262	13	0	300	0	4	0	0	4	1	3	0	0	4	0	0	0	0	0	0
11:30	31	283	11	0	325	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	1
11:45	27	267	15	0	309	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
12:00	33	260	13	1	307	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	0
12:15	40	279	24	0	343	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	0
12:30	34	276	15	1	326	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0
12:45	20	266	8	0	294	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	0
13:00	30	248	15	1	294	0	1	2	0	3	0	2	0	0	2	0	0	0	0	0	1
13:15	27	273	7	1	308	0	5	0	0	5	0	1	0	0	1	0	2	0	0	2	1
13:30	21	287	9	0	317	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0
13:45	33	318	10	1	362	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	1
SUBTOTAL	344	3223	150	5	3722	1	38	3	0	42	1	14	0	0	15	0	3	0	0	3	5



Traffic Count Data

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Municipality: Windsor
 Count Date: Mar 24, 2021

West Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	31	361	18	0	410	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	1
15:15	35	404	6	0	445	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	0
15:30	34	320	12	0	366	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	0
15:45	26	339	16	0	381	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	0
16:00	38	292	11	0	341	0	1	0	0	1	0	1	0	0	1	0	3	0	0	3	0
16:15	18	296	6	0	320	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	1
16:30	25	328	0	0	353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	11	289	23	1	324	0	1	0	0	1	0	1	1	0	2	0	1	0	0	1	1
17:00	9	303	24	1	337	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0
17:15	8	283	26	0	317	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0
17:30	10	311	20	0	341	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0
17:45	7	248	25	0	280	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
SUBTOTAL	252	3774	187	2	4215	0	25	0	0	25	0	16	1	0	17	1	6	0	0	7	3
GRAND TOTAL	799	9121	420	11	10351	1	99	3	0	103	2	45	3	0	50	1	10	1	0	12	10

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 08:45:00
To: 09:45:00

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
Site Code: 2103700088
Count Date: Mar 24, 2021

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: TECUMSEH RD E runs E/W

North Approach

	Out	In	Total
🚗	162	115	277
MTB	2	0	2
HT	1	0	1
🚲	0	0	0
Totals	165	115	280

HOME DEPOT ACCESS RD

🚲	0	0	0	0
HT	0	0	1	0
MTB	1	0	1	0
🚗	76	5	81	0
Totals	77	5	83	0

East Approach

	Out	In	Total
🚗	805	933	1738
MTB	16	13	29
HT	6	9	15
🚲	1	1	2
Totals	828	956	1784

TECUMSEH RD E

🚲	HT	MTB	🚗	Totals
0	0	0	2	2
0	0	0	95	95
1	8	12	823	844
1	0	0	32	33

Peds: 2



TECUMSEH RD E

Totals	🚗	MTB	HT	🚲
9	9	0	0	0
13	13	0	0	0
772	750	15	6	1
34	33	1	0	0

West Approach

	Out	In	Total
🚗	952	869	1821
MTB	12	16	28
HT	8	6	14
🚲	2	1	3
Totals	974	892	1866

Totals	🚗	MTB	HT	🚲
41	41	7	20	0
MTB	0	0	0	0
HT	0	0	0	0
🚲	0	0	0	0

HOME DEPOT ACCESS RD

South Approach

	Out	In	Total
🚗	68	70	138
MTB	0	1	1
HT	0	0	0
🚲	0	1	1
Totals	68	72	140

🚗 - Cars

MTB - Medium Trucks + Buses HT - Heavy Trucks

🚲 - Bicycles

Comments



Peak Hour Summary

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Count Date: Mar 24, 2021
 Period: 07:00 - 10:00

Peak Hour Data (08:45 - 09:45)

Start Time	North Approach HOME DEPOT ACCESS RD						South Approach HOME DEPOT ACCESS RD						East Approach TECUMSEH RD E						West Approach TECUMSEH RD E						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
08:45	23	2	26	0	1	51	12	1	4	0	0	17	6	229	3	3	2	241	30	232	14	1	1	277	586
09:00	11	1	13	0	0	25	12	4	2	0	0	18	10	189	3	4	0	206	26	222	7	0	0	255	504
09:15	29	2	18	0	1	49	7	0	7	0	1	14	10	145	4	2	1	161	13	191	6	1	0	211	435
09:30	20	0	20	0	0	40	10	2	7	0	0	19	8	209	3	0	0	220	26	199	6	0	0	231	510
Grand Total	83	5	77	0	2	165	41	7	20	0	1	68	34	772	13	9	3	828	95	844	33	2	1	974	2035
Approach %	50.3	3	46.7	0	-	-	60.3	10.3	29.4	0	-	-	4.1	93.2	1.6	1.1	-	-	9.8	86.7	3.4	0.2	-	-	-
Totals %	4.1	0.2	3.8	0	8.1	-	2	0.3	1	0	3.3	-	1.7	37.9	0.6	0.4	40.7	-	4.7	41.5	1.6	0.1	47.9	-	-
PHF	0.72	0.63	0.74	0	0.81	0.85	0.44	0.71	0	0.89	0.85	0.84	0.81	0.56	0.86	0.79	0.91	0.59	0.5	0.88	0.87	0.87	0.87	0.87	
Cars	81	5	76	0	162	41	7	20	0	68	33	750	13	9	805	95	823	32	2	952	1987	1987	1987	1987	
% Cars	97.6	100	98.7	0	98.2	100	100	100	0	100	97.1	97.2	100	100	97.2	100	97.5	97	100	97.7	97.7	97.7	97.7	97.6	
Medium Trucks + Buses	1	0	1	0	2	0	0	0	0	0	1	15	0	0	16	0	12	0	0	12	30	30	30	30	
% Medium Trucks + Buses	1.2	0	1.3	0	1.2	0	0	0	0	0	2.9	1.9	0	0	1.9	0	1.4	0	0	1.2	1.5	1.5	1.5	1.5	
Heavy Trucks	1	0	0	0	1	0	0	0	0	0	0	6	0	0	6	0	8	0	0	8	15	15	15	15	
% Heavy Trucks	1.2	0	0	0	0.6	0	0	0	0	0	0	0.8	0	0	0.7	0	0.9	0	0	0.8	0.7	0.7	0.7	0.7	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	2	3	3	3	3	
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0	0.1	3	0	0.2	0.1	0.1	0.1	0.1	
Peds					2	-				1	-					3	-			1	-			7	
% Peds					28.6	-				14.3	-					42.9	-			14.3	-			7	

Peak Hour Diagram

Specified Period

From: 11:00:00
To: 14:00:00

One Hour Peak

From: 11:45:00
To: 12:45:00

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
Site Code: 2103700088
Count Date: Mar 24, 2021

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: TECUMSEH RD E runs E/W

North Approach

	Out	In	Total
	291	151	442
MTB	0	0	0
HT	0	0	0
	0	0	0
Totals	291	151	442

HOME DEPOT ACCESS RD

	0	0	0	0
HT	0	0	0	0
MTB	0	0	0	0
	114	5	172	0
Totals	114	5	172	0

East Approach

	Out	In	Total
	1118	1318	2436
MTB	20	14	34
HT	6	4	10
	1	0	1
Totals	1145	1336	2481

TECUMSEH RD E

	HT	MTB		Totals
	0	0	2	2
	0	0	134	134
	4	14	1082	1100
	0	0	67	67

Peds: 1

Peds: 0



Peds: 1

Peds: 13

TECUMSEH RD E

Totals		MTB	HT	
19	19	0	0	0
13	13	0	0	0
1073	1048	19	6	0
40	38	1	0	1

West Approach

	Out	In	Total
	1285	1226	2511
MTB	14	20	34
HT	4	6	10
	0	1	1
Totals	1303	1253	2556

Totals				
64	4	45	0	
	62	4	45	0
MTB	1	0	0	0
HT	0	0	0	0
	1	0	0	0

HOME DEPOT ACCESS RD

South Approach

	Out	In	Total
	111	110	221
MTB	1	1	2
HT	0	0	0
	1	1	2
Totals	113	112	225

- Cars

MTB - Medium Trucks + Buses HT - Heavy Trucks

- Bicycles

Comments



Peak Hour Summary

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Count Date: Mar 24, 2021
 Period: 11:00 - 14:00

Peak Hour Data (11:45 - 12:45)

Start Time	North Approach HOME DEPOT ACCESS RD						South Approach HOME DEPOT ACCESS RD						East Approach TECUMSEH RD E						West Approach TECUMSEH RD E						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
11:45	44	0	30	0	0	74	9	1	10	0	4	20	6	272	6	5	0	289	27	272	15	0	0	314	697
12:00	48	2	29	0	1	79	12	1	14	0	4	27	11	299	2	5	0	317	33	266	13	1	0	313	736
12:15	30	2	30	0	0	62	12	2	9	0	3	23	10	248	2	3	1	263	40	283	24	0	0	347	695
12:30	50	1	25	0	0	76	31	0	12	0	2	43	13	254	3	6	0	276	34	279	15	1	0	329	724
Grand Total	172	5	114	0	1	291	64	4	45	0	13	113	40	1073	13	19	1	1145	134	1100	67	2	0	1303	2852
Approach %	59.1	1.7	39.2	0	-	-	56.6	3.5	39.8	0	-	-	3.5	93.7	1.1	1.7	-	-	10.3	84.4	5.1	0.2	-	-	-
Totals %	6	0.2	4	0	10.2	-	2.2	0.1	1.6	0	4	-	1.4	37.6	0.5	0.7	40.1	-	4.7	38.6	2.3	0.1	45.7	-	-
PHF	0.86	0.63	0.95	0	0.92	0.52	0.5	0.8	0	0.66	0.77	0.9	0.54	0.79	0.9	0.84	0.97	0.7	0.5	0.94	0.97	0.94	0.97	0.97	0.97
Cars	172	5	114	0	291	62	4	45	0	111	38	1048	13	19	1118	134	1082	67	2	1285	2805	2805	2805	2805	
% Cars	100	100	100	0	100	96.9	100	100	0	98.2	95	97.7	100	100	97.6	100	98.4	100	100	100	100	98.6	98.6	98.6	98.4
Medium Trucks + Buses	0	0	0	0	0	1	0	0	0	1	1	19	0	0	20	0	14	0	0	14	35	35	35	35	
% Medium Trucks + Buses	0	0	0	0	0	1.6	0	0	0	0.9	2.5	1.8	0	0	1.7	0	1.3	0	0	1.1	1.2	1.2	1.2	1.2	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	4	0	0	4	10	10	10	10	
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0.5	0	0.4	0	0	0.3	0.4	0.4	0.4	0.4	
Bicycles	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	2	2	2	2	
% Bicycles	0	0	0	0	0	1.6	0	0	0	0.9	2.5	0	0	0	0.1	0	0	0	0	0	0.1	0.1	0.1	0.1	
Peds					1	-				13	-				1	-				0	-	15	15	15	
% Peds					6.7	-				86.7	-				6.7	-				0	-	5.3	5.3	5.3	

Peak Hour Diagram

Specified Period

From: 15:00:00
To: 18:00:00

One Hour Peak

From: 15:00:00
To: 16:00:00

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
Site Code: 2103700088
Count Date: Mar 24, 2021

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: TECUMSEH RD E runs E/W

North Approach

	Out	In	Total
	280	145	425
MTB	1	0	1
HT	0	0	0
	0	0	0
Totals	281	145	426

HOME DEPOT ACCESS RD

	0	0	0	0
HT	0	0	0	0
MTB	0	0	1	0
	113	2	165	0
Totals	113	2	166	0

East Approach

	Out	In	Total
	1408	1647	3055
MTB	10	22	32
HT	2	9	11
	2	1	3
Totals	1422	1679	3101

TECUMSEH RD E

	HT	MTB		Totals
0	0	0	0	0
0	0	0	126	126
0	9	21	1424	1454
0	0	0	52	52

Peds: 8

Peds: 1



Peds: 1

Peds: 9

TECUMSEH RD E

Totals		MTB	HT	
13	13	0	0	0
16	16	0	0	0
1372	1358	10	2	2
21	21	0	0	0

West Approach

	Out	In	Total
	1602	1520	3122
MTB	21	10	31
HT	9	2	11
	0	2	2
Totals	1632	1534	3166

Totals	49	3	46	0
	49	3	45	0
MTB	0	0	0	0
HT	0	0	0	0
	0	0	1	0

HOME DEPOT ACCESS RD

South Approach

	Out	In	Total
	97	75	172
MTB	0	0	0
HT	0	0	0
	1	0	1
Totals	98	75	173

- Cars

MTB - Medium Trucks + Buses HT - Heavy Trucks

- Bicycles

Comments

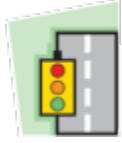


Peak Hour Summary

Intersection: TECUMSEH RD E & HOME DEPOT ACCESS RD
 Site Code: 2103700088
 Count Date: Mar 24, 2021
 Period: 15:00 - 18:00

Peak Hour Data (15:00 - 16:00)

Start Time	North Approach HOME DEPOT ACCESS RD						South Approach HOME DEPOT ACCESS RD						East Approach TECUMSEH RD E						West Approach TECUMSEH RD E						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
15:00	39	0	26	0	2	65	14	1	8	0	4	23	6	390	5	3	0	404	31	367	18	0	1	416	908
15:15	46	0	32	0	0	78	15	1	9	0	1	25	5	336	6	0	0	347	35	412	6	0	0	453	903
15:30	43	2	31	0	4	76	11	0	16	0	3	27	9	346	2	4	1	361	34	329	12	0	0	375	839
15:45	38	0	24	0	2	62	9	1	13	0	1	23	1	300	3	6	0	310	26	346	16	0	0	388	783
Grand Total	166	2	113	0	8	281	49	3	46	0	9	98	21	1372	16	13	1	1422	126	1454	52	0	1	1632	3433
Approach %	59.1	0.7	40.2	0	-	-	50	3.1	46.9	0	-	-	1.5	96.5	1.1	0.9	-	-	7.7	89.1	3.2	0	-	-	-
Totals %	4.8	0.1	3.3	0	8.2	-	1.4	0.1	1.3	0	2.9	-	0.6	40	0.5	0.4	41.4	-	3.7	42.4	1.5	0	-	47.5	-
PHF	0.9	0.25	0.88	0	0.9	0.91	0.82	0.75	0.72	0	0.91	0.58	0.88	0.67	0.54	0.88	0.88	0.9	0.88	0.72	0	0.9	0.9	0.95	
Cars	165	2	113	0	280	280	49	3	45	0	97	97	21	1358	16	13	1408	1408	126	1424	52	0	1602	3387	
% Cars	99.4	100	100	0	99.6	99.6	100	100	97.8	0	99	99	100	99	100	100	99	99	100	97.9	100	0	98.2	98.7	
Medium Trucks + Buses	1	0	0	0	1	1	0	0	0	0	0	0	0	10	0	0	10	10	0	21	0	0	21	32	
% Medium Trucks + Buses	0.6	0	0	0	0.4	0.4	0	0	0	0	0	0	0	0.7	0	0	0.7	0.7	0	1.4	0	0	1.3	0.9	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0	9	0	0	9	11	
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0.1	0	0.6	0	0	0.6	0.3	
Bicycles	0	0	0	0	0	0	0	0	1	0	1	1	0	2	0	0	2	2	0	0	0	0	0	3	
% Bicycles	0	0	0	0	0	0	0	0	2.2	0	1	1	0	0.1	0	0	0.1	0.1	0	0	0	0	0	0.1	
Peds					8	8					9	9					1	1					1	19	
% Peds					42.1	42.1					47.4	47.4					5.3	5.3					5.3	5.3	



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Project #20-035 - City of Windsor

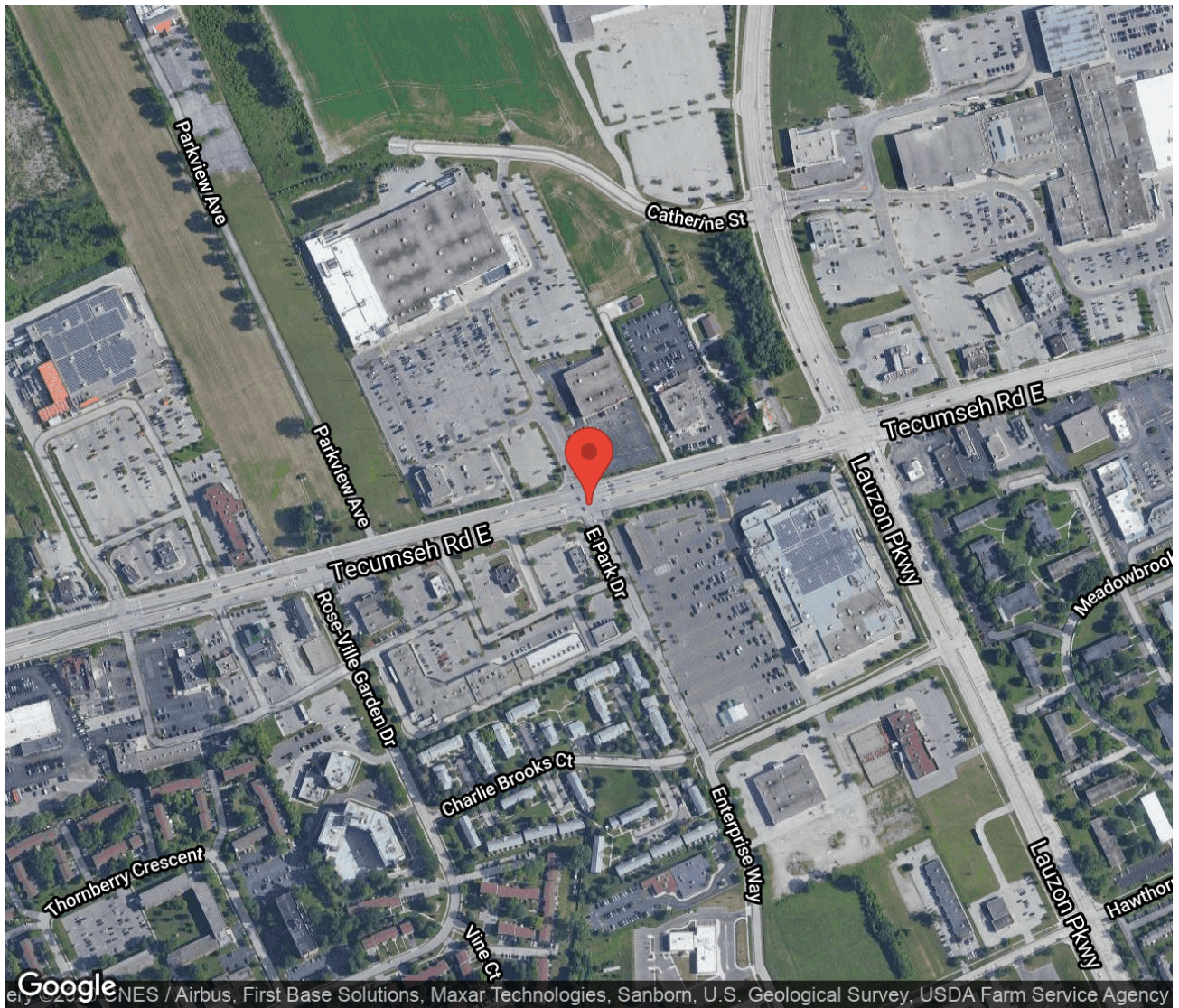
Intersection Count Report

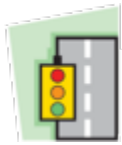
Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020
Site Code: 2003500051
Count Categories: Cars, Medium Trucks, Heavy Trucks, Bicycles, Pedestrians
Count Period: 07:00-10:00, 11:00-14:00, 15:00-18:00
Weather: Clear



Traffic Count Map

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020



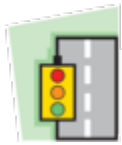


Traffic Count Summary

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

Plaza Access - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Medium Trucks, Heavy Trucks, Bicycles						Includes Cars, Medium Trucks, Heavy Trucks, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	20	5	18	0	43	0	30	16	11	0	57	2
08:00 - 09:00	27	20	49	0	96	0	49	9	14	0	72	3
09:00 - 10:00	77	32	62	0	171	0	60	46	32	0	138	6
BREAK												
11:00 - 12:00	146	66	114	0	326	0	104	56	86	0	246	9
12:00 - 13:00	171	80	120	0	371	0	150	69	95	0	314	7
13:00 - 14:00	183	98	88	0	369	0	116	71	100	0	287	10
BREAK												
15:00 - 16:00	171	75	108	0	354	0	180	90	114	0	384	6
16:00 - 17:00	169	75	116	0	360	0	186	69	97	0	352	12
17:00 - 18:00	122	71	100	0	293	0	152	50	100	0	302	3
GRAND TOTAL	1086	522	775	0	2383	0	1027	476	649	0	2152	58



Traffic Count Summary

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

TECUMSEH RD E - Traffic Summary

East Approach Totals

West Approach Totals

Hour	Includes Cars, Medium Trucks, Heavy Trucks, Bicycles						Includes Cars, Medium Trucks, Heavy Trucks, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	21	597	36	0	654	0	47	519	57	1	624	0
08:00 - 09:00	43	914	90	4	1051	0	89	733	65	0	887	0
09:00 - 10:00	88	909	141	5	1143	0	152	792	95	1	1040	5
BREAK												
11:00 - 12:00	148	975	190	8	1321	7	201	1119	77	0	1397	9
12:00 - 13:00	156	1099	220	9	1484	3	207	1128	124	0	1459	7
13:00 - 14:00	159	1097	195	2	1453	0	179	1145	105	4	1433	16
BREAK												
15:00 - 16:00	173	1289	208	2	1672	0	214	1430	138	0	1782	25
16:00 - 17:00	137	1105	180	6	1428	1	181	1346	128	2	1657	14
17:00 - 18:00	116	1026	129	5	1276	0	162	1217	93	2	1474	4
GRAND TOTAL	1041	9011	1389	41	11482	11	1432	9429	882	10	11753	80



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

North Approach - Plaza Access

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	5	1	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	6	3	5	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	8	1	8	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	1	3	11	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	8	3	14	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	10	7	10	0	27	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:45	8	7	12	0	27	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
09:00	17	9	8	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	20	9	15	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	16	6	21	0	43	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
09:45	22	8	18	0	48	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	122	57	127	0	306	1	0	1	0	2	0	0	1	0	1	1	0	0	0	0	1



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

North Approach - Plaza Access

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	35	10	27	0	72	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
11:15	39	16	29	0	84	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0
11:30	41	20	27	0	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	29	20	29	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	46	18	30	0	94	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
12:15	37	18	23	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	55	15	38	0	108	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
12:45	33	24	28	0	85	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
13:00	48	28	28	0	104	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
13:15	45	25	24	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	40	29	23	0	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	50	15	13	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	498	238	319	0	1055	2	5	3	0	10	0	0	0	0	0	0	1	0	0	1	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

North Approach - Plaza Access

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	42	15	23	0	80	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
15:15	46	20	36	0	102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	39	18	25	0	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	44	22	23	0	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	40	20	28	0	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	41	17	27	0	85	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
16:30	52	18	33	0	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	35	19	28	0	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	37	22	35	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	24	16	17	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	29	12	26	0	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	31	21	22	0	74	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	460	220	323	0	1003	2	1	1	0	4	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	1080	515	769	0	2364	5	6	5	0	16	0	0	1	0	1	1	1	0	0	2	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

South Approach - EAST PARK DR

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	10	5	2	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	7	4	1	0	12	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:30	6	4	3	0	13	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0
07:45	5	3	4	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00	7	1	1	0	9	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	2
08:15	10	2	3	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30	13	2	5	0	20	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
08:45	18	4	3	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	13	19	9	0	41	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0
09:15	12	6	7	0	25	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
09:30	15	9	6	0	30	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
09:45	15	12	10	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
SUBTOTAL	131	71	54	0	256	5	0	2	0	7	3	0	1	0	4	0	0	0	0	0	11



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

South Approach - EAST PARK DR

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	82	24	43	0	149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
15:15	46	20	26	0	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
15:30	44	25	26	0	95	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1
15:45	5	20	19	0	44	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1
16:00	57	16	22	0	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	46	22	24	0	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
16:30	44	20	30	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
16:45	37	11	21	0	69	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
17:00	46	16	25	0	87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:15	35	10	21	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	37	12	28	0	77	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
17:45	34	12	25	0	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	513	208	310	0	1031	2	0	1	0	3	1	1	0	0	2	2	0	0	0	2	21
GRAND TOTAL	1010	472	644	0	2126	11	3	4	0	18	4	1	1	0	6	2	0	0	0	2	58



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

East Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	7	89	5	0	101	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0
07:15	4	109	14	0	127	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0
07:30	4	191	9	0	204	0	1	0	0	1	0	5	0	0	5	0	0	0	0	0	0
07:45	6	189	8	0	203	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	0
08:00	4	205	13	1	223	0	3	0	0	3	0	5	0	0	5	0	0	0	0	0	0
08:15	6	195	18	0	219	0	3	0	0	3	0	5	0	0	5	0	0	0	0	0	0
08:30	12	226	26	0	264	0	3	0	0	3	0	9	0	0	9	0	1	0	0	1	0
08:45	21	249	33	3	306	0	2	0	0	2	0	8	0	0	8	0	0	0	0	0	0
09:00	19	237	26	2	284	0	5	0	0	5	0	5	0	0	5	0	1	0	0	1	0
09:15	18	197	35	0	250	0	4	0	0	4	0	2	0	0	2	0	1	1	0	2	0
09:30	26	215	32	3	276	0	2	0	0	2	0	4	0	0	4	1	0	0	0	1	0
09:45	24	230	46	0	300	0	2	1	0	3	0	4	0	0	4	0	0	0	0	0	0
SUBTOTAL	151	2332	265	9	2757	0	30	1	0	31	0	55	0	0	55	1	3	1	0	5	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

East Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	38	200	49	2	289	0	1	1	0	2	0	3	0	0	3	0	1	0	0	1	3
11:15	34	227	45	2	308	0	2	0	0	2	0	5	1	0	6	0	1	0	0	1	0
11:30	38	244	47	2	331	0	1	0	0	1	0	2	0	0	2	0	1	0	0	1	0
11:45	38	282	47	2	369	0	3	0	0	3	0	1	0	0	1	0	1	0	0	1	4
12:00	45	273	72	3	393	0	2	0	0	2	0	2	0	0	2	0	1	0	0	1	0
12:15	27	265	55	3	350	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0	1
12:30	34	258	46	2	340	0	3	0	0	3	0	4	0	0	4	0	0	1	0	1	2
12:45	50	279	46	1	376	0	3	0	0	3	0	2	0	0	2	0	1	0	0	1	0
13:00	57	278	58	0	393	0	0	0	0	0	0	8	0	0	8	0	1	0	0	1	0
13:15	32	257	37	1	327	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0
13:30	33	290	46	0	369	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0
13:45	37	250	54	1	342	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0
SUBTOTAL	463	3103	602	19	4187	0	23	1	0	24	0	38	1	0	39	0	7	1	0	8	10



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

East Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	41	328	55	0	424	0	1	0	0	1	0	5	0	0	5	0	0	0	0	0	0
15:15	43	311	50	1	405	0	2	0	0	2	0	6	0	0	6	0	1	1	0	2	0
15:30	42	336	54	0	432	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0
15:45	47	289	48	1	385	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0
16:00	38	293	52	2	385	0	3	0	0	3	0	4	0	0	4	0	1	0	0	1	0
16:15	27	271	48	0	346	0	0	1	0	1	0	2	0	0	2	0	2	0	0	2	0
16:30	25	249	44	2	320	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	1
16:45	47	276	35	2	360	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
17:00	32	278	29	2	341	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0
17:15	39	278	33	1	351	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0
17:30	28	247	42	2	319	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0
17:45	17	216	24	0	257	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0
SUBTOTAL	426	3372	514	13	4325	0	12	2	0	14	0	32	0	0	32	0	4	1	0	5	1
GRAND TOTAL	1040	8807	1381	41	11269	0	65	4	0	69	0	125	1	0	126	1	14	3	0	18	11



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

West Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	14	81	12	1	108	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0
07:15	5	108	11	0	124	0	2	1	0	3	0	3	0	0	3	0	0	0	0	0	0
07:30	16	150	14	0	180	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0
07:45	12	165	18	0	195	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0
08:00	10	162	13	0	185	0	6	1	0	7	0	7	0	0	7	0	0	0	0	0	0
08:15	23	159	18	0	200	0	2	0	0	2	0	6	0	0	6	0	0	0	0	0	0
08:30	16	167	17	0	200	0	3	0	0	3	1	1	0	0	2	0	0	1	0	1	0
08:45	37	213	14	0	264	1	0	1	0	2	1	7	0	0	8	0	0	0	0	0	0
09:00	30	180	22	0	232	0	0	0	0	0	0	2	1	0	3	0	0	1	0	1	1
09:15	31	156	18	1	206	0	5	0	0	5	0	6	0	0	6	0	0	0	0	0	1
09:30	40	216	21	0	277	0	1	1	0	2	0	3	0	0	3	0	1	0	0	1	2
09:45	49	210	29	0	288	1	6	2	0	9	1	6	0	0	7	0	0	0	0	0	1
SUBTOTAL	283	1967	207	2	2459	2	27	7	0	36	3	49	1	0	53	0	1	2	0	3	5



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

West Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	49	279	16	0	344	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	2
11:15	45	249	23	0	317	0	2	0	0	2	1	1	0	0	2	0	0	0	0	0	4
11:30	53	268	24	0	345	0	6	0	0	6	0	4	0	0	4	0	0	0	0	0	2
11:45	53	296	14	0	363	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	1
12:00	58	255	37	0	350	1	3	1	0	5	0	2	0	0	2	0	1	0	0	1	1
12:15	45	284	21	0	350	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
12:30	47	293	29	0	369	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	2
12:45	56	279	35	0	370	0	2	1	0	3	0	4	0	0	4	0	0	0	0	0	1
13:00	44	250	22	1	317	1	3	0	0	4	0	1	0	0	1	0	0	0	0	0	4
13:15	48	294	36	2	380	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	6
13:30	46	277	23	0	346	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	5
13:45	39	306	23	1	369	1	1	0	0	2	0	4	0	0	4	0	0	0	0	0	1
SUBTOTAL	583	3330	303	4	4220	3	31	3	0	37	1	30	0	0	31	0	1	0	0	1	32



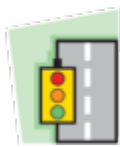
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Traffic Count Data

Intersection: TECUMSEH RD E & EAST PARK DR
Municipality: Windsor
Count Date: Nov 24, 2020

West Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	50	354	31	0	435	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	6
15:15	59	332	38	0	429	0	4	1	0	5	0	3	0	0	3	0	0	0	0	0	14
15:30	58	399	27	0	484	1	4	0	0	5	0	4	0	0	4	0	0	0	0	0	3
15:45	46	321	41	0	408	0	3	0	0	3	0	2	0	0	2	0	0	0	0	0	2
16:00	49	355	43	0	447	0	2	1	0	3	0	1	0	0	1	0	0	0	0	0	2
16:15	51	348	29	0	428	0	1	2	0	3	0	2	0	0	2	0	0	0	0	0	5
16:30	54	323	33	2	412	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
16:45	27	312	20	0	359	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
17:00	36	322	27	0	385	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2
17:15	46	336	15	0	397	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1
17:30	38	296	29	1	364	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0
17:45	41	256	22	1	320	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1
SUBTOTAL	555	3954	355	4	4868	1	16	4	0	21	1	23	0	0	24	0	0	0	0	0	43
GRAND TOTAL	1421	9251	865	10	11547	6	74	14	0	94	5	102	1	0	108	0	2	2	0	4	80



Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 09:00:00
To: 10:00:00

Intersection: TECUMSEH RD E & EAST PARK DR
Site ID: 2003500051
Count Date: Nov 24, 2020

Weather conditions:

**** Signalized Intersection ****

Major Road: TECUMSEH RD E runs E/W

North Approach

	Out	In	Total
🚗	169	335	504
MT	1	2	3
HT	0	1	1
🚲	1	1	2
Totals	171	339	510

Plaza Access

🚲	0	0	1	0
HT	0	0	0	0
MT	0	0	1	0
🚗	62	32	75	0
Totals	62	32	77	0

East Approach

	Out	In	Total
🚗	1110	874	1984
MT	14	13	27
HT	15	17	32
🚲	4	2	6
Totals	1143	906	2049

TECUMSEH RD E

	HT	MT	🚗	Totals
🚲	0	0	1	1
HT	0	1	150	152
MT	17	12	762	792
🚗	1	3	90	95

Peds: 0



Peds: 5

Peds: 0

TECUMSEH RD E

Totals	🚗	MT	HT	🚲
5	5	0	0	0
141	139	1	0	1
909	879	13	15	2
88	87	0	0	1

Peds: 6

West Approach

	Out	In	Total
🚗	1003	997	2000
MT	16	16	32
HT	19	17	36
🚲	2	2	4
Totals	1040	1032	2072

Totals	🚗	MT	HT	🚲
60	55	46	32	0
46	3	0	0	0
32	2	0	0	0
0	0	0	0	0

EAST PARK DR

South Approach

	Out	In	Total
🚗	133	209	342
MT	3	3	6
HT	2	1	3
🚲	0	2	2
Totals	138	215	353

🚗 - Cars

MT - Medium Trucks

HT - Heavy Trucks

🚲 - Bicycles

Comments



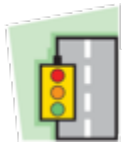
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Peak Hour Summary

Intersection: TECUMSEH RD E & EAST PARK DR
Count Date: Nov 24, 2020
Period: 07:00 - 10:00

Peak Hour Data (09:00 - 10:00)

Start Time	North Approach Plaza Access						South Approach EAST PARK DR						East Approach TECUMSEH RD E						West Approach TECUMSEH RD E						Total Vehic es
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
09:00	17	9	8	0	0	34	15	19	9	0	0	43	19	248	26	2	0	295	30	182	24	0	1	236	608
09:15	20	9	15	0	0	44	13	6	7	0	1	26	18	204	36	0	0	258	31	167	18	1	1	217	545
09:30	17	6	21	0	0	44	17	9	6	0	2	32	27	221	32	3	0	283	40	221	22	0	2	283	642
09:45	23	8	18	0	0	49	15	12	10	0	3	37	24	236	47	0	0	307	51	222	31	0	1	304	697
Grand Total	77	32	62	0	0	171	60	46	32	0	6	138	88	909	141	5	0	1143	152	792	95	1	5	1040	2492
Approach %	45	18.7	36.3	0	-	-	43.5	33.3	23.2	0	-	-	7.7	79.5	12.3	0.4	-	-	14.6	76.2	9.1	0.1	-	-	-
Totals %	3.1	1.3	2.5	0	6.9	-	2.4	1.8	1.3	0	5.5	-	3.5	36.5	5.7	0.2	45.9	-	6.1	31.8	3.8	0	-	41.7	-
PHF	0.84	0.89	0.74	0	0.87	-	0.88	0.61	0.8	0	0.8	-	0.81	0.92	0.75	0.42	0.93	-	0.75	0.89	0.77	0.25	0.86	0.89	-
Cars	75	32	62	0	169	-	55	46	32	0	133	-	87	879	139	5	1110	-	150	762	90	1	1003	2415	
% Cars	97.4	100	100	0	98.8	-	91.7	100	100	0	96.4	-	98.9	96.7	98.6	100	97.1	-	98.7	96.2	94.7	100	96.4	96.9	-
Medium Trucks	1	0	0	0	1	-	3	0	0	0	3	-	0	13	1	0	14	-	1	12	3	0	16	34	
% Medium Trucks	1.3	0	0	0	0.6	-	5	0	0	0	2.2	-	0	1.4	0.7	0	1.2	-	0.7	1.5	3.2	0	1.5	1.4	-
Heavy Trucks	0	0	0	0	0	-	2	0	0	0	2	-	0	15	0	0	15	-	1	17	1	0	19	36	
% Heavy Trucks	0	0	0	0	0	-	3.3	0	0	0	1.4	-	0	1.7	0	0	1.3	-	0.7	2.1	1.1	0	1.8	1.4	-
Bicycles	1	0	0	0	1	-	0	0	0	0	0	-	1	2	1	0	4	-	0	1	1	0	2	7	
% Bicycles	1.3	0	0	0	0.6	-	0	0	0	0	0	-	1.1	0.2	0.7	0	0.3	-	0	0.1	1.1	0	0.2	0.3	-
Peds					0	-					6	-					0	-					5	-	11
% Peds					0	-					54.5	-					0	-					45.5	-	-



Peak Hour Diagram

Specified Period

From: 11:00:00
To: 14:00:00

One Hour Peak

From: 12:00:00
To: 13:00:00

Intersection: TECUMSEH RD E & EAST PARK DR
Site ID: 2003500051
Count Date: Nov 24, 2020

Weather conditions:

**** Signalized Intersection ****

Major Road: TECUMSEH RD E runs E/W

North Approach

	Out	In	Total
🚗	365	494	859
MT	6	1	7
HT	0	0	0
🚲	0	1	1
Totals	371	496	867

Plaza Access

🚲	0	0	0	0
HT	0	0	0	0
MT	1	5	0	0
🚗	119	75	171	0
Totals	120	80	171	0

East Approach

	Out	In	Total
🚗	1459	1385	2844
MT	10	8	18
HT	12	9	21
🚲	3	1	4
Totals	1484	1403	2887

TECUMSEH RD E

	HT	MT	🚗	Totals
🚲	0	0	0	0
HT	0	0	1	206
MT	9	7	1111	1128
🚗	0	0	2	124

Peds: 0



Peds: 7

Peds: 3

Peds: 7

TECUMSEH RD E

Totals	🚗	MT	HT	🚲
9	9	0	0	0
220	219	0	0	1
1099	1075	10	12	2
156	156	0	0	0

West Approach

	Out	In	Total
🚗	1439	1342	2781
MT	10	13	23
HT	9	12	21
🚲	1	2	3
Totals	1459	1369	2828

Totals	🚗	MT	HT	🚲
150	148	69	94	0
MT	2	0	1	0
HT	0	0	0	0
🚲	0	0	0	0

EAST PARK DR

South Approach

	Out	In	Total
🚗	311	353	664
MT	3	7	10
HT	0	0	0
🚲	0	0	0
Totals	314	360	674

🚗 - Cars

MT - Medium Trucks

HT - Heavy Trucks

🚲 - Bicycles

Comments



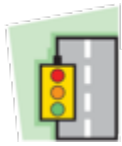
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: TECUMSEH RD E & EAST PARK DR
Count Date: Nov 24, 2020
Period: 11:00 - 14:00

Peak Hour Data (12:00 - 13:00)

Start Time	North Approach Plaza Access						South Approach EAST PARK DR						East Approach TECUMSEH RD E						West Approach TECUMSEH RD E						Total Vehic es
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
12:00	46	19	30	0	0	95	38	15	21	0	2	74	45	278	72	3	0	398	59	261	38	0	1	358	925
12:15	37	18	23	0	0	78	48	23	24	0	1	95	27	271	55	3	1	356	45	285	21	0	3	351	880
12:30	55	19	38	0	0	112	34	16	31	0	3	81	34	265	47	2	2	348	47	297	29	0	2	373	914
12:45	33	24	29	0	0	86	30	15	19	0	1	64	50	285	46	1	0	382	56	285	36	0	1	377	909
Grand Total	171	80	120	0	0	371	150	69	95	0	7	314	156	1099	220	9	3	1484	207	1128	124	0	7	1459	3628
Approach %	46.1	21.6	32.3	0	-	-	47.8	22	30.3	0	-	-	10.5	74.1	14.8	0.6	-	-	14.2	77.3	8.5	0	-	-	-
Totals %	4.7	2.2	3.3	0	10.2	-	4.1	1.9	2.6	0	8.7	-	4.3	30.3	6.1	0.2	40.9	-	5.7	31.1	3.4	0	-	40.2	-
PHF	0.78	0.83	0.79	0	0.83	-	0.78	0.75	0.77	0	0.83	-	0.78	0.96	0.76	0.75	0.93	-	0.88	0.95	0.82	0	-	0.97	0.98
Cars	171	75	119	0	0	365	148	69	94	0	311	156	1075	219	9	0	1459	206	1111	122	0	0	1439	3574	
% Cars	100	93.8	99.2	0	0	98.4	98.7	100	98.9	0	99	100	97.8	99.5	100	98.3	99.5	98.5	98.4	0	0	0	98.6	98.5	
Medium Trucks	0	5	1	0	0	6	2	0	1	0	3	0	10	0	0	0	10	1	7	2	0	0	10	29	
% Medium Trucks	0	6.3	0.8	0	0	1.6	1.3	0	1.1	0	1	0	0.9	0	0	0.7	0.7	0.5	0.6	1.6	0	0	0.7	0.8	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12	0	9	0	0	0	9	21	
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1.1	0	0	0.8	0.8	0	0.8	0	0	0	0.6	0.6	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	1	0	0	0	1	4	
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	0	0.2	0.2	0	0.1	0	0	0	0.1	0.1	
Peds					0	-					7	-					3	-					7	-	17
% Peds					0	-					41.2	-					17.6	-					41.2	-	-



Peak Hour Diagram

Specified Period

From: 15:00:00
To: 18:00:00

One Hour Peak

From: 15:00:00
To: 16:00:00

Intersection: TECUMSEH RD E & EAST PARK DR
Site ID: 2003500051
Count Date: Nov 24, 2020

Weather conditions:

**** Signalized Intersection ****

Major Road: TECUMSEH RD E runs E/W

North Approach

	Out	In	Total
	353	509	862
MT	1	1	2
HT	0	1	1
	0	1	1
Totals	354	512	866

Plaza Access

	0	0	0	0
HT	0	0	0	0
MT	1	0	0	0
	107	75	171	0
Totals	108	75	171	0

East Approach

	Out	In	Total
	1646	1693	3339
MT	7	12	19
HT	17	12	29
	2	0	2
Totals	1672	1717	3389

TECUMSEH RD E

	HT	MT		Totals
	0	0	0	0
HT	0	0	1	214
MT	12	12	1406	1430
	0	0	1	138

Peds: 0



Peds: 25

Peds: 0

TECUMSEH RD E

Totals		MT	HT	
2	2	0	0	0
208	207	0	0	1
1289	1264	7	17	1
173	173	0	0	0

Peds: 6

West Approach

	Out	In	Total
	1756	1548	3304
MT	14	9	23
HT	12	17	29
	0	3	3
Totals	1782	1577	3359

Totals				
	177	89	114	0
MT	1	0	0	0
HT	0	1	0	0
	2	0	0	0

EAST PARK DR

South Approach

	Out	In	Total
	380	385	765
MT	1	1	2
HT	1	0	1
	2	0	2
Totals	384	386	770

- Cars

MT - Medium Trucks

HT - Heavy Trucks

- Bicycles

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: TECUMSEH RD E & EAST PARK DR
Count Date: Nov 24, 2020
Period: 15:00 - 18:00

Peak Hour Data (15:00 - 16:00)

Start Time	North Approach Plaza Access						South Approach EAST PARK DR						East Approach TECUMSEH RD E						West Approach TECUMSEH RD E						Total Vehic es	
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total		
15:00	42	15	24	0	0	81	82	24	43	0	2	149	41	334	55	0	0	430	50	358	31	0	6	439	1099	
15:15	46	20	36	0	0	102	46	20	26	0	1	92	43	320	51	1	0	415	59	339	39	0	14	437	1046	
15:30	39	18	25	0	0	82	45	26	26	0	1	97	42	340	54	0	0	436	59	407	27	0	3	493	1108	
15:45	44	22	23	0	0	89	7	20	19	0	2	46	47	295	48	1	0	391	46	326	41	0	2	413	939	
Grand Total	171	75	108	0	0	354	180	90	114	0	6	384	173	1289	208	2	0	1672	214	1430	138	0	25	1782	4192	
Approach %	48.3	21.2	30.5	0	-	-	46.9	23.4	29.7	0	-	-	10.3	77.1	12.4	0.1	-	-	12	80.2	7.7	0	-	-	-	
Totals %	4.1	1.8	2.6	0	-	8.4	4.3	2.1	2.7	0	-	9.2	4.1	30.7	5	0	-	39.9	5.1	34.1	3.3	0	-	-	42.5	
PHF	0.93	0.85	0.75	0	-	0.87	0.55	0.87	0.66	0	-	0.64	0.92	0.95	0.95	0.5	-	0.96	0.91	0.88	0.84	0	-	-	0.9	0.95
Cars	171	75	107	0	-	353	177	89	114	0	-	380	173	1264	207	2	-	1646	213	1406	137	0	-	-	1756	4135
% Cars	100	100	99.1	0	-	99.7	98.3	98.9	100	0	-	99	100	98.1	99.5	100	-	98.4	99.5	98.3	99.3	0	-	-	98.5	98.6
Medium Trucks	0	0	1	0	-	1	1	0	0	0	-	1	0	7	0	0	-	7	1	12	1	0	-	-	14	23
% Medium Trucks	0	0	0.9	0	-	0.3	0.6	0	0	0	-	0.3	0	0.5	0	0	-	0.4	0.5	0.8	0.7	0	-	-	0.8	0.5
Heavy Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	17	0	0	-	17	0	12	0	0	-	-	12	30
% Heavy Trucks	0	0	0	0	-	0	0	1.1	0	0	-	0.3	0	1.3	0	0	-	1	0	0.8	0	0	-	-	0.7	0.7
Bicycles	0	0	0	0	-	0	2	0	0	0	-	2	0	1	1	0	-	2	0	0	0	0	-	-	0	4
% Bicycles	0	0	0	0	-	0	1.1	0	0	0	-	0.5	0	0.1	0.5	0	-	0.1	0	0	0	0	-	-	0	0.1
Peds	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	25	-	-	31
% Peds	-	-	-	-	0	-	-	-	-	-	19.4	-	-	-	-	-	0	-	-	-	-	-	80.6	-	-	-



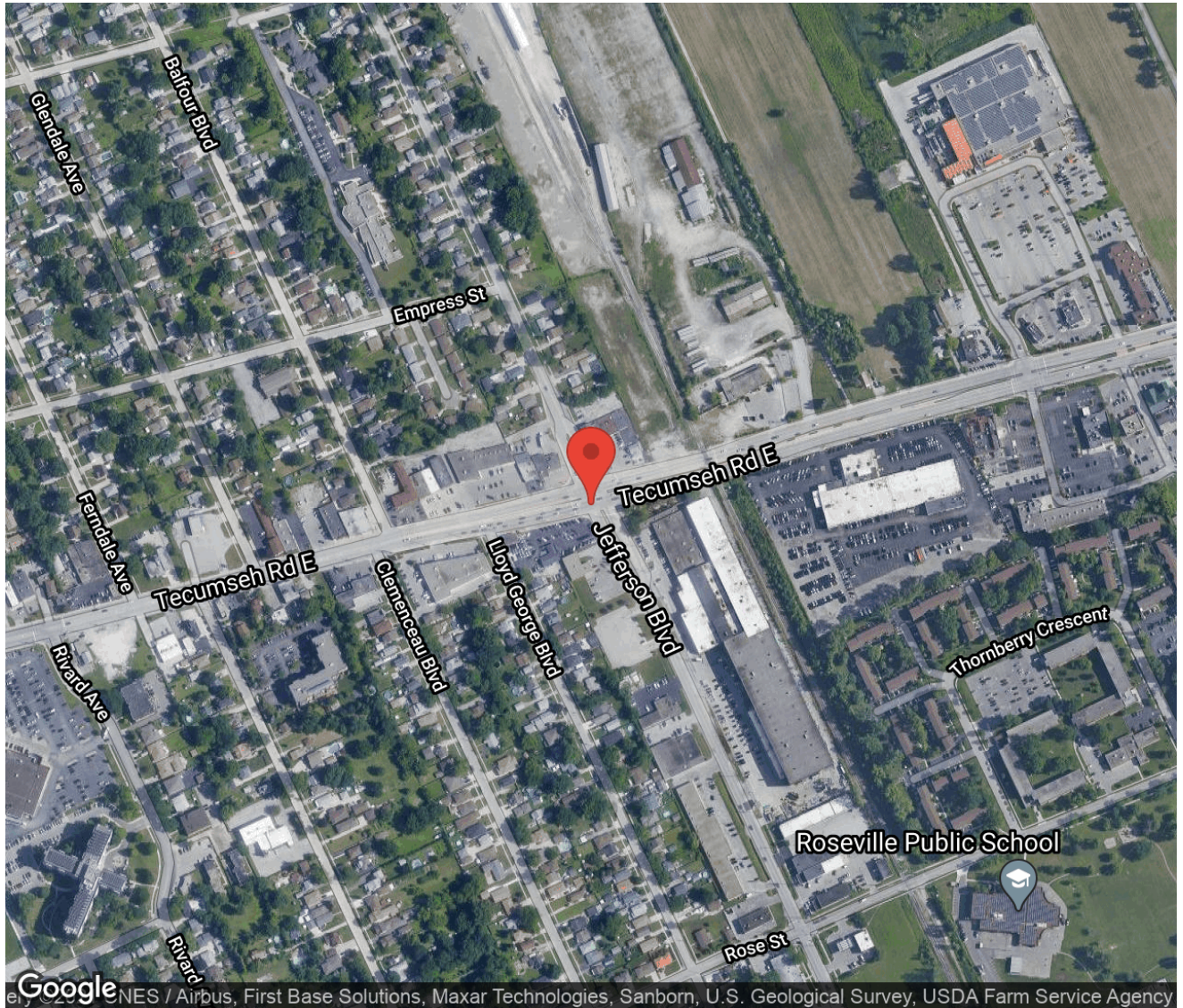
Project #21-037 - City of Windsor

Intersection Count Report

Intersection:	TECUMSEH RD E & JEFFERSON BLVD
Municipality:	Windsor
Count Date:	Mar 24, 2021
Site Code:	2103700075
Count Categories:	Cars, Medium Trucks + Buses, Heavy Trucks, Peds, Bicycles
Count Period:	07:00-10:00, 11:00-14:00, 15:00-18:00
Weather:	Clear

Traffic Count Map

Intersection: TECUMSEH RD E & JEFFERSON BLVD
Site Code: 2103700075
Municipality: Windsor
Count Date: Mar 24, 2021



Traffic Count Summary

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

JEFFERSON BLVD - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	171	225	46	0	442	2	47	132	57	0	236	0	678
08:00 - 09:00	195	246	76	0	517	0	80	160	81	0	321	1	838
09:00 - 10:00	178	133	55	0	366	0	92	124	89	0	305	1	671
BREAK													
11:00 - 12:00	235	174	80	0	489	2	85	148	130	0	363	5	852
12:00 - 13:00	224	193	77	1	495	2	90	159	119	0	368	5	863
13:00 - 14:00	237	192	72	0	501	3	91	123	119	0	333	4	834
BREAK													
15:00 - 16:00	281	281	88	0	650	5	147	297	149	0	593	5	1243
16:00 - 17:00	231	210	75	0	516	4	136	280	105	0	521	5	1037
17:00 - 18:00	224	188	74	0	486	4	141	253	124	0	518	2	1004
GRAND TOTAL	1976	1842	643	1	4462	22	909	1676	973	0	3558	28	8020

Traffic Count Summary

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

TECUMSEH RD E - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total	
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds		
07:00 - 08:00	39	448	107	1	595	0	33	430	76	0	539	0	1134	
08:00 - 09:00	78	680	172	2	932	2	48	582	57	0	687	0	1619	
09:00 - 10:00	83	624	142	4	853	1	36	676	73	0	785	0	1638	
BREAK														
11:00 - 12:00	109	820	217	1	1147	2	72	842	75	1	990	1	2137	
12:00 - 13:00	132	849	255	4	1240	0	69	941	80	2	1092	1	2332	
13:00 - 14:00	117	861	253	3	1234	1	83	952	99	2	1136	0	2370	
BREAK														
15:00 - 16:00	131	1079	323	3	1536	2	101	1202	116	0	1419	5	2955	
16:00 - 17:00	120	933	279	3	1335	4	93	1016	115	0	1224	3	2559	
17:00 - 18:00	110	813	280	2	1205	1	102	928	89	1	1120	1	2325	
GRAND TOTAL	919	7107	2028	23	1007	7	13	637	7569	780	6	8992	11	19069



Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

North Approach - JEFFERSON BLVD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds	
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total		
07:00	28	40	8	0	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	46	49	11	0	106	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:30	48	63	11	0	122	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
07:45	49	70	16	0	135	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	48	62	20	0	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	36	59	20	0	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	45	57	22	0	124	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
08:45	64	64	14	0	142	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
09:00	46	43	9	0	98	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	0
09:15	38	23	13	0	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	47	30	17	0	94	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0
09:45	46	32	13	0	91	1	0	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0
SUBTOTAL	541	592	174	0	1307	2	7	2	0	11	0	4	1	0	5	1	1	0	0	2	2	2



Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

North Approach - JEFFERSON BLVD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	55	40	16	0	111	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
11:15	62	52	18	0	132	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0	2
11:30	62	36	25	0	123	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0
11:45	53	42	19	0	114	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
12:00	56	51	17	0	124	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0
12:15	57	48	20	0	125	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
12:30	60	36	18	1	115	1	0	1	0	2	0	1	0	0	1	0	1	0	0	1	0
12:45	46	52	18	0	116	3	1	1	0	5	0	1	0	0	1	0	1	1	0	2	0
13:00	53	47	17	0	117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	61	47	22	0	130	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	1
13:30	66	47	18	0	131	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	2
13:45	55	48	15	0	118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	686	546	223	1	1456	9	5	4	0	18	1	6	0	0	7	0	2	2	0	4	7



Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

North Approach - JEFFERSON BLVD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	70	89	26	0	185	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	66	58	19	0	143	0	0	1	0	1	0	1	1	0	2	0	0	0	0	0	2
15:30	67	62	21	0	150	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	3
15:45	73	65	20	0	158	1	4	0	0	5	1	0	0	0	1	1	0	0	0	1	0
16:00	56	53	18	0	127	0	0	1	0	1	0	3	0	0	3	1	1	0	0	2	0
16:15	47	46	21	0	114	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	1
16:30	70	51	18	0	139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	57	54	16	0	127	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
17:00	53	60	24	0	137	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
17:15	61	44	14	0	119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:30	62	49	23	0	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	46	35	13	0	94	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
SUBTOTAL	728	666	233	0	1627	3	7	3	0	13	1	5	1	0	7	4	1	0	0	5	13
GRAND TOTAL	1955	1804	630	1	4390	14	19	9	0	42	2	15	2	0	19	5	4	2	0	11	22

Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

South Approach - JEFFERSON BLVD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	6	21	11	0	38	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:15	10	23	9	0	42	0	3	2	0	5	1	5	1	0	7	0	0	0	0	0	0
07:30	13	31	11	0	55	0	3	2	0	5	0	1	2	0	3	0	0	0	0	0	0
07:45	15	43	19	0	77	1	1	0	0	2	1	0	0	0	1	0	0	0	0	0	0
08:00	29	30	15	0	74	0	1	1	0	2	0	3	0	0	3	0	0	0	0	0	0
08:15	15	36	18	0	69	1	0	1	0	2	1	1	0	0	2	0	0	0	0	0	0
08:30	12	43	19	0	74	1	2	2	0	5	0	1	0	0	1	0	0	0	0	0	1
08:45	20	41	24	0	85	1	0	0	0	1	0	2	1	0	3	0	0	0	0	0	0
09:00	24	30	29	0	83	1	1	0	0	2	1	0	0	0	1	0	0	0	0	0	0
09:15	18	27	17	0	62	0	1	0	0	1	0	0	2	0	2	0	0	0	0	0	1
09:30	18	25	20	0	63	3	1	0	0	4	0	1	0	0	1	0	0	0	0	0	0
09:45	26	36	21	0	83	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	0
SUBTOTAL	206	386	213	0	805	8	15	8	0	31	5	15	6	0	26	0	0	0	0	0	2



Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

South Approach - JEFFERSON BLVD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	13	33	22	0	68	0	1	1	0	2	0	1	0	0	1	0	0	0	0	0	1
11:15	21	35	28	0	84	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
11:30	24	37	30	0	91	1	1	1	0	3	0	0	0	0	0	1	0	0	0	1	3
11:45	24	40	44	0	108	1	0	2	0	3	0	0	1	0	1	0	0	0	0	0	0
12:00	25	44	32	0	101	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
12:15	12	35	29	0	76	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2
12:30	18	31	30	0	79	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1
12:45	32	43	27	0	102	0	1	1	0	2	0	1	0	0	1	0	1	0	0	1	0
13:00	33	29	31	0	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
13:15	17	30	31	0	78	0	1	0	0	1	0	1	1	0	2	0	0	0	0	0	1
13:30	24	24	26	0	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	16	34	29	0	79	1	3	1	0	5	0	1	0	0	1	0	0	0	0	0	1
SUBTOTAL	259	415	359	0	1033	6	8	7	0	21	0	5	2	0	7	1	2	0	0	3	14



Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

South Approach - JEFFERSON BLVD

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds	
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total		
15:00	37	80	37	0	154	2	0	0	0	2	1	2	1	0	4	0	0	0	0	0	0	
15:15	39	77	36	0	152	0	0	2	0	2	0	0	4	0	4	0	0	0	0	0	2	
15:30	32	73	23	0	128	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3	
15:45	34	64	43	0	141	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0	
16:00	26	69	33	0	128	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
16:15	36	76	24	0	136	1	1	0	0	2	0	0	1	0	1	0	0	0	0	0	2	
16:30	32	64	20	0	116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16:45	41	68	27	0	136	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
17:00	38	81	37	0	156	0	1	0	0	1	0	0	1	0	1	1	0	0	0	0	1	0
17:15	42	80	35	0	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:30	30	46	20	0	96	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
17:45	29	45	31	0	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	416	823	366	0	1605	5	5	5	0	15	2	2	7	0	11	1	0	0	0	1	12	
GRAND TOTAL	881	1624	938	0	3443	19	28	20	0	67	7	22	15	0	44	2	2	0	0	4	28	



Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

East Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	10	78	27	0	115	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
07:15	6	81	21	0	108	1	0	2	0	3	0	1	0	0	1	0	0	0	0	0	0
07:30	6	137	22	1	166	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
07:45	13	144	34	0	191	2	3	1	0	6	0	0	0	0	0	0	2	0	0	2	0
08:00	13	150	36	0	199	3	4	1	0	8	0	1	0	0	1	0	0	0	0	0	1
08:15	16	158	37	2	213	0	1	0	0	1	1	2	0	0	3	0	0	0	0	0	0
08:30	19	162	44	0	225	2	0	1	0	3	0	2	0	0	2	0	0	0	0	0	1
08:45	23	189	52	0	264	1	8	1	0	10	0	3	0	0	3	0	0	0	0	0	0
09:00	16	154	32	1	203	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0	0
09:15	22	124	32	0	178	1	2	0	1	4	0	0	0	0	0	0	0	0	0	0	0
09:30	26	159	39	0	224	1	3	0	0	4	0	2	0	0	2	0	1	0	0	1	0
09:45	13	175	39	2	229	2	1	0	0	3	0	1	0	0	1	0	0	0	0	0	1
SUBTOTAL	183	1711	415	6	2315	15	24	6	1	46	2	14	0	0	16	0	3	0	0	3	3



Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

East Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	27	198	42	0	267	0	5	1	0	6	0	0	1	0	1	0	1	0	0	1	1
11:15	18	163	52	1	234	1	0	0	0	1	0	2	0	0	2	0	2	0	0	2	0
11:30	26	222	57	0	305	1	6	1	0	8	1	3	0	0	4	0	0	0	0	0	1
11:45	34	213	63	0	310	1	3	0	0	4	0	2	0	0	2	0	0	0	0	0	0
12:00	28	222	68	0	318	3	4	0	0	7	2	2	1	0	5	0	0	0	0	0	0
12:15	33	199	62	1	295	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
12:30	39	205	58	1	303	0	3	1	0	4	0	1	0	0	1	0	0	0	0	0	0
12:45	25	212	64	2	303	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0
13:00	36	217	60	0	313	0	4	0	0	4	1	0	0	0	1	0	0	0	0	0	1
13:15	27	201	60	0	288	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	0
13:30	26	210	62	0	298	1	2	1	0	4	0	1	0	0	1	0	0	0	0	0	0
13:45	24	221	69	3	317	1	3	1	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	343	2483	717	8	3551	10	31	6	0	47	5	12	2	0	19	0	4	0	0	4	3

Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

East Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	34	298	90	0	422	1	4	0	0	5	0	0	0	0	0	0	2	0	0	2	1
15:15	39	275	72	0	386	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
15:30	31	275	88	2	396	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0
15:45	23	219	73	1	316	1	2	0	0	3	0	1	0	0	1	0	0	0	0	0	1
16:00	35	214	75	0	324	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0
16:15	20	210	65	1	296	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
16:30	33	249	64	1	347	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:45	30	256	75	1	362	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
17:00	36	207	89	1	333	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	1
17:15	25	207	68	0	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	27	215	68	1	311	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0
17:45	21	180	54	0	255	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	354	2805	881	8	4048	7	13	1	0	21	0	4	0	0	4	0	3	0	0	3	7
GRAND TOTAL	880	6999	2013	22	9914	32	68	13	1	114	7	30	2	0	39	0	10	0	0	10	13



Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

West Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	5	73	17	0	95	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
07:15	7	93	21	0	121	1	2	0	0	3	0	2	1	0	3	0	0	0	0	0	0
07:30	7	116	16	0	139	1	2	1	0	4	0	0	0	0	0	0	0	0	0	0	0
07:45	12	138	18	0	168	0	1	0	0	1	0	1	2	0	3	0	0	0	0	0	0
08:00	13	120	16	0	149	0	3	3	0	6	0	1	0	0	1	0	0	0	0	0	0
08:15	13	134	14	0	161	1	4	1	0	6	0	1	0	0	1	0	0	0	0	0	0
08:30	10	129	9	0	148	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	0
08:45	11	181	13	0	205	0	2	1	0	3	0	1	0	0	1	0	1	0	0	1	0
09:00	11	169	19	0	199	0	2	4	0	6	0	2	0	0	2	0	0	0	0	0	0
09:15	7	159	13	0	179	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	0
09:30	7	155	15	0	177	1	2	1	0	4	0	2	1	0	3	0	1	0	0	1	0
09:45	10	179	20	0	209	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	113	1646	191	0	1950	4	28	11	0	43	0	12	4	0	16	0	2	0	0	2	0



Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

West Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	16	173	18	0	207	0	3	2	0	5	0	1	0	0	1	0	1	0	0	1	0
11:15	20	200	20	0	240	1	3	1	0	5	0	2	1	0	3	0	0	0	0	0	1
11:30	18	237	12	0	267	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
11:45	17	215	21	1	254	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
12:00	21	211	20	0	252	0	3	0	0	3	0	1	0	0	1	0	1	0	0	1	0
12:15	12	263	14	2	291	0	2	0	0	2	0	2	1	0	3	0	0	0	0	0	1
12:30	18	242	24	0	284	1	2	1	0	4	1	2	0	0	3	0	0	0	0	0	0
12:45	16	209	20	0	245	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0
13:00	23	224	17	2	266	0	2	0	0	2	0	0	1	0	1	0	1	0	0	1	0
13:15	19	224	25	0	268	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0
13:30	21	211	26	0	258	0	1	0	0	1	0	1	1	0	2	0	0	0	0	0	0
13:45	19	281	28	0	328	1	1	0	0	2	0	1	1	0	2	0	1	0	0	1	0
SUBTOTAL	220	2690	245	5	3160	3	29	4	0	36	1	11	5	0	17	0	5	0	0	5	2



Traffic Count Data

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Municipality: Windsor
 Count Date: Mar 24, 2021

West Approach - TECUMSEH RD E

Start Time	Cars					Medium Trucks + Buses					Heavy Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	23	303	26	0	352	1	3	1	0	5	0	0	0	0	0	0	0	0	0	0	0
15:15	37	330	31	0	398	1	4	0	0	5	0	2	0	0	2	0	0	0	0	0	2
15:30	23	283	31	0	337	0	7	0	0	7	0	1	0	0	1	0	0	0	0	0	1
15:45	16	266	25	0	307	0	2	1	0	3	0	1	1	0	2	0	0	0	0	0	2
16:00	27	239	24	0	290	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	2
16:15	20	262	25	0	307	0	0	2	0	2	0	0	0	0	0	0	1	0	0	1	1
16:30	21	264	29	0	314	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0
16:45	25	245	33	0	303	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0
17:00	26	245	33	0	304	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:15	28	214	30	0	272	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	1
17:30	27	263	15	1	306	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0
17:45	21	202	8	0	231	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	294	3116	310	1	3721	2	19	7	0	28	0	8	3	0	11	0	3	0	0	3	9
GRAND TOTAL	627	7452	746	6	8831	9	76	22	0	107	1	31	12	0	44	0	10	0	0	10	11

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 08:15:00
To: 09:15:00

Intersection: TECUMSEH RD E & JEFFERSON BLVD
Site Code: 2103700075
Count Date: Mar 24, 2021

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: TECUMSEH RD E runs E/W

North Approach

	Out	In	Total
	479	360	839
MTB	7	6	13
HT	1	4	5
	1	0	1
Totals	488	370	858

JEFFERSON BLVD

	0	0	1	0
HT	0	1	0	0
MTB	2	4	1	0
	65	223	191	0
Totals	67	228	193	0

East Approach

	Out	In	Total
	905	897	1802
MTB	16	16	32
HT	10	6	16
	0	2	2
Totals	931	921	1852

TECUMSEH RD E

	HT	MTB		Totals
0	0	0	0	0
0	0	1	45	46
1	5	12	613	631
0	0	6	55	61

Peds: 0

Peds: 0



Peds: 1

Peds: 1

TECUMSEH RD E

Totals		MTB	HT	
3	3	0	0	0
167	165	2	0	0
681	663	10	8	0
80	74	4	2	0

West Approach

	Out	In	Total
	713	799	1512
MTB	19	16	35
HT	5	10	15
	1	0	1
Totals	738	825	1563

Totals				
77	157	94	0	
	71	150	90	0
MTB	4	3	3	0
HT	2	4	1	0
	0	0	0	0

JEFFERSON BLVD

South Approach

	Out	In	Total
	311	352	663
MTB	10	14	24
HT	7	3	10
	0	0	0
Totals	328	369	697

- Cars

MTB - Medium Trucks + Buses HT - Heavy Trucks

- Bicycles

Comments



Peak Hour Summary

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Count Date: Mar 24, 2021
 Period: 07:00 - 10:00

Peak Hour Data (08:15 - 09:15)

Start Time	North Approach JEFFERSON BLVD						South Approach JEFFERSON BLVD						East Approach TECUMSEH RD E						West Approach TECUMSEH RD E						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
08:15	36	59	20	0	0	115	17	37	19	0	0	73	17	161	37	2	0	217	14	139	15	0	0	168	573
08:30	46	57	22	0	0	125	13	46	21	0	1	80	21	164	45	0	1	230	10	134	9	0	0	153	588
08:45	65	68	14	0	0	147	21	43	25	0	0	89	24	200	53	0	0	277	11	185	14	0	0	210	723
09:00	46	44	11	0	0	101	26	31	29	0	0	86	18	156	32	1	0	207	11	173	23	0	0	207	601
Grand Total	193	228	67	0	0	488	77	157	94	0	1	328	80	681	167	3	1	931	46	631	61	0	0	738	2485
Approach %	39.5	46.7	13.7	0	-	-	23.5	47.9	28.7	0	-	-	8.6	73.1	17.9	0.3	-	-	6.2	85.5	8.3	0	-	-	-
Totals %	7.8	9.2	2.7	0	19.6	13.2	3.1	6.3	3.8	0	13.2	3.2	27.4	6.7	0.1	37.5	1.9	25.4	2.5	0	29.7	-			
PHF	0.74	0.84	0.76	0	0.83	0.92	0.74	0.85	0.81	0	0.92	0.83	0.85	0.79	0.38	0.84	0.82	0.85	0.66	0	0.88	0.86			
Cars	191	223	65	0	479	311	71	150	90	0	311	74	663	165	3	905	45	613	55	0	713	2408			
% Cars	99	97.8	97	0	98.2	94.8	92.2	95.5	95.7	0	94.8	92.5	97.4	98.8	100	97.2	97.8	97.1	90.2	0	96.6	96.9			
Medium Trucks + Buses	1	4	2	0	7	10	4	3	3	0	10	4	10	2	0	16	1	12	6	0	19	52			
% Medium Trucks + Buses	0.5	1.8	3	0	1.4	3	5.2	1.9	3.2	0	3	5	1.5	1.2	0	1.7	2.2	1.9	9.8	0	2.6	2.1			
Heavy Trucks	0	1	0	0	1	7	2	4	1	0	7	2	8	0	0	10	0	5	0	0	5	23			
% Heavy Trucks	0	0.4	0	0	0.2	2.1	2.6	2.5	1.1	0	2.1	2.5	1.2	0	0	1.1	0	0.8	0	0	0.7	0.9			
Bicycles	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2			
% Bicycles	0.5	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.1	0.1			
Peds					0	-					1	-					1	-					0	-	2
% Peds					0	-					50	-					50	-					0	-	-

Peak Hour Diagram

Specified Period

From: 11:00:00
To: 14:00:00

One Hour Peak

From: 11:30:00
To: 12:30:00

Intersection: TECUMSEH RD E & JEFFERSON BLVD
Site Code: 2103700075
Count Date: Mar 24, 2021

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: TECUMSEH RD E runs E/W

North Approach

	Out	In	Total
Car	486	474	960
MTB	4	3	7
HT	2	2	4
Bike	1	0	1
Totals	493	479	972

JEFFERSON BLVD

Bike	1	0	0	0
HT	0	2	0	0
MTB	2	0	2	0
Car	81	177	228	0
Totals	84	179	230	0

East Approach

	Out	In	Total
Car	1228	1290	2518
MTB	21	17	38
HT	11	4	15
Bike	0	1	1
Totals	1260	1312	2572

TECUMSEH RD E

	HT	MTB	Car	Totals
Bike	0	0	3	3
HT	0	0	68	68
MTB	1	3	926	942
Car	0	1	67	68

Peds: 2



TECUMSEH RD E

Totals	Car	MTB	HT	Bike
1	1	0	0	0
252	250	1	1	0
876	856	13	7	0
131	121	7	3	0

West Approach

	Out	In	Total
Car	1064	1025	2089
MTB	12	19	31
HT	4	7	11
Bike	1	2	3
Totals	1081	1053	2134

Totals	90	159	139	0
Car	85	156	135	0
MTB	4	2	3	0
HT	0	1	1	0
Bike	1	0	0	0

JEFFERSON BLVD

South Approach

	Out	In	Total
Car	376	365	741
MTB	9	7	16
HT	2	6	8
Bike	1	0	1
Totals	388	378	766

Car - Cars

MTB - Medium Trucks + Buses HT - Heavy Trucks

Bike - Bicycles

Comments



Peak Hour Summary

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Count Date: Mar 24, 2021
 Period: 11:00 - 14:00

Peak Hour Data (11:30 - 12:30)

Start Time	North Approach JEFFERSON BLVD						South Approach JEFFERSON BLVD						East Approach TECUMSEH RD E						West Approach TECUMSEH RD E						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
11:30	63	37	26	0	0	126	26	38	31	0	3	95	28	231	58	0	1	317	18	239	12	0	0	269	807
11:45	53	42	20	0	0	115	25	40	47	0	0	112	35	218	63	0	0	316	17	220	21	1	0	259	802
12:00	57	51	18	0	0	126	26	45	32	0	2	103	33	228	69	0	0	330	21	216	20	0	0	257	816
12:15	57	49	20	0	2	126	13	36	29	0	2	78	35	199	62	1	0	297	12	267	15	2	1	296	797
Grand Total	230	179	84	0	2	493	90	159	139	0	7	388	131	876	252	1	1	1260	68	942	68	3	1	1081	3222
Approach %	46.7	36.3	17	0	-	-	23.2	41	35.8	0	-	-	10.4	69.5	20	0.1	-	-	6.3	87.1	6.3	0.3	-	-	-
Totals %	7.1	5.6	2.6	0	15.3	-	2.8	4.9	4.3	0	12	-	4.1	27.2	7.8	0	39.1	-	2.1	29.2	2.1	0.1	-	33.6	-
PHF	0.91	0.88	0.81	0	0.98	0.87	0.88	0.74	0	0.87	0.94	0.95	0.91	0.25	0.95	0.81	0.88	0.81	0.38	0.91	0.99	0.91	0.99	0.91	0.99
Cars	228	177	81	0	486	85	156	135	0	376	121	856	250	1	1228	68	926	67	3	1064	3154				
% Cars	99.1	98.9	96.4	0	98.6	94.4	98.1	97.1	0	96.9	92.4	97.7	99.2	100	97.5	100	98.3	98.5	100	98.4	97.9				
Medium Trucks + Buses	2	0	2	0	4	4	2	3	0	9	7	13	1	0	21	0	12	0	0	12	46				
% Medium Trucks + Buses	0.9	0	2.4	0	0.8	4.4	1.3	2.2	0	2.3	5.3	1.5	0.4	0	1.7	0	1.3	0	0	1.1	1.4				
Heavy Trucks	0	2	0	0	2	0	1	1	0	2	3	7	1	0	11	0	3	1	0	4	19				
% Heavy Trucks	0	1.1	0	0	0.4	0	0.6	0.7	0	0.5	2.3	0.8	0.4	0	0.9	0	0.3	1.5	0	0.4	0.6				
Bicycles	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	3				
% Bicycles	0	0	1.2	0	0.2	1.1	0	0	0	0.3	0	0	0	0	0	0	0.1	0	0	0.1	0.1				
Peds					2	-				7	-				1	-				1	-			11	
% Peds					18.2	-				63.6	-				9.1	-				9.1	-				

Peak Hour Diagram

Specified Period

From: 15:00:00
To: 18:00:00

One Hour Peak

From: 15:00:00
To: 16:00:00

Intersection: TECUMSEH RD E & JEFFERSON BLVD
Site Code: 2103700075
Count Date: Mar 24, 2021

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: TECUMSEH RD E runs E/W

North Approach

	Out	In	Total
	636	716	1352
MTB	10	3	13
HT	3	2	5
	1	0	1
Totals	650	721	1371

JEFFERSON BLVD

	0	0	1	0
HT	1	1	1	0
MTB	1	6	3	0
	86	274	276	0
Totals	88	281	281	0

East Approach

	Out	In	Total
	1520	1600	3120
MTB	12	24	36
HT	2	10	12
	2	1	3
Totals	1536	1635	3171

TECUMSEH RD E

	HT	MTB		Totals
	0	0	0	0
	0	0	99	101
	4	16	1182	1202
	1	2	113	116

Peds: 5

Peds: 5



Peds: 2

Peds: 5

TECUMSEH RD E

Totals		MTB	HT	
3	3	0	0	0
323	323	0	0	0
1079	1067	8	2	2
131	127	4	0	0

West Approach

	Out	In	Total
	1394	1295	2689
MTB	20	13	33
HT	5	4	9
	0	2	2
Totals	1419	1314	2733

Totals	147	297	149	0
	142	294	139	0
MTB	4	1	5	0
HT	1	2	5	0
	0	0	0	0

JEFFERSON BLVD

South Approach

	Out	In	Total
	575	514	1089
MTB	10	12	22
HT	8	2	10
	0	0	0
Totals	593	528	1121

- Cars

MTB - Medium Trucks + Buses HT - Heavy Trucks

- Bicycles

Comments



Peak Hour Summary

Intersection: TECUMSEH RD E & JEFFERSON BLVD
 Site Code: 2103700075
 Count Date: Mar 24, 2021
 Period: 15:00 - 18:00

Peak Hour Data (15:00 - 16:00)

Start Time	North Approach JEFFERSON BLVD						South Approach JEFFERSON BLVD						East Approach TECUMSEH RD E						West Approach TECUMSEH RD E						Total Vehic es
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
15:00	70	89	26	0	0	185	40	82	38	0	0	160	35	304	90	0	1	429	24	306	27	0	0	357	1131
15:15	66	59	21	0	2	146	39	77	42	0	2	158	40	276	72	0	0	388	38	336	31	0	2	405	1097
15:30	69	64	21	0	3	154	33	74	23	0	3	130	32	277	88	2	0	399	23	291	31	0	1	345	1028
15:45	76	69	20	0	0	165	35	64	46	0	0	145	24	222	73	1	1	320	16	269	27	0	2	312	942
Grand Total	281	281	88	0	5	650	147	297	149	0	5	593	131	1079	323	3	2	1536	101	1202	116	0	5	1419	4198
Approach %	43.2	43.2	13.5	0	-	-	24.8	50.1	25.1	0	-	-	8.5	70.2	21	0.2	-	-	7.1	84.7	8.2	0	-	-	-
Totals %	6.7	6.7	2.1	0	15.5	3.5	7.1	3.5	0	14.1	3.1	25.7	7.7	0.1	36.6	2.4	28.6	2.8	0	33.8	-	-	-	-	
PHF	0.92	0.79	0.85	0	0.88	0.92	0.91	0.81	0	0.93	0.82	0.89	0.9	0.38	0.9	0.66	0.89	0.94	0	0.88	0.93	0.93	0.93		
Cars	276	274	86	0	636	142	294	139	0	575	127	1067	323	3	1520	99	1182	113	0	1394	4125	4125			
% Cars	98.2	97.5	97.7	0	97.8	96.6	99	93.3	0	97	96.9	98.9	100	100	99	98	98.3	97.4	0	98.2	98.3	98.3			
Medium Trucks + Buses	3	6	1	0	10	4	1	5	0	10	4	8	0	0	12	2	16	2	0	20	52	52			
% Medium Trucks + Buses	1.1	2.1	1.1	0	1.5	2.7	0.3	3.4	0	1.7	3.1	0.7	0	0	0.8	2	1.3	1.7	0	1.4	1.2	1.2			
Heavy Trucks	1	1	1	0	3	1	2	5	0	8	0	2	0	0	2	0	4	1	0	5	18	18			
% Heavy Trucks	0.4	0.4	1.1	0	0.5	0.7	0.7	3.4	0	1.3	0	0.2	0	0	0.1	0	0.3	0.9	0	0.4	0.4	0.4			
Bicycles	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3	3			
% Bicycles	0.4	0	0	0	0.2	0	0	0	0	0	0	0.2	0	0	0.1	0	0	0	0	0	0.1	0.1			
Peds					5					5					2					5		17			
% Peds					29.4					29.4					11.8					29.4					

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1637

Intersection Name: D4-TECUMSEH-JEFFERSON

IP Address: 10.0.4.37 Port: 3000

Phases:

1	WBL	9
2	EBT	10
3	SBL	11
4	NBT	12
5	EBL	13
6	WBT	14
7	NBL	15
8	SBT	16

Comment:

Date: 2024-05-08

By: signals.tech2

(3-2) Pattern Options

Pattern Num 21

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8				
Alt Sequence	- - - - - - - -			TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - - - -				
No Extend	- - - - - - - - - - - - - - - -				
Float Enable	X X X X X X X X - - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - - - -				
Walk Rest	- X - - - X - - - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - - - -				

(3-2) Pattern Options

Pattern Num 22

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8				
Alt Sequence	- - - - - - - -			TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - - - -				
No Extend	- - - - - - - - - - - - - - - -				
Float Enable	X X X X X X X X - - - - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - - - - -				
Walk Rest	- X - - - X - - - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - - - -				

(3-2) Pattern Options

Pattern Num 23

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8				
Alt Sequence	- - - - - - - -			TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - - - -				
No Extend	- - - - - - - - - - - - - - - -				
Float Enable	X X X X X X X X - - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - - - -				
Walk Rest	- X - - - X - - - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - - - -				

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset	
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8				
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
2	1:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	25	1
3	6:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	21	1
4	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
5	3:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
6	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	23	1
7	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
8	9:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1634

Intersection Name: D4-TECUMSEH-HOME DEPOT-

IP Address: 10.0.4.34 Port: 3000

Phases:

1	WBL	9
2	EBT	10
3		11
4	SBT	12
5	EBL	13
6	WBT	14
7		15
8	NBT	16

Comment:

Date: 2024-05-08

By: signals.tech2

(3-2) Pattern Options

Pattern Num 21

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8				
Alt Sequence	- - - - - - - -			TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - -				
No Extend	- - - - - - - - - - - - - -				
Float Enable	X X - X X X - X - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - -				
Walk Rest	- X - - - X - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - -				

(3-2) Pattern Options

Pattern Num 22

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8			TOD Link	0
Alt Sequence	- - - - - - - -				
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - -				
No Extend	- - - - - - - - - - - - - -				
Float Enable	X X - X X X - X - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - -				
Walk Rest	- X - - - X - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - -				

(3-2) Pattern Options

Pattern Num 23

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8				
Alt Sequence	- - - - - - - -			TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - -				
No Extend	- - - - - - - - - - - - - -				
Float Enable	X X - X X X - X - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - -				
Walk Rest	- X - - - X - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - -				

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8			
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
2	1:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	25	1
3	6:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	21	1
4	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
5	3:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
6	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	23	1
7	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
8	9:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1635

Intersection Name: D4-TECUMSEH-ROSEVILLE-

IP Address: 10.0.4.35 Port: 3000

Phases:

1	WBL	9
2	EBT	10
3		11
4	NBT	12
5		13
6	WBT	14
7		15
8	SBT	16

Comment:

Date: 2024-05-08

By: signals.tech2

(3-2) Pattern Options

Pattern Num 23

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8				
Alt Sequence	- - - - - - - -			TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - -				
No Extend	- - - - - - - - - - - - - -				
Float Enable	X X - X - X - X - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - -				
Walk Rest	- X - - - X - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - -				

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8			
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
2	1:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	25	1
3	6:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	21	1
4	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
5	3:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
6	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	23	1
7	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
8	9:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1636

Intersection Name: D4-TECUMSEH-EAST PARK-

IP Address: 10.0.4.36 Port: 3000

Phases:

1	WBL	9
2	EBT	10
3		11
4	NBT	12
5	EBL	13
6	WBT	14
7		15
8	SBT	16

Comment:

Date: 2024-05-08

By: signals.tech2

(3-2) Pattern Options

Pattern Num 21

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8			TOD Link	0
Alt Sequence	- - - - - - - -				
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - - - -				
No Extend	- - - - - - - - - - - - - - - -				
Float Enable	X X - X X X - X - - - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - - - -				
Walk Rest	- X - - - X - - - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - - - -				

(3-2) Pattern Options

Pattern Num 22

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8			TOD Link	0
Alt Sequence	- - - - - - - -				
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - - - -				
No Extend	- - - - - - - - - - - - - - - -				
Float Enable	X X - X X X - X - - - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - - - -				
Walk Rest	- X - - - X - - - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - - - -				

(3-2) Pattern Options

Pattern Num 23

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8				
Alt Sequence	- - - - - - - -			TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - - - -				
No Extend	- - - - - - - - - - - - - - - -				
Float Enable	X X - X X X - X - - - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - - - -				
Walk Rest	- X - - - X - - - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - - - -				

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8			
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
2	1:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	25	1
3	6:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	21	1
4	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
5	3:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
6	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	23	1
7	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
8	9:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1620

Intersection Name: D4-TECUMSEH-LAUZON PK-

IP Address: 10.0.4.20 Port: 3000

Phases:

1	WBL	9
2	EBT	10
3	SBL	11
4	NBT	12
5	EBL	13
6	WBT	14
7	NBL	15
8	SBT	16

Comment:

red/blue

Date: 2024-05-08

By: signals.tech2

(3-2) Pattern Options

Pattern Num 21

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8				
Alt Sequence	- - - - - - - -			TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - - - -				
No Extend	- - - - - - - - - - - - - - - -				
Float Enable	X X X X X X X X - - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - - - -				
Walk Rest	- X - - - X - - - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - - - -				

(3-2) Pattern Options

Pattern Num 22

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8				
Alt Sequence	- - - - - - - -			TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - -				
No Extend	- - - - - - - - - - - - - -				
Float Enable	X X X X X X X X - - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - - -				
Walk Rest	- X - - - X - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - -				

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8			
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
2	1:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	25	1
3	6:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	21	1
4	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
5	3:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
6	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	23	1
7	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
8	9:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	1:00 AM	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	Scheduler	25	1
12	6:00 AM	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	Scheduler	21	1
13	9:30 AM	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	Scheduler	22	1
14	3:00 PM	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	Scheduler	22	1
15	4:00 PM	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	Scheduler	23	1
16	6:30 PM	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	Scheduler	26	1
17	11:00 PM	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	Scheduler	22	1
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1699

Intersection Name: D4-LZN PKWY-CATHERINE

IP Address: 10.0.4.99 Port: 3000

Phases:

1	SBL	9
2	NBT	10
3		11
4	EBT	12
5	NBL	13
6	SBT	14
7		15
8	WBT	16

Comment:

Date: 2024-05-08

By: signals.tech2

(3-2) Pattern Options

Pattern Num 21

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4	5 6 7 8			
Alt Sequence	- - - -	- - - -		TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - - - -				
No Extend	- - - - - - - - - - - - - - - -				
Float Enable	X X - X X X - X - - - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - - - -				
Walk Rest	- X - - - X - - - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - - - -				

(3-2) Pattern Options

Pattern Num 22

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8			TOD Link	0
Alt Sequence	- - - - - - - -				
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - -				
No Extend	- - - - - - - - - - - - - -				
Float Enable	X X - X X X - X - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - -				
Walk Rest	- X - - - X - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - -				

(3-2) Pattern Options

Pattern Num 23

Perm Mode	Sing Band	Ped Perm Mode	Partial	Max Mode	Max Inh
Walk Rest Mode	Yield	Perm Limit	2	Perm 2 Start	0
Perm 2 End	0				
	1 2 3 4 5 6 7 8				
Alt Sequence	- - - - - - - -			TOD Link	0
Trans Mode	Default	Offset Ref	Default	Adapt Mode	Disable
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				
Coord Phases	- X - - - X - - - - - - - -				
No Extend	- - - - - - - - - - - - - -				
Float Enable	X X - X X X - X - - - - - - -				
Veh Equals Ped Perm	- X - X - X - X - - - - - - -				
Walk Rest	- X - - - X - - - - - - - -				
Ped Recall	- - - - - - - - - - - - - -				
Cond Ped Call	- - - - - - - - - - - - - -				
Olap Ped Recall	- - - - - - - - - - - - - -				
Ped Recycle	- - - - - - - - - - - - - -				
Min Recall	- - - - - - - - - - - - - -				
Max Recall	- - - - - - - - - - - - - -				
Cond Service	- - - - - - - - - - - - - -				
Reservice	- - - - - - - - - - - - - -				
Veh Omit	- - - - - - - - - - - - - -				
Ped Omit	- - - - - - - - - - - - - -				
Olap Omit	- - - - - - - - - - - - - -				
Perm Reserve	- - - - - - - - - - - - - -				
Perm 1 Phases	- - - - - - - - - - - - - -				
Max Inhibit	- - - - - - - - - - - - - -				
FYA Omit	- - - - - - - - - - - - - -				
Adapt Phases	- - - - - - - - - - - - - -				

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8			
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
2	1:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	25	1
3	6:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	21	1
4	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
5	3:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
6	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	23	1
7	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
8	9:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

Appendix C

Existing Traffic Operations Reports



Lanes, Volumes, Timings

Existing AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	46	631	61	80	681	167	77	157	94	193	228	67
Future Volume (vph)	46	631	61	80	681	167	77	157	94	193	228	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00					0.99		1.00	
Fit		0.987				0.850			0.850		0.966	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4935	0	1671	3505	1599	1671	3471	1553	1787	3411	0
Fit Permitted	0.288			0.307			0.423			0.607		
Satd. Flow (perm)	536	4935	0	540	3505	1599	744	3471	1533	1141	3411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				194			109			38
Link Speed (k/h)		60			60			50				50
Link Distance (m)		230.2			437.3			222.3				200.9
Travel Time (s)		13.8			26.2			16.0				14.5
Confl. Peds. (#/hr)			1	1					1	1		
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 (%)	2%	3%	10%	8%	3%	1%	8%	4%	4%	1%	2%	3%
Adj. Flow (vph)	53	734	71	93	792	194	90	183	109	224	265	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	805	0	93	792	194	90	183	109	224	343	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	41.0		11.0	41.0	41.0	15.0	37.0	37.0	13.0	35.0	
Total Split (%)	10.8%	40.2%		10.8%	40.2%	40.2%	14.7%	36.3%	36.3%	12.7%	34.3%	
Maximum Green (s)	7.0	36.0		7.0	36.0	36.0	11.0	32.0	32.0	9.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	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	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effect Green (s)	61.3	54.7		61.3	54.7	54.7	26.5	15.5	15.5	25.3	17.1	
Actuated g/C Ratio	0.60	0.54		0.60	0.54	0.54	0.26	0.15	0.15	0.25	0.17	
v/c Ratio	0.13	0.30		0.23	0.42	0.20	0.32	0.35	0.34	0.66	0.57	

Lanes, Volumes, Timings

Existing AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	9.1	14.3		6.0	13.1	3.8	29.1	39.6	9.9	40.2	39.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.1	14.3		6.0	13.1	3.8	29.1	39.6	9.9	40.2	39.0	
LOS	A	B		A	B	A	C	D	A	D	D	
Approach Delay		14.0			10.8			28.6				39.5
Approach LOS		B			B			C				D
Queue Length 50th (m)	3.8	33.2		4.7	68.3	1.9	14.1	18.2	0.0	37.9	31.9	
Queue Length 95th (m)	9.3	44.6		7.6	91.0	4.3	23.6	25.8	12.7	52.6	42.6	
Internal Link Dist (m)		206.2			413.3			198.3				176.9
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	406	2655		402	1880	947	300	1088	555	340	1030	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.30		0.23	0.42	0.20	0.30	0.17	0.20	0.66	0.33	

Intersection Summary

Area Type: Other

Cycle Length: 102

Actuated Cycle Length: 102

Offset: 36 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 19.7

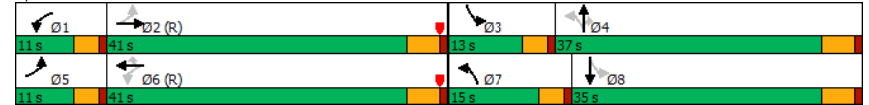
Intersection LOS: B

Intersection Capacity Utilization 69.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary
 1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS
 Existing AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	46	631	61	80	681	167	77	157	94	193	228	67
Future Volume (veh/h)	46	631	61	80	681	167	77	157	94	193	228	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1752	1781	1856	1885	1781	1841	1885	1870	1856	1856
Adj Flow Rate, veh/h	53	734	71	93	792	194	90	183	109	224	265	78
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
Percent Heavy Veh, %	2	3	10	8	3	1	8	4	4	1	2	3
Cap, veh/h	404	2526	243	469	1931	875	254	469	209	323	384	111
Arrive On Green	0.05	0.54	0.54	0.06	0.55	0.55	0.08	0.13	0.13	0.09	0.14	0.14
Sat Flow, veh/h	1781	4699	452	1697	3526	1597	1697	3497	1556	1795	2720	784
Grp Volume(v), veh/h	53	526	279	93	792	194	90	183	109	224	171	172
Grp Sat Flow(s),veh/h/ln	1781	1689	1774	1697	1763	1597	1697	1749	1556	1795	1777	1727
Q Serve(g_s), s	1.3	8.7	8.8	2.4	13.4	6.4	4.5	4.9	6.7	9.0	9.3	9.7
Cycle Q Clear(g_c), s	1.3	8.7	8.8	2.4	13.4	6.4	4.5	4.9	6.7	9.0	9.3	9.7
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	404	1815	953	469	1931	875	254	469	209	323	251	244
V/C Ratio(X)	0.13	0.29	0.29	0.20	0.41	0.22	0.35	0.39	0.52	0.69	0.68	0.71
Avail Cap(c_a), veh/h	431	1815	953	478	1931	875	299	1097	488	323	523	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	12.9	12.9	9.0	13.4	11.9	33.6	40.3	41.1	36.5	41.6	41.8
Incr Delay (d2), s/veh	0.1	0.4	0.8	0.2	0.6	0.6	0.8	0.5	2.0	6.2	3.3	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.8	0.0	1.0	0.6	1.2	1.4	1.8	3.5	2.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	13.3	13.7	9.2	14.1	12.5	34.4	40.9	43.1	42.7	44.9	45.5
LnGrp LOS	A	B	B	A	B	B	C	D	D	D	D	D
Approach Vol, veh/h	858			1079			382			567		
Approach Delay, s/veh	13.2			13.4			40.0			44.2		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	59.8	13.0	18.7	9.4	60.9	12.3	19.4				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	7.0	36.0	9.0	32.0	7.0	36.0	11.0	30.0				
Max Q Clear Time (g_c+I1), s	4.4	10.8	11.0	8.7	3.3	15.4	6.5	11.7				
Green Ext Time (p_c), s	0.1	6.6	0.0	1.9	0.0	7.4	0.1	2.2				

Intersection Summary			
HCM 6th Ctrl Delay	22.9		
HCM 6th LOS	C		

Lanes, Volumes, Timings

2: Commercial Access/Home Depot Access & Tecumseh Road
 (230538) Major Retail Development, Tecumseh Road, Windsor TIS
 Existing AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	95	844	33	34	772	13	41	7	20	83	5	77
Future Volume (vph)	95	844	33	34	772	13	41	7	20	83	5	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Frnt	0.994			0.998			0.960			0.859		
Fit Protected	0.950			0.950			0.971			0.950		
Satd. Flow (prot)	1805	5054	0	1752	5026	0	0	1763	0	1770	1597	0
Fit Permitted	0.278			0.272			0.761			0.733		
Satd. Flow (perm)	528	5054	0	502	5026	0	0	1381	0	1362	1597	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	8			3			21			89		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	437.3			186.0			136.6			186.3		
Travel Time (s)	26.2			11.2			9.8			13.4		
Conf. Peds. (#/hr)	2		1	1		2	1		3	3		1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	2%	0%	3%	3%	0%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	109	970	38	39	887	15	47	8	23	95	6	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	1008	0	39	902	0	0	78	0	95	95	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		8			4		4
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	40.0		11.0	40.0		35.0	35.0		35.0	35.0	
Total Split (s)	12.0	55.0		12.0	55.0		35.0	35.0		35.0	35.0	
Total Split (%)	11.8%	53.9%		11.8%	53.9%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)	8.0	50.0		8.0	50.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0			7.0			7.0			7.0		
Flash Dont Walk (s)	28.0			28.0			23.0			23.0		
Pedestrian Calls (#/hr)	0			0			0			0		
Act Effct Green (s)	77.5	72.0		75.3	67.3		13.4			13.4	13.4	
Actuated g/C Ratio	0.76	0.71		0.74	0.66		0.13			0.13	0.13	
v/c Ratio	0.22	0.28		0.09	0.27		0.39			0.53	0.33	

Lanes, Volumes, Timings

Existing AM Peak Hour

2: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

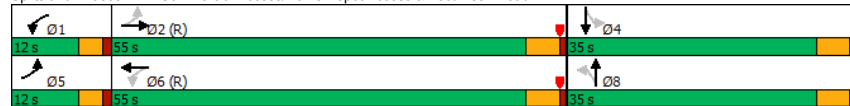


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	7.9	13.1		2.4	4.7			35.5		51.9	12.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	7.9	13.1		2.4	4.7			35.5		51.9	12.6	
LOS	A	B		A	A			D		D	B	
Approach Delay		12.6			4.6			35.5			32.2	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	11.0	50.5		1.0	13.5			11.1		19.0	1.1	
Queue Length 95th (m)	m20.2	62.1		1.9	13.2			23.3		32.5	13.8	
Internal Link Dist (m)		413.3			162.0			112.6			162.3	
Turn Bay Length (m)	35.0			30.0						45.0		
Base Capacity (vph)	502	3568		473	3316			421		400	532	
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	0.22	0.28		0.08	0.27			0.19		0.24	0.18	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 7 (7%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 11.7
 Intersection LOS: B
 Intersection Capacity Utilization 58.7%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Commercial Access/Home Depot Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

Existing AM Peak Hour

2: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	95	844	33	34	772	13	41	7	20	83	5	77
Future Volume (veh/h)	95	844	33	34	772	13	41	7	20	83	5	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1856	1856	1900	1900	1900	1900	1870	1900	1885
Adj Flow Rate, veh/h	109	970	38	39	887	15	47	8	23	95	6	89
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	2	0	3	3	0	0	0	0	2	0	1
Cap, veh/h	608	3469	136	492	3429	58	121	27	38	235	13	195
Arrive On Green	0.07	0.69	0.69	0.09	1.00	1.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1810	5041	197	1767	5130	87	499	212	298	1372	102	1513
Grp Volume(v), veh/h	109	655	353	39	584	318	78	0	95	0	95	0
Grp Sat Flow(s),veh/h/ln	1810	1702	1835	1767	1689	1840	1009	0	1372	0	1615	0
Q Serve(g_s), s	1.7	7.6	7.6	0.6	0.0	0.0	3.7	0.0	0.0	0.0	0.0	5.6
Cycle Q Clear(g_c), s	1.7	7.6	7.6	0.6	0.0	0.0	9.2	0.0	0.0	7.4	0.0	5.6
Prop In Lane	1.00		0.11	1.00		0.05	0.60		0.29	1.00		0.94
Lane Grp Cap(c), veh/h	608	2342	1262	492	2257	1230	186	0	235	0	208	0
V/C Ratio(X)	0.18	0.28	0.28	0.08	0.26	0.26	0.42	0.00	0.00	0.40	0.00	0.46
Avail Cap(c_a), veh/h	632	2342	1262	549	2257	1230	424	0	462	0	475	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.98	0.98	0.98	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.8	6.1	6.1	4.2	0.0	0.0	43.4	0.0	0.0	41.9	0.0	41.1
Incr Delay (d2), s/veh	0.1	0.3	0.6	0.1	0.3	0.5	1.5	0.0	0.0	1.1	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.2	0.0	0.1	0.2	1.3	0.0	0.0	1.5	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.0	6.4	6.7	4.3	0.3	0.5	44.9	0.0	0.0	43.0	0.0	42.7
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h		1117			941		78			190		
Approach Delay, s/veh		6.3			0.5		44.9			42.9		
Approach LOS		A			A		D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	75.2		18.1	10.7	73.2		18.1				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	8.0	50.0		30.0	8.0	50.0		30.0				
Max Q Clear Time (g_c+I1), s	2.6	9.6		9.4	3.7	2.0		11.2				
Green Ext Time (p_c), s	0.0	9.8		1.0	0.1	8.6		0.4				

Intersection Summary

HCM 6th Ctrl Delay 8.2
 HCM 6th LOS A

Lanes, Volumes, Timings

Existing AM Peak Hour

3: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↖	↙	←	↘	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖	↑↑↑	↘	↗
Traffic Volume (vph)	949	45	92	921	56	112
Future Volume (vph)	949	45	92	921	56	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	50.0		50.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			40.0		50.0	
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.98
Frt	0.993					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4948	0	1626	5036	1736	1553
Flt Permitted			0.239		0.950	
Satd. Flow (perm)	4948	0	408	5036	1730	1526
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	10					117
Link Speed (k/h)	60		60	50		
Link Distance (m)	186.0		68.8	289.9		
Travel Time (s)	11.2		4.1	20.9		
Conf. Peds. (#/hr)		10	10	3	5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	2%	11%	3%	4%	4%
Adj. Flow (vph)	989	47	96	959	58	117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1036	0	96	959	58	117
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases			6			4
Detector Phase	2		1	6	4	4
Switch Phase						
Minimum Initial (s)	10.0		7.0	10.0	11.0	11.0
Minimum Split (s)	28.0		11.0	28.0	34.0	34.0
Total Split (s)	56.0		11.0	67.0	35.0	35.0
Total Split (%)	54.9%		10.8%	65.7%	34.3%	34.3%
Maximum Green (s)	51.0		7.0	62.0	30.0	30.0
Yellow Time (s)	4.0		3.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		4.0	5.0	5.0	5.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	16.0		16.0	22.0	22.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	72.0		81.8	80.8	11.2	11.2
Actuated g/C Ratio	0.71		0.80	0.79	0.11	0.11
v/c Ratio	0.30		0.23	0.24	0.30	0.43

Lanes, Volumes, Timings

Existing AM Peak Hour

3: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↖	↙	←	↘	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Control Delay	3.0		3.1	1.6	46.3	13.2
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	3.0		3.1	1.6	46.3	13.2
LOS	A		A	A	D	B
Approach Delay	3.0			1.8	24.2	
Approach LOS	A			A	C	
Queue Length 50th (m)	9.5		1.4	6.7	11.3	0.0
Queue Length 95th (m)	11.2		3.6	9.7	23.9	16.6
Internal Link Dist (m)	162.0			44.8	265.9	
Turn Bay Length (m)			50.0		50.0	
Base Capacity (vph)	3494		410	3988	510	531
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.30		0.23	0.24	0.11	0.22

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	13 (13%), Referenced to phase 2:EBT and 6:WBTL, Start of Red
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.43
Intersection Signal Delay:	4.1
Intersection Capacity Utilization:	48.4%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 3: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary Existing AM Peak Hour
 3: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↑	↑↑↑	↑	↑
Traffic Volume (veh/h)	949	45	92	921	56	112
Future Volume (veh/h)	949	45	92	921	56	112
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1870	1737	1856	1841	1841
Adj Flow Rate, veh/h	989	47	96	959	58	117
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	2	11	3	4	4
Cap, veh/h	3398	161	526	4027	188	167
Arrive On Green	1.00	1.00	0.06	0.79	0.11	0.11
Sat Flow, veh/h	5079	233	1654	5233	1753	1560
Grp Volume(v), veh/h	674	362	96	959	58	117
Grp Sat Flow(s),veh/h/ln	1675	1797	1654	1689	1753	1560
Q Serve(g_s), s	0.0	0.0	1.4	4.9	3.1	7.4
Cycle Q Clear(g_c), s	0.0	0.0	1.4	4.9	3.1	7.4
Prop In Lane		0.13	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2317	1243	526	4027	188	167
V/C Ratio(X)	0.29	0.29	0.18	0.24	0.31	0.70
Avail Cap(c_a), veh/h	2317	1243	533	4027	516	459
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	2.8	2.6	42.1	44.0
Incr Delay (d2), s/veh	0.3	0.6	0.2	0.1	0.9	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.0	0.1	0.9	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.3	0.6	2.9	2.8	43.0	49.2
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	1036			1055	175	
Approach Delay, s/veh	0.4			2.8	47.1	
Approach LOS	A			A	D	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.5	75.5		15.9		86.1
Change Period (Y+Rc), s	4.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	7.0	51.0		30.0		62.0
Max Q Clear Time (g_c+I1), s	3.4	2.0		9.4		6.9
Green Ext Time (p_c), s	0.1	10.6		0.7		10.3
Intersection Summary						
HCM 6th Ctrl Delay			5.1			
HCM 6th LOS			A			

Lanes, Volumes, Timings Existing AM Peak Hour
 4: Tecumseh Road & Serbian Centre Private Drive(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Volume (vph)	0	1049	1137	4	0	1
Future Volume (vph)	0	1049	1137	4	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt						0.865
Fit Protected						
Satd. Flow (prot)	0	5085	5085	0	0	1611
Fit Permitted						
Satd. Flow (perm)	0	5085	5085	0	0	1611
Link Speed (k/h)		60	60			50
Link Distance (m)		68.8	204.3			282.6
Travel Time (s)		4.1	12.3			20.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1140	1236	4	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1140	1240	0	0	1
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	32.1%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC

Existing AM Peak Hour

4: Tecumseh Road & Serbian Centre Private Drive (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑↑↑↑		↑↑↑↑			↑
Traffic Vol, veh/h	0	1049	1137	4	0	1
Future Vol, veh/h	0	1049	1137	4	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1140	1236	4	0	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 620
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 7.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.92
Pot Cap-1 Maneuver	0	-	- 0 369
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- 369
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-


Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	369
HCM Lane V/C Ratio	-	-	-	0.003
HCM Control Delay (s)	-	-	-	14.8
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Lanes, Volumes, Timings

Existing AM Peak Hour

5: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑↑			↑↑↑↑			↑↑↑↑			↑↑↑↑		
Traffic Volume (vph)	152	792	95	88	909	141	60	46	32	77	32	62
Future Volume (vph)	152	792	95	88	909	141	60	46	32	77	32	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00					0.99
Frt		0.984			0.980			0.939				0.901
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	4892	0	1805	4948	0	1671	1784	0	1787	1693	0
Fit Permitted	0.202			0.268			0.657			0.700		
Satd. Flow (perm)	380	4892	0	508	4948	0	1151	1784	0	1317	1693	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			40			35				70
Link Speed (k/h)		60			60			50				50
Link Distance (m)		204.3			268.3			231.1				151.2
Travel Time (s)		12.3			16.1			16.6				10.9
Confl. Peds. (#/hr)			6	6			5					5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	4%	0%	3%	1%	8%	0%	0%	1%	0%	0%
Adj. Flow (vph)	171	890	107	99	1021	158	67	52	36	87	36	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	997	0	99	1179	0	67	88	0	87	106	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4				8
Permitted Phases	2			6				4				8
Detector Phase	5	2		1	6			4	4			8 8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0		35.0
Total Split (s)	12.0	55.0		12.0	55.0		35.0	35.0		35.0		35.0
Total Split (%)	11.8%	53.9%		11.8%	53.9%		34.3%	34.3%		34.3%		34.3%
Maximum Green (s)	8.0	50.0		8.0	50.0		30.0	30.0		30.0		30.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
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
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)		7.0			7.0			7.0				7.0
Flash Dont Walk (s)		23.0			23.0			23.0				23.0
Pedestrian Calls (#/hr)		0			0			0				0
Act Effct Green (s)	77.0	69.6		76.2	67.2		12.8	12.8		12.8		12.8
Actuated g/C Ratio	0.75	0.68		0.75	0.66		0.13	0.13		0.13		0.13
v/c Ratio	0.43	0.30		0.21	0.36		0.47	0.35		0.53		0.39

Lanes, Volumes, Timings

Existing AM Peak Hour

5: East Park Drive/Walmart Access & Tecumseh Road (R2658) Major Retail Development, Tecumseh Road, Windsor TIS

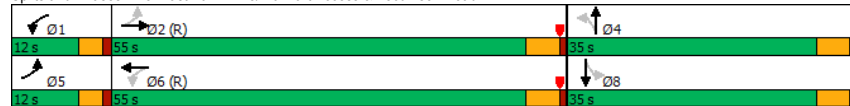


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	13.4	5.6		4.0	7.0		51.3	28.9		52.8	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.4	5.6		4.0	7.0		51.3	28.9		52.8	20.3	
LOS	B	A		A	A		D	C		D	C	
Approach Delay	6.8			6.8			38.6			34.9		
Approach LOS	A			A			D			C		
Queue Length 50th (m)	7.7	19.2		4.1	21.7		13.3	10.2		17.4	6.9	
Queue Length 95th (m)	29.6	24.1		m9.3	37.3		25.8	23.4		31.3	21.3	
Internal Link Dist (m)	180.3		244.3		207.1		127.2					
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	397	3347		481	3273		338	549		387	547	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.43	0.30		0.21	0.36		0.20	0.16		0.22	0.19	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 93 (91%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 10.5
 Intersection LOS: B
 Intersection Capacity Utilization 56.4%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

Existing AM Peak Hour

5: East Park Drive/Walmart Access & Tecumseh Road (R2658) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Traffic Volume (veh/h)	152	792	95	88	909	141	60	46	32	77	32	62
Future Volume (veh/h)	152	792	95	88	909	141	60	46	32	77	32	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1841	1841	1900	1856	1885	1781	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	171	890	107	99	1021	158	67	52	36	87	36	70
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	0	3	1	8	0	0	1	0	0
Cap, veh/h	511	2870	344	514	2775	429	194	164	114	219	90	176
Arrive On Green	0.08	0.63	0.63	0.15	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1795	4546	544	1810	4423	683	1218	1041	721	1310	573	1114
Grp Volume(v), veh/h	171	655	342	99	779	400	67	0	88	87	0	106
Grp Sat Flow(s), veh/h/ln	1795	1675	1740	1810	1689	1729	1218	0	1762	1310	0	1687
Q Serve(g_s), s	3.2	9.1	9.2	1.7	0.0	0.0	5.3	0.0	4.5	6.4	0.0	5.8
Cycle Q Clear(g_c), s	3.2	9.1	9.2	1.7	0.0	0.0	11.1	0.0	4.5	11.0	0.0	5.8
Prop In Lane	1.00		0.31	1.00		0.40	1.00		0.41	1.00		0.66
Lane Grp Cap(c), veh/h	511	2116	1099	514	2119	1085	194	0	278	219	0	266
V/C Ratio(X)	0.33	0.31	0.31	0.19	0.37	0.37	0.35	0.00	0.32	0.40	0.00	0.40
Avail Cap(c_a), veh/h	512	2116	1099	523	2119	1085	360	0	518	398	0	496
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.88	0.88	0.88	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.9	8.6	8.6	4.8	0.0	0.0	43.6	0.0	38.1	43.0	0.0	38.6
Incr Delay (d2), s/veh	0.4	0.4	0.7	0.2	0.4	0.9	1.1	0.0	0.6	1.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.0	0.1	0.3	1.1	0.0	1.3	1.4	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.3	9.0	9.4	5.0	0.4	0.9	44.7	0.0	38.7	44.1	0.0	39.6
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h	1168			1278			155			193		
Approach Delay, s/veh	8.6			0.9			41.3			41.6		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	69.4		21.1	11.9	69.0		21.1				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	8.0	50.0		30.0	8.0	50.0		30.0				
Max Q Clear Time (g_c+I1), s	3.7	11.2		13.1	5.2	2.0		13.0				
Green Ext Time (p_c), s	0.1	9.7		0.7	0.2	12.9		1.0				

Intersection Summary

HCM 6th Ctrl Delay 9.2
 HCM 6th LOS A

Lanes, Volumes, Timings

Existing AM Peak Hour

6: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↖ ↖	↖ ↖ ↖		↙ ↙ ↙	↙ ↙ ↙		↖ ↖ ↖	↖ ↖ ↖		↘ ↘ ↘	↘ ↘ ↘	↘ ↘ ↘
Traffic Volume (vph)	185	604	123	112	653	44	219	282	83	81	340	253
Future Volume (vph)	185	604	123	112	653	44	219	282	83	81	340	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	1.00		1.00		1.00	0.99
Frt		0.975			0.991			0.966				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	4934	0	1736	5016	0	1752	4742	0	1517	4940	1495
Fit Permitted	0.330			0.319			0.525			0.428		
Satd. Flow (perm)	574	4934	0	582	5016	0	967	4742	0	681	4940	1473
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			11			73				265
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	5		7	7		5	3		6	6		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	1%	8%	4%	1%	23%	3%	5%	6%	19%	5%	8%
Adj. Flow (vph)	199	649	132	120	702	47	235	303	89	87	366	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	781	0	120	749	0	235	392	0	87	366	272
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	37.0	37.0
Total Split (s)	12.0	39.0		12.0	39.0		11.0	35.0		16.0	40.0	40.0
Total Split (%)	11.8%	38.2%		11.8%	38.2%		10.8%	34.3%		15.7%	39.2%	39.2%
Maximum Green (s)	8.0	33.0		8.0	33.0		7.0	29.0		12.0	34.0	34.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			7.0	7.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	60.6	50.7		60.2	50.5		23.6	16.0		28.1	16.6	16.6
Actuated g/C Ratio	0.59	0.50		0.59	0.50		0.23	0.16		0.28	0.16	0.16
v/c Ratio	0.47	0.32		0.28	0.30		0.85	0.49		0.33	0.46	0.59

Lanes, Volumes, Timings

Existing AM Peak Hour

6: Lauzon Parkway & Tecumseh Road

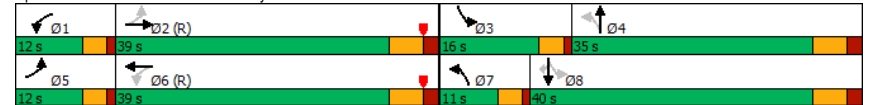
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	15.1	17.9		9.9	15.9		60.8	34.6		25.2	36.1	15.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	15.1	17.9		9.9	15.9		60.8	34.6		25.2	36.1	15.4
LOS	B	B		A	B		E	C		C	D	B
Approach Delay		17.3			15.1			44.4				27.0
Approach LOS		B			B			D				C
Queue Length 50th (m)	27.3	39.8		8.9	31.7		40.5	23.1		14.4	26.1	11.4
Queue Length 95th (m)	41.4	46.6		18.5	44.9		#74.1	32.8		25.8	34.5	43.4
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	426	2476		435	2489		277	1400		295	1646	667
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	0.47	0.32		0.28	0.30		0.85	0.28		0.29	0.22	0.41

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 63 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 24.2
 Intersection Capacity Utilization 78.8%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

Existing AM Peak Hour

6: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔		↔↔↔		↔↔↔		↔↔↔		↔↔↔		↔↔↔	
Traffic Volume (veh/h)	185	604	123	112	653	44	219	282	83	81	340	253
Future Volume (veh/h)	185	604	123	112	653	44	219	282	83	81	340	253
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1767	1885	1781	1841	1885	1559	1856	1826	1811	1618	1826	1781
Adj Flow Rate, veh/h	199	649	132	120	702	47	235	303	89	87	366	272
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	8	4	1	23	3	5	6	19	5	8
Cap, veh/h	424	1882	377	391	2099	140	336	916	255	311	1151	346
Arrive On Green	0.03	0.14	0.14	0.07	0.43	0.43	0.07	0.24	0.24	0.13	0.46	0.46
Sat Flow, veh/h	1682	4295	861	1753	4927	328	1767	3868	1078	1541	4985	1498
Grp Volume(v), veh/h	199	516	265	120	488	261	235	258	134	87	366	272
Grp Sat Flow(s),veh/h/ln	1682	1716	1725	1753	1716	1824	1767	1662	1622	1541	1662	1498
Q Serve(g_s), s	6.6	13.8	14.1	3.8	9.7	9.8	7.0	6.6	7.0	4.3	4.7	15.7
Cycle Q Clear(g_c), s	6.6	13.8	14.1	3.8	9.7	9.8	7.0	6.6	7.0	4.3	4.7	15.7
Prop In Lane	1.00		0.50	1.00		0.18	1.00		0.66	1.00		1.00
Lane Grp Cap(c), veh/h	424	1503	756	391	1461	777	336	787	384	311	1151	346
V/C Ratio(X)	0.47	0.34	0.35	0.31	0.33	0.34	0.70	0.33	0.35	0.28	0.32	0.79
Avail Cap(c_a), veh/h	424	1503	756	412	1461	777	336	945	461	396	1662	499
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.98
Uniform Delay (d), s/veh	15.7	30.4	30.5	15.1	19.6	19.6	31.6	32.2	32.4	25.4	22.4	25.3
Incr Delay (d2), s/veh	0.8	0.6	1.2	0.4	0.6	1.2	6.3	0.3	0.7	0.5	0.2	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.5	2.7	0.4	1.5	1.8	2.9	1.5	1.6	0.8	1.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	31.0	31.8	15.5	20.2	20.8	37.9	32.5	33.0	25.8	22.6	31.1
LnGrp LOS	B	C	C	B	C	C	D	C	C	C	C	C
Approach Vol, veh/h	980			869			627			725		
Approach Delay, s/veh	28.3			19.7			34.6			26.2		
Approach LOS	C			B			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	50.7	10.4	30.1	12.0	49.4	11.0	29.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	8.0	33.0	12.0	29.0	8.0	33.0	7.0	34.0				
Max Q Clear Time (g_c+1), s	5.8	16.1	6.3	9.0	8.6	11.8	9.0	17.7				
Green Ext Time (p_c), s	0.1	7.0	0.1	3.2	0.0	7.5	0.0	4.5				
Intersection Summary												
HCM 6th Ctrl Delay	26.7											
HCM 6th LOS	C											

Lanes, Volumes, Timings

Existing AM Peak Hour

7: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔		↔↔		↔↔		↔↔		↔↔		↔↔	
Traffic Volume (vph)	44	22	13	54	10	27	25	365	88	56	661	58
Future Volume (vph)	44	22	13	54	10	27	25	365	88	56	661	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99		1.00			1.00			0.98	1.00		1.00
Frt	0.945				0.890				0.850		0.988	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1645	0	1245	1457	0	1612	3471	1583	1626	4933	0
Fit Permitted	0.730			0.732			0.338			0.503		
Satd. Flow (perm)	1387	1645	0	955	1457	0	572	3471	1549	860	4933	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	14			30			98			19		
Link Speed (k/h)	50			50			60			60		
Link Distance (m)	283.9			106.2			230.9			292.9		
Travel Time (s)	20.4			7.6			13.9			17.6		
Confl. Peds. (#/hr)			4		4		3		1		1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	23%	45%	0%	22%	12%	4%	2%	11%	4%	0%
Adj. Flow (vph)	49	24	14	60	11	30	28	406	98	62	734	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	38	0	60	41	0	28	406	98	62	798	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4				8		8		5		2	
Permitted Phases	4				8		8		2		6	
Detector Phase	4		4		8		8		5		2	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	35.0	35.0		35.0	35.0		12.0	55.0	55.0	12.0	55.0	
Total Split (%)	34.3%	34.3%		34.3%	34.3%		11.8%	53.9%	53.9%	11.8%	53.9%	
Maximum Green (s)	29.0	29.0		29.0	29.0		8.0	49.0	49.0	8.0	49.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	6.0	
Lead/Lag												
Lead-Lag Optimize?							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	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	13.2	13.2		13.2	13.2		78.9	72.5	72.5	79.9	74.8	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.77	0.71	0.71	0.78	0.73	
v/c Ratio	0.27	0.17		0.49	0.19		0.05	0.16	0.09	0.09	0.22	

Lanes, Volumes, Timings

7: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Existing AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	43.0	28.8		54.2	19.8		10.3	18.6	12.7	3.5	6.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	43.0	28.8		54.2	19.8		10.3	18.6	12.7	3.5	6.4	
LOS	D	C		D	B		B	B	B	A	A	
Approach Delay	36.8			40.3			17.1			6.2		
Approach LOS	D			D			B			A		
Queue Length 50th (m)	9.5	4.6		12.0	2.1		2.1	36.7	1.7	2.3	21.6	
Queue Length 95th (m)	19.7	13.4		24.3	11.6		m8.3	52.4	16.8	6.6	33.4	
Internal Link Dist (m)	259.9		82.2		206.9		115.0		268.9			
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	394	477		271	435		528	2465	1128	737	3622	
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	0.08		0.22	0.09		0.05	0.16	0.09	0.08	0.22	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 97 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 13.7
 Intersection Capacity Utilization 55.2%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

7: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Existing AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	44	22	13	54	10	27	25	365	88	56	661	58
Future Volume (veh/h)	44	22	13	54	10	27	25	365	88	56	661	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1559	1233	1900	1574	1722	1841	1870	1737	1841	1900
Adj Flow Rate, veh/h	49	24	14	60	11	30	28	406	98	62	734	64
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	23	45	0	22	12	4	2	11	4	0
Cap, veh/h	215	143	83	167	57	155	520	2306	1043	712	3194	277
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.08	1.00	1.00	0.06	0.68	0.68
Sat Flow, veh/h	1376	1121	654	896	447	1220	1640	3497	1581	1654	4708	408
Grp Volume(v), veh/h	49	0	38	60	0	41	28	406	98	62	521	277
Grp Sat Flow(s), veh/h/ln	1376	0	1775	896	0	1667	1640	1749	1581	1654	1675	1766
Q Serve(g_s), s	3.4	0.0	1.9	6.5	0.0	2.2	0.5	0.0	0.0	1.1	6.0	6.1
Cycle Q Clear(g_c), s	5.6	0.0	1.9	8.5	0.0	2.2	0.5	0.0	0.0	1.1	6.0	6.1
Prop In Lane	1.00		0.37	1.00		0.73	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	215	0	226	167	0	212	520	2306	1043	712	2273	1198
V/C Ratio(X)	0.23	0.00	0.17	0.36	0.00	0.19	0.05	0.18	0.09	0.09	0.23	0.23
Avail Cap(c_a), veh/h	432	0	505	308	0	474	587	2306	1043	748	2273	1198
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	39.7	43.5	0.0	39.8	4.7	0.0	0.0	4.3	6.2	6.3
Incr Delay (d2), s/veh	0.5	0.0	0.3	1.3	0.0	0.4	0.0	0.1	0.2	0.1	0.2	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.8	0.0	0.6	1.0	0.0	0.6	0.0	0.0	0.0	0.0	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.9	0.0	40.1	44.8	0.0	40.3	4.7	0.1	0.2	4.3	6.5	6.7
LnGrp LOS	D	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h	87			101			532			860		
Approach Delay, s/veh	41.6			43.0			0.4			6.4		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	73.2		19.0	7.8	75.2		19.0				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	8.0	49.0		29.0	8.0	49.0		29.0				
Max Q Clear Time (g_c+I1), s	3.1	2.0		7.6	2.5	8.1		10.5				
Green Ext Time (p_c), s	0.1	4.1		0.4	0.0	7.3		0.6				

Intersection Summary

HCM 6th Ctrl Delay: 8.7
 HCM 6th LOS: A

Lanes, Volumes, Timings

Existing PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	101	1202	116	131	1079	323	147	297	149	281	281	88
Future Volume (vph)	101	1202	116	131	1079	323	147	297	149	281	281	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00		0.99	1.00		1.00
Fit		0.987				0.850			0.850		0.964	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5008	0	1752	3574	1615	1752	3574	1509	1770	3372	0
Fit Permitted	0.123			0.105			0.293			0.380		
Satd. Flow (perm)	229	5008	0	194	3574	1588	539	3574	1488	707	3372	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				331			169			37
Link Speed (k/h)		60			60			50				50
Link Distance (m)		230.2			437.3			222.3				200.9
Travel Time (s)		13.8			26.2			16.0				14.5
Conf. Peds. (#/hr)	5		5	5		5	5		2	2		5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	3%	3%	1%	0%	3%	1%	7%	2%	3%	2%
Adj. Flow (vph)	115	1366	132	149	1226	367	167	338	169	319	319	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	1498	0	149	1226	367	167	338	169	319	419	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	5	2		1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	13.0	47.0		13.0	47.0	47.0	15.0	35.0	35.0	15.0	35.0	
Total Split (%)	11.8%	42.7%		11.8%	42.7%	42.7%	13.6%	31.8%	31.8%	13.6%	31.8%	
Maximum Green (s)	9.0	42.0		9.0	42.0	42.0	11.0	30.0	30.0	11.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	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	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effect Green (s)	64.0	54.8		64.8	55.2	55.2	29.2	17.6	17.6	30.0	18.0	
Actuated g/C Ratio	0.58	0.50		0.59	0.50	0.50	0.27	0.16	0.16	0.27	0.16	
v/c Ratio	0.47	0.60		0.64	0.68	0.38	0.64	0.59	0.44	1.07	0.72	

Lanes, Volumes, Timings

Existing PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	15.9	21.4		38.7	42.5	20.3	40.7	46.7	9.7	105.8	46.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.9	21.4		38.7	42.5	20.3	40.7	46.7	9.7	105.8	46.7	
LOS	B	C		D	D	C	D	D	A	F	D	
Approach Delay		21.0			37.5			35.9				72.2
Approach LOS		C			D			D				E
Queue Length 50th (m)	9.8	85.7		0.3	138.1	43.7	28.8	37.6	0.0	-66.3	43.6	
Queue Length 95th (m)	19.3	107.4		#51.2	174.5	78.6	43.1	48.9	16.7	#87.3	56.4	
Internal Link Dist (m)		206.2			413.3			198.3				176.9
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	261	2505		242	1794	962	266	974	528	299	946	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.44	0.60		0.62	0.68	0.38	0.63	0.35	0.32	1.07	0.44	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 56 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 37.1

Intersection LOS: D

Intersection Capacity Utilization 76.4%

ICU Level of Service D

Analysis Period (min) 15

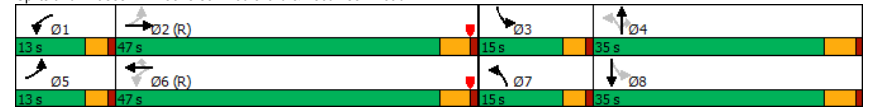
~ Volume exceeds capacity, queue is theoretically infinite.

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: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

Existing PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑↑			↑↑↑		
Traffic Volume (veh/h)	101	1202	116	131	1079	323	147	297	149	281	281	88
Future Volume (veh/h)	101	1202	116	131	1079	323	147	297	149	281	281	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1885	1900	1856	1885	1796	1870	1856	1870
Adj Flow Rate, veh/h	115	1366	132	149	1226	367	167	338	169	319	319	100
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	3	3	1	0	3	1	7	2	3	2
Cap, veh/h	255	2387	231	282	1811	812	289	605	255	317	462	142
Arrive On Green	0.06	0.50	0.50	0.06	0.51	0.51	0.09	0.17	0.17	0.10	0.17	0.17
Sat Flow, veh/h	1781	4733	457	1767	3582	1605	1767	3582	1509	1781	2648	815
Grp Volume(v), veh/h	115	982	516	149	1226	367	167	338	169	319	210	209
Grp Sat Flow(s),veh/h/ln	1781	1702	1786	1767	1791	1605	1767	1791	1509	1781	1763	1700
Q Serve(g_s), s	3.3	22.1	22.1	4.4	28.3	16.1	8.5	9.5	11.5	11.0	12.3	12.7
Cycle Q Clear(g_c), s	3.3	22.1	22.1	4.4	28.3	16.1	8.5	9.5	11.5	11.0	12.3	12.7
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	255	1717	901	282	1811	812	289	605	255	317	307	296
V/C Ratio(X)	0.45	0.57	0.57	0.53	0.68	0.45	0.58	0.56	0.66	1.01	0.68	0.70
Avail Cap(c_a), veh/h	291	1717	901	316	1811	812	298	977	411	317	481	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	19.0	19.0	15.1	20.4	17.4	33.7	41.9	42.8	40.4	42.6	42.7
Incr Delay (d2), s/veh	1.2	1.4	2.6	1.5	2.1	1.8	2.6	0.8	2.9	52.2	2.7	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.0	3.5	0.4	4.1	2.6	2.4	2.8	3.0	9.2	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	20.4	21.6	16.7	22.5	19.2	36.3	42.7	45.7	92.6	45.3	45.8
LnGrp LOS	B	C	C	B	C	B	D	D	D	F	D	D
Approach Vol, veh/h	1613			1742			674			738		
Approach Delay, s/veh	20.6			21.3			41.9			65.9		
Approach LOS	C			C			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	60.5	15.0	23.6	10.8	60.6	14.4	24.2				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	9.0	42.0	11.0	30.0	9.0	42.0	11.0	30.0				
Max Q Clear Time (g_c+I1), s	6.4	24.1	13.0	13.5	5.3	30.3	10.5	14.7				
Green Ext Time (p_c), s	0.1	11.0	0.0	3.1	0.1	8.2	0.0	2.6				

Intersection Summary	
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Lanes, Volumes, Timings

Existing PM Peak Hour

2: Commercial Access/Home Depot Access & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑			↑↑		
Traffic Volume (vph)	126	1454	52	21	1372	16	49	3	46	166	2	113
Future Volume (vph)	126	1454	52	21	1372	16	49	3	46	166	2	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99		0.99	1.00		0.99
Fit	0.995			0.998			0.936			0.852		
Fit Protected	0.950			0.950			0.976			0.950		
Satd. Flow (prot)	1805	5057	0	1805	5124	0	0	1725	0	1787	1598	0
Fit Permitted	0.114			0.117			0.777			0.671		
Satd. Flow (perm)	216	5057	0	222	5124	0	0	1373	0	1261	1598	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	7			2			40			126		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	437.3			186.0			136.6			186.3		
Travel Time (s)	26.2			11.2			9.8			13.4		
Confl. Peds. (#/hr)	8		9	9		8	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	140	1616	58	23	1524	18	54	3	51	184	2	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	1674	0	23	1542	0	0	108	0	184	128	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			8		
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	40.0		11.0	40.0		35.0	35.0		35.0	35.0	
Total Split (s)	15.0	60.0		15.0	60.0		35.0	35.0		35.0	35.0	
Total Split (%)	13.6%	54.5%		13.6%	54.5%		31.8%	31.8%		31.8%	31.8%	
Maximum Green (s)	11.0	55.0		11.0	55.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0			7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	28.0			28.0			23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0			0			0	0		0	0	
Act Effct Green (s)	79.7	74.7		74.7	66.7		20.9	20.9		20.9	20.9	
Actuated g/C Ratio	0.72	0.68		0.68	0.61		0.19	0.19		0.19	0.19	
v/c Ratio	0.50	0.49		0.09	0.50		0.37	0.37		0.77	0.32	

Lanes, Volumes, Timings

Existing PM Peak Hour

2: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

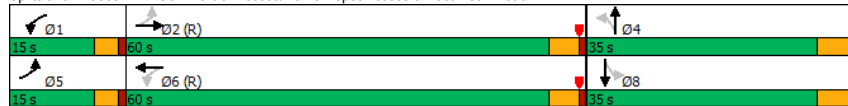


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	22.4	5.8		8.8	17.7			26.6		62.2	8.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	22.4	5.8		8.8	17.7			26.6		62.2	8.3	
LOS	C	A		A	B			C		E	A	
Approach Delay	7.1			17.5			26.6			40.1		
Approach LOS	A			B			C			D		
Queue Length 50th (m)	6.0	21.6		1.4	108.0			13.2		39.8	0.4	
Queue Length 95th (m)	m21.8	m46.8		4.7	144.3			27.3		60.3	15.0	
Internal Link Dist (m)	413.3			162.0				112.6		162.3		
Turn Bay Length (m)	35.0			30.0				45.0				
Base Capacity (vph)	316	3436		316	3105			403		343	527	
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	0.44	0.49		0.07	0.50			0.27		0.54	0.24	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 93 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 14.7
 Intersection Capacity Utilization 64.0%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Commercial Access/Home Depot Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

Existing PM Peak Hour

2: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑				↔		↑↑		↑
Traffic Volume (veh/h)	126	1454	52	21	1372	16	49	3	46	166	2	113
Future Volume (veh/h)	126	1454	52	21	1372	16	49	3	46	166	2	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1900	1900	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	140	1616	58	23	1524	18	54	3	51	184	2	126
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	0	0	1	0	0	0	0	1	0	0
Cap, veh/h	390	3282	118	269	3241	38	136	22	97	287	5	304
Arrive On Green	0.06	0.65	0.65	0.06	1.00	1.00	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1810	5059	182	1810	5243	62	455	113	508	1359	25	1586
Grp Volume(v), veh/h	140	1087	587	23	997	545	108	0	0	184	0	128
Grp Sat Flow(s),veh/h/ln	1810	1702	1836	1810	1716	1873	1077	0	0	1359	0	1612
Q Serve(g_s), s	2.8	18.1	18.1	0.5	0.0	0.0	5.2	0.0	0.0	4.7	0.0	7.7
Cycle Q Clear(g_c), s	2.8	18.1	18.1	0.5	0.0	0.0	12.9	0.0	0.0	17.6	0.0	7.7
Prop In Lane	1.00		0.10	1.00		0.03	0.50		0.47	1.00		0.98
Lane Grp Cap(c), veh/h	390	2209	1191	269	2121	1158	255	0	0	287	0	309
V/C Ratio(X)	0.36	0.49	0.49	0.09	0.47	0.47	0.42	0.00	0.00	0.64	0.00	0.41
Avail Cap(c_a), veh/h	457	2209	1191	392	2121	1158	371	0	0	397	0	440
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.6	10.0	10.0	7.6	0.0	0.0	42.0	0.0	0.0	43.5	0.0	39.0
Incr Delay (d2), s/veh	0.6	0.8	1.5	0.1	0.7	1.3	1.1	0.0	0.0	2.4	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.5	0.0	0.2	0.4	1.9	0.0	0.0	3.4	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	10.8	11.4	7.7	0.7	1.3	43.1	0.0	0.0	45.9	0.0	39.9
LnGrp LOS	A	B	B	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h	1814			1565			108			312		
Approach Delay, s/veh	10.6			1.0			43.1			43.5		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	76.4		26.1	10.9	73.0		26.1				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	55.0		30.0	11.0	55.0		30.0				
Max Q Clear Time (g_c+I1), s	2.5	20.1		14.9	4.8	2.0		19.6				
Green Ext Time (p_c), s	0.0	18.7		0.5	0.2	19.7		1.2				

Intersection Summary

HCM 6th Ctrl Delay 10.3
 HCM 6th LOS B

Lanes, Volumes, Timings

Existing PM Peak Hour

3: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↖	↗	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖	↑↑↑	↖	↖
Traffic Volume (vph)	1512	62	198	1163	100	187
Future Volume (vph)	1512	62	198	1163	100	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	50.0		50.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			40.0		50.0	
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Ped Bike Factor	1.00				1.00	0.98
Frt	0.994					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5097	0	1752	5085	1787	1599
Flt Permitted			0.085		0.950	
Satd. Flow (perm)	5097	0	157	5085	1781	1574
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8					213
Link Speed (k/h)			60		50	
Link Distance (m)	186.0			85.2	289.9	
Travel Time (s)	11.2			5.1	20.9	
Conf. Peds. (#/hr)		13	13		3	3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	1%	0%	3%	2%	1%	1%
Adj. Flow (vph)	1718	70	225	1322	114	213
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1788	0	225	1322	114	213
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases			6			4
Detector Phase	2		1	6	4	4
Switch Phase						
Minimum Initial (s)	10.0		7.0	10.0	11.0	11.0
Minimum Split (s)	28.0		11.0	28.0	34.0	34.0
Total Split (s)	58.0		17.0	75.0	35.0	35.0
Total Split (%)	52.7%		15.5%	68.2%	31.8%	31.8%
Maximum Green (s)	53.0		13.0	70.0	30.0	30.0
Yellow Time (s)	4.0		3.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		4.0	5.0	5.0	5.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	16.0			16.0	22.0	22.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	70.9		87.8	86.8	13.2	13.2
Actuated g/C Ratio	0.64		0.80	0.79	0.12	0.12
v/c Ratio	0.54		0.76	0.33	0.54	0.57

Lanes, Volumes, Timings

Existing PM Peak Hour

3: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↖	↗	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Control Delay	5.6		30.9	7.1	54.5	12.1
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	5.7		30.9	7.1	54.5	12.1
LOS	A		C	A	D	B
Approach Delay	5.7			10.5		26.9
Approach LOS	A			B		C
Queue Length 50th (m)	43.9		33.1	47.9	24.8	0.0
Queue Length 95th (m)	24.2		#61.6	72.6	40.6	19.5
Internal Link Dist (m)	162.0			61.2	265.9	
Turn Bay Length (m)			50.0		50.0	
Base Capacity (vph)	3287		313	4014	487	584
Starvation Cap Reductn	154		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.57		0.72	0.33	0.23	0.36

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 102 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of Red
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 9.6
 Intersection Capacity Utilization 63.9%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary Existing PM Peak Hour
 3: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↖	↙	←	↘	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖	↑↑↑	↖	↗
Traffic Volume (veh/h)	1512	62	198	1163	100	187
Future Volume (veh/h)	1512	62	198	1163	100	187
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1900	1856	1870	1885	1885
Adj Flow Rate, veh/h	1718	70	225	1322	114	212
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	0	3	2	1	1
Cap, veh/h	3299	134	284	3833	285	253
Arrive On Green	0.44	0.44	0.06	0.75	0.16	0.16
Sat Flow, veh/h	5240	206	1767	5274	1795	1598
Grp Volume(v), veh/h	1162	626	225	1322	114	212
Grp Sat Flow(s),veh/h/ln	1716	1846	1767	1702	1795	1598
Q Serve(g_s), s	27.2	27.2	4.3	9.6	6.3	14.2
Cycle Q Clear(g_c), s	27.2	27.2	4.3	9.6	6.3	14.2
Prop In Lane		0.11	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2232	1201	284	3833	285	253
V/C Ratio(X)	0.52	0.52	0.79	0.34	0.40	0.84
Avail Cap(c_a), veh/h	2232	1201	380	3833	490	436
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.85	0.85	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	18.5	18.7	4.6	41.6	44.9
Incr Delay (d2), s/veh	0.7	1.4	8.1	0.2	0.9	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.6	0.1	1.9	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.2	19.9	26.7	4.9	42.5	52.1
LnGrp LOS	B	B	C	A	D	D
Approach Vol, veh/h	1788			1547	326	
Approach Delay, s/veh	19.5			8.0	48.7	
Approach LOS	B			A	D	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.0	76.6		22.4		87.6
Change Period (Y+Rc), s	4.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	13.0	53.0		30.0		70.0
Max Q Clear Time (g_c+I1), s	6.3	29.2		16.2		11.6
Green Ext Time (p_c), s	0.5	15.9		1.3		16.8
Intersection Summary						
HCM 6th Ctrl Delay			17.3			
HCM 6th LOS			B			

Lanes, Volumes, Timings Existing PM Peak Hour
 4: Tecumseh Road & Serbian Centre Private Drive(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	←	↙	↘	↗
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↖
Traffic Volume (vph)	0	1711	1410	19	0	4
Future Volume (vph)	0	1711	1410	19	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Fit Protected						
Satd. Flow (prot)	0	5136	5126	0	0	1644
Fit Permitted						
Satd. Flow (perm)	0	5136	5126	0	0	1644
Link Speed (k/h)		60	60		50	
Link Distance (m)		85.2	187.8		251.2	
Travel Time (s)		5.1	11.3		18.1	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	1801	1484	20	0	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1801	1504	0	0	4
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	37.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC

Existing PM Peak Hour

4: Tecumseh Road & Serbian Centre Private Drive (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑↑↑↑		↑↑↑↑			↑
Traffic Vol, veh/h	0	1711	1410	19	0	4
Future Vol, veh/h	0	1711	1410	19	0	4
Conflicting Peds, #/hr	14	0	0	14	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	1801	1484	20	0	4

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 766
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.1
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.9
Pot Cap-1 Maneuver	0	-	- 0 300
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	- - -
Mov Cap-1 Maneuver	-	-	- - 296
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -


Approach	EB	WB	SB
HCM Control Delay, s	0	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	296
HCM Lane V/C Ratio	-	-	-	0.014
HCM Control Delay (s)	-	-	-	17.3
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0

Lanes, Volumes, Timings

Existing PM Peak Hour

5: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑↑			↑↑↑↑			↑↑↑↑			↑↑↑↑		
Traffic Volume (vph)	214	1430	138	173	1289	208	180	90	114	171	75	108
Future Volume (vph)	214	1430	138	173	1289	208	180	90	114	171	75	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			0.98			0.98		
Frt		0.987			0.979			0.916				0.911
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	5010	0	1805	4992	0	1787	1733	0	1805	1681	0
Fit Permitted	0.079			0.084			0.498			0.454		
Satd. Flow (perm)	149	5010	0	160	4992	0	919	1733	0	863	1681	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			33			64				72
Link Speed (k/h)		60			60			50				50
Link Distance (m)		187.8			268.3			231.1				151.2
Travel Time (s)		11.3			16.1			16.6				10.9
Confl. Peds. (#/hr)			6	6			25					25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	1%	0%	2%	0%	1%	0%	0%	0%	0%	1%
Adj. Flow (vph)	238	1589	153	192	1432	231	200	100	127	190	83	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	1742	0	192	1663	0	200	227	0	190	203	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4				8
Permitted Phases	2			6			4					8
Detector Phase	5	2		1	6		4	4			8	8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0		35.0
Total Split (s)	18.0	54.0		13.0	49.0		43.0	43.0		43.0		43.0
Total Split (%)	16.4%	49.1%		11.8%	44.5%		39.1%	39.1%		39.1%		39.1%
Maximum Green (s)	14.0	49.0		9.0	44.0		38.0	38.0		38.0		38.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
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
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0		23.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effct Green (s)	73.3	60.4		67.0	57.0		26.6	26.6		26.6		26.6
Actuated g/C Ratio	0.67	0.55		0.61	0.52		0.24	0.24		0.24		0.24
v/c Ratio	0.84	0.63		0.83	0.64		0.90	0.49		0.91		0.44

Lanes, Volumes, Timings

Existing PM Peak Hour

5: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

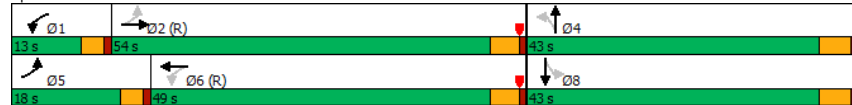


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	59.3	11.2		53.2	16.1		79.0	27.3		82.7	23.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	59.3	11.2		53.2	16.1		79.0	27.3		82.7	23.7	
LOS	E	B		D	B		E	C		F	C	
Approach Delay		17.0			19.9			51.5			52.3	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	26.1	112.3		27.3	63.7		43.8	31.2		41.8	24.5	
Queue Length 95th (m)	#74.0	154.8		#70.6	86.5		66.2	48.3		64.3	40.8	
Internal Link Dist (m)		163.8			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	309	2761		232	2602		317	640		298	627	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.77	0.63		0.83	0.64		0.63	0.35		0.64	0.32	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 24.3
 Intersection Capacity Utilization 86.5%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

Existing PM Peak Hour

5: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	214	1430	138	173	1289	208	180	90	114	171	75	108
Future Volume (veh/h)	214	1430	138	173	1289	208	180	90	114	171	75	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1885	1870	1885	1900	1870	1900	1885	1885	1900	1900	1900	1885
Adj Flow Rate, veh/h	238	1589	153	192	1432	231	200	100	127	190	83	120
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	1	0	2	0	1	1	0	0	0	1
Cap, veh/h	284	2374	228	267	2157	348	303	222	282	285	206	298
Arrive On Green	0.09	0.50	0.50	0.05	0.33	0.33	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1795	4734	455	1810	4427	713	1171	743	944	1156	691	999
Grp Volume(v), veh/h	238	1142	600	192	1101	562	200	0	227	190	0	203
Grp Sat Flow(s),veh/h/ln	1795	1702	1785	1810	1702	1737	1171	0	1687	1156	0	1690
Q Serve(g_s), s	7.2	27.7	27.8	5.7	30.6	30.6	18.1	0.0	12.0	17.5	0.0	10.5
Cycle Q Clear(g_c), s	7.2	27.7	27.8	5.7	30.6	30.6	28.6	0.0	12.0	29.5	0.0	10.5
Prop In Lane	1.00		0.26	1.00		0.41	1.00		0.56	1.00		0.59
Lane Grp Cap(c), veh/h	284	1707	895	267	1658	846	303	0	504	285	0	505
V/C Ratio(X)	0.84	0.67	0.67	0.72	0.66	0.66	0.66	0.00	0.45	0.67	0.00	0.40
Avail Cap(c_a), veh/h	357	1707	895	284	1658	846	358	0	583	339	0	584
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.5	20.6	20.6	20.6	29.3	29.3	42.1	0.0	31.3	43.2	0.0	30.7
Incr Delay (d2), s/veh	13.2	2.1	4.0	6.5	1.7	3.3	3.5	0.0	0.6	3.9	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.9	4.6	1.0	5.9	6.4	3.6	0.0	2.9	3.5	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	22.7	24.6	27.1	31.0	32.6	45.6	0.0	31.9	47.1	0.0	31.3
LnGrp LOS	C	C	C	C	C	C	D	A	C	D	A	C
Approach Vol, veh/h		1980			1855			427				393
Approach Delay, s/veh		24.7			31.1			38.3				38.9
Approach LOS		C			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	60.2		37.9	13.6	58.6		37.9				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	9.0	49.0		38.0	14.0	44.0		38.0				
Max Q Clear Time (g_c+I1), s	7.7	29.8		30.6	9.2	32.6		31.5				
Green Ext Time (p_c), s	0.1	13.4		1.6	0.4	8.5		1.3				

Intersection Summary

HCM 6th Ctrl Delay 29.7
 HCM 6th LOS C

Lanes, Volumes, Timings

Existing PM Peak Hour

6: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↙	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖
Traffic Volume (vph)	276	1241	198	167	863	78	238	703	217	138	422	273
Future Volume (vph)	276	1241	198	167	863	78	238	703	217	138	422	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	0.99		1.00	0.99		1.00
Frt		0.979			0.988			0.965				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	5043	0	1805	5060	0	1787	4894	0	1656	5136	1553
Flt Permitted	0.181			0.098			0.410			0.153		
Satd. Flow (perm)	329	5043	0	186	5060	0	768	4894	0	266	5136	1521
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			14			70				263
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	21		19	19		21	8		9	9		8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	2%	0%	0%	12%	1%	2%	1%	9%	1%	4%
Adj. Flow (vph)	303	1364	218	184	948	86	262	773	238	152	464	300
Shared Lane Traffic (%)												
Lane Group Flow (vph)	303	1582	0	184	1034	0	262	1011	0	152	464	300
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	36.0		11.0	36.0	36.0
Total Split (s)	15.0	43.0		15.0	43.0		16.0	36.0		16.0	36.0	36.0
Total Split (%)	13.6%	39.1%		13.6%	39.1%		14.5%	32.7%		14.5%	32.7%	32.7%
Maximum Green (s)	11.0	37.0		11.0	37.0		12.0	30.0		12.0	30.0	30.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		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	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			6.0			6.0	6.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	54.6	41.6		53.1	40.8		41.1	27.1		39.2	26.2	26.2
Actuated g/C Ratio	0.50	0.38		0.48	0.37		0.37	0.25		0.36	0.24	0.24
v/c Ratio	1.00	0.82		0.77	0.55		0.66	0.80		0.65	0.38	0.53

Lanes, Volumes, Timings

Existing PM Peak Hour

6: Lauzon Parkway & Tecumseh Road

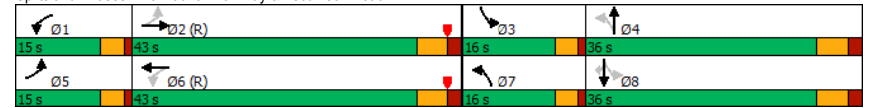
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↙	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	82.7	22.6		43.1	28.9		31.8	41.4		44.8	28.7	6.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	82.7	22.6		43.1	28.9		31.8	41.4		44.8	28.7	6.4
LOS	F	C		D	C		C	D		D	C	A
Approach Delay		32.2			31.1			39.4				24.1
Approach LOS		C			C			D				C
Queue Length 50th (m)	~44.1	125.2		23.4	67.9		39.5	72.8		19.2	26.0	3.9
Queue Length 95th (m)	#105.8	#118.1		#58.6	85.0		58.7	87.5		43.5	24.4	7.7
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	303	1925		252	1887		398	1385		249	1400	606
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	1.00	0.82		0.73	0.55		0.66	0.73		0.61	0.33	0.50

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 7 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 32.3
 Intersection LOS: C
 Intersection Capacity Utilization 87.4%
 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: 6: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

Existing PM Peak Hour

6: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑		→	↑↑↑		→	↑↑↑		→	↑↑↑		→
Traffic Volume (veh/h)	276	1241	198	167	863	78	238	703	217	138	422	273
Future Volume (veh/h)	276	1241	198	167	863	78	238	703	217	138	422	273
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1900	1870	1900	1900	1722	1885	1870	1885	1767	1885	1841
Adj Flow Rate, veh/h	303	1364	218	184	948	86	262	773	238	152	464	300
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	0	2	0	0	12	1	2	1	9	1	4
Cap, veh/h	353	1723	275	243	1764	160	373	1038	316	252	1256	377
Arrive On Green	0.03	0.13	0.13	0.08	0.36	0.36	0.11	0.27	0.27	0.03	0.08	0.08
Sat Flow, veh/h	1753	4496	718	1810	4833	437	1795	3869	1179	1682	5147	1543
Grip Volume(v), veh/h	303	1049	533	184	678	356	262	679	332	152	464	300
Grip Sat Flow(s),veh/h/ln	1753	1729	1757	1810	1729	1812	1795	1702	1644	1682	1716	1543
Q Serve(g_s), s	11.0	32.4	32.4	6.9	17.0	17.1	12.0	20.1	20.4	7.3	9.4	21.0
Cycle Q Clear(g_c), s	11.0	32.4	32.4	6.9	17.0	17.1	12.0	20.1	20.4	7.3	9.4	21.0
Prop In Lane	1.00		0.41	1.00		0.24	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	353	1325	673	243	1262	661	373	913	441	252	1256	377
V/C Ratio(X)	0.86	0.79	0.79	0.76	0.54	0.54	0.70	0.74	0.75	0.60	0.37	0.80
Avail Cap(c_a), veh/h	353	1325	673	275	1262	661	373	928	448	293	1404	421
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.70	0.70	0.70	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.96
Uniform Delay (d), s/veh	25.0	43.8	43.8	25.3	27.6	27.6	27.2	36.8	36.9	31.1	42.5	47.9
Incr Delay (d2), s/veh	13.8	3.5	6.7	10.2	1.6	3.1	5.8	3.2	6.9	2.5	0.2	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	10.5	11.3	1.8	3.7	4.2	3.1	5.1	5.4	1.8	2.5	6.6
Unsig. Movement Delay, s/veh												
LnGrip Delay(d),s/veh	38.9	47.3	50.4	35.5	29.2	30.7	33.0	40.0	43.8	33.6	42.7	56.9
LnGrip LOS	D	D	D	D	C	C	C	D	D	C	D	E
Approach Vol, veh/h	1885			1218			1273			916		
Approach Delay, s/veh	46.8			30.6			39.6			45.8		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	48.2	13.3	35.5	15.0	46.1	16.0	32.9				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	11.0	37.0	12.0	30.0	11.0	37.0	12.0	30.0				
Max Q Clear Time (g_c+I1), s	8.9	34.4	9.3	22.4	13.0	19.1	14.0	23.0				
Green Ext Time (p_c), s	0.1	2.2	0.1	4.3	0.0	7.5	0.0	2.8				

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

Lanes, Volumes, Timings

Existing PM Peak Hour

7: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑		→	↑↑		→	↑↑		→	↑↑		→
Traffic Volume (vph)	129	49	24	138	42	144	38	824	190	124	661	69
Future Volume (vph)	129	49	24	138	42	144	38	824	190	124	661	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99	0.99		0.99	0.98		1.00		0.98	1.00		1.00
Frt		0.951			0.884				0.850		0.986	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1772	0	1570	1592	0	1671	3610	1455	1703	5058	0
Fit Permitted	0.457			0.705			0.337			0.254		
Satd. Flow (perm)	863	1772	0	1155	1592	0	593	3610	1423	455	5058	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			158				209			19
Link Speed (k/h)		50			50			60				60
Link Distance (m)		375.8			106.2			230.9				292.9
Travel Time (s)		27.1			7.6			13.9				17.6
Conf. Peds. (#/hr)	7		8	8		7	1		1	1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	4%	15%	0%	5%	8%	0%	11%	6%	1%	0%
Adj. Flow (vph)	142	54	26	152	46	158	42	905	209	136	726	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	80	0	152	204	0	42	905	209	136	802	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		36.0	36.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	43.0	43.0		43.0	43.0		18.0	54.0	54.0	13.0	49.0	
Total Split (%)	39.1%	39.1%		39.1%	39.1%		16.4%	49.1%	49.1%	11.8%	44.5%	
Maximum Green (s)	37.0	37.0		37.0	37.0		14.0	48.0	48.0	9.0	43.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	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	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0				23.0	23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	20.0	20.0		20.0	20.0		75.2	66.0	66.0	78.5	71.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.68	0.60	0.60	0.71	0.65	
v/c Ratio	0.91	0.23		0.73	0.49		0.09	0.42	0.22	0.33	0.24	

Lanes, Volumes, Timings

7: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

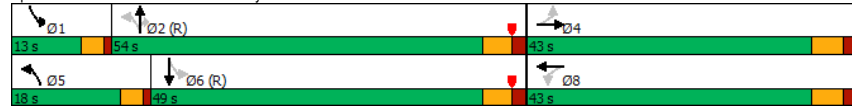
Existing PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	94.4	27.1		61.0	14.0		5.5	9.8	1.7	7.7	9.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	94.4	27.1		61.0	14.0		5.5	9.8	1.7	7.7	9.7	
LOS	F	C		E	B		A	A	A	A	A	
Approach Delay		70.1			34.1			8.2			9.4	
Approach LOS		E			C			A			A	
Queue Length 50th (m)	31.8	10.8		32.7	8.9		1.9	35.1	0.9	7.9	27.8	
Queue Length 95th (m)	#53.4	22.4		51.0	27.6		m3.3	m46.7	m2.9	18.4	43.8	
Internal Link Dist (m)		351.8			82.2			206.9			268.9	
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	290	611		388	640		568	2166	937	427	3285	
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	0.49	0.13		0.39	0.32		0.07	0.42	0.22	0.32	0.24	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 79 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 17.2
 Intersection Capacity Utilization 73.6%
 Analysis Period (min) 15
 # 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: 7: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

7: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Existing PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	129	49	24	138	42	144	38	824	190	124	661	69
Future Volume (veh/h)	129	49	24	138	42	144	38	824	190	124	661	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1841	1678	1900	1826	1781	1900	1737	1811	1885	1900
Adj Flow Rate, veh/h	142	54	26	152	46	158	42	905	209	136	726	76
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	4	15	0	5	8	0	11	6	1	0
Cap, veh/h	238	303	146	318	94	321	452	1954	796	439	2641	275
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.09	1.00	1.00	0.06	0.56	0.56
Sat Flow, veh/h	1190	1207	581	1173	373	1282	1697	3610	1471	1725	4735	492
Grp Volume(v), veh/h	142	0	80	152	0	204	42	905	209	136	525	277
Grp Sat Flow(s), veh/h/ln	1190	0	1789	1173	0	1655	1697	1805	1471	1725	1716	1796
Q Serve(g_s), s	12.7	0.0	3.9	12.8	0.0	11.6	1.1	0.0	0.0	3.7	8.8	8.9
Cycle Q Clear(g_c), s	24.3	0.0	3.9	16.7	0.0	11.6	1.1	0.0	0.0	3.7	8.8	8.9
Prop In Lane	1.00		0.32	1.00		0.77	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	238	0	448	318	0	415	452	1954	796	439	1914	1002
V/C Ratio(X)	0.60	0.00	0.18	0.48	0.00	0.49	0.09	0.46	0.26	0.31	0.27	0.28
Avail Cap(c_a), veh/h	340	0	602	419	0	557	590	1954	796	472	1914	1002
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.42	0.42	0.42	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	0.0	32.3	38.9	0.0	35.2	9.4	0.0	0.0	9.4	12.7	12.7
Incr Delay (d2), s/veh	2.4	0.0	0.2	1.1	0.0	0.9	0.0	0.3	0.3	0.4	0.4	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.7	0.0	1.1	2.4	0.0	3.0	0.1	0.1	0.1	0.2	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	48.0	0.0	32.5	40.0	0.0	36.1	9.4	0.3	0.3	9.8	13.1	13.4
LnGrp LOS	D	A	C	D	A	D	A	A	A	A	B	B
Approach Vol, veh/h		222			356			1156			938	
Approach Delay, s/veh		42.4			37.8			0.7			12.7	
Approach LOS		D			D			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	65.5		33.6	9.1	67.4		33.6				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	48.0		37.0	14.0	43.0		37.0				
Max Q Clear Time (g_c+I1), s	5.7	2.0		26.3	3.1	10.9		18.7				
Green Ext Time (p_c), s	0.1	11.1		0.8	0.1	7.0		2.2				

Intersection Summary

HCM 6th Ctrl Delay 13.3
 HCM 6th LOS B

Lanes, Volumes, Timings

Existing Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔	↔		↔	↔↔↔	↔	↔↔↔	
Traffic Volume (vph)	28	1011	106	168	1109	177	139	73	148	159	107	21
Future Volume (vph)	28	1011	106	168	1109	177	139	73	148	159	107	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00		0.98	0.99		1.00
Fit		0.986				0.850			0.850		0.975	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5041	0	1770	3574	1599	1770	3574	1615	1805	3453	0
Fit Permitted	0.201			0.187			0.668			0.706		
Satd. Flow (perm)	381	5041	0	347	3574	1564	1240	3574	1585	1334	3453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	19					181			153			22
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	230.2			437.3			222.3			200.9		
Travel Time (s)	13.8			26.2			16.0			14.5		
Confl. Peds. (#/hr)	11		18	18		11	4		6	6		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	3%	2%	1%	1%	2%	1%	0%	0%	1%	5%
Adj. Flow (vph)	29	1042	109	173	1143	182	143	75	153	164	110	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	1151	0	173	1143	182	143	75	153	164	132	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	13.0	47.0		13.0	47.0	47.0	13.0	35.0	35.0	13.0	35.0	
Total Split (%)	12.0%	43.5%		12.0%	43.5%	43.5%	12.0%	32.4%	32.4%	12.0%	32.4%	
Maximum Green (s)	9.0	42.0		9.0	42.0	42.0	9.0	30.0	30.0	9.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	69.7	61.7		74.0	67.6	67.6	20.8	10.8	10.8	20.8	10.8	
Actuated g/C Ratio	0.65	0.57		0.69	0.63	0.63	0.19	0.10	0.10	0.19	0.10	
v/c Ratio	0.09	0.40		0.50	0.51	0.17	0.51	0.21	0.52	0.55	0.36	

Lanes, Volumes, Timings

Existing Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	6.1	13.3		22.0	9.9	0.7	41.9	45.8	13.8	43.4	40.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.1	13.3		22.0	9.9	0.7	41.9	45.8	13.8	43.4	40.3	
LOS	A	B		C	A	A	D	D	B	D	D	
Approach Delay		13.1			10.1			31.1			42.0	
Approach LOS		B			B			C			D	
Queue Length 50th (m)	1.7	47.6		15.4	35.0	0.1	27.0	8.2	0.0	31.3	12.2	
Queue Length 95th (m)	4.9	62.3		39.1	56.4	1.3	44.2	15.2	18.8	49.8	21.4	
Internal Link Dist (m)		206.2			413.3			198.3			176.9	
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	371	2889		356	2236	1046	283	992	550	296	975	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.08	0.40		0.49	0.51	0.17	0.51	0.08	0.28	0.55	0.14	

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 16.3

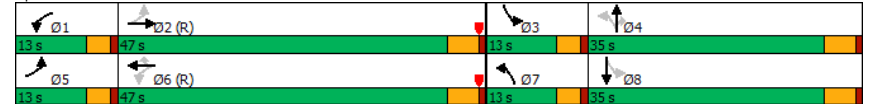
Intersection LOS: B

Intersection Capacity Utilization 73.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

1: Jefferson Boulevard & Tecumseh Road

Existing Saturday Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑↑			↑↑↑		
Traffic Volume (veh/h)	28	1011	106	168	1109	177	139	73	148	159	107	21
Future Volume (veh/h)	28	1011	106	168	1109	177	139	73	148	159	107	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1856	1870	1885	1885	1870	1885	1900	1900	1885	1826
Adj Flow Rate, veh/h	29	1042	109	173	1143	182	143	75	153	164	110	22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	3	2	1	1	2	1	0	0	1	5
Cap, veh/h	285	2534	265	379	2016	890	360	536	238	370	446	87
Arrive On Green	0.04	0.54	0.54	0.06	0.56	0.56	0.08	0.15	0.15	0.08	0.15	0.15
Sat Flow, veh/h	1810	4728	494	1781	3582	1582	1781	3582	1591	1810	2983	581
Grp Volume(v), veh/h	29	756	395	173	1143	182	143	75	153	164	65	67
Grp Sat Flow(s),veh/h/ln	1810	1716	1790	1781	1791	1582	1781	1791	1591	1810	1791	1772
Q Serve(g_s), s	0.7	14.2	14.2	4.5	22.1	6.1	7.2	2.0	9.8	8.3	3.4	3.6
Cycle Q Clear(g_c), s	0.7	14.2	14.2	4.5	22.1	6.1	7.2	2.0	9.8	8.3	3.4	3.6
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	285	1839	960	379	2016	890	360	536	238	370	268	265
V/C Ratio(X)	0.10	0.41	0.41	0.46	0.57	0.20	0.40	0.14	0.64	0.44	0.24	0.25
Avail Cap(c_a), veh/h	368	1839	960	412	2016	890	360	995	442	370	497	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	14.9	14.9	10.8	15.2	11.7	34.6	39.9	43.2	35.0	40.5	40.6
Incr Delay (d2), s/veh	0.2	0.7	1.3	0.9	1.2	0.5	0.7	0.2	4.1	0.8	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.5	1.7	0.2	1.9	0.6	2.0	0.6	2.8	2.3	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	15.6	16.2	11.7	16.3	12.2	35.3	40.1	47.3	35.8	41.2	41.3
LnGrp LOS	B	B	B	B	B	D	D	D	D	D	D	D
Approach Vol, veh/h	1180			1498			371			296		
Approach Delay, s/veh	15.7			15.3			41.2			38.2		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	62.9	13.0	21.2	8.1	65.8	13.0	21.2				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	9.0	42.0	9.0	30.0	9.0	42.0	9.0	30.0				
Max Q Clear Time (g_c+1), s	6.5	16.2	10.3	11.8	2.7	24.1	9.2	5.6				
Green Ext Time (p_c), s	0.1	13.3	0.0	1.6	0.0	11.9	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay	20.3											
HCM 6th LOS	C											

Lanes, Volumes, Timings

2: Commercial Access/Home Depot Access & Tecumseh Road

Existing Saturday Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑			↑↑		
Traffic Volume (vph)	159	1313	33	47	1149	19	53	10	47	241	10	160
Future Volume (vph)	159	1313	33	47	1149	19	53	10	47	241	10	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99		0.99	1.00	0.99	
Fit	0.996			0.998			0.943			0.859		
Fit Protected	0.950			0.950					0.976		0.950	
Satd. Flow (prot)	1787	5162	0	1805	5124	0	0	1738	0	1787	1579	0
Fit Permitted	0.168			0.144					0.750		0.672	
Satd. Flow (perm)	316	5162	0	273	5124	0	0	1334	0	1262	1579	0
Right Turn on Red			Yes		Yes		Yes		Yes			Yes
Satd. Flow (RTOR)		5			3			34			168	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		437.3			186.0			136.6			186.3	
Travel Time (s)		26.2			11.2			9.8			13.4	
Confl. Peds. (#/hr)	5		8	8		5	3		2	2		3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	167	1382	35	49	1209	20	56	11	49	254	11	168
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	1417	0	49	1229	0	0	116	0	254	179	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6				4			8	
Detector Phase	5	2		1	6			4	4		8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	40.0		11.0	40.0		35.0	35.0		35.0	35.0	
Total Split (s)	13.0	60.0		13.0	60.0		35.0	35.0		35.0	35.0	
Total Split (%)	12.0%	55.6%		12.0%	55.6%		32.4%	32.4%		32.4%	32.4%	
Maximum Green (s)	9.0	55.0		9.0	55.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0			7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	28.0			28.0			23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	71.0	62.9		67.9	59.5		25.9	25.9		25.9	25.9	
Actuated g/C Ratio	0.66	0.58		0.63	0.55		0.24	0.24		0.24	0.24	
v/c Ratio	0.52	0.47		0.18	0.44		0.34	0.34		0.84	0.35	

Lanes, Volumes, Timings

Existing Saturday Peak Hour

2: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

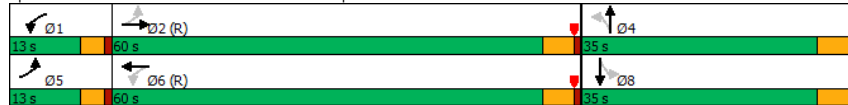


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	17.9	10.9		5.4	9.0			25.2		62.4	7.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	17.9	10.9		5.4	9.0			25.2		62.4	7.8	
LOS	B	B		A	A			C		E	A	
Approach Delay		11.7			8.8			25.2			39.8	
Approach LOS		B			A			C			D	
Queue Length 50th (m)	11.4	44.7		1.0	72.7			14.4		52.5	1.8	
Queue Length 95th (m)	28.1	54.5		3.6	64.2			29.9		#87.8	18.4	
Internal Link Dist (m)		413.3			162.0			112.6			162.3	
Turn Bay Length (m)	35.0			30.0						45.0		
Base Capacity (vph)	330	3008		303	2825			395		350	559	
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	0.51	0.47		0.16	0.44			0.29		0.73	0.32	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 5 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 14.6
 Intersection Capacity Utilization 78.5%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Commercial Access/Home Depot Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

Existing Saturday Peak Hour

2: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑ ↑ ↑	↑ ↑ ↑		↑ ↑ ↑	↑ ↑ ↑		↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	159	1313	33	47	1149	19	53	10	47	241	10	160
Future Volume (veh/h)	159	1313	33	47	1149	19	53	10	47	241	10	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		No
Adj Sat Flow, veh/h/ln	1885	1900	1900	1900	1885	1900	1900	1900	1900	1885	1900	1870
Adj Flow Rate, veh/h	167	1382	35	49	1209	20	56	11	49	254	11	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	0	0	0	1	0	0	0	0	1	0	2
Cap, veh/h	434	2947	75	315	2878	48	159	42	111	356	25	386
Arrive On Green	0.06	0.57	0.57	0.10	1.00	1.00	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1795	5201	132	1810	5214	86	433	165	437	1350	100	1520
Grp Volume(v), veh/h	167	919	498	49	796	433	116	0	0	254	0	179
Grp Sat Flow(s),veh/h/ln	1795	1729	1875	1810	1716	1869	1034	0	0	1350	0	1620
Q Serve(g_s), s	4.2	16.9	16.9	1.2	0.0	0.0	5.2	0.0	0.0	8.8	0.0	10.0
Cycle Q Clear(g_c), s	4.2	16.9	16.9	1.2	0.0	0.0	15.2	0.0	0.0	24.0	0.0	10.0
Prop In Lane	1.00		0.07	1.00		0.05	0.48		0.42	1.00		0.94
Lane Grp Cap(c), veh/h	434	1959	1062	315	1894	1032	312	0	0	356	0	411
V/C Ratio(X)	0.38	0.47	0.47	0.16	0.42	0.42	0.37	0.00	0.00	0.71	0.00	0.44
Avail Cap(c_a), veh/h	468	1959	1062	375	1894	1032	346	0	0	388	0	450
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.8	13.8	13.8	9.5	0.0	0.0	36.7	0.0	0.0	39.9	0.0	33.8
Incr Delay (d2), s/veh	0.7	0.8	1.5	0.3	0.6	1.2	1.0	0.0	0.0	6.3	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.3	1.6	0.1	0.2	0.3	1.8	0.0	0.0	4.7	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.4	14.6	15.3	9.8	0.6	1.2	37.7	0.0	0.0	46.2	0.0	34.8
LnGrp LOS	A	B	B	A	A	A	D	A	A	D	A	T
Approach Vol, veh/h		1584			1278		116			433		
Approach Delay, s/veh		14.3			1.2		37.7			41.5		
Approach LOS		B			A		D			D		
Timer - Assigned Phs	1	2		4	5	6	8					
Phs Duration (G+Y+Rc), s	9.4	66.2		32.4	11.0	64.6	32.4					
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0	5.0					
Max Green Setting (Gmax), s	9.0	55.0		30.0	9.0	55.0	30.0					
Max Q Clear Time (g_c+I1), s	3.2	18.9		17.2	6.2	2.0	26.0					
Green Ext Time (p_c), s	0.1	20.2		0.7	0.2	19.8	1.2					

Intersection Summary

HCM 6th Ctrl Delay 13.6
 HCM 6th LOS B

Lanes, Volumes, Timings

Existing Saturday Peak Hour

3: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↖	↗	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖	↑↑↑	↖	↖
Traffic Volume (vph)	1412	54	159	1368	98	154
Future Volume (vph)	1412	54	159	1368	98	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	50.0		50.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			40.0		50.0	
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Ped Bike Factor	1.00				0.99	0.98
Frt	0.994					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5099	0	1787	5187	1787	1599
Flt Permitted			0.125		0.950	
Satd. Flow (perm)	5099	0	235	5187	1773	1566
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	7					160
Link Speed (k/h)			60		50	
Link Distance (m)	186.0			85.2	289.9	
Travel Time (s)	11.2			5.1	20.9	
Conf. Peds. (#/hr)		9	9		7	8
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	1%	0%	1%	1%
Adj. Flow (vph)	1471	56	166	1425	102	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1527	0	166	1425	102	160
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases			6			4
Detector Phase	2		1	6	4	4
Switch Phase						
Minimum Initial (s)	10.0		7.0	11.0	11.0	11.0
Minimum Split (s)	28.0		11.0	28.0	34.0	34.0
Total Split (s)	57.0		16.0	73.0	35.0	35.0
Total Split (%)	52.8%		14.8%	67.6%	32.4%	32.4%
Maximum Green (s)	52.0		12.0	68.0	30.0	30.0
Yellow Time (s)	4.0		3.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		4.0	5.0	5.0	5.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	4.0		3.5	4.0	4.0	4.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	16.0			16.0	22.0	22.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	71.4		85.9	84.9	13.1	13.1
Actuated g/C Ratio	0.66		0.80	0.79	0.12	0.12
v/c Ratio	0.45		0.52	0.35	0.47	0.48

Lanes, Volumes, Timings

Existing Saturday Peak Hour

3: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↖	↗	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Control Delay	5.1		12.5	5.3	51.0	11.8
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	5.1		12.5	5.3	51.0	11.8
LOS	A		B	A	D	B
Approach Delay	5.1			6.0	27.1	
Approach LOS	A			A	C	
Queue Length 50th (m)	25.3		11.7	38.3	21.5	0.0
Queue Length 95th (m)	28.6		20.4	57.2	37.4	18.5
Internal Link Dist (m)	162.0			61.2	265.9	
Turn Bay Length (m)			50.0		50.0	
Base Capacity (vph)	3374		359	4075	496	550
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.45		0.46	0.35	0.21	0.29

Intersection Summary

Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	14 (13%), Referenced to phase 2:EBT and 6:WBTL, Start of Red
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	7.2
Intersection Capacity Utilization:	61.7%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	B

Splits and Phases: 3: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary Existing Saturday Peak Hour
 3: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↖	↙	←	↘	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↖	↑↑↑	↖	↗
Traffic Volume (veh/h)	1412	54	159	1368	98	154
Future Volume (veh/h)	1412	54	159	1368	98	154
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1900	1885	1900	1885	1885
Adj Flow Rate, veh/h	1471	56	166	1425	102	160
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1	0	1	1
Cap, veh/h	3439	131	347	4033	233	207
Arrive On Green	0.45	0.45	0.06	0.78	0.13	0.13
Sat Flow, veh/h	5256	194	1795	5358	1795	1598
Grp Volume(v), veh/h	992	535	166	1425	102	160
Grp Sat Flow(s),veh/h/ln	1716	1849	1795	1729	1795	1598
Q Serve(g_s), s	21.2	21.2	2.7	9.1	5.7	10.5
Cycle Q Clear(g_c), s	21.2	21.2	2.7	9.1	5.7	10.5
Prop In Lane		0.10	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2320	1250	347	4033	233	207
V/C Ratio(X)	0.43	0.43	0.48	0.35	0.44	0.77
Avail Cap(c_a), veh/h	2320	1250	431	4033	499	444
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.84	0.84	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	15.4	8.3	3.7	43.4	45.4
Incr Delay (d2), s/veh	0.5	0.9	1.2	0.2	1.8	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.1	0.1	1.8	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.8	16.3	9.5	3.9	45.2	53.8
LnGrp LOS	B	B	A	A	D	D
Approach Vol, veh/h	1527			1591	262	
Approach Delay, s/veh	16.0			4.5	50.4	
Approach LOS	B			A	D	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.0	78.0		19.0		89.0
Change Period (Y+Rc), s	4.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	12.0	52.0		30.0		68.0
Max Q Clear Time (g_c+I1), s	4.7	23.2		12.5		11.1
Green Ext Time (p_c), s	0.4	19.0		1.6		26.5
Intersection Summary						
HCM 6th Ctrl Delay			13.3			
HCM 6th LOS			B			

Lanes, Volumes, Timings Existing Saturday Peak Hour
 4: Tecumseh Road & Serbian Centre Private Drive(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	←	↙	↘	↗
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↖
Traffic Volume (vph)	0	1600	1469	9	0	7
Future Volume (vph)	0	1600	1469	9	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999			0.865
Fit Protected						
Satd. Flow (prot)	0	5136	5131	0	0	1644
Fit Permitted						
Satd. Flow (perm)	0	5136	5131	0	0	1644
Link Speed (k/h)		60	60		50	
Link Distance (m)		85.2	187.8		251.2	
Travel Time (s)		5.1	11.3		18.1	
Confl. Peds. (#/hr)	10			10	1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	1667	1530	9	0	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1667	1539	0	0	7
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	38.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC

Existing Saturday Peak Hour

4: Tecumseh Road & Serbian Centre Private Drive (30538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑↑↑		↑↑↑			↑
Traffic Vol, veh/h	0	1600	1469		9	0
Future Vol, veh/h	0	1600	1469		9	0
Conflicting Peds, #/hr	10	0	0	10	1	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	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	1667	1530	9	0	7

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-


Approach	EB	WB	SB
HCM Control Delay, s	0	0	17.6
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	292
HCM Lane V/C Ratio	-	-	-	0.025
HCM Control Delay (s)	-	-	-	17.6
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.1

Lanes, Volumes, Timings

Existing Saturday Peak Hour

5: East Park Drive/Walmart Access & Tecumseh Road (30538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Volume (vph)	240	1271	114	183	1156	225	129	78	112	171	84	142
Future Volume (vph)	240	1271	114	183	1156	225	129	78	112	171	84	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.97	0.99		1.00	0.97	
Frt		0.988			0.976			0.912			0.906	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5061	0	1805	4998	0	1787	1705	0	1805	1664	0
Fit Permitted	0.130			0.134			0.420			0.496		
Satd. Flow (perm)	247	5061	0	254	4998	0	768	1705	0	939	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			46			74			86	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		187.8			268.3			231.1			151.2	
Travel Time (s)		11.3			16.1			16.6			10.9	
Confl. Peds. (#/hr)	4		12	12		4	39		5	5		39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%
Adj. Flow (vph)	247	1310	118	189	1192	232	133	80	115	176	87	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	1428	0	189	1424	0	133	195	0	176	233	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4				8	
Detector Phase	5	2		1	6		4	4			8	8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	15.0	50.0		15.0	50.0		43.0	43.0		43.0	43.0	
Total Split (%)	13.9%	46.3%		13.9%	46.3%		39.8%	39.8%		39.8%	39.8%	
Maximum Green (s)	11.0	45.0		11.0	45.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	72.0	60.0		70.4	59.2		23.8	23.8		23.8	23.8	
Actuated g/C Ratio	0.67	0.56		0.65	0.55		0.22	0.22		0.22	0.22	
v/c Ratio	0.76	0.51		0.61	0.52		0.79	0.45		0.85	0.54	

Lanes, Volumes, Timings

Existing Saturday Peak Hour

5: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

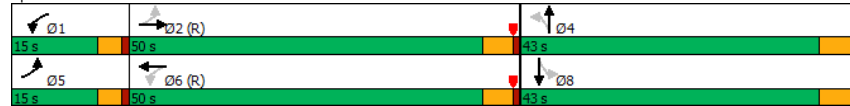


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	30.6	24.5		26.2	12.2		68.6	23.9		72.8	26.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	30.6	24.5		26.2	12.2		68.6	23.9		72.8	26.3	
LOS	C	C		C	B		E	C		E	C	
Approach Delay		25.4			13.9			42.0			46.3	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	28.1	111.3		17.0	43.4		28.0	22.6		37.7	28.4	
Queue Length 95th (m)	#65.6	132.8		m45.5	m68.2		46.4	39.4		58.1	47.0	
Internal Link Dist (m)		163.8			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	323	2818		325	2759		270	647		330	641	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.76	0.51		0.58	0.52		0.49	0.30		0.53	0.36	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 58 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 24.3
 Intersection Capacity Utilization 87.2%
 Analysis Period (min) 15
 # 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: 5: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

Existing Saturday Peak Hour

5: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	240	1271	114	183	1156	225	129	78	112	171	84	142
Future Volume (veh/h)	240	1271	114	183	1156	225	129	78	112	171	84	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.96	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1885	1900	1885	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	247	1310	118	189	1192	232	133	80	115	176	87	146
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	0	0	1	0	1	0	1	0	0	0
Cap, veh/h	328	2478	223	328	2178	424	250	192	276	284	174	291
Arrive On Green	0.09	0.52	0.52	0.05	0.34	0.34	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1810	4800	432	1810	4314	840	1129	686	986	1175	620	1040
Grp Volume(v), veh/h	247	936	492	189	948	476	133	0	195	176	0	233
Grp Sat Flow(s),veh/h/ln	1810	1716	1801	1810	1716	1722	1129	0	1672	1175	0	1659
Q Serve(g_s), s	7.0	19.6	19.6	5.2	24.2	24.2	12.1	0.0	10.3	15.5	0.0	12.7
Cycle Q Clear(g_c), s	7.0	19.6	19.6	5.2	24.2	24.2	24.8	0.0	10.3	25.8	0.0	12.7
Prop In Lane	1.00		0.24	1.00		0.49	1.00		0.59	1.00		0.63
Lane Grp Cap(c), veh/h	328	1771	930	328	1733	870	250	0	469	284	0	465
V/C Ratio(X)	0.75	0.53	0.53	0.58	0.55	0.55	0.53	0.00	0.42	0.62	0.00	0.50
Avail Cap(c_a), veh/h	358	1771	930	378	1733	870	331	0	588	368	0	584
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.65	0.65	0.65	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	17.4	17.4	14.2	25.7	25.7	42.9	0.0	31.7	42.2	0.0	32.5
Incr Delay (d2), s/veh	8.0	1.1	2.1	1.0	0.8	1.6	2.5	0.0	0.8	3.1	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.4	2.7	0.4	3.8	4.0	2.4	0.0	2.5	3.1	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	18.5	19.5	15.3	26.5	27.3	45.4	0.0	32.5	45.3	0.0	33.7
LnGrp LOS	C	B	B	B	C	C	D	A	C	D	A	C
Approach Vol, veh/h		1675			1613			328				409
Approach Delay, s/veh		19.9			25.4			37.7				38.7
Approach LOS		B			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	60.8		35.3	13.2	59.5		35.3				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	45.0		38.0	11.0	45.0		38.0				
Max Q Clear Time (g_c+I1), s	7.2	21.6		26.8	9.0	26.2		27.8				
Green Ext Time (p_c), s	0.2	15.5		2.1	0.2	13.2		2.5				

Intersection Summary

HCM 6th Ctrl Delay 25.5
 HCM 6th LOS C

Lanes, Volumes, Timings

Existing Saturday Peak Hour

6: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↖ ↖	↖ ↖ ↖	↘ ↘ ↘	↙ ↙ ↙	↖ ↖ ↖	↙ ↙ ↙	↖ ↖ ↖	↖ ↖ ↖	↘ ↘ ↘	↙ ↙ ↙	↖ ↖ ↖	↖ ↖ ↖
Traffic Volume (vph)	301	1156	149	226	1071	91	287	389	185	122	471	374
Future Volume (vph)	301	1156	149	226	1071	91	287	389	185	122	471	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	1.00		1.00		1.00	
Frt		0.983			0.988			0.952				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5073	0	1805	5087	0	1770	4882	0	1719	5136	1583
Flt Permitted	0.127			0.097			0.326			0.320		
Satd. Flow (perm)	236	5073	0	184	5087	0	606	4882	0	579	5136	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			13			109				281
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	12		23	23		12	3		2	2		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	0%	1%	0%	0%	7%	2%	1%	0%	5%	1%	2%
Adj. Flow (vph)	324	1243	160	243	1152	98	309	418	199	131	506	402
Shared Lane Traffic (%)												
Lane Group Flow (vph)	324	1403	0	243	1250	0	309	617	0	131	506	402
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	35.0	35.0
Total Split (s)	17.0	39.0		17.0	39.0		17.0	35.0		17.0	35.0	35.0
Total Split (%)	15.7%	36.1%		15.7%	36.1%		15.7%	32.4%		15.7%	32.4%	32.4%
Maximum Green (s)	13.0	33.0		13.0	33.0		13.0	29.0		13.0	29.0	29.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			5.0	5.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	57.8	42.8		56.6	42.2		36.6	21.9		32.7	19.8	19.8
Actuated g/C Ratio	0.54	0.40		0.52	0.39		0.34	0.20		0.30	0.18	0.18
v/c Ratio	1.04	0.69		0.86	0.63		0.90	0.57		0.45	0.54	0.78

Lanes, Volumes, Timings

Existing Saturday Peak Hour

6: Lauzon Parkway & Tecumseh Road

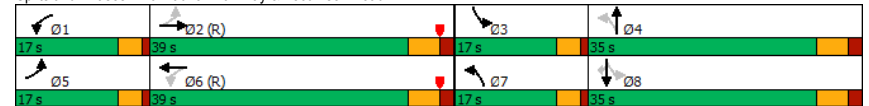
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	102.5	14.5		53.4	29.0		56.7	33.4		23.4	33.9	17.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	102.5	14.5		53.4	29.0		56.7	33.4		23.4	33.9	17.4
LOS	F	B		D	C		E	C		C	C	B
Approach Delay		31.0			33.0			41.2				26.2
Approach LOS		C			C			D				C
Queue Length 50th (m)	~59.4	26.7		33.9	77.6		54.0	38.3		13.7	39.5	33.9
Queue Length 95th (m)	#126.0	#82.1		#85.1	110.3		#67.0	45.8		18.4	26.2	13.1
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	311	2023		292	1994		345	1390		323	1379	624
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	1.04	0.69		0.83	0.63		0.90	0.44		0.41	0.37	0.64

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 52 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 32.4
 Intersection LOS: C
 Intersection Capacity Utilization 88.8%
 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: 6: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary
6: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS
Existing Saturday Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	301	1156	149	226	1071	91	287	389	185	122	471	374
Future Volume (veh/h)	301	1156	149	226	1071	91	287	389	185	122	471	374
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1900	1885	1900	1900	1796	1870	1885	1900	1826	1885	1870
Adj Flow Rate, veh/h	324	1243	160	243	1152	98	309	418	199	131	506	402
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	1	0	0	7	2	1	0	5	1	2
Cap, veh/h	321	1464	188	286	1485	126	389	1096	496	363	1382	424
Arrive On Green	0.04	0.10	0.10	0.11	0.31	0.31	0.12	0.32	0.32	0.02	0.09	0.09
Sat Flow, veh/h	1781	4638	597	1810	4859	413	1781	3463	1566	1739	5147	1580
Grp Volume(v), veh/h	324	927	476	243	820	430	309	414	203	131	506	402
Grp Sat Flow(s),veh/h/ln	1781	1729	1777	1810	1729	1814	1781	1716	1598	1739	1716	1580
Q Serve(g_s), s	13.0	28.4	28.4	9.8	23.3	23.3	13.0	10.1	10.7	5.8	10.0	27.3
Cycle Q Clear(g_c), s	13.0	28.4	28.4	9.8	23.3	23.3	13.0	10.1	10.7	5.8	10.0	27.3
Prop In Lane	1.00		0.34	1.00		0.23	1.00		0.98	1.00		1.00
Lane Grp Cap(c), veh/h	321	1092	561	286	1057	554	389	1086	506	363	1382	424
V/C Ratio(X)	1.01	0.85	0.85	0.85	0.78	0.78	0.79	0.38	0.40	0.36	0.37	0.95
Avail Cap(c_a), veh/h	321	1092	561	305	1057	554	389	1086	506	446	1382	424
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	0.94
Uniform Delay (d), s/veh	28.5	45.8	45.8	26.1	34.1	34.1	24.8	28.7	28.9	26.9	40.6	48.5
Incr Delay (d2), s/veh	48.0	6.9	12.5	18.8	5.6	10.2	10.8	0.3	0.6	0.6	0.2	29.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	9.7	10.8	3.2	5.9	7.0	3.6	2.2	2.2	1.3	2.6	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.6	52.7	58.3	44.9	39.7	44.4	35.6	29.0	29.5	27.4	40.7	78.0
LnGrp LOS	F	D	E	D	D	D	D	C	C	C	D	E
Approach Vol, veh/h	1727			1493			926			1039		
Approach Delay, s/veh	58.8			41.9			31.3			53.5		
Approach LOS	E			D			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.9	40.1	11.8	40.2	17.0	39.0	17.0	35.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	13.0	33.0	13.0	29.0	13.0	33.0	13.0	29.0				
Max Q Clear Time (g_c+1), s	11.8	30.4	7.8	12.7	15.0	25.3	15.0	29.3				
Green Ext Time (p_c), s	0.1	2.2	0.2	4.8	0.0	5.8	0.0	0.0				

Intersection Summary	
HCM 6th Ctrl Delay	47.9
HCM 6th LOS	D

Lanes, Volumes, Timings
7: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS
Existing Saturday Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	131	53	31	157	57	154	60	562	211	150	726	113
Future Volume (vph)	131	53	31	157	57	154	60	562	211	150	726	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00		0.98	1.00		1.00
Frt		0.945			0.890				0.850			0.980
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1786	0	1671	1623	0	1805	3610	1524	1752	5020	0
Fit Permitted	0.421			0.697			0.287			0.368		
Satd. Flow (perm)	798	1786	0	1224	1623	0	544	3610	1490	678	5020	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			138				234		33	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		375.8			106.2			230.9			292.9	
Travel Time (s)		27.1			7.6			13.9			17.6	
Conf. Peds. (#/hr)	4		2	2		4	5		1	1		5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	8%	0%	4%	0%	0%	6%	3%	1%	0%
Adj. Flow (vph)	146	59	34	174	63	171	67	624	234	167	807	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	93	0	174	234	0	67	624	234	167	933	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	43.0	43.0		43.0	43.0		15.0	50.0	50.0	15.0	50.0	
Total Split (%)	39.8%	39.8%		39.8%	39.8%		13.9%	46.3%	46.3%	13.9%	46.3%	
Maximum Green (s)	37.0	37.0		37.0	37.0		11.0	44.0	44.0	11.0	44.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			23.0	23.0		23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	21.9	21.9		21.9	21.9		70.5	61.1	61.1	74.4	64.9	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.65	0.57	0.57	0.69	0.60	
v/c Ratio	0.90	0.24		0.70	0.53		0.15	0.31	0.25	0.30	0.31	

Lanes, Volumes, Timings

7: Lauzon Parkway & Catherine Street

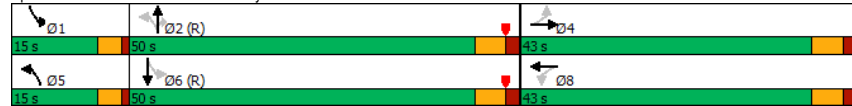
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	90.1	24.5		53.9	19.1		8.7	15.5	5.3	7.8	12.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	90.1	24.5		53.9	19.1		8.7	15.5	5.3	7.8	12.0	
LOS	F	C		D	B		A	B	A	A	B	
Approach Delay	64.6			34.0			12.4			11.4		
Approach LOS	E			C			B			B		
Queue Length 50th (m)	31.9	11.8		36.2	18.2		5.6	38.2	5.2	10.6	34.7	
Queue Length 95th (m)	#55.6	23.6		54.3	38.1		m9.7	m51.5	m10.8	23.9	55.0	
Internal Link Dist (m)	351.8		82.2		206.9		115.0		268.9			
Turn Bay Length (m)	50.0		80.0		20.0		115.0					
Base Capacity (vph)	273	630		419	646		501	2042	944	584	3028	
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	0.53	0.15		0.42	0.36		0.13	0.31	0.25	0.29	0.31	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 3 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 19.9
 Intersection Capacity Utilization 75.0%
 Analysis Period (min) 15
 # 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: 7: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

7: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	131	53	31	157	57	154	60	562	211	150	726	113
Future Volume (veh/h)	131	53	31	157	57	154	60	562	211	150	726	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1841	1900	1900	1811	1856	1885	1900
Adj Flow Rate, veh/h	146	59	34	174	63	171	67	624	234	167	807	126
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	8	0	4	0	0	6	3	1	0
Cap, veh/h	242	305	176	351	122	330	425	1868	791	511	2361	366
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.11	1.00	1.00	0.06	0.53	0.53
Sat Flow, veh/h	1162	1129	651	1237	451	1223	1810	3610	1527	1767	4491	696
Grp Volume(v), veh/h	146	0	93	174	0	234	67	624	234	167	615	318
Grp Sat Flow(s), veh/h/ln	1162	0	1779	1237	0	1673	1810	1805	1527	1767	1716	1756
Q Serve(g_s), s	13.2	0.0	4.3	13.6	0.0	12.8	1.7	0.0	0.0	4.7	11.2	11.3
Cycle Q Clear(g_c), s	26.0	0.0	4.3	18.0	0.0	12.8	1.7	0.0	0.0	4.7	11.2	11.3
Prop In Lane	1.00		0.37	1.00		0.73	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	242	0	480	351	0	452	425	1868	791	511	1804	923
V/C Ratio(X)	0.60	0.00	0.19	0.50	0.00	0.52	0.16	0.33	0.30	0.33	0.34	0.34
Avail Cap(c_a), veh/h	327	0	610	441	0	573	507	1868	791	577	1804	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.60	0.60	0.60	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	0.0	30.4	37.3	0.0	33.5	10.1	0.0	0.0	10.4	14.8	14.8
Incr Delay (d2), s/veh	3.4	0.0	0.3	1.5	0.0	1.3	0.1	0.3	0.6	0.4	0.5	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	1.2	2.7	0.0	3.2	0.1	0.1	0.1	0.3	1.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	0.0	30.7	38.8	0.0	34.8	10.2	0.3	0.6	10.8	15.3	15.8
LnGrp LOS	D	A	C	D	A	C	B	A	A	B	B	B
Approach Vol, veh/h	239			408			925			1100		
Approach Delay, s/veh	41.2			36.5			1.1			14.8		
Approach LOS	D			D			A			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	61.9		35.1	10.1	62.8		35.1				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	11.0	44.0		37.0	11.0	44.0		37.0				
Max Q Clear Time (g_c+I1), s	6.7	2.0		28.0	3.7	13.3		20.0				
Green Ext Time (p_c), s	0.2	10.6		1.2	0.1	11.4		3.3				

Intersection Summary

HCM 6th Ctrl Delay 15.7
 HCM 6th LOS B

Appendix D

Trip Generation Information



Trip Generation

The Weekday AM/PM and Saturday peak hour trip generation for the development was estimated using two separate methodologies as described below.

Costco Trip Generation

The Costco trip generation estimates for 158,000 sq. ft. GFA and the Gas Station with 16 pumps were provided by Kittelson & Associates Inc. who maintain a trip generation database for Costco stores. The estimates included pass-by trips and diverted trips.

Table D-1 provides trip generation estimates including pass-by and diverted trips.

TABLE D-1: KITTELSON & ASSOCIATES COSTCO TRIP GENERATION

Windsor Costco w 24-Position Gas	Size (KSF)	Weekday Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Daily Trips	Saturday Midday Peak Hour		
			Total	In	Out	Total	In	Out		Total	In	Out
Total External Trips		12,417	353	199	154	1,171	566	605	13,799	1,585	794	791
<i>Pass-By Trips</i>	158	-2,200	-128	-64	-64	-208	-104	-104	-2,170	-250	-125	-125
<i>Diverted Trips</i>		-3,725	-140	-70	-70	-352	-176	-176	-3,221	-370	-185	-185
Net New Trips		6,492	85	65	20	611	286	325	8408	965	484	481

Table D-2 breaks down the pass-by and diverted trips as percentages of the gross trip estimate totals.

TABLE D-2: COSTCO PASS-BY AND DIVERTED TRIPS

Windsor Costco w 24-Position Gas	Size (KSF)	Weekday Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Daily Trips	Saturday Midday Peak Hour		
			Total	In	Out	Total	In	Out		Total	In	Out
<i>Pass-By Trips</i>	158	-2,200	-128	-64	-64	-208	-104	-104	-2,170	-250	-125	-125
		18%	36%	32%	42%	18%	18%	17%	16%	16%	16%	16%
<i>Diverted Trips</i>		-3,725	-140	-70	-70	-352	-176	-176	-3,221	-370	-185	-185
		30%	40%	35%	45%	30%	31%	29%	23%	23%	23%	23%

Pass-by Trips & Diverted Trips

The pass-by trips for the subject Costco development are assumed to be drawn from the existing eastbound and westbound traffic volumes on Tecumseh Road, and the southbound traffic volumes on Lauzon Parkway within the study area, and have been proportionately discounted based on the following directional proportions:

- ▶ 50% from the west on Tecumseh Road;
- ▶ 30% from the east on Tecumseh Road; and
- ▶ 20% from the north on Lauzon Parkway.

The Costco diverted trips have been drawn from the following commercial developments in the study area:

- ▶ the Tecumseh Mall located to the east of Lauzon Parkway;
- ▶ Walmart and Home Depot commercial developments on the north side of Tecumseh Road; and
- ▶ the commercial plazas near Rose-Ville Garden Drive to the south of Tecumseh Road.

The diverted trips to/from these developments are proportionately based on their access intersection volumes corresponding to the estimates for the Costco development.

Sobey’s Trip Generation

The trip generation estimates for the Sobey’s store are based on trip rates corresponding to Supermarket Land Use (LUC 850) in the Institute of Transportation Engineers (ITE) Trip Generation Manual.¹ Pass-by trips are also based on rates included in the Trip Generation Manual.

The ITE’s trip generation charts for LUC 850 are included in this Appendix.

Table D-3 summarizes the Sobey’s trip generation estimates corresponding to the above-noted Land Use Code.

TABLE D-3: LUC 850 TRIP GENERATION

Land Use	Gross Floor Area	AM Peak Hour				PM Peak Hour				Saturday Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
850: Supermarket (Sobey’s)	100,556 sq. ft.	2.86	170	118	288	Eq	388	388	776	Eq	459	459	918
Trip Generation			170	118	288		388	388	776		459	459	918
<i>Sobey’s Pass-by Trips</i>		0%	0	0	0	24%	-81	-81	-162	19%	-75	-75	-150
Net Additional Trips			0	0	0		-81	-81	-162		-75	-75	-150

LUC 850 | PM: $\ln(T) = 0.81 \ln(X) + 2.92$ | Saturday: $\ln(T) = 0.74 \ln(X) + 3.41$

Total Site Traffic

The total site traffic for the subject development is the summation of traffic generated by the Costco and Sobey’s and stores as shown **Table D-4**.

The proximate location of the two stores on the same site with common access points will create opportunities for shared trips between them. A 10% internal capture reduction has been applied to the total trip generation as shown in **Table D-4**.

Table D-4 shows the 10% reduction for internally shared trips, reductions for pass by-trips and diverted trips, and the net traffic volumes generated by the site.

¹ Institute of Transportation Engineers, *Trip Generation Manual*, 11th ed., (Washington, DC: ITE, 2021).

TABLE D-4: SUBJECT SITE TRIP GENERATION

Land Use	Gross Floor Area	AM Peak Hour				PM Peak Hour				Saturday Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
Costco (from Kittelson & Associates)	158,000 sq. ft.	2.23	199	154	353	7.41	566	605	1171	10.03	794	791	1585
850: Supermarket (Sobey's)	100,556 sq. ft.	2.86	170	118	288	Eq	388	388	776	Eq	459	459	918
Trip Generation			369	272	641		954	993	1947		1253	1250	2503
<i>Internal Trip Reduction</i>		10%	-39	-25	-64	10%	-95	-99	-194	10%	-128	-122	-250
Net Trip Generation			330	247	577		859	894	1753		1125	1128	2253
<i>Costco Pass-by Trips</i>		-	-64	-64	-128	-	-104	-104	-208	-	-125	-125	-250
<i>Costco Diverted Trips</i>		-	-70	-70	-140	-	-176	-176	-352	-	-185	-185	-370
<i>Sobey's Pass-by Trips</i>		0%	0	0	0	24%	-81	-81	-162	19%	-75	-75	-150
Net Additional Trips			196	113	309		498	533	1031		740	743	1483

LUC 850 | PM: $\ln(T) = 0.81 \ln(X) + 2.92$ | Saturday: $\ln(T) = 0.74 \ln(X) + 3.41$

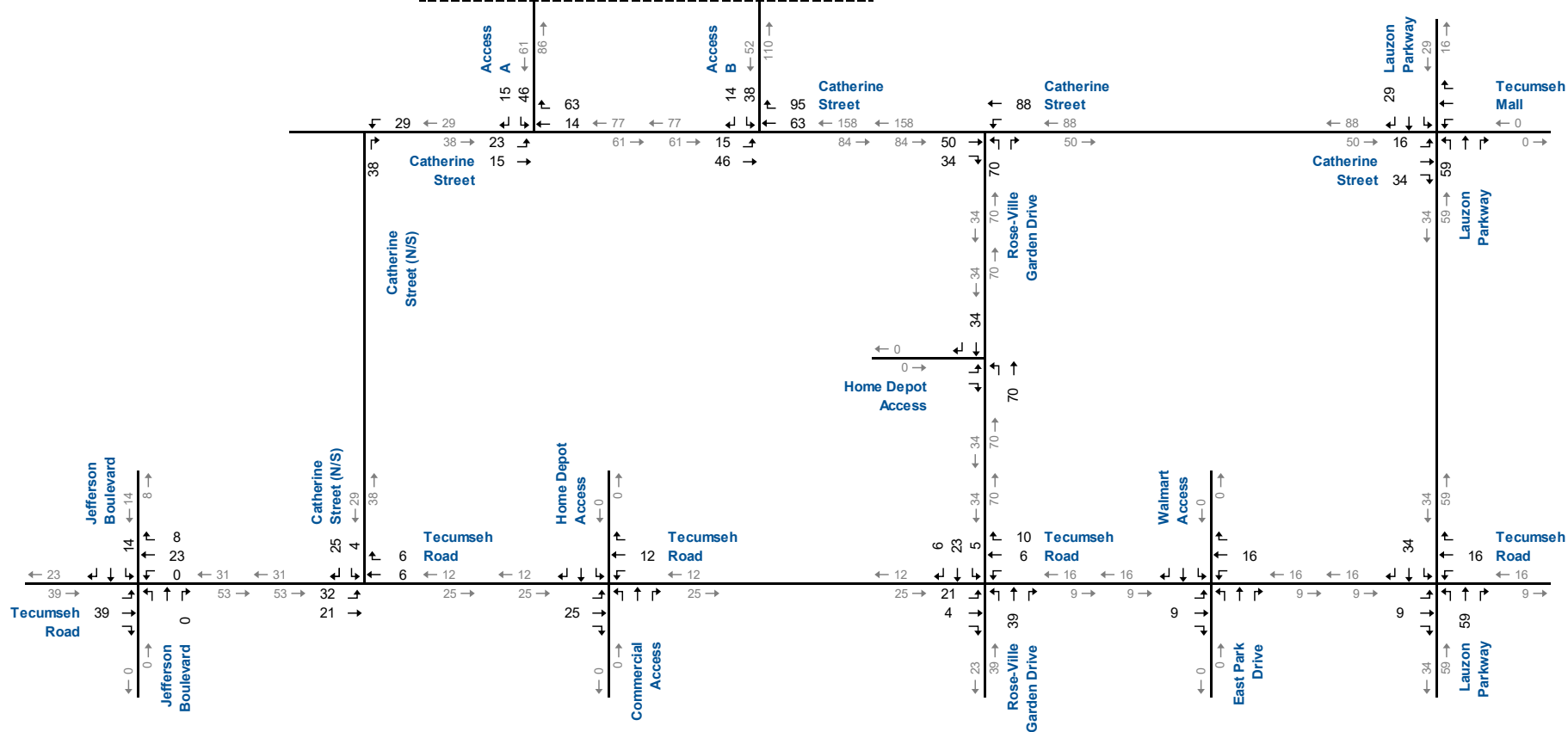
Table D-4 is included in Section 3 of this Report as Table 3.1. The net traffic volumes shown in Table 3.1 have been used for assigning site traffic to the study area road system and adding to background road traffic volumes to obtain total road traffic volumes for operational analysis for the study area intersections.

The weekday AM/PM and Saturday site traffic volumes are illustrated in the attached figures as noted below.

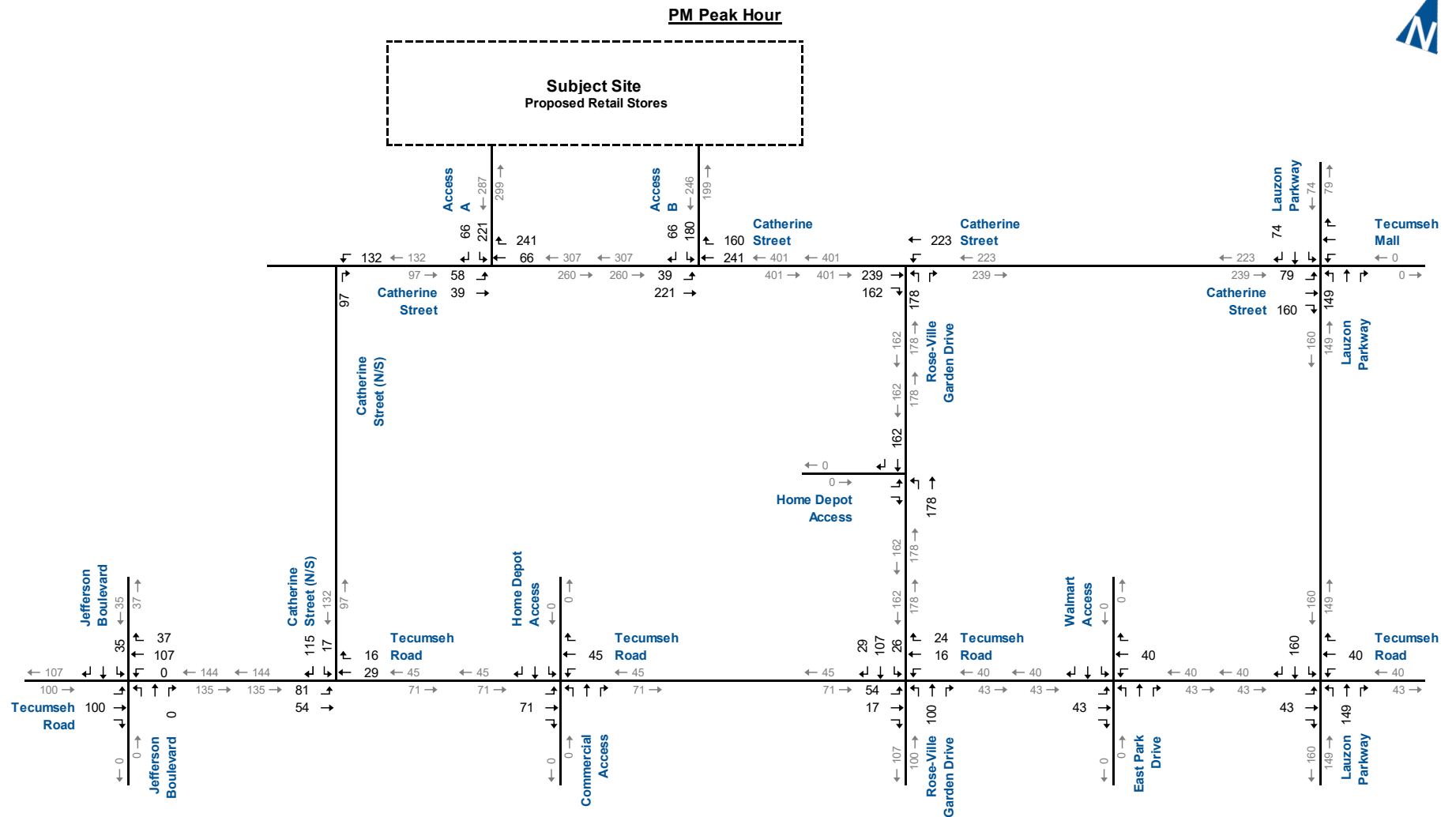
- ▶ **Figure D.1A/B/C:** Costco & Sobey's Net Additional Trips (External Trips Only);
- ▶ **Figure D.2A/B/C:** Costco Pass-by Trips;
- ▶ **Figure D.3A/B/C:** Costco Diverted Trips;
- ▶ **Figure D.4A/B/C:** Sobey's Pass-by Trips; and
- ▶ **Figure D.5A/B/C:** Net Trip Generation (Figures 3.3A/B/C in the TIS report).



AM Peak Hour



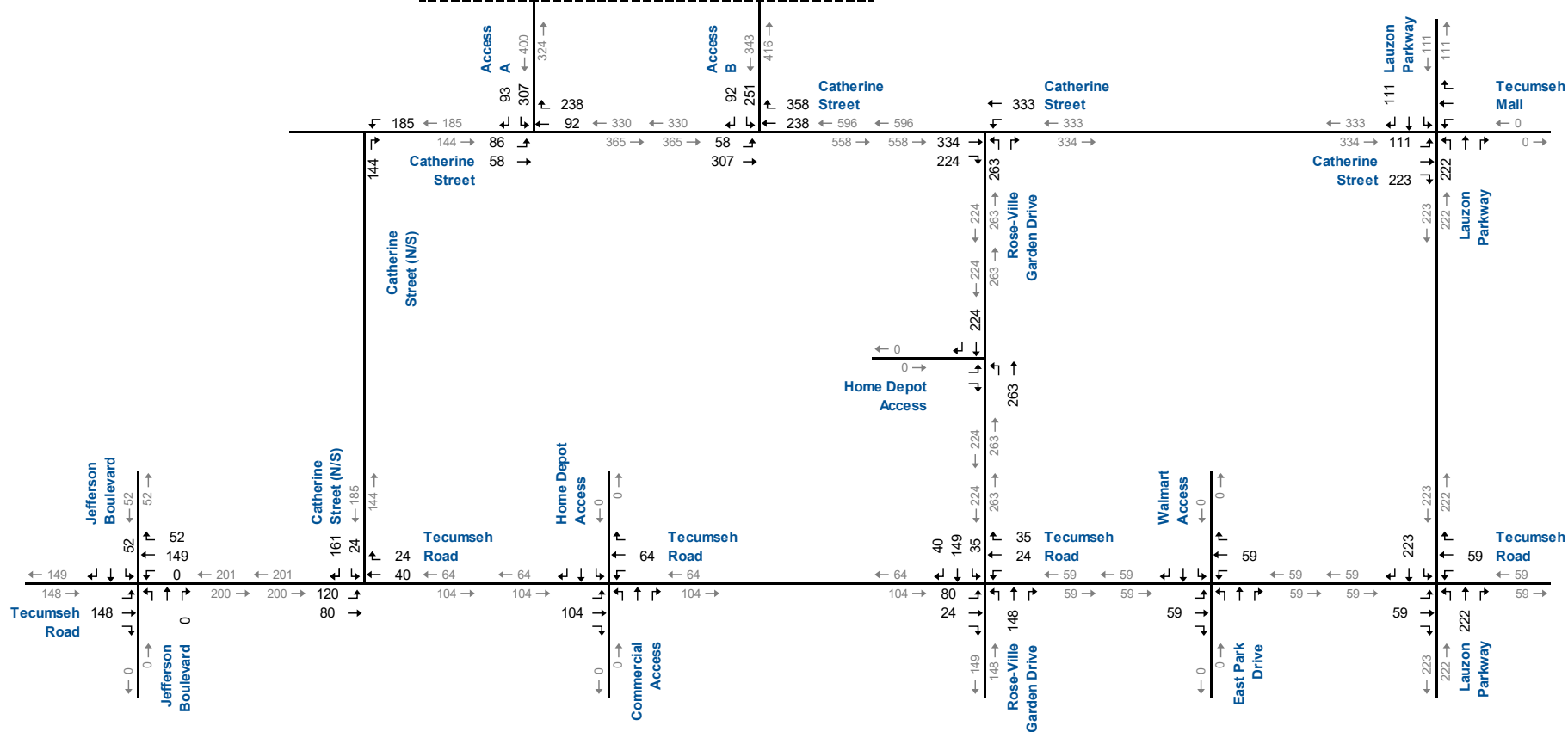
Net Additional Trips AM Peak Hour



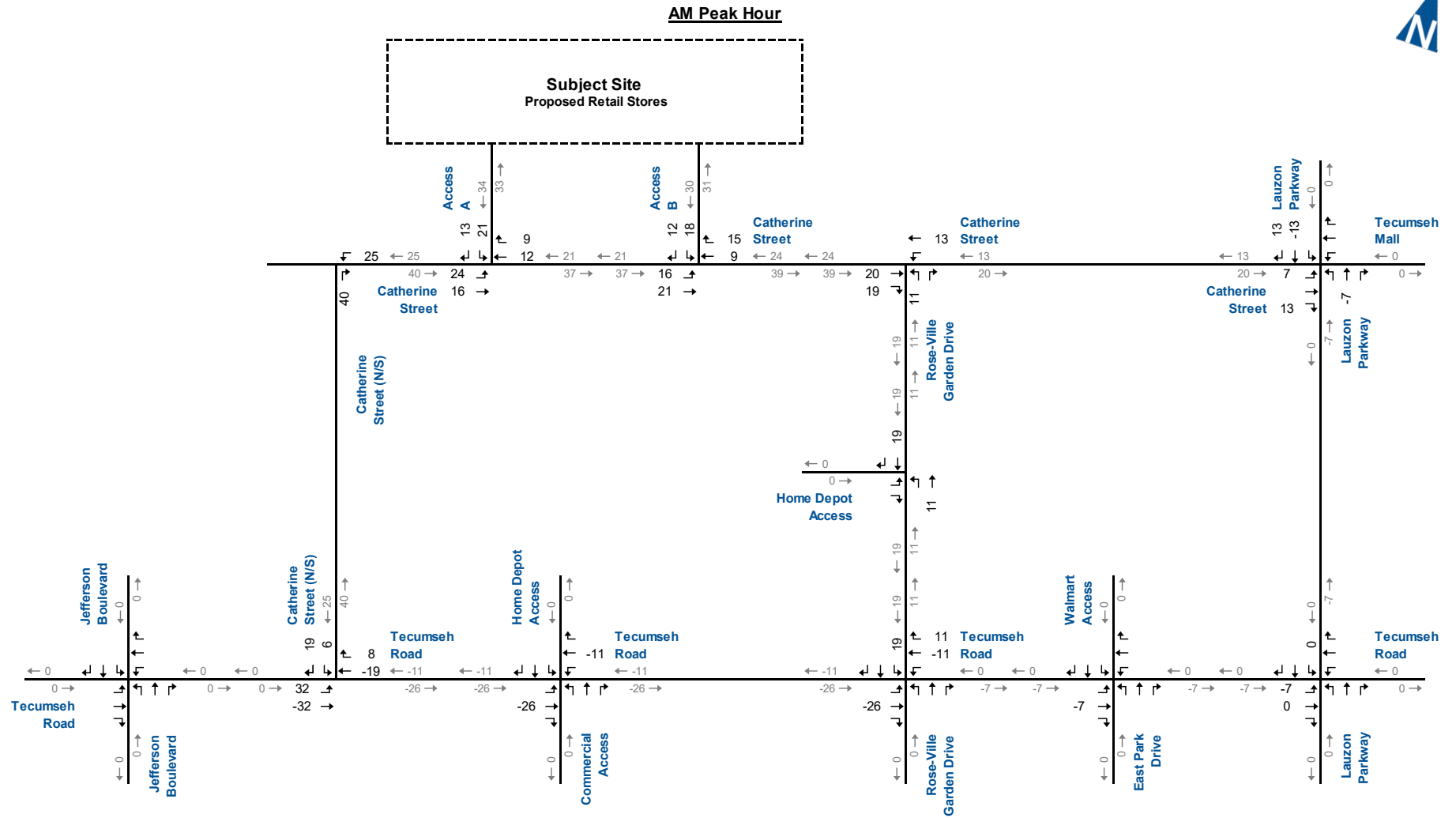
Net Additional Trips PM Peak Hour



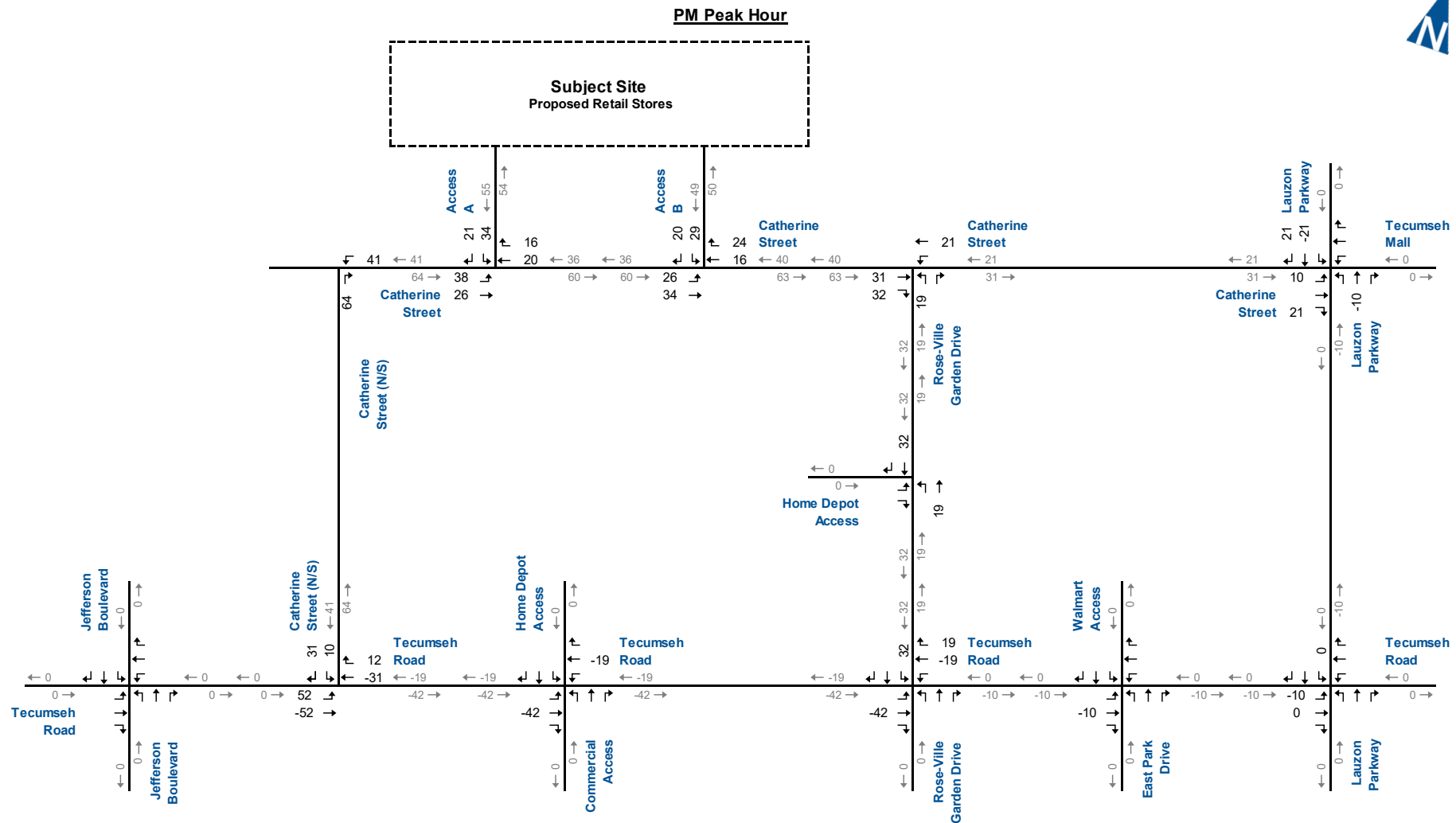
Saturday Peak Hour



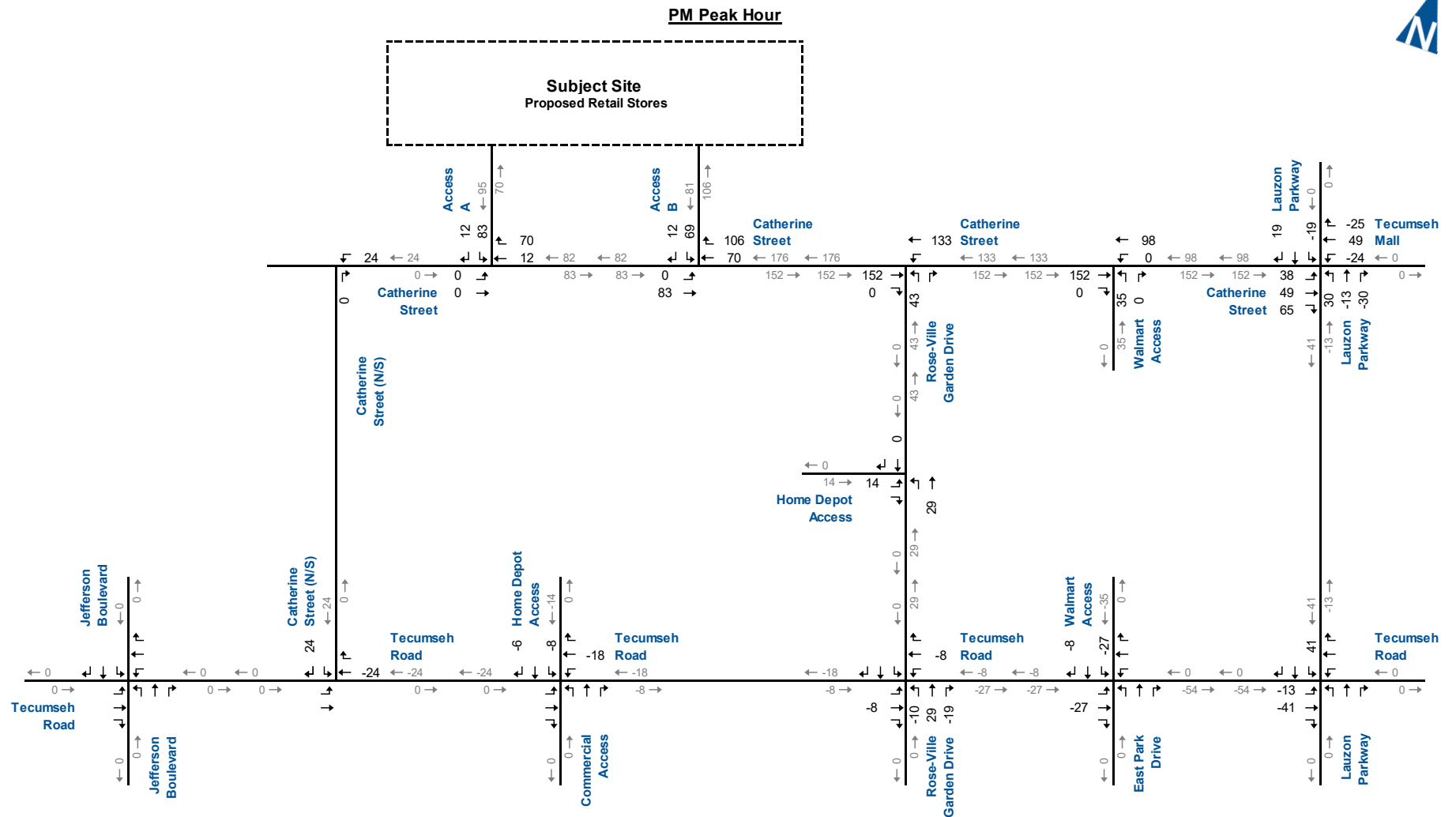
Net Additional Trips Saturday Peak Hour



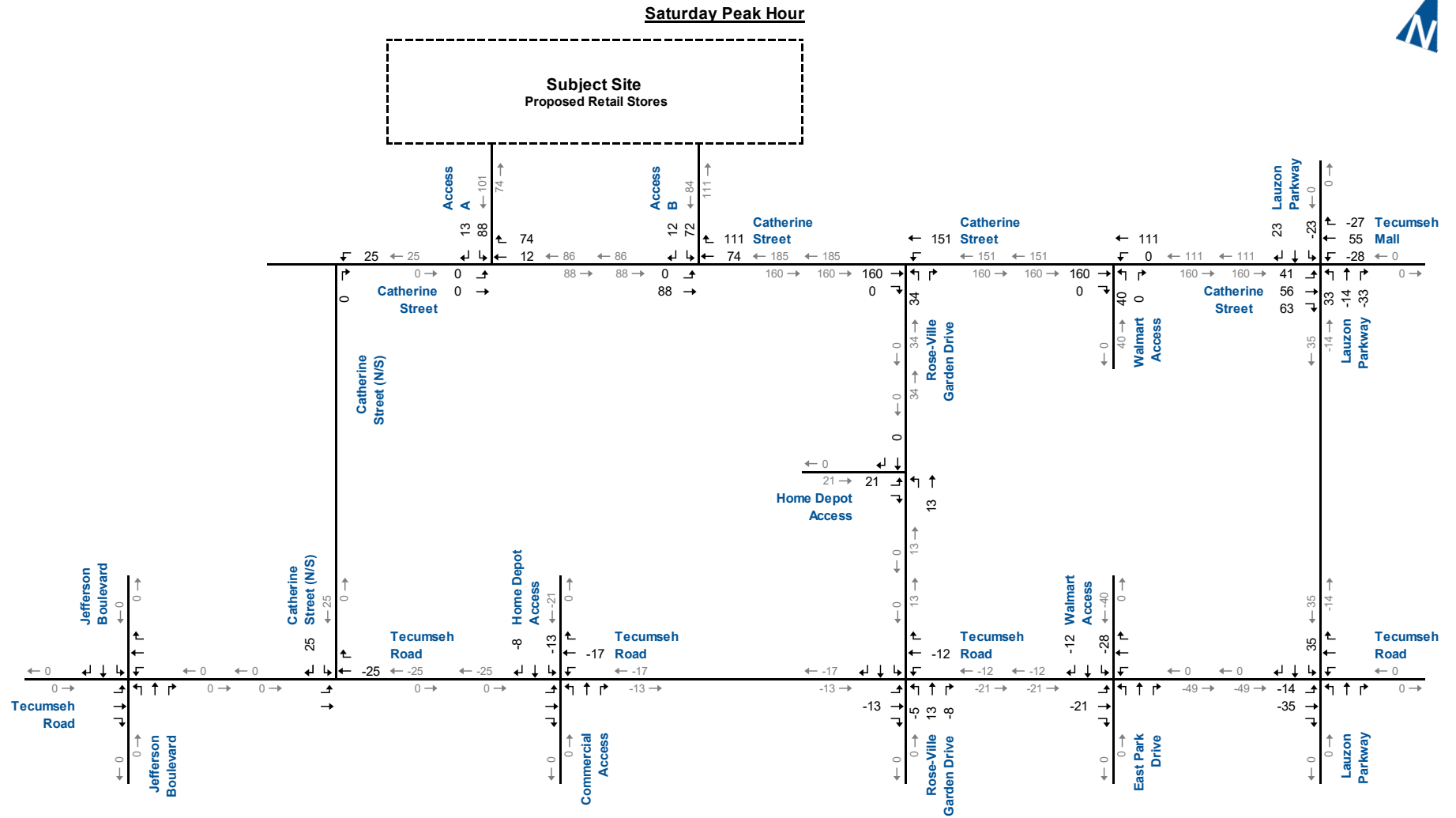
Costco Pass-by Traffic Volumes AM Peak Hour



Costco Pass-by Traffic Volumes PM Peak Hour



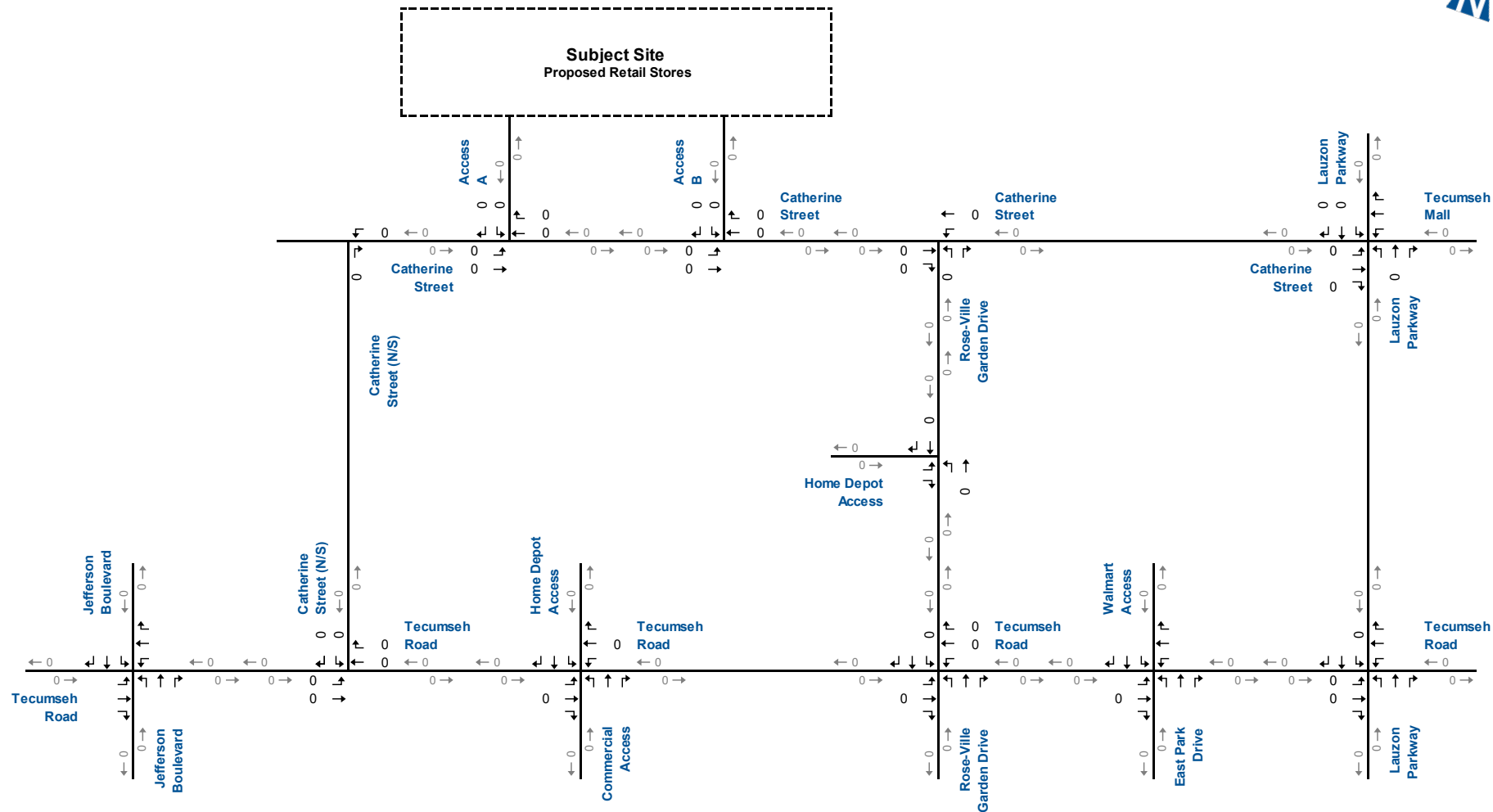
Costco Diverted Traffic Volumes PM Peak Hour



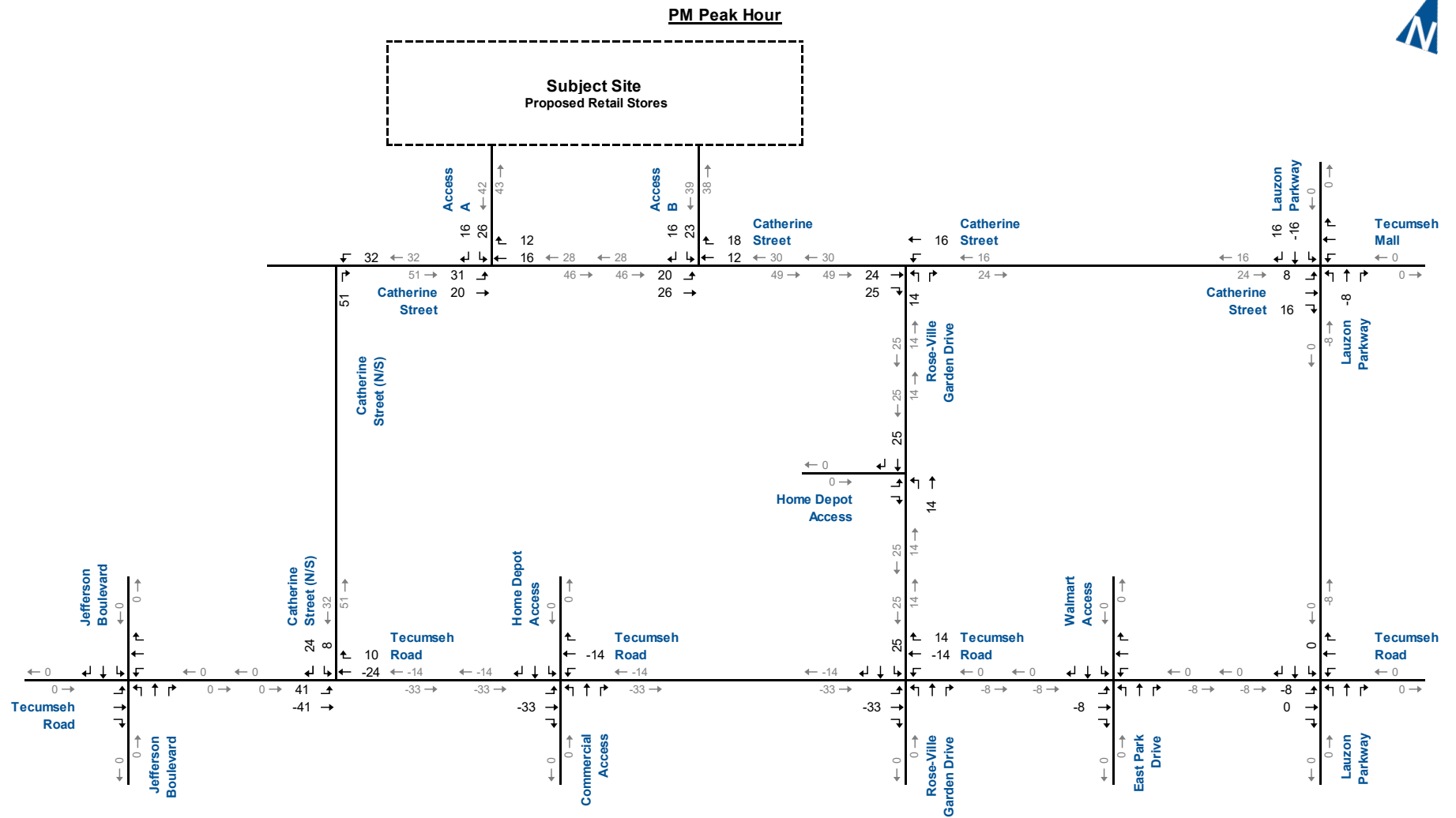
Costco Diverted Traffic Volumes Saturday Peak Hour



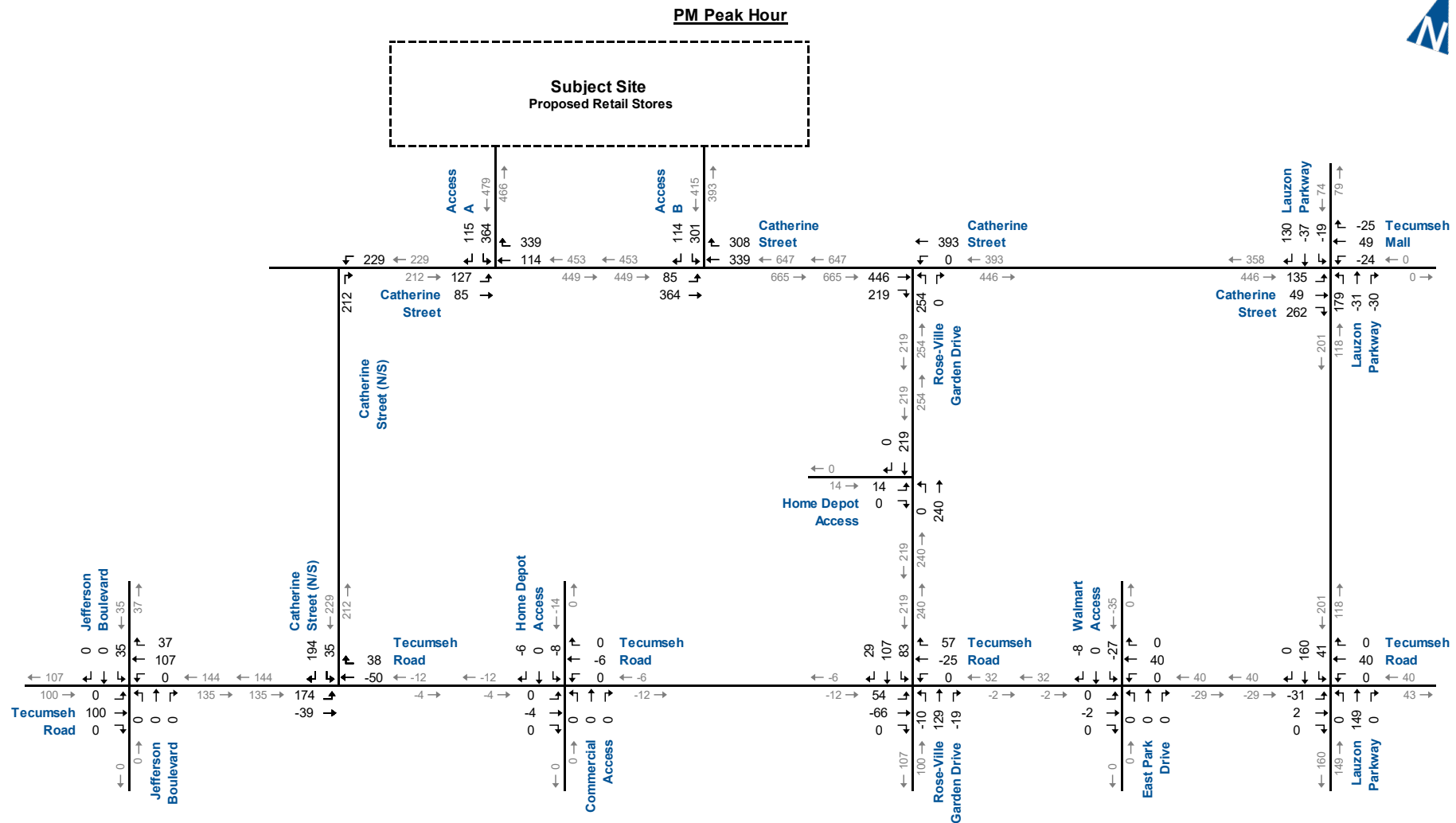
AM Peak Hour



Sobeys Pass-by Traffic Volumes AM Peak Hour



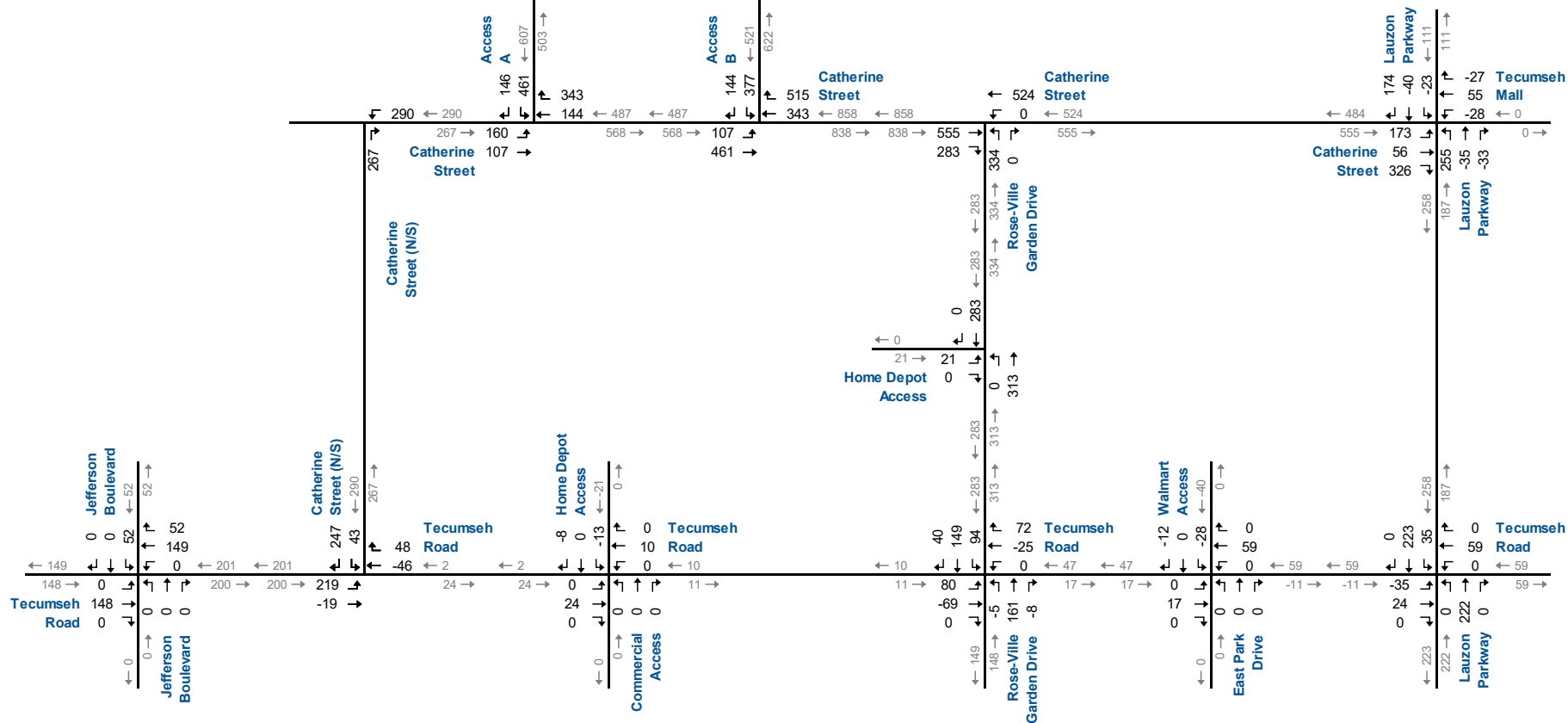
Sobeys Pass-by Traffic Volumes PM Peak Hour



Net Trip Generation PM Peak Hour



Saturday Peak Hour



Net Trip Generation Saturday Peak Hour

Land Use: 820

Shopping Center (>150k)

Description

A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has at least 150,000 square feet of gross leasable area (GLA). It often has more than one anchor store. Various names can be assigned to a shopping center within this size range, depending on its specific size and tenants, such as community center, regional center, superregional center, fashion center, and power center.

A shopping center of this size typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants.

A shopping center of this size can be enclosed or open-air. The vehicle trips generated at a shopping center are based upon the total GLA of the center. In the case of a smaller center without an enclosed mall or peripheral buildings, the GLA is the same as the gross floor area of the building.

The 150,000 square feet GLA threshold value between community/regional shopping center and shopping plaza (Land Use 821) is based on an examination of trip generation data. For a shopping plaza that is smaller than the threshold value, the presence or absence of a supermarket within the plaza has a measurable effect on site trip generation. For a shopping center that is larger than the threshold value, the trips generated by its other major tenants mask any effects of the presence or absence of an on-site supermarket.

Shopping plaza (40-150k) (Land Use 821), strip retail plaza (<40k) (Land Use 822), and factory outlet center (Land Use 823) are related uses.

Additional Data

Many shopping centers—in addition to the integrated unit of shops in one building or enclosed around a mall—include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices. Although the data herein do not indicate which of the centers studied include peripheral buildings, it can be assumed that some of the data show their effect.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky,

Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

Source Numbers

77, 110, 154, 156, 159, 190, 199, 202, 204, 213, 251, 269, 294, 295, 299, 304, 305, 307, 308, 309, 311, 314, 315, 316, 317, 319, 365, 385, 404, 414, 423, 442, 446, 562, 629, 702, 715, 728, 868, 871, 880, 899, 912, 926, 946, 962, 973, 974, 978, 1034, 1040, 1067

Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 108

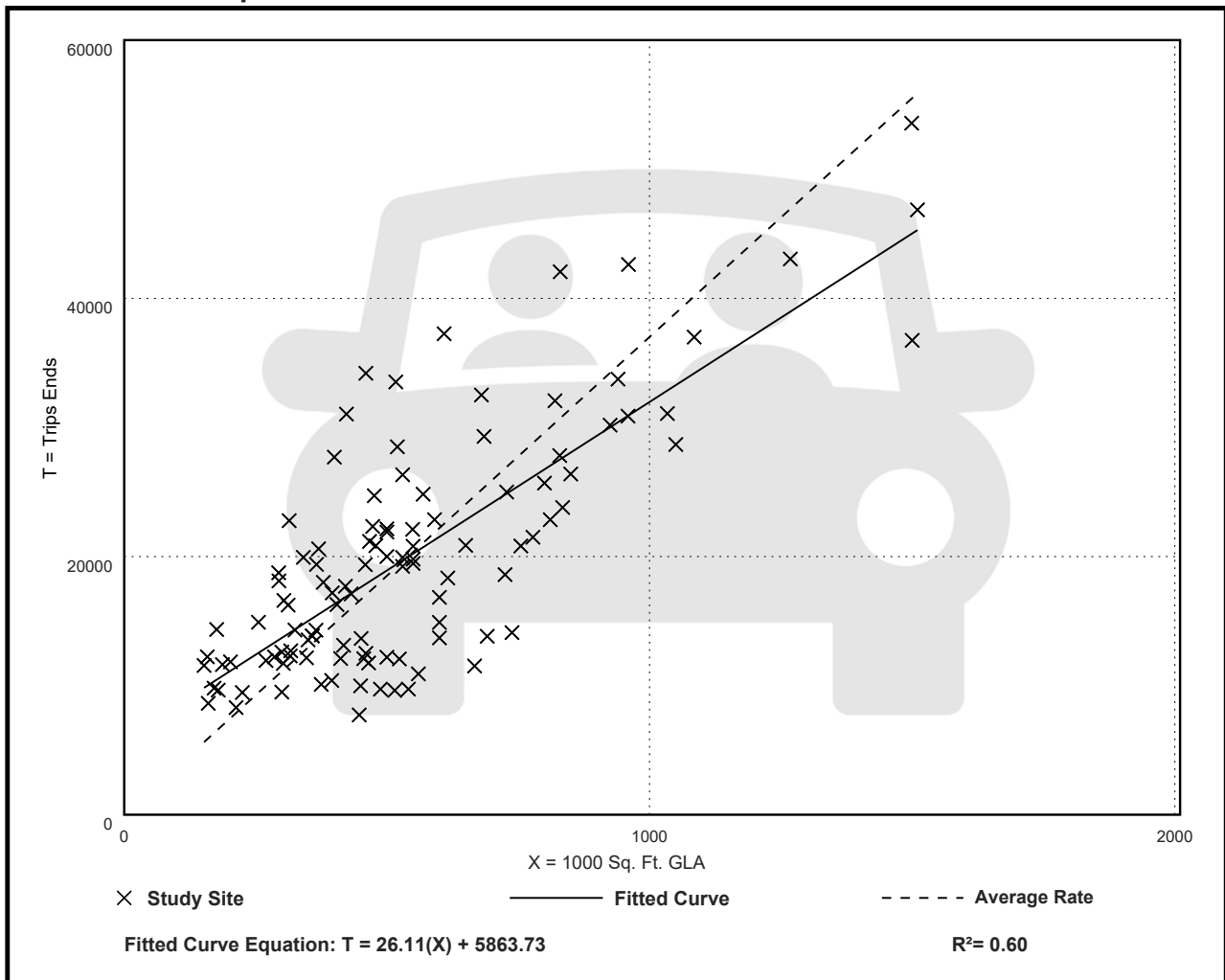
Avg. 1000 Sq. Ft. GLA: 538

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.01	17.27 - 81.53	12.79

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 44

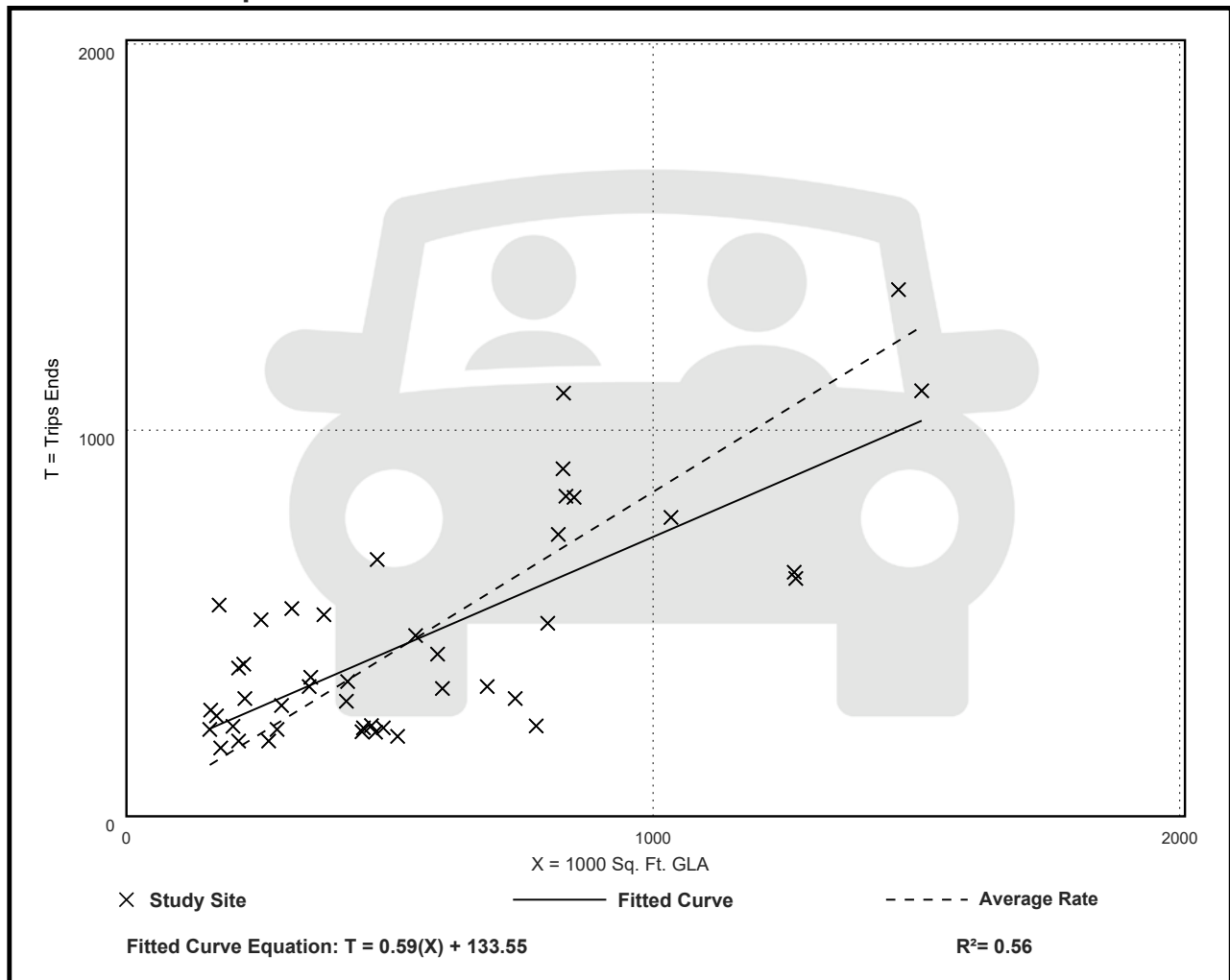
Avg. 1000 Sq. Ft. GLA: 546

Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.84	0.30 - 3.11	0.42

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: **Weekday,**

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 126

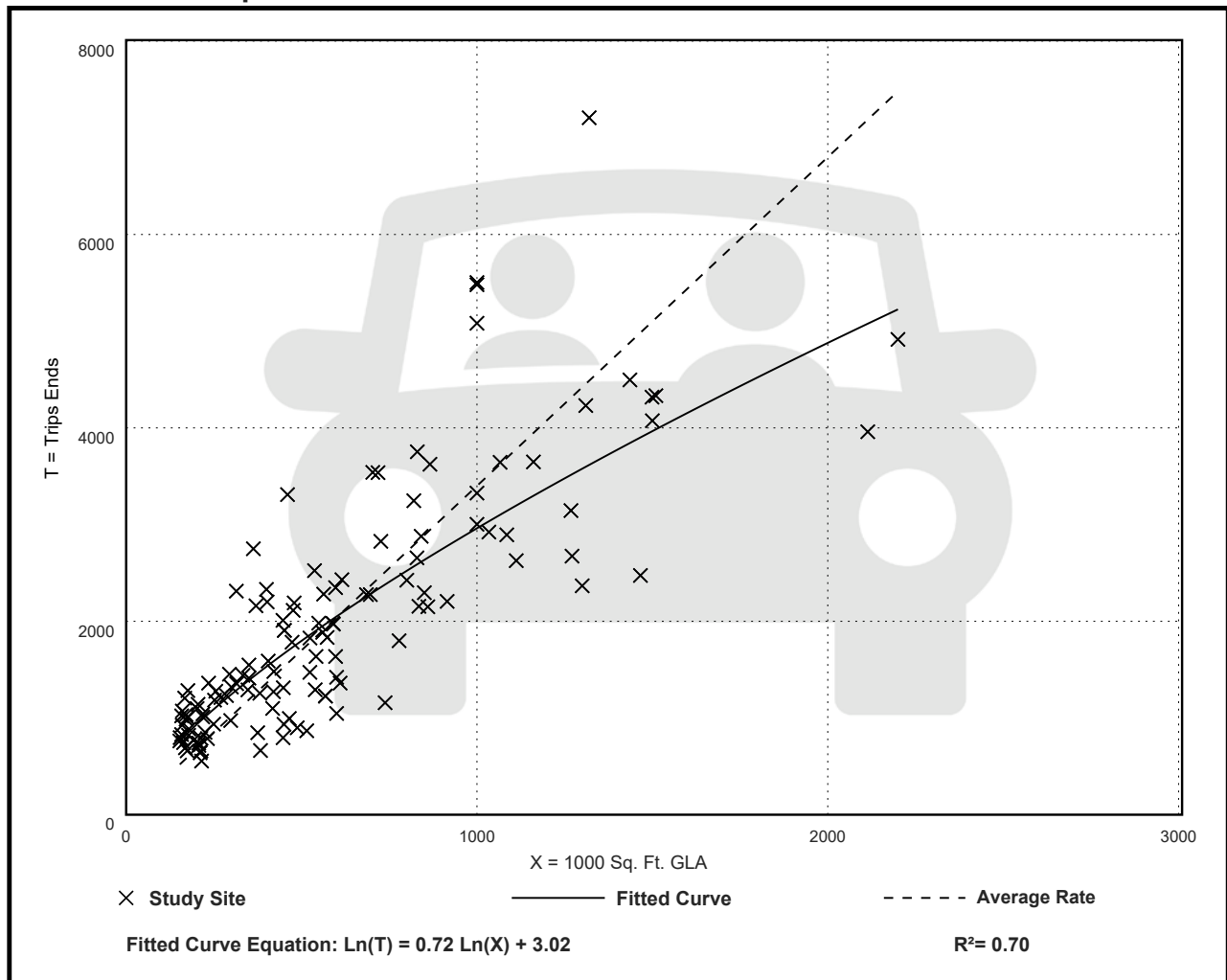
Avg. 1000 Sq. Ft. GLA: 581

Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.40	1.57 - 7.58	1.26

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

**On a: Weekday,
AM Peak Hour of Generator**

Setting/Location: General Urban/Suburban

Number of Studies: 26

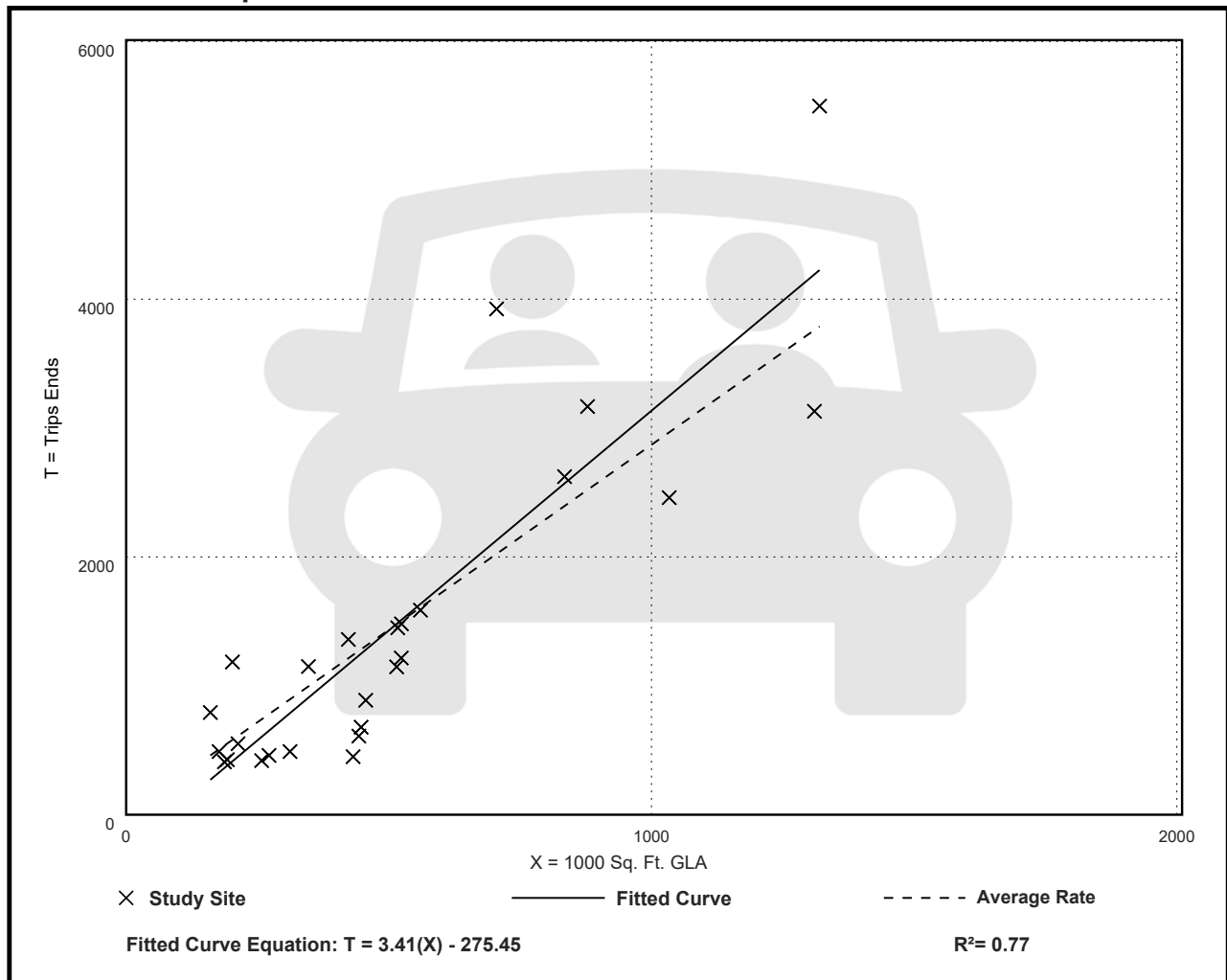
Avg. 1000 Sq. Ft. GLA: 509

Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.87	1.04 - 5.86	1.14

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 28

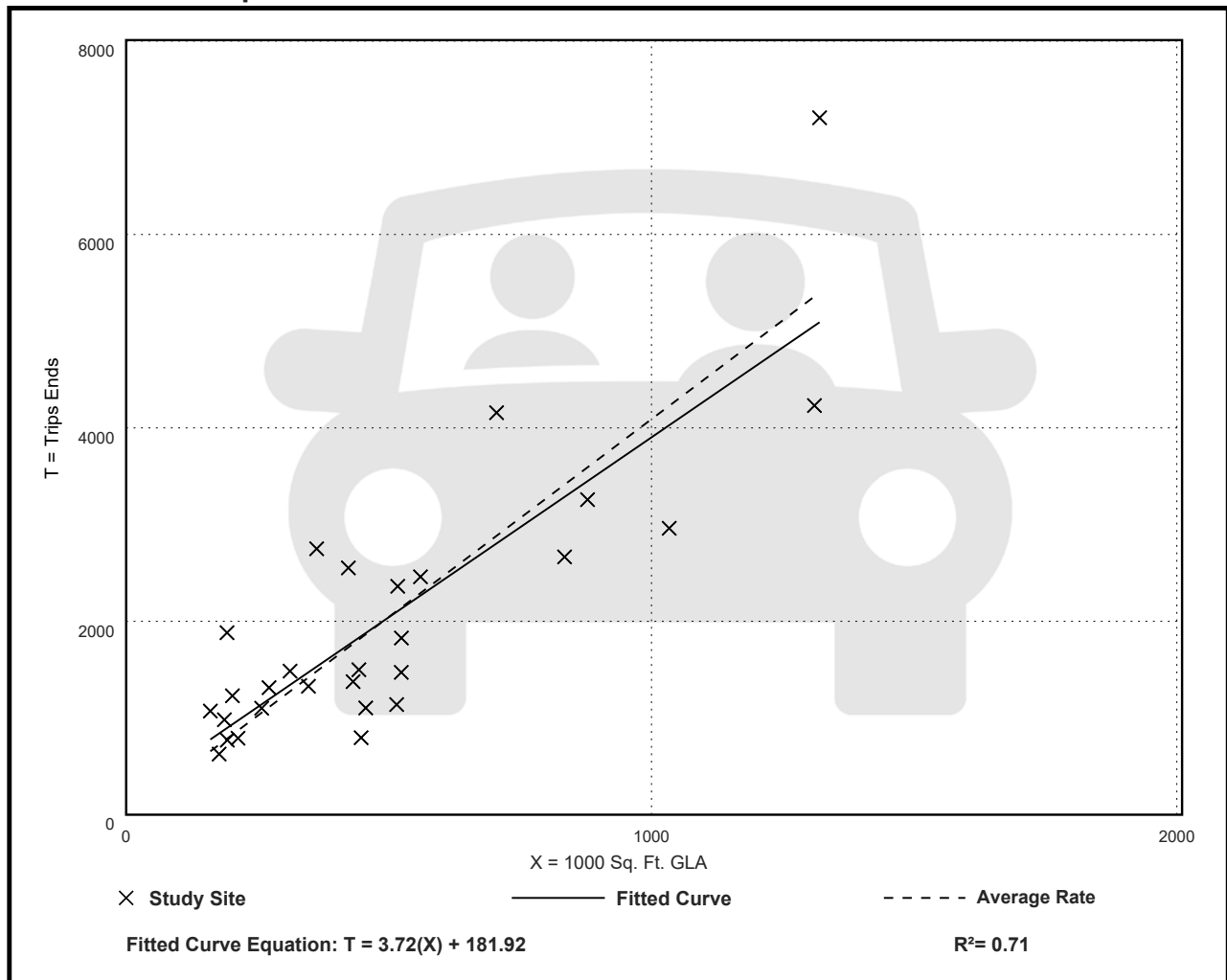
Avg. 1000 Sq. Ft. GLA: 493

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.09	1.78 - 9.80	1.51

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Saturday

Setting/Location: General Urban/Suburban

Number of Studies: 48

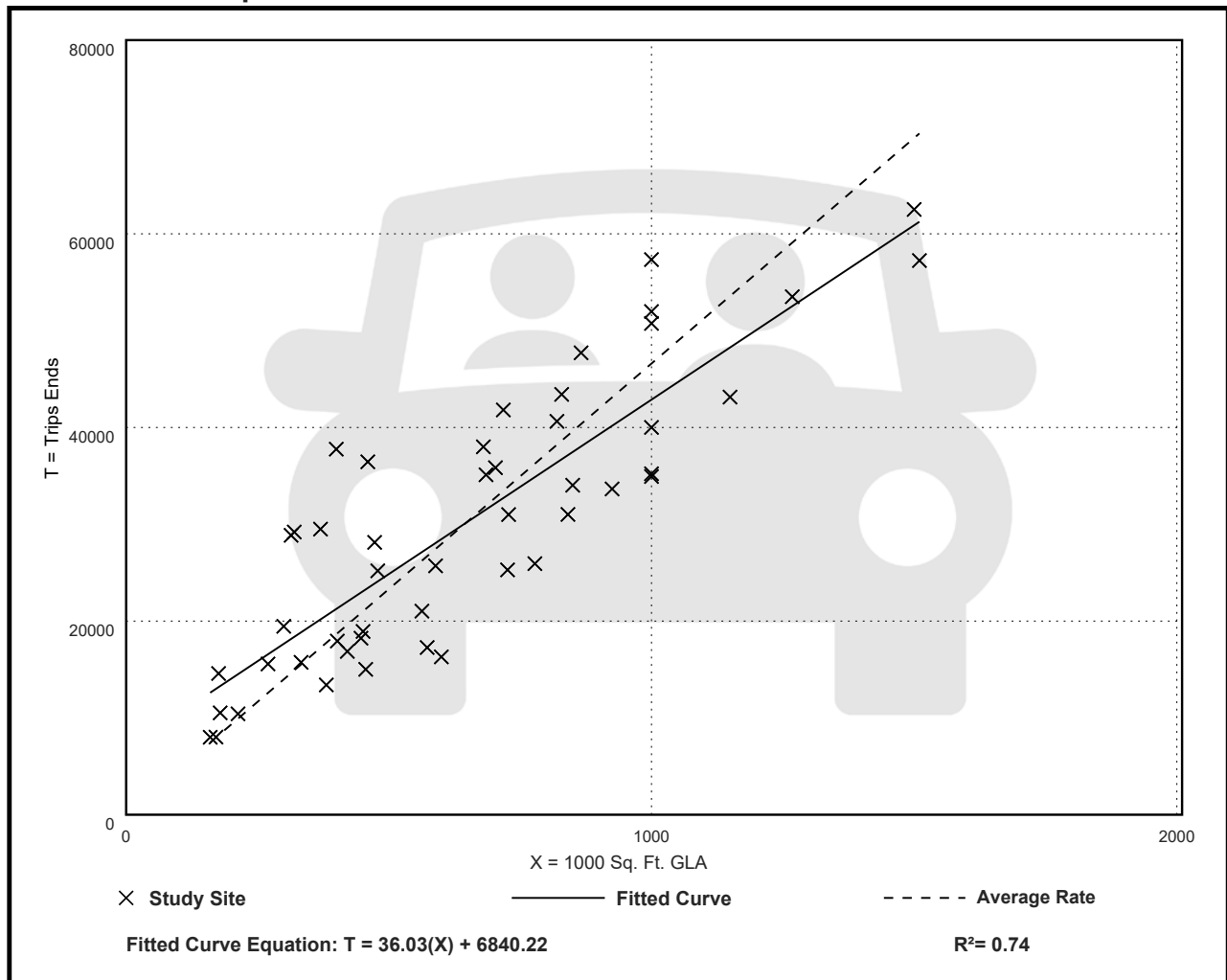
Avg. 1000 Sq. Ft. GLA: 647

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
46.60	27.17 - 94.40	13.66

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 81

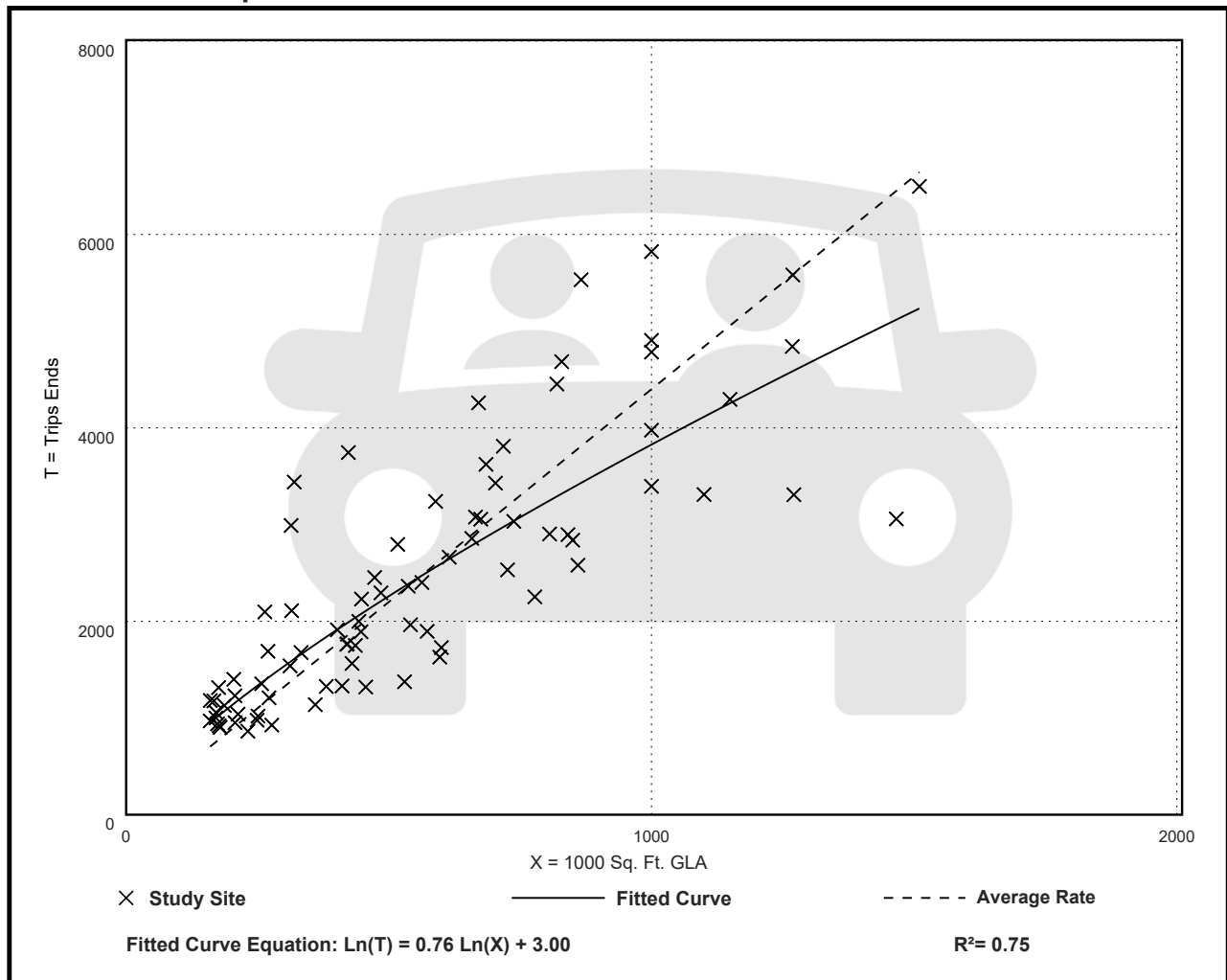
Avg. 1000 Sq. Ft. GLA: 559

Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.40	2.09 - 10.75	1.41

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Sunday

Setting/Location: General Urban/Suburban

Number of Studies: 20

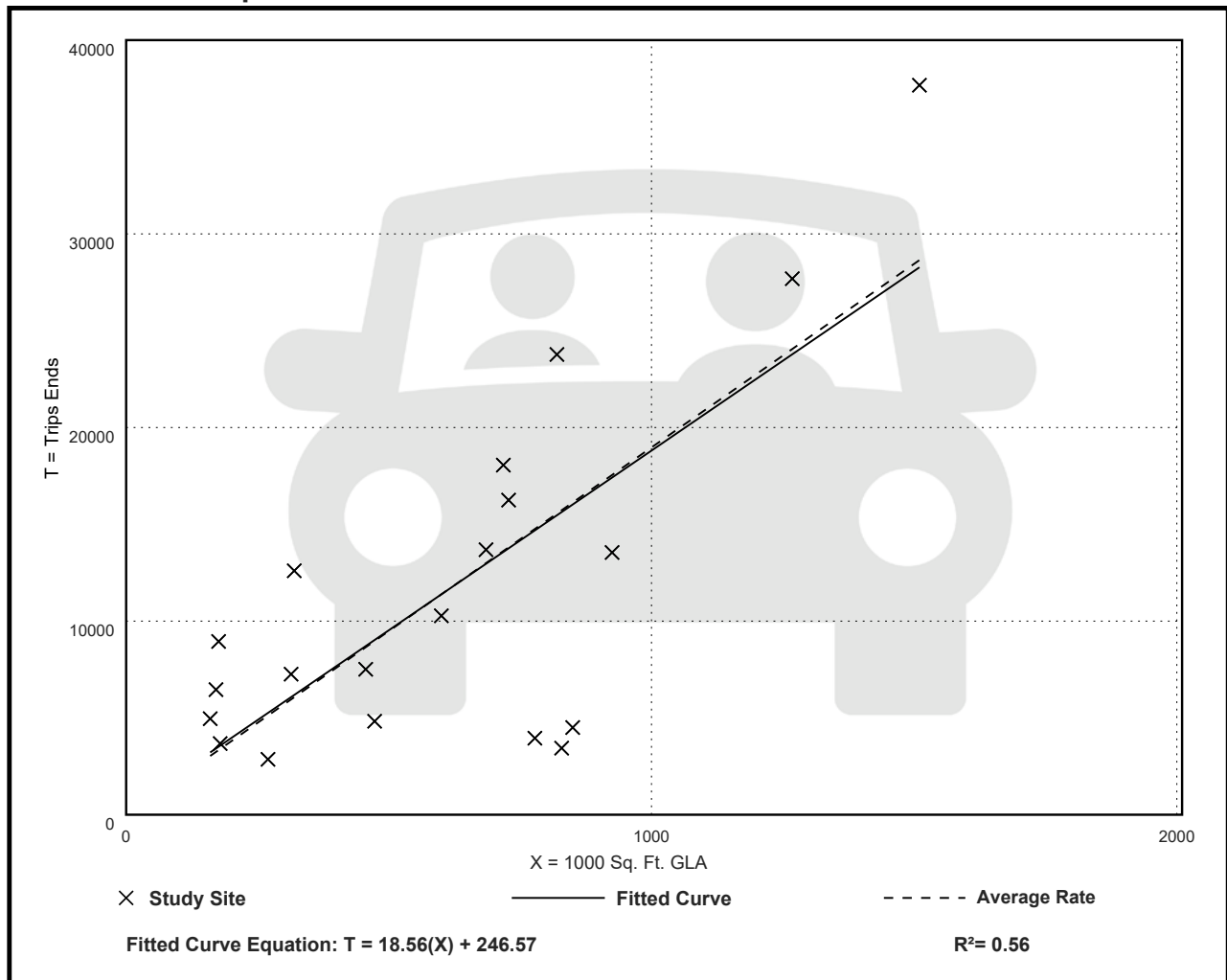
Avg. 1000 Sq. Ft. GLA: 612

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
18.97	4.15 - 50.85	9.96

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Sunday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 16

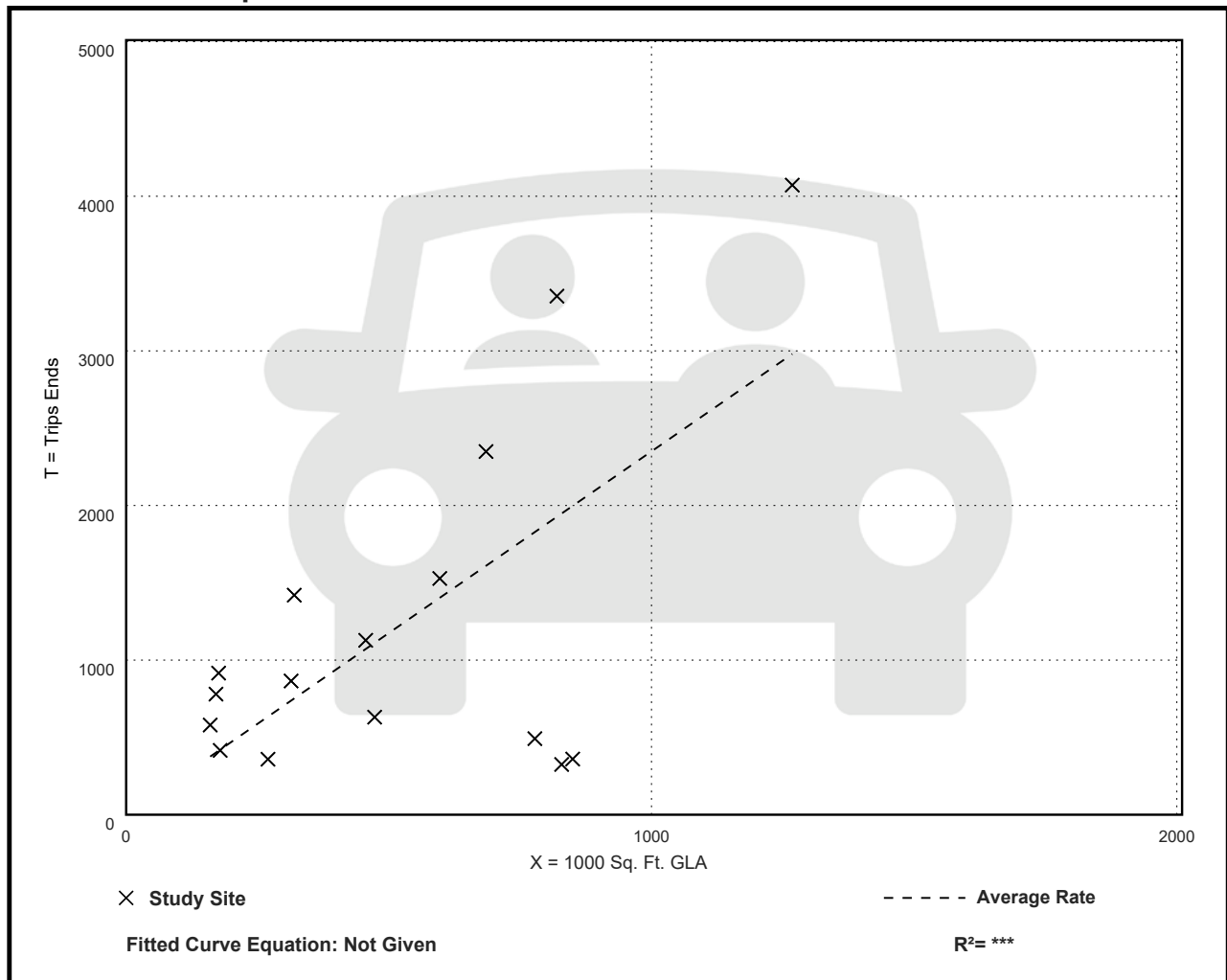
Avg. 1000 Sq. Ft. GLA: 522

Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.35	0.39 - 5.20	1.50

Data Plot and Equation



Shopping Center (>150k) (820)

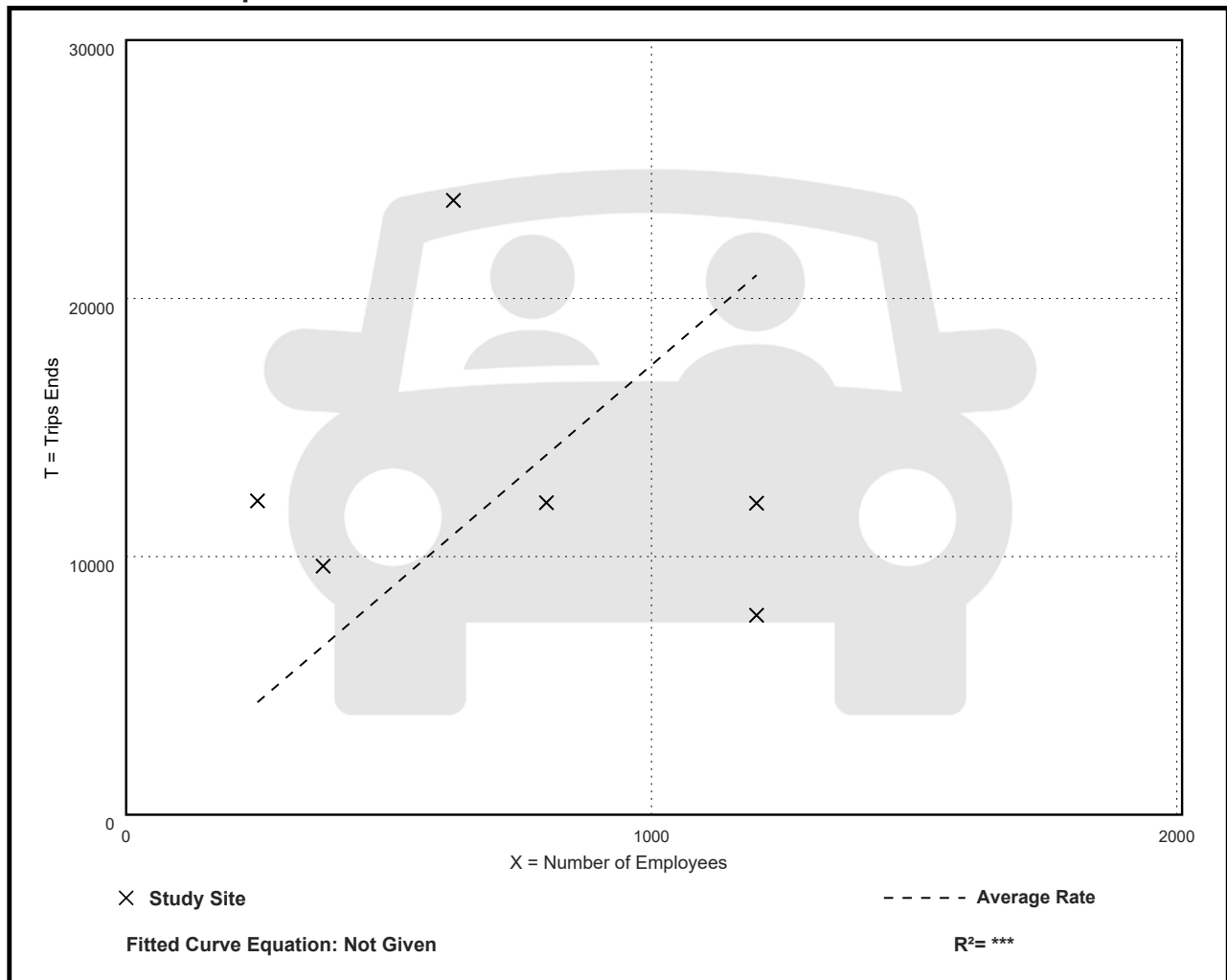
Vehicle Trip Ends vs: Employees
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. Num. of Employees: 741
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
17.42	6.44 - 48.63	14.25

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: Employees

On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 4

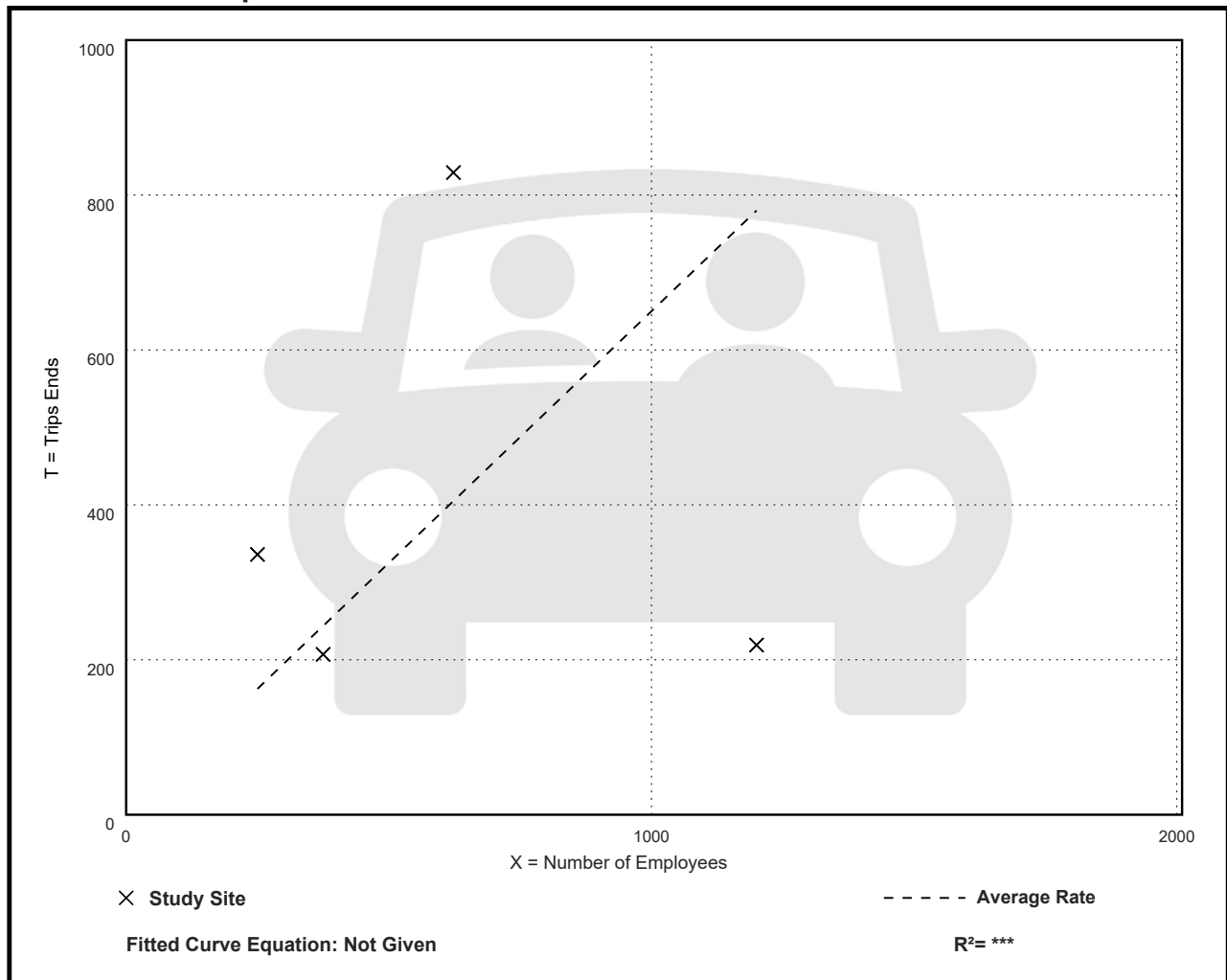
Avg. Num. of Employees: 612

Directional Distribution: 64% entering, 36% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.65	0.18 - 1.34	0.61

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: Employees

On a: **Weekday,**

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 6

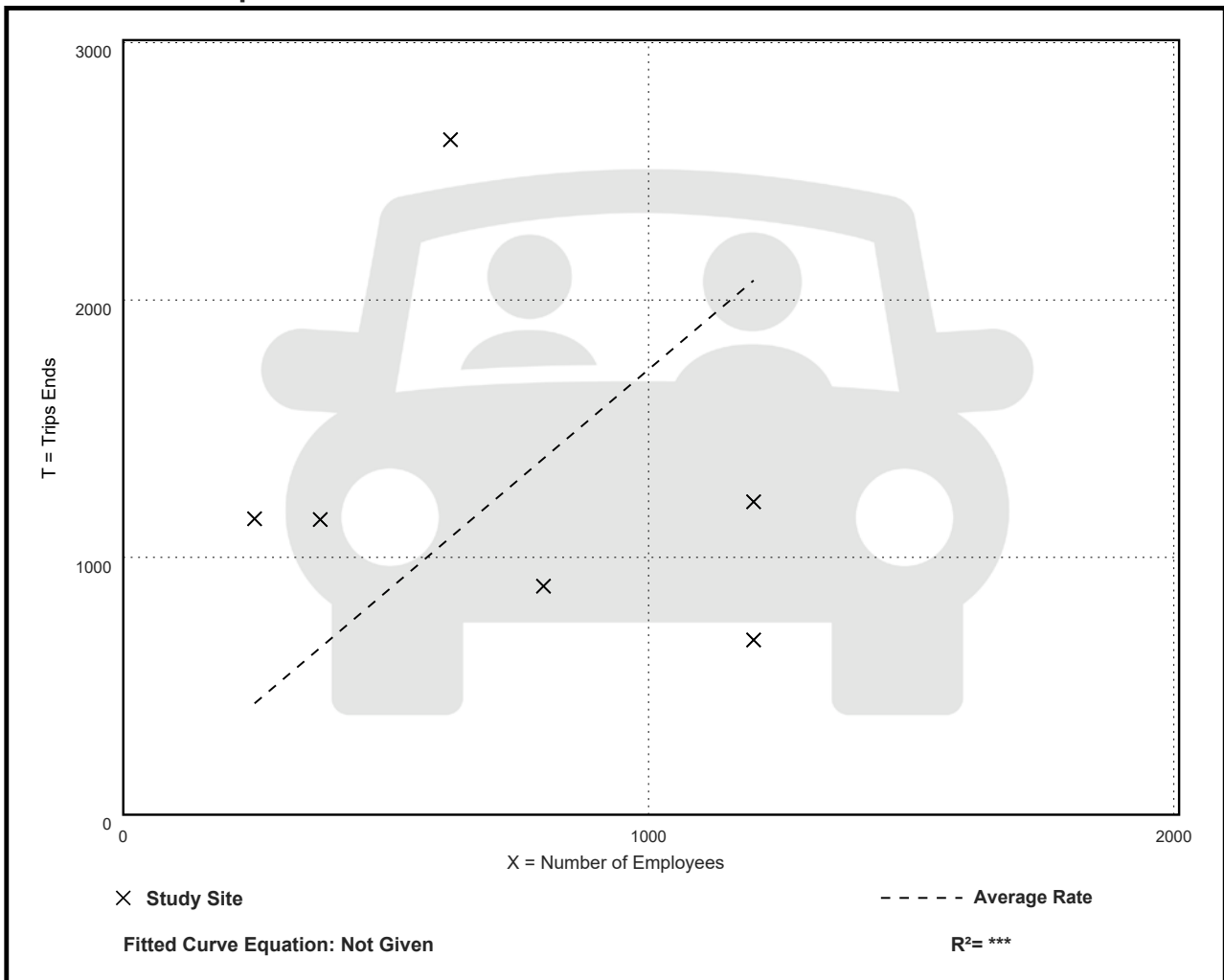
Avg. Num. of Employees: 741

Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
1.73	0.57 - 4.60	1.57

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: Employees

On a: **Weekday,**

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 6

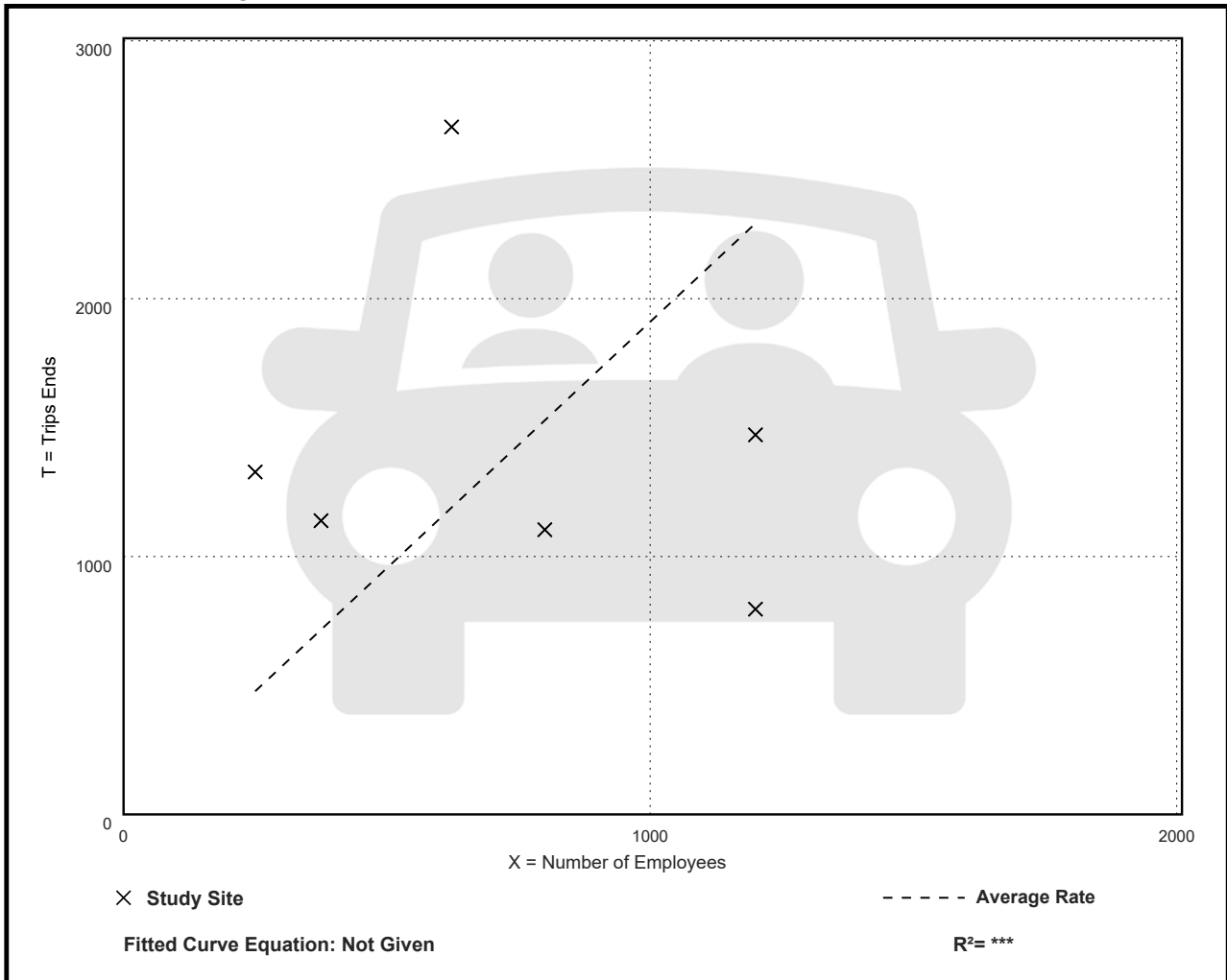
Avg. Num. of Employees: 741

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
1.91	0.66 - 5.31	1.60

Data Plot and Equation



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: Employees
On a: Saturday

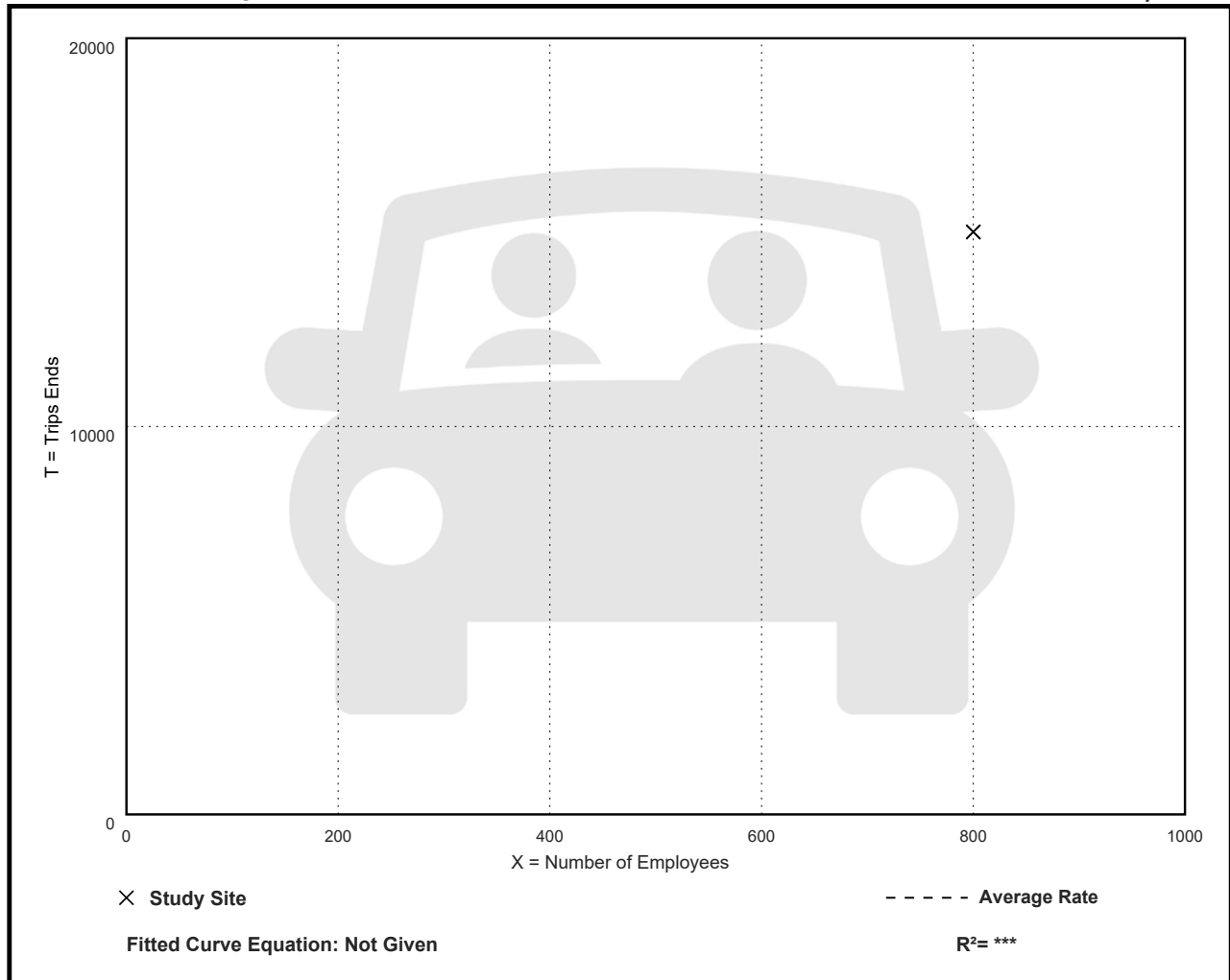
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Employees: 800
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
18.77	18.77 - 18.77	***

Data Plot and Equation

Caution – Small Sample Size



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: Employees

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. Num. of Employees: 800

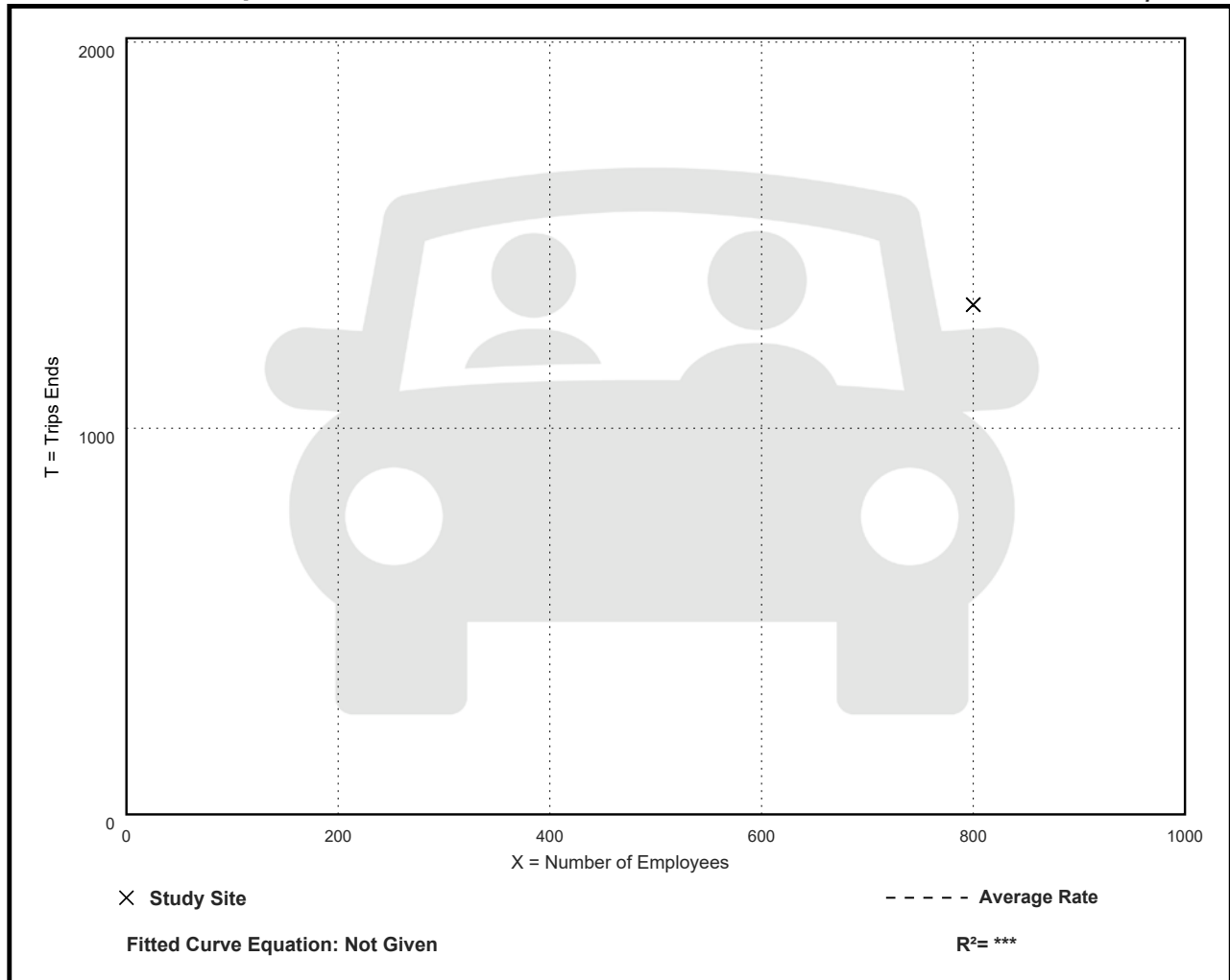
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
1.65	1.65 - 1.65	***

Data Plot and Equation

Caution – Small Sample Size



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: Employees
On a: Sunday

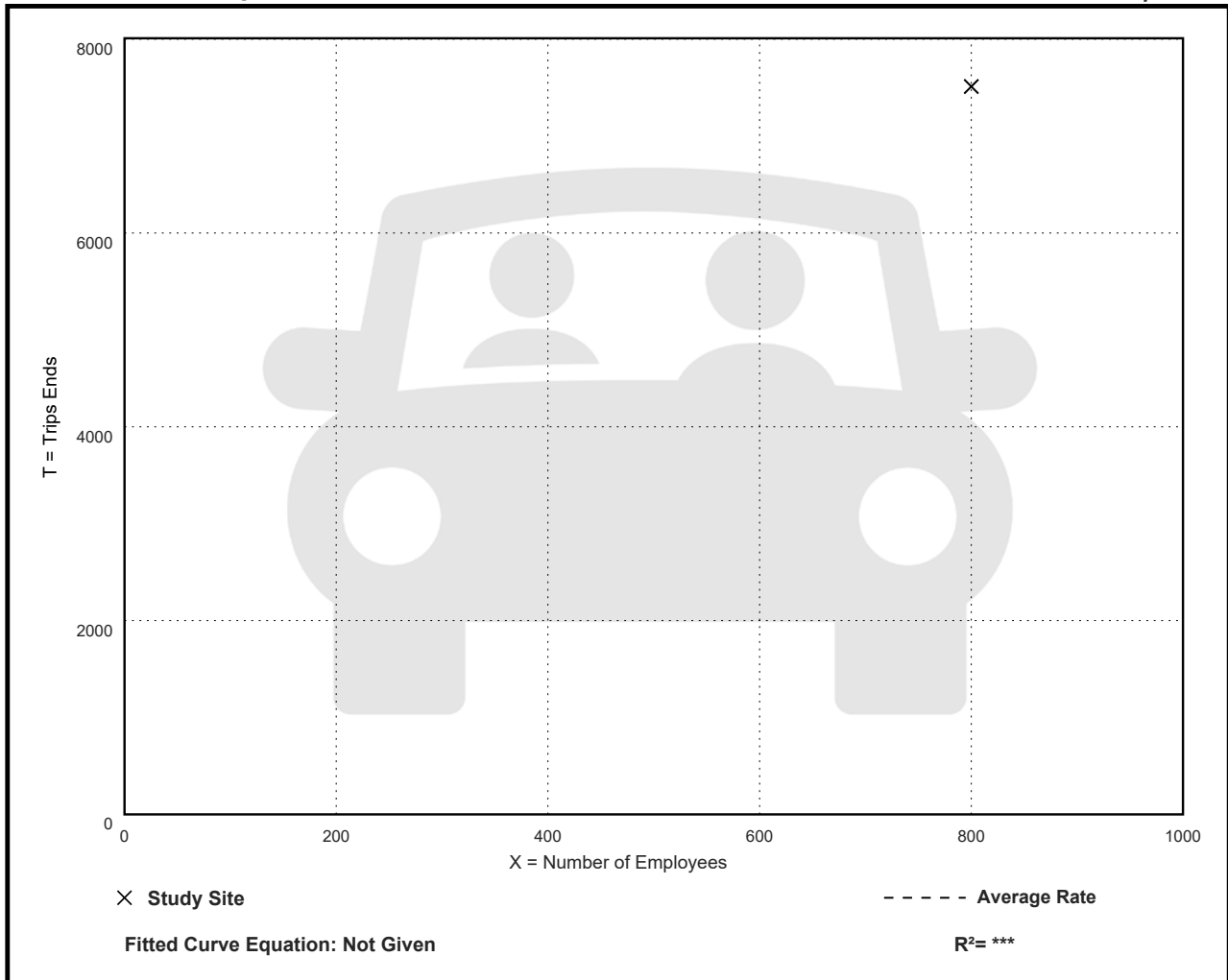
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Employees: 800
Directional Distribution: Not Available

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
9.39	9.39 - 9.39	***

Data Plot and Equation

Caution – Small Sample Size



Shopping Center (>150k) (820)

Vehicle Trip Ends vs: Employees

On a: Sunday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. Num. of Employees: 800

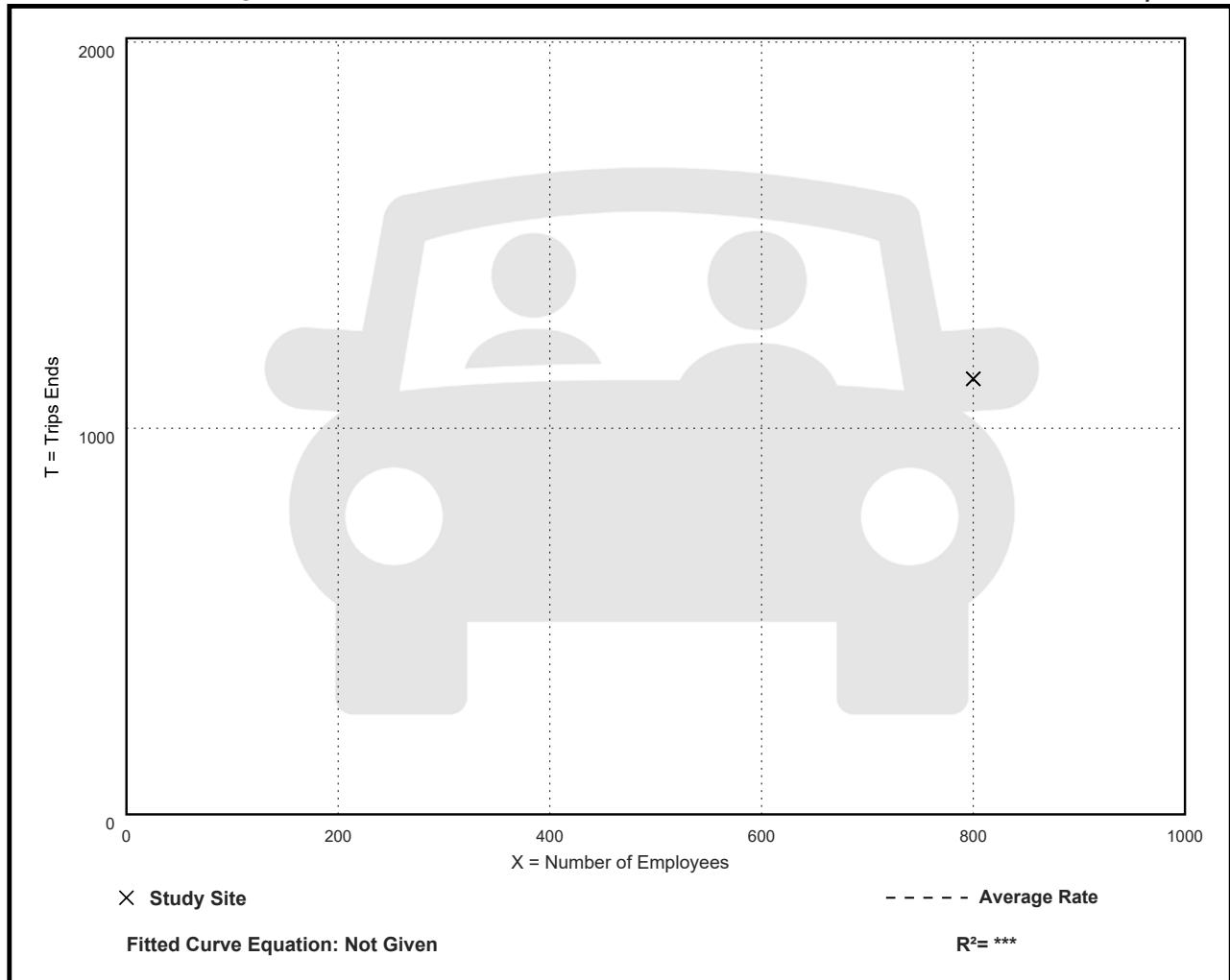
Directional Distribution: Not Available

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
1.41	1.41 - 1.41	***

Data Plot and Equation

Caution – Small Sample Size



Shopping Center (>150k) (820)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GLA

On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. 1000 Sq. Ft. GLA: 1638

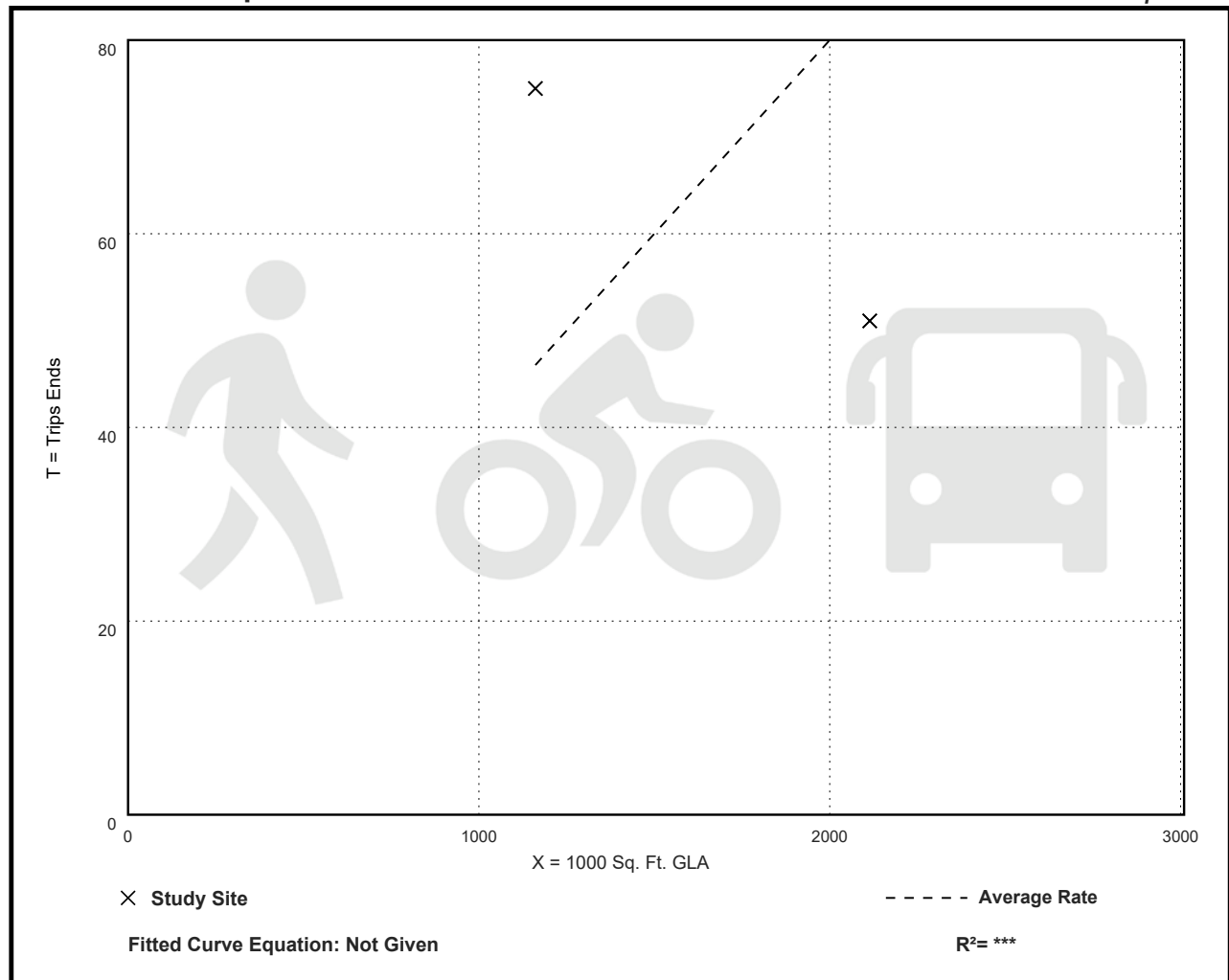
Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.04	0.02 - 0.06	***

Data Plot and Equation

Caution – Small Sample Size



Shopping Center (>150k) (820)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GLA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. 1000 Sq. Ft. GLA: 160

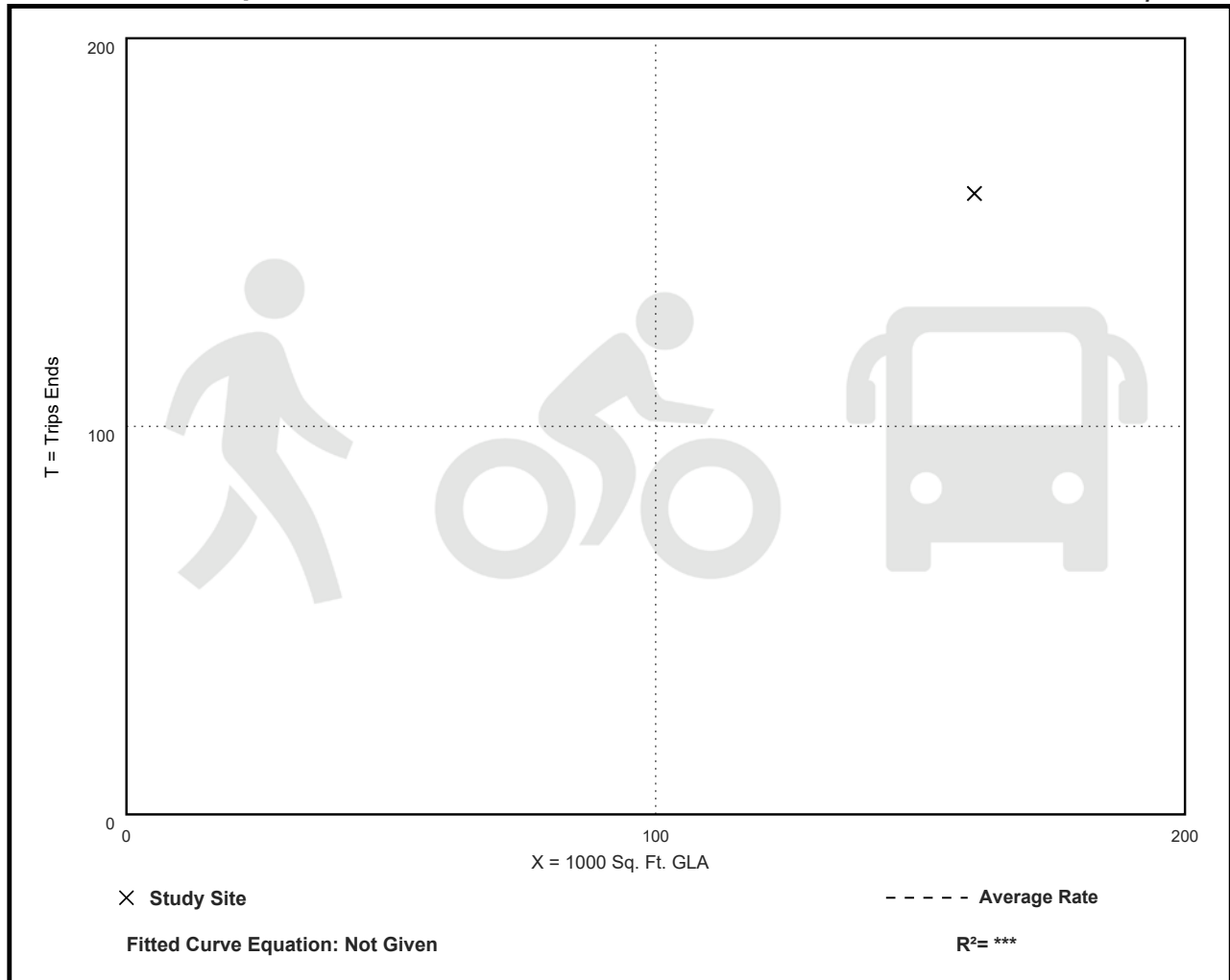
Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
1.00	1.00 - 1.00	***

Data Plot and Equation

Caution – Small Sample Size



Land Use: 850 Supermarket

Description

A supermarket is a free-standing retail store that sells a complete assortment of food, beverage, food preparation materials, and household products. A supermarket may also provide additional products and services such as a bakery, dry cleaning, floral arrangements, greeting cards, a limited-service bank, and a pharmacy.

Additional Data

In prior editions of *Trip Generation Manual*, a separate land use code was assigned to a discount supermarket. With the addition of new supermarket data points, an examination of the database reveals very little difference between trip generation rates for the traditional supermarket and a reported discount supermarket. This examination looked at both the small discount supermarkets and the large discount supermarkets. As a result, all types of supermarkets are included in this land use database.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, Colorado, Connecticut, District of Columbia, Florida, Georgia, Illinois, Kentucky, Maryland, Minnesota, Nevada, New Jersey, New York, Ontario (CAN), Oregon, Pennsylvania, South Dakota, Texas, Vermont, Virginia, Washington, and Wisconsin.

Source Numbers

213, 221, 236, 251, 273, 305, 359, 365, 438, 440, 442, 447, 448, 514, 520, 537, 552, 577, 610, 715, 716, 728, 738, 746, 854, 870, 882, 893, 917, 926, 935, 946, 959, 961, 966, 975, 1004, 1009, 1025, 1058, 1063, 1064

Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 22

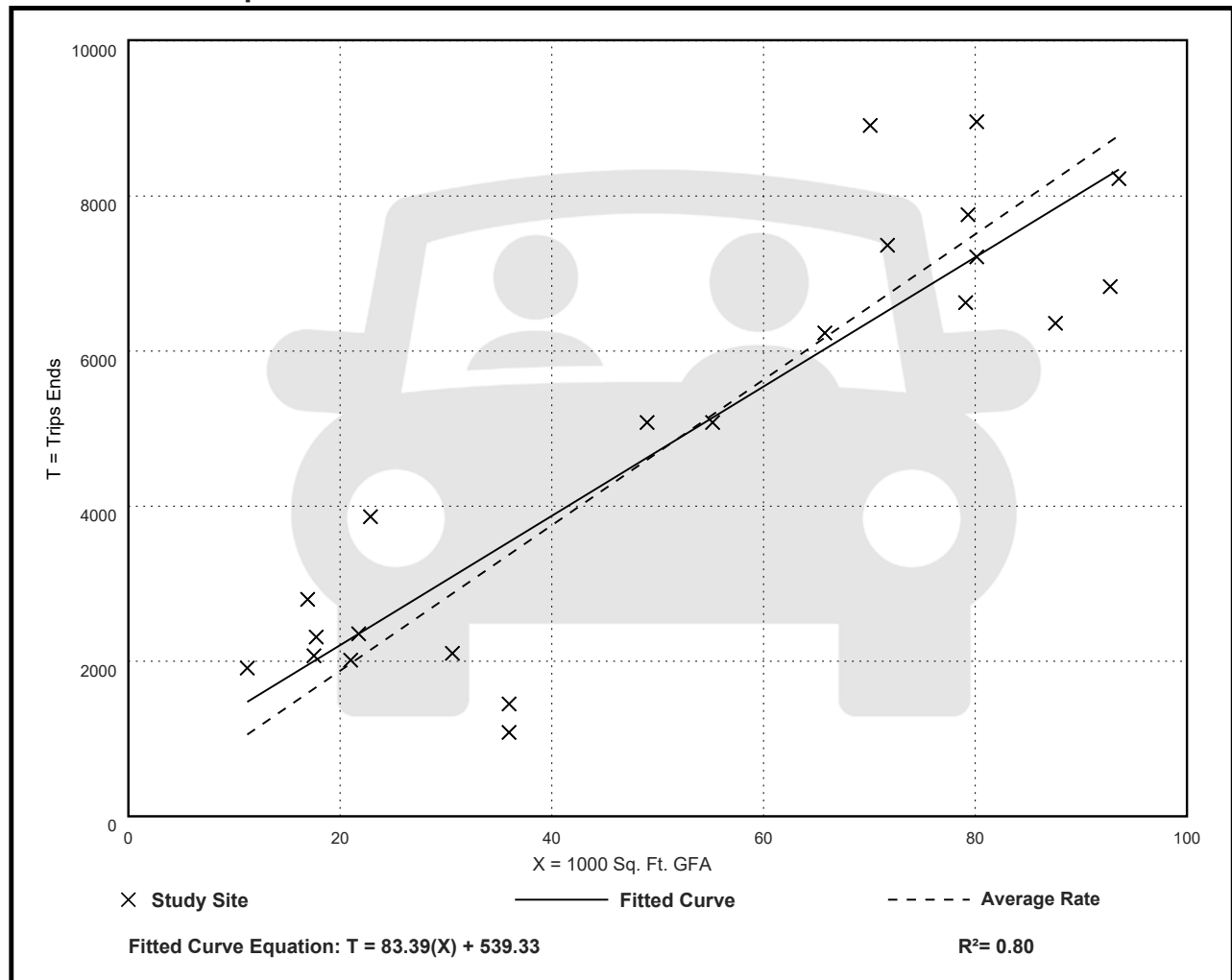
Avg. 1000 Sq. Ft. GFA: 52

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
93.84	30.09 - 170.24	27.05

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 34

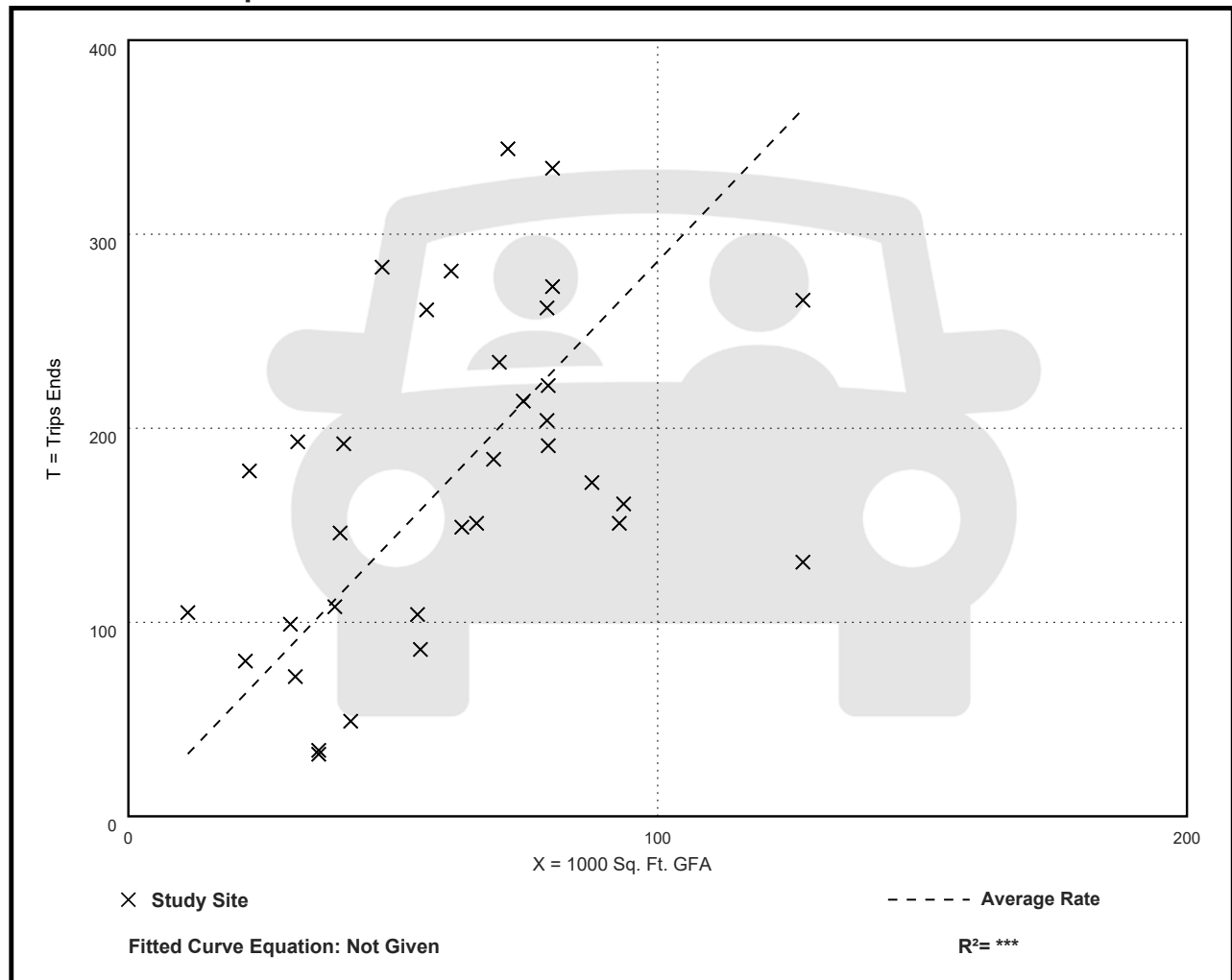
Avg. 1000 Sq. Ft. GFA: 61

Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.86	0.89 - 9.35	1.45

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 104

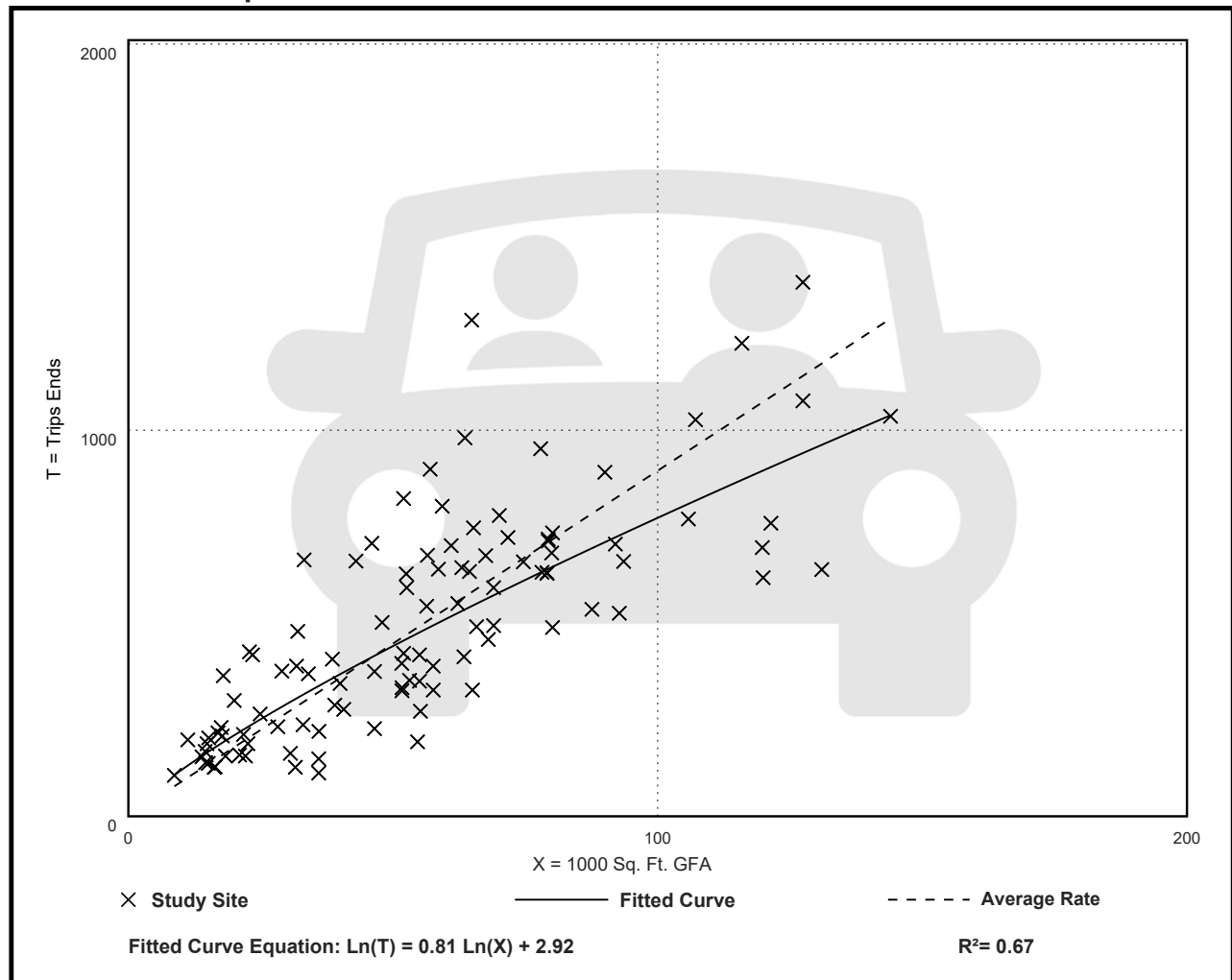
Avg. 1000 Sq. Ft. GFA: 55

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
8.95	3.11 - 20.30	3.32

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 30

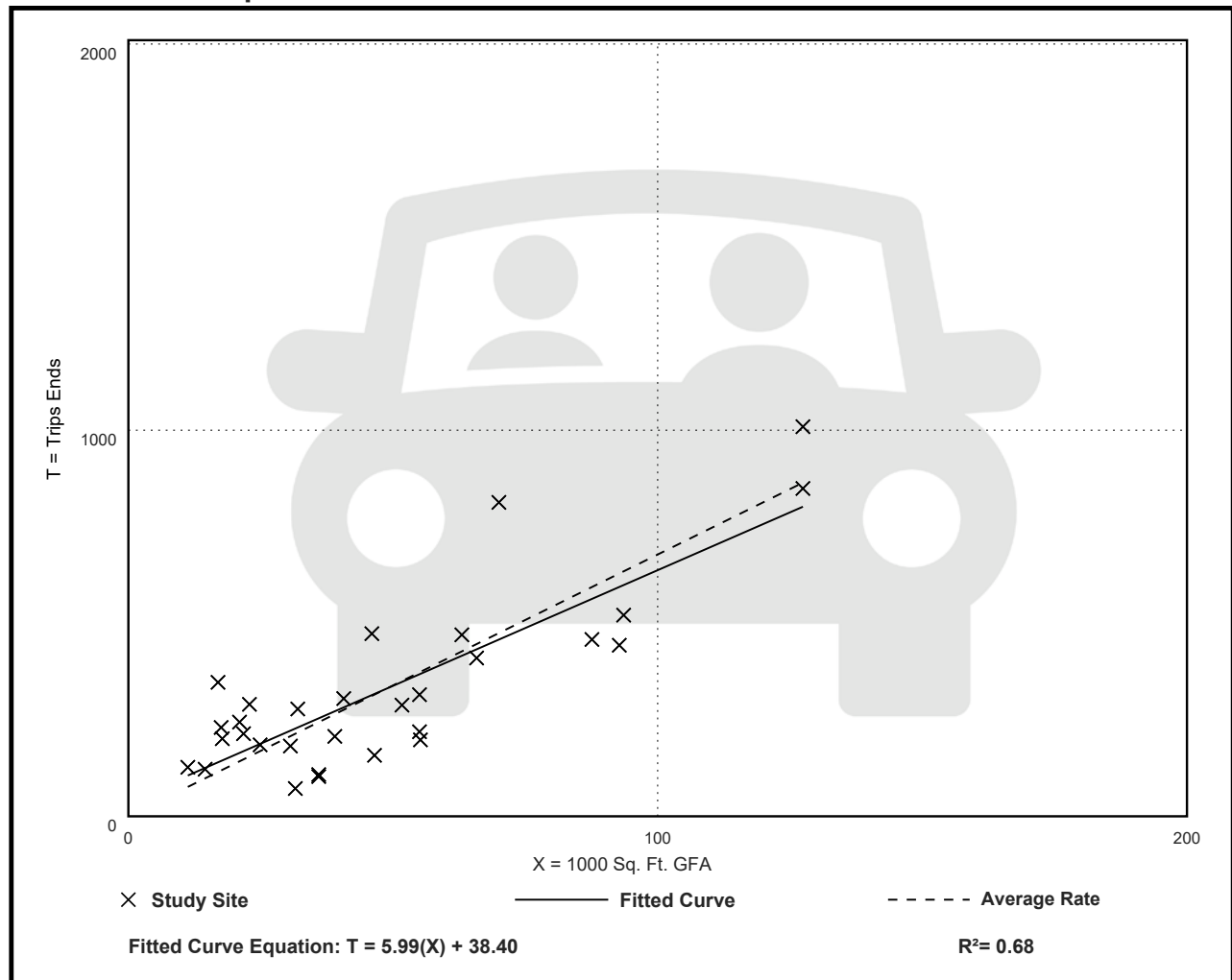
Avg. 1000 Sq. Ft. GFA: 48

Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
6.78	2.28 - 20.49	3.02

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 65

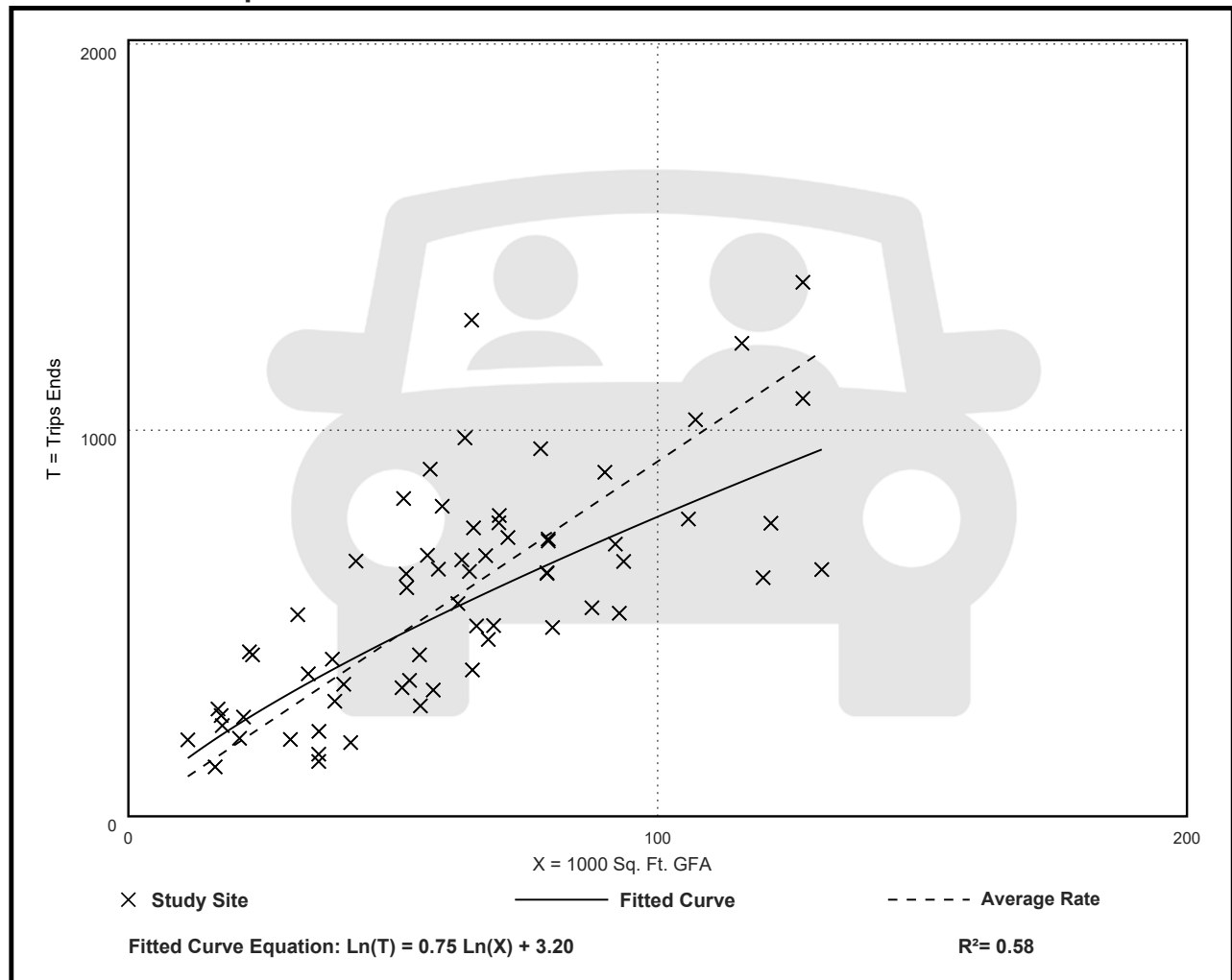
Avg. 1000 Sq. Ft. GFA: 62

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.19	3.95 - 19.81	3.40

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday

Setting/Location: General Urban/Suburban

Number of Studies: 18

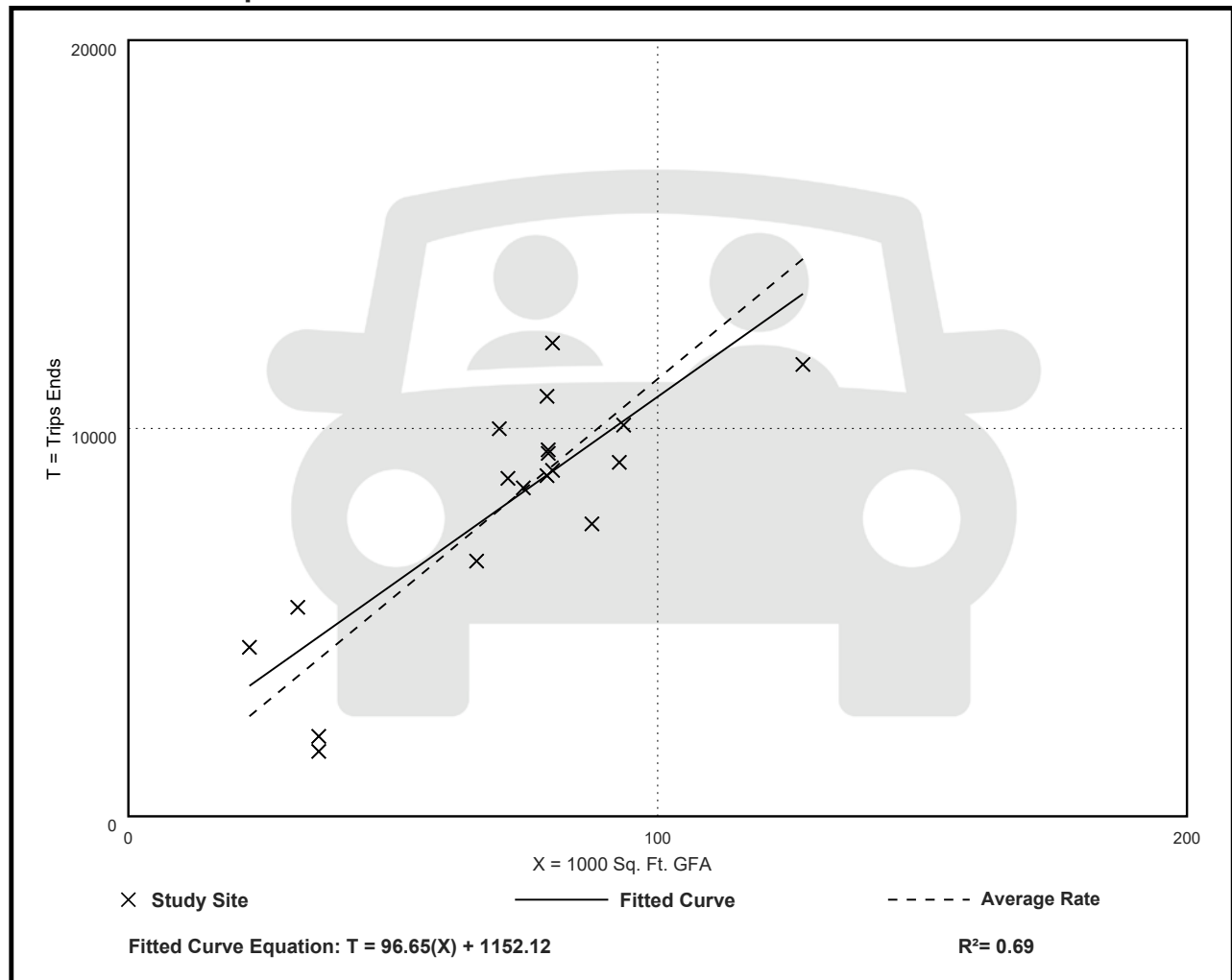
Avg. 1000 Sq. Ft. GFA: 72

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
112.76	46.55 - 190.51	27.25

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 62

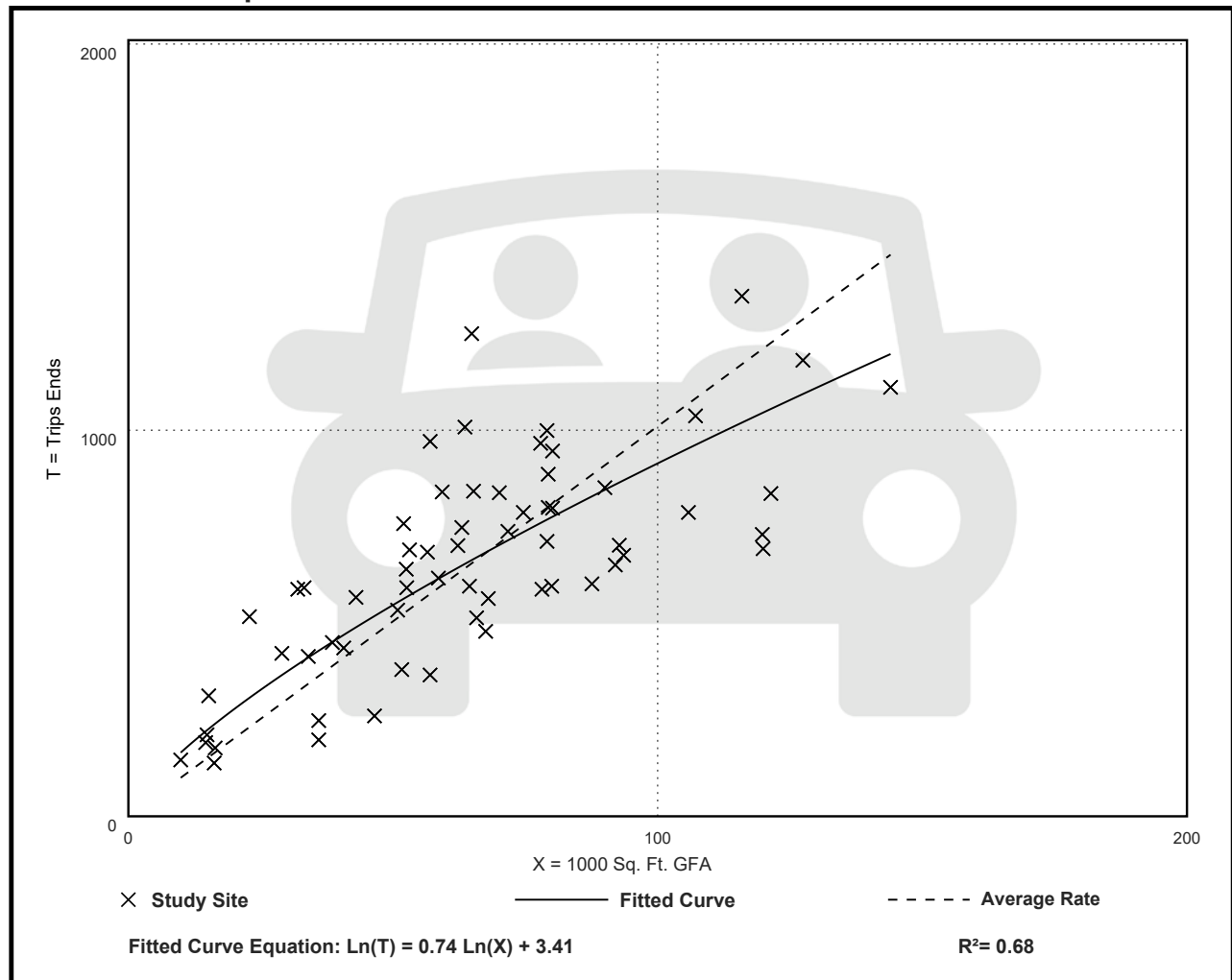
Avg. 1000 Sq. Ft. GFA: 65

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.10	5.51 - 22.61	3.30

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Sunday

Setting/Location: General Urban/Suburban

Number of Studies: 15

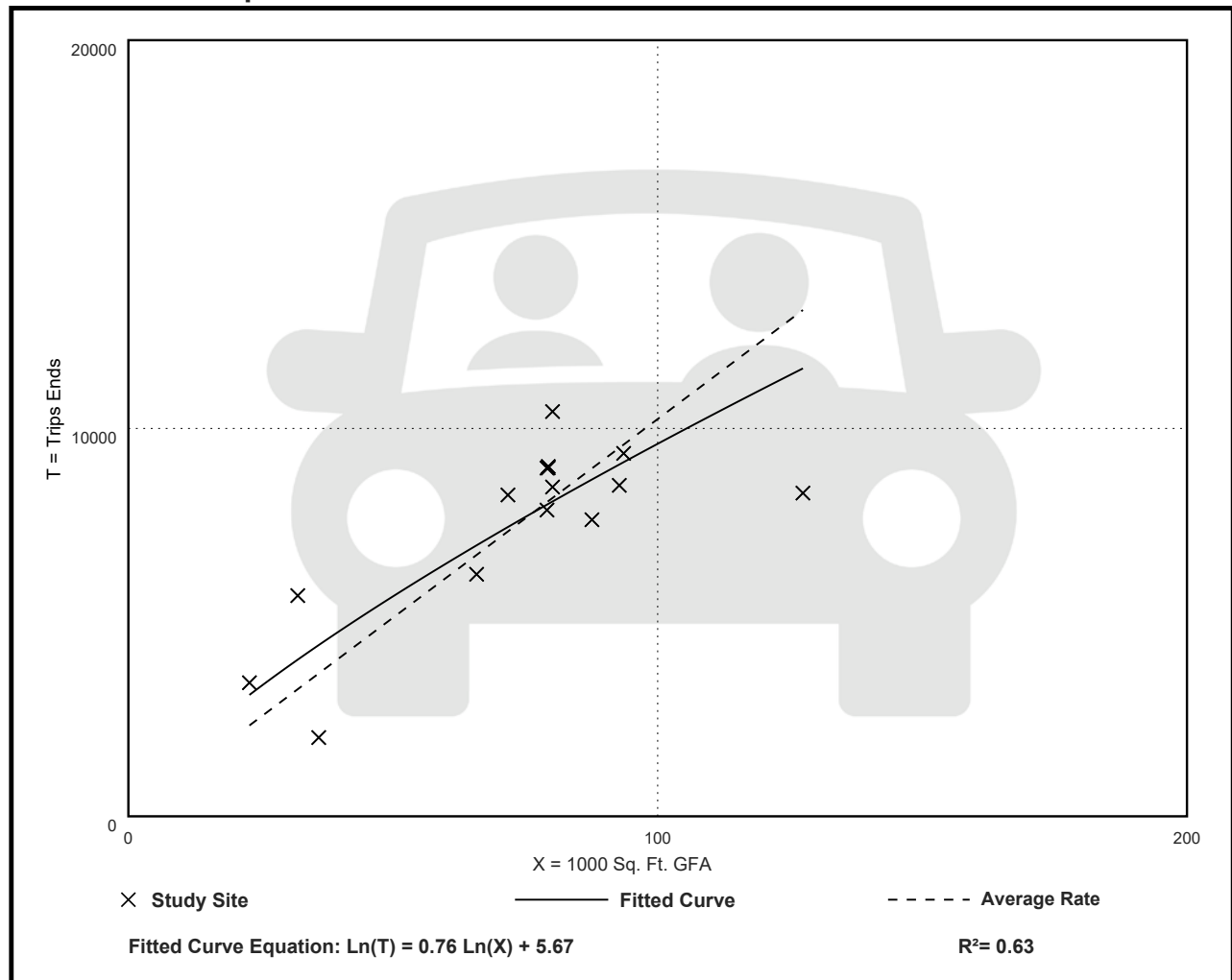
Avg. 1000 Sq. Ft. GFA: 74

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
102.42	56.45 - 177.81	24.60

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Sunday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 8

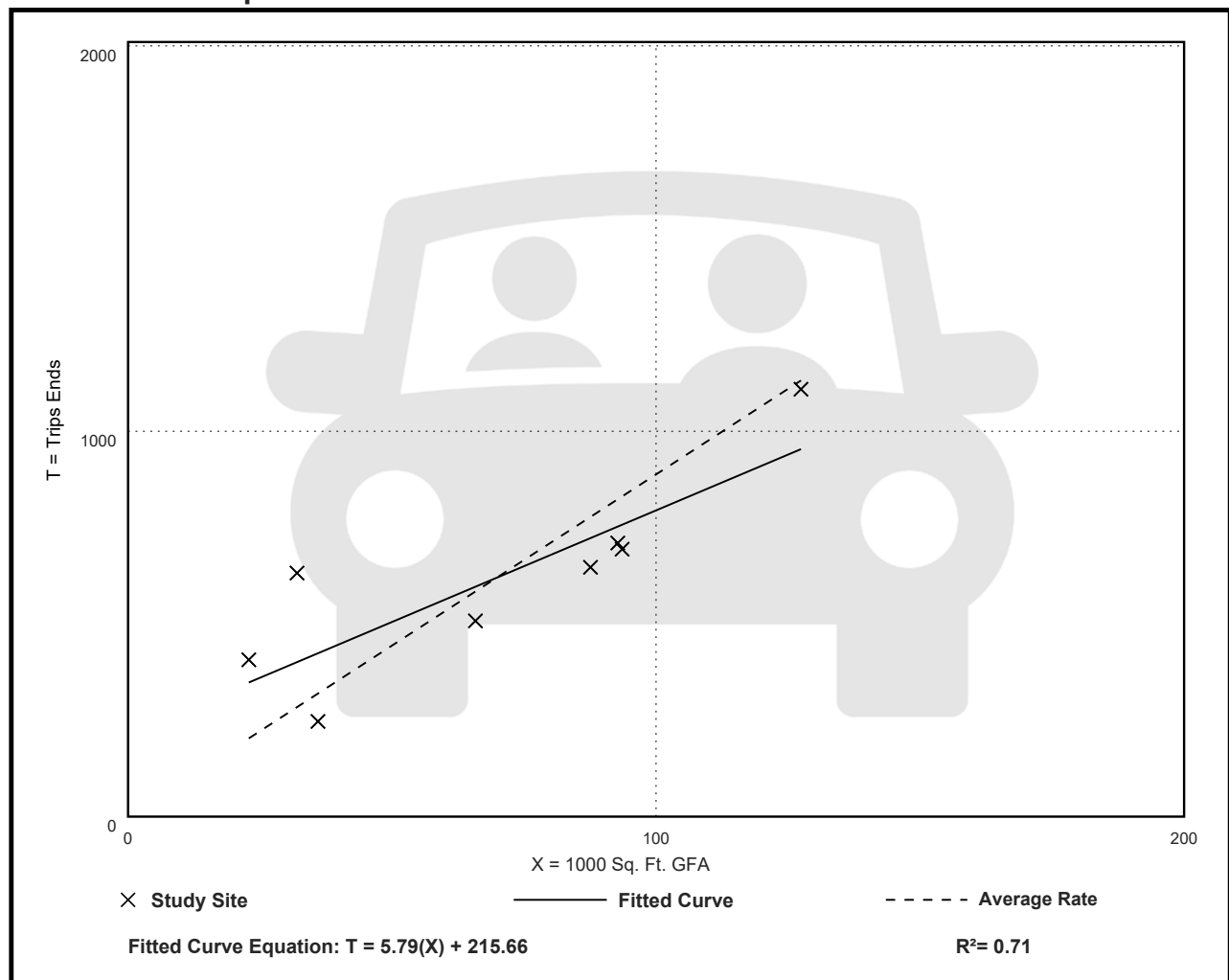
Avg. 1000 Sq. Ft. GFA: 70

Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
8.88	6.87 - 19.75	3.61

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: Employees
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 6

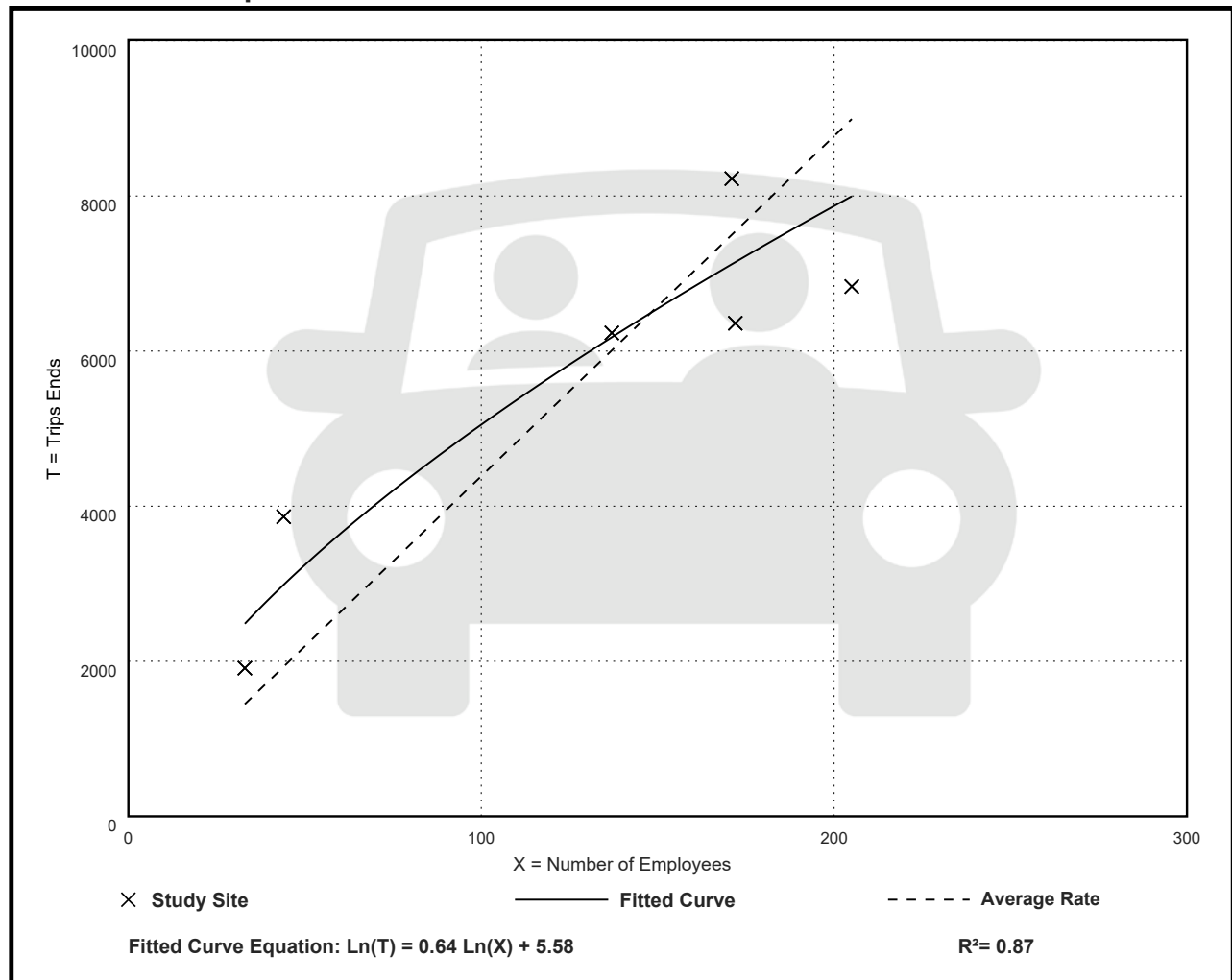
Avg. Num. of Employees: 127

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
43.86	33.33 - 87.82	14.08

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: Employees

On a: **Weekday,**

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 5

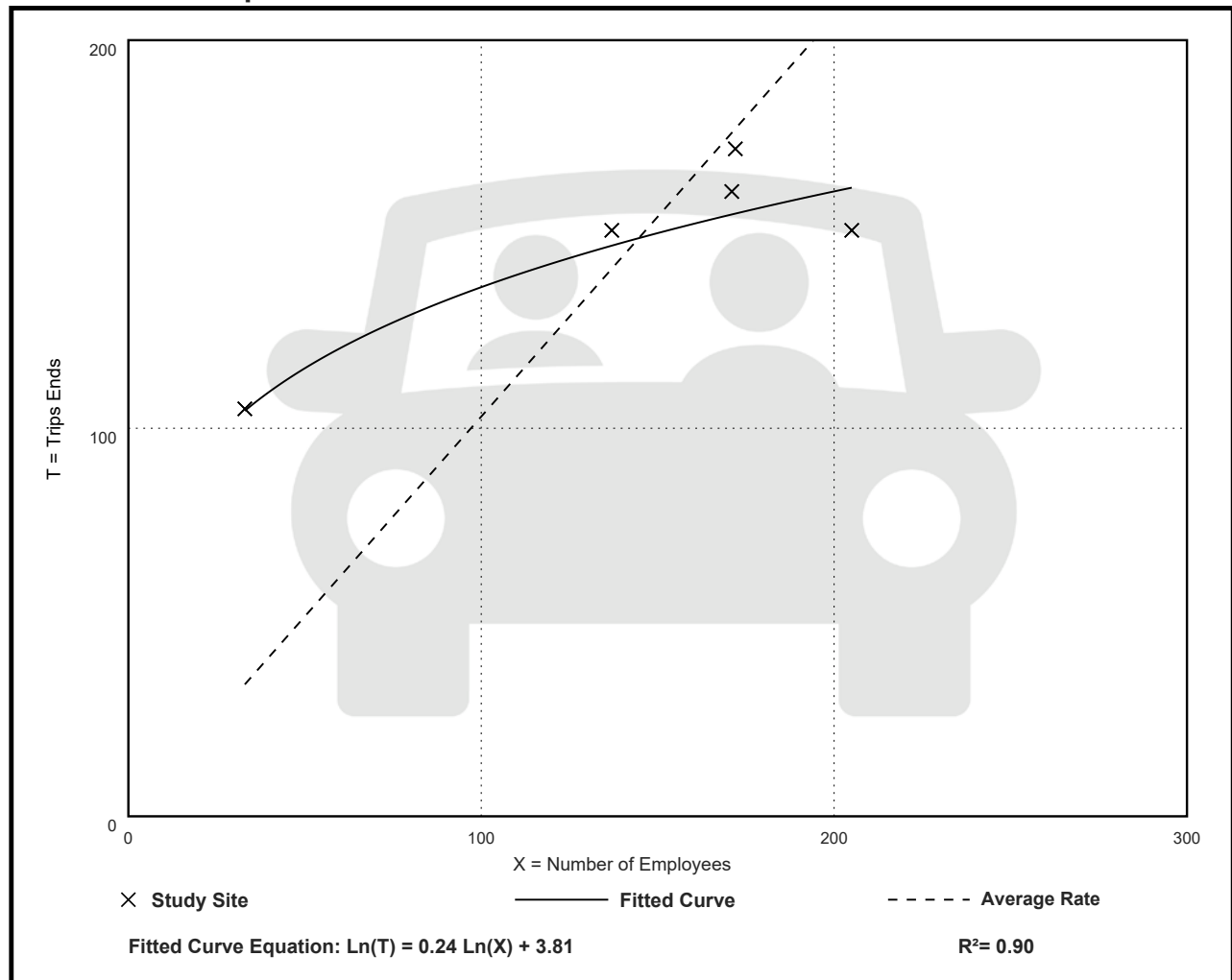
Avg. Num. of Employees: 144

Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
1.03	0.74 - 3.18	0.55

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: Employees

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 5

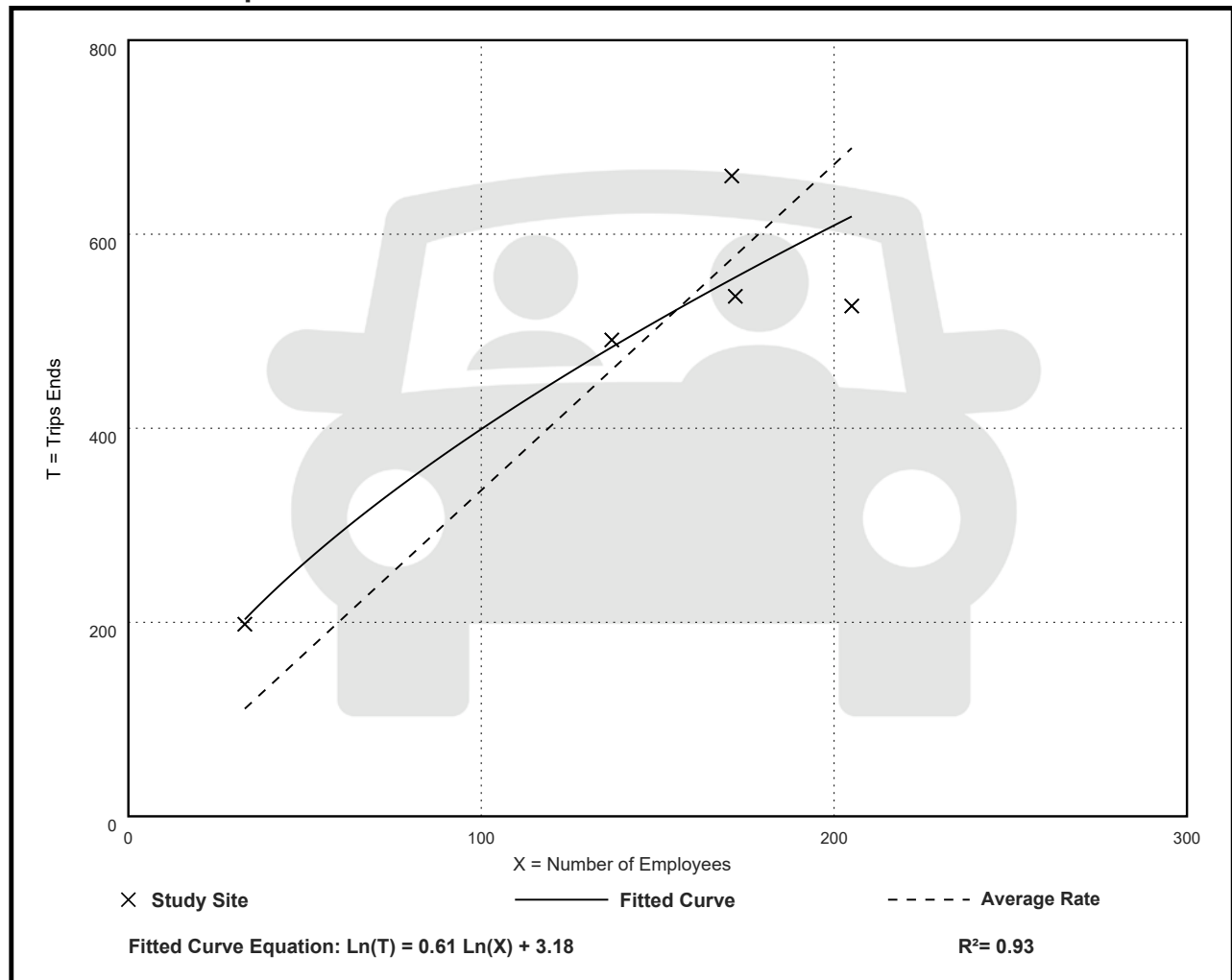
Avg. Num. of Employees: 144

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
3.36	2.57 - 6.00	0.85

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: Employees

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

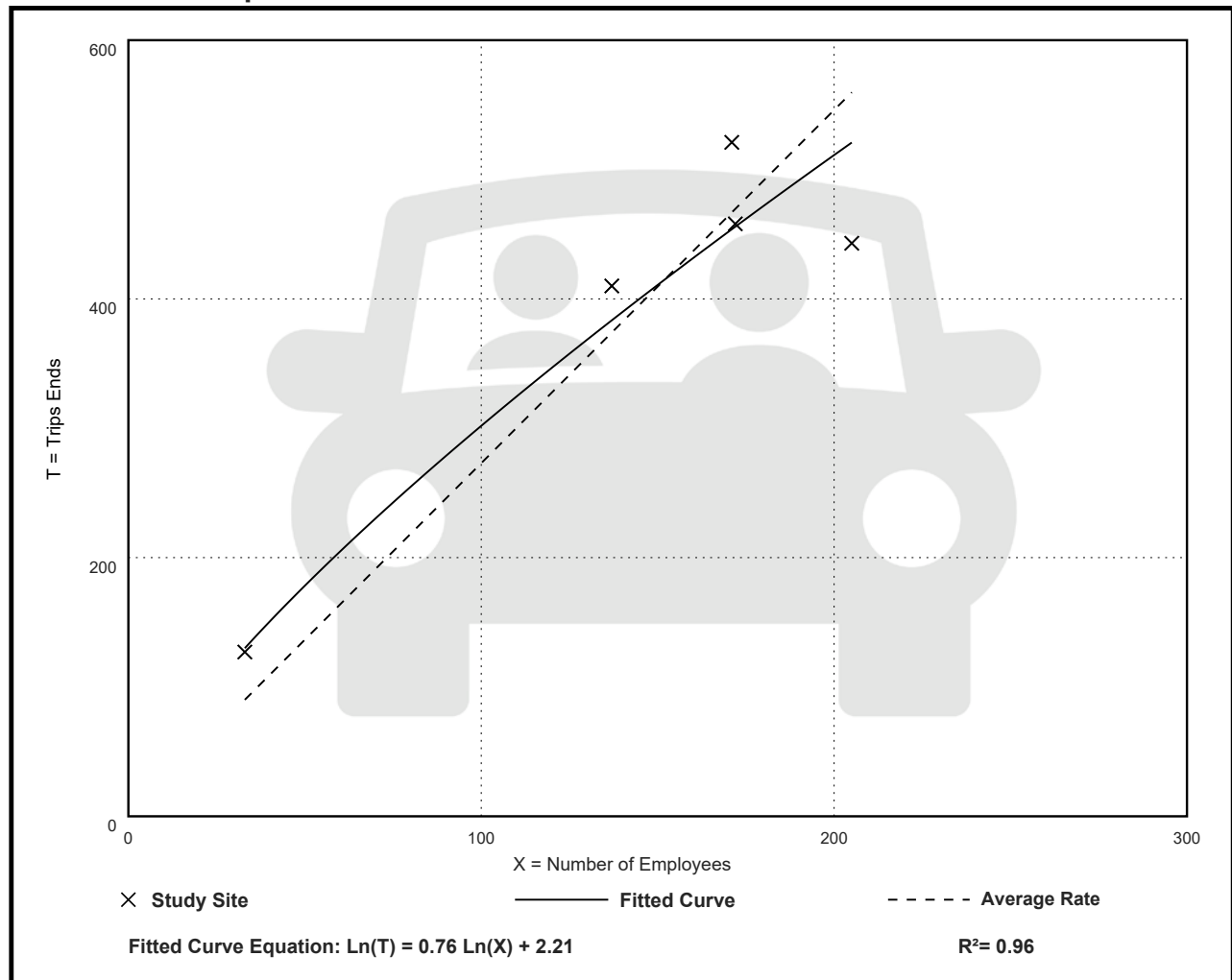
Avg. Num. of Employees: 144

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
2.73	2.16 - 3.85	0.48

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: Employees

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

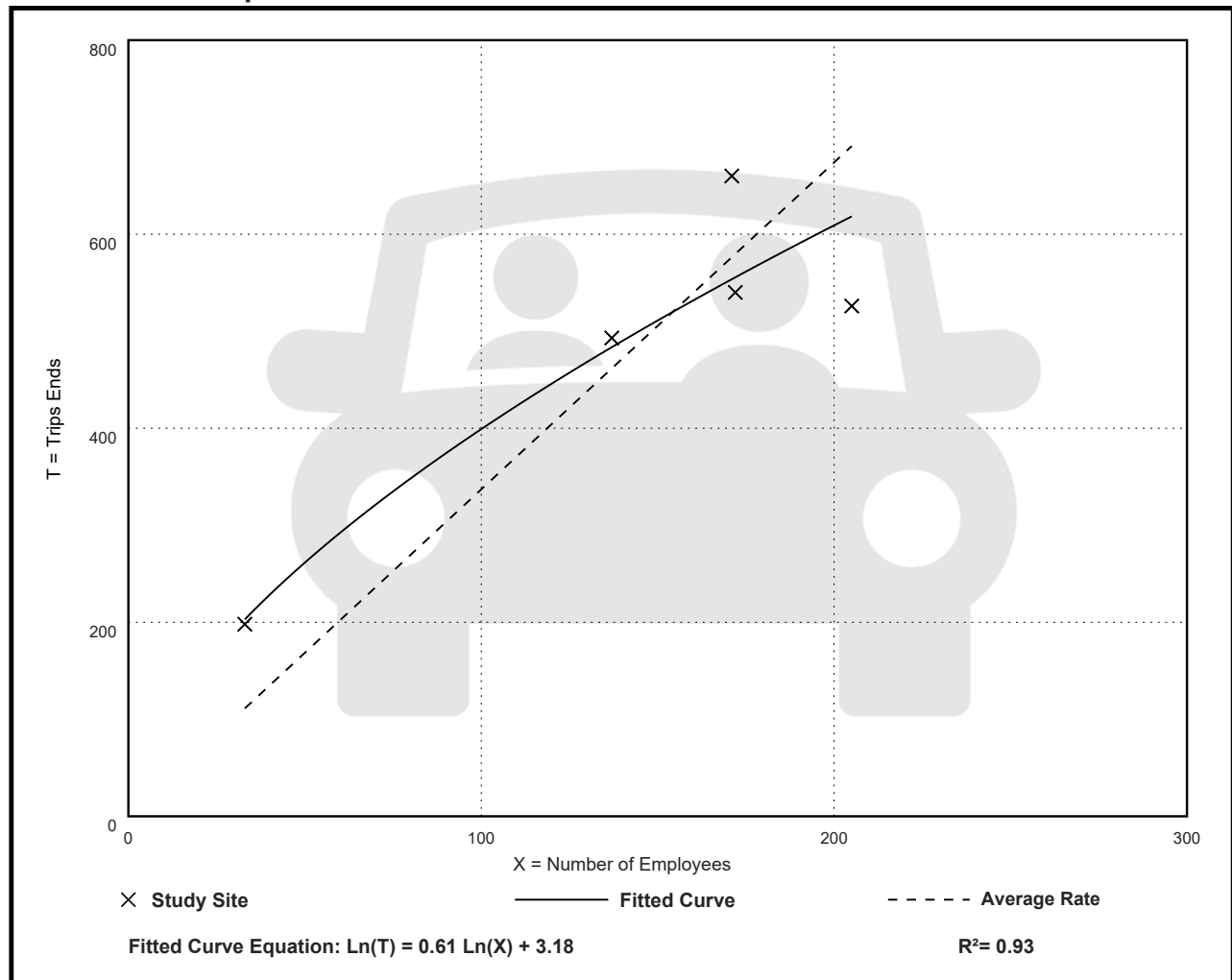
Avg. Num. of Employees: 144

Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
3.37	2.57 - 6.00	0.85

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: Employees
On a: Saturday

Setting/Location: General Urban/Suburban

Number of Studies: 4

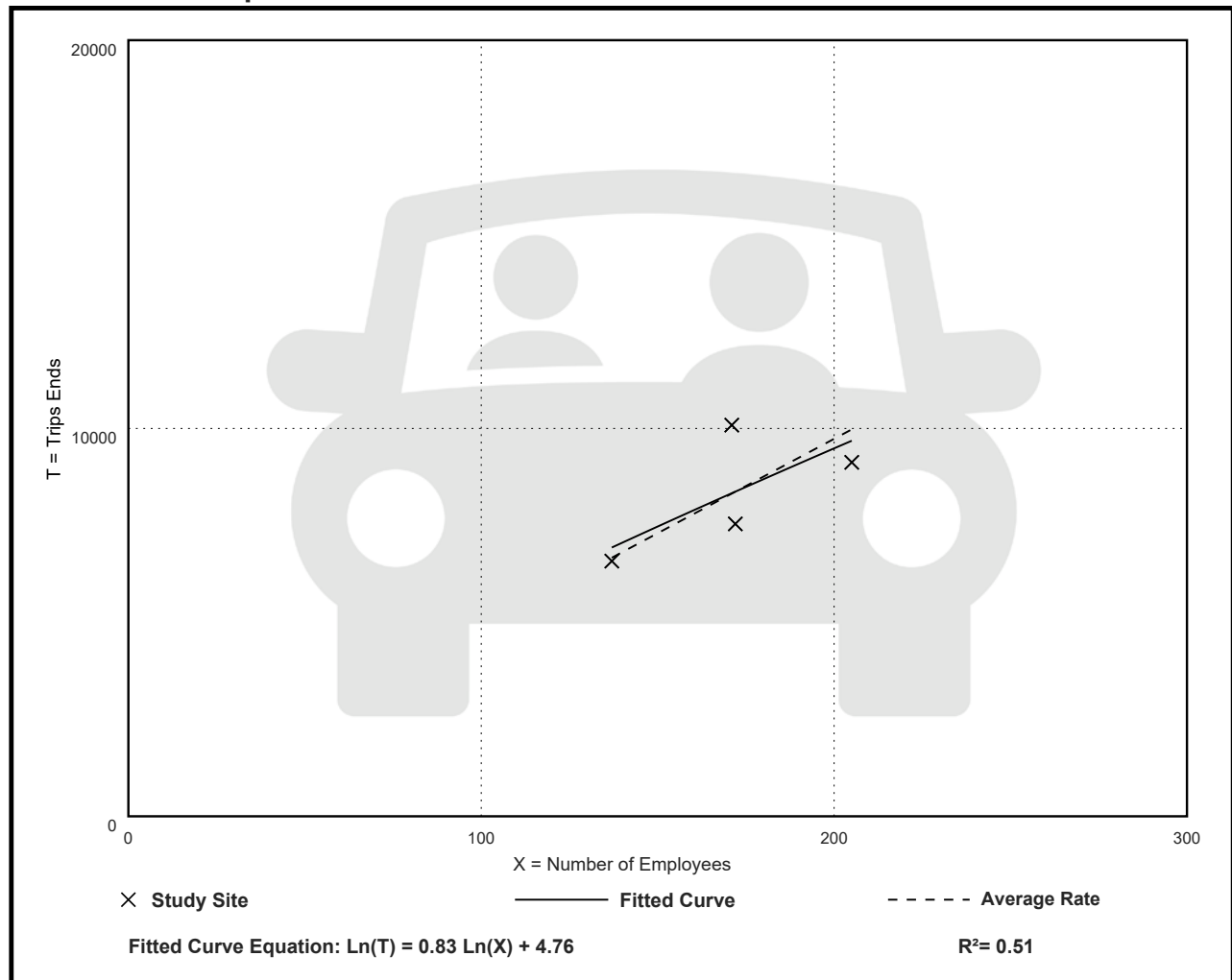
Avg. Num. of Employees: 171

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
48.66	43.83 - 58.98	7.09

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: Employees

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 4

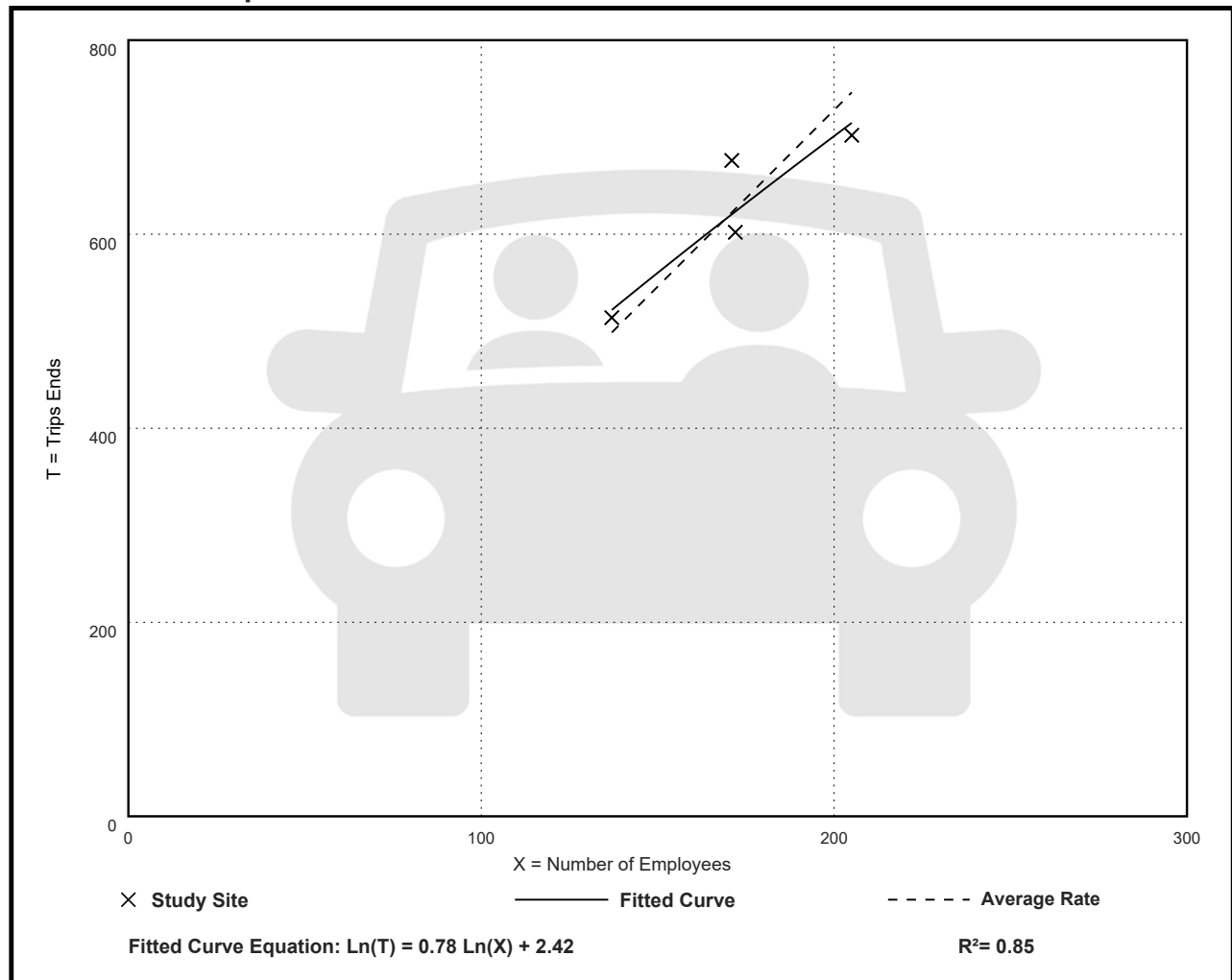
Avg. Num. of Employees: 171

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
3.64	3.42 - 3.95	0.25

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: Employees
On a: Sunday

Setting/Location: General Urban/Suburban

Number of Studies: 4

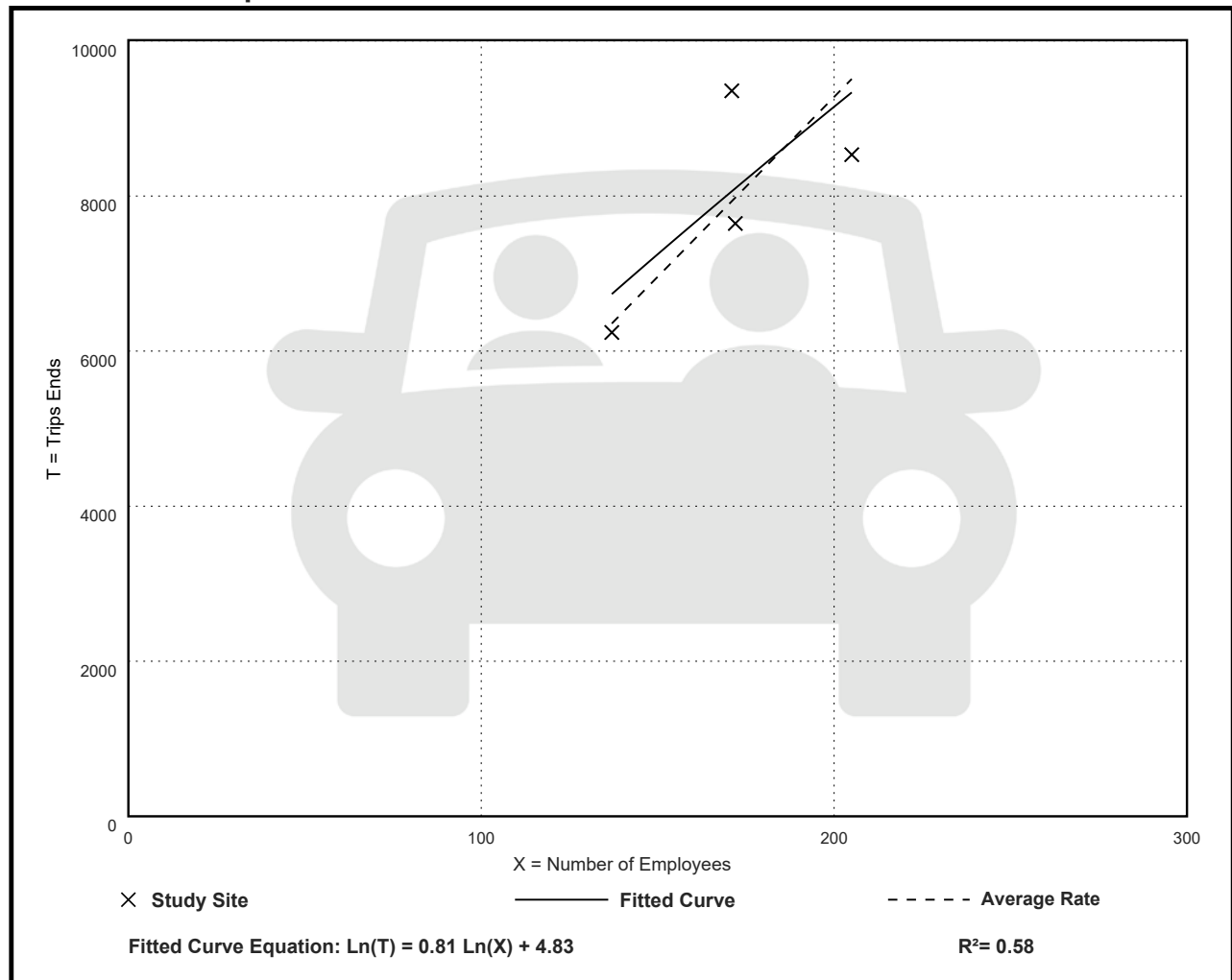
Avg. Num. of Employees: 171

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
46.39	41.62 - 54.72	5.80

Data Plot and Equation



Supermarket (850)

Vehicle Trip Ends vs: Employees

On a: Sunday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 4

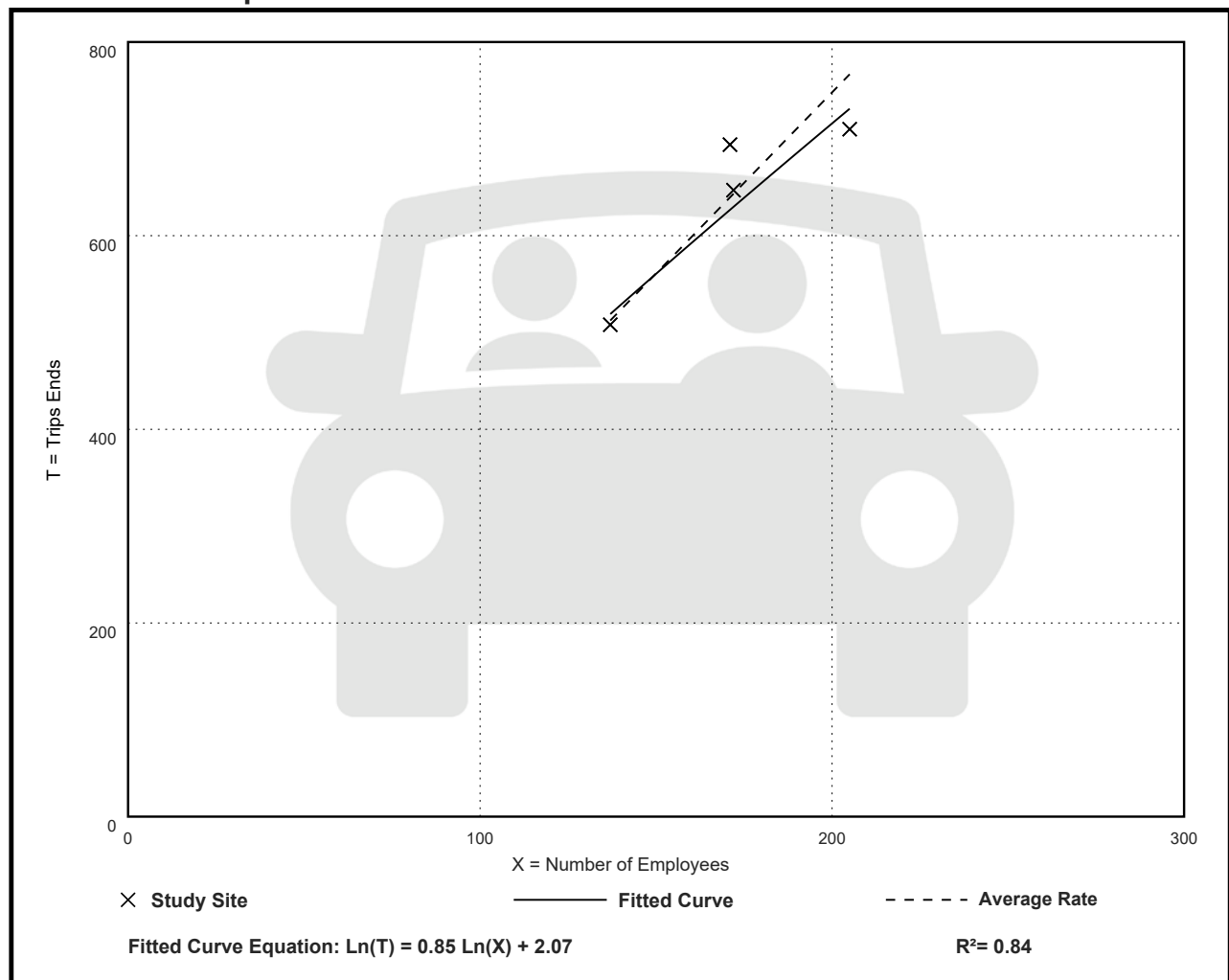
Avg. Num. of Employees: 171

Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
3.74	3.46 - 4.06	0.25

Data Plot and Equation



Supermarket (850)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 5

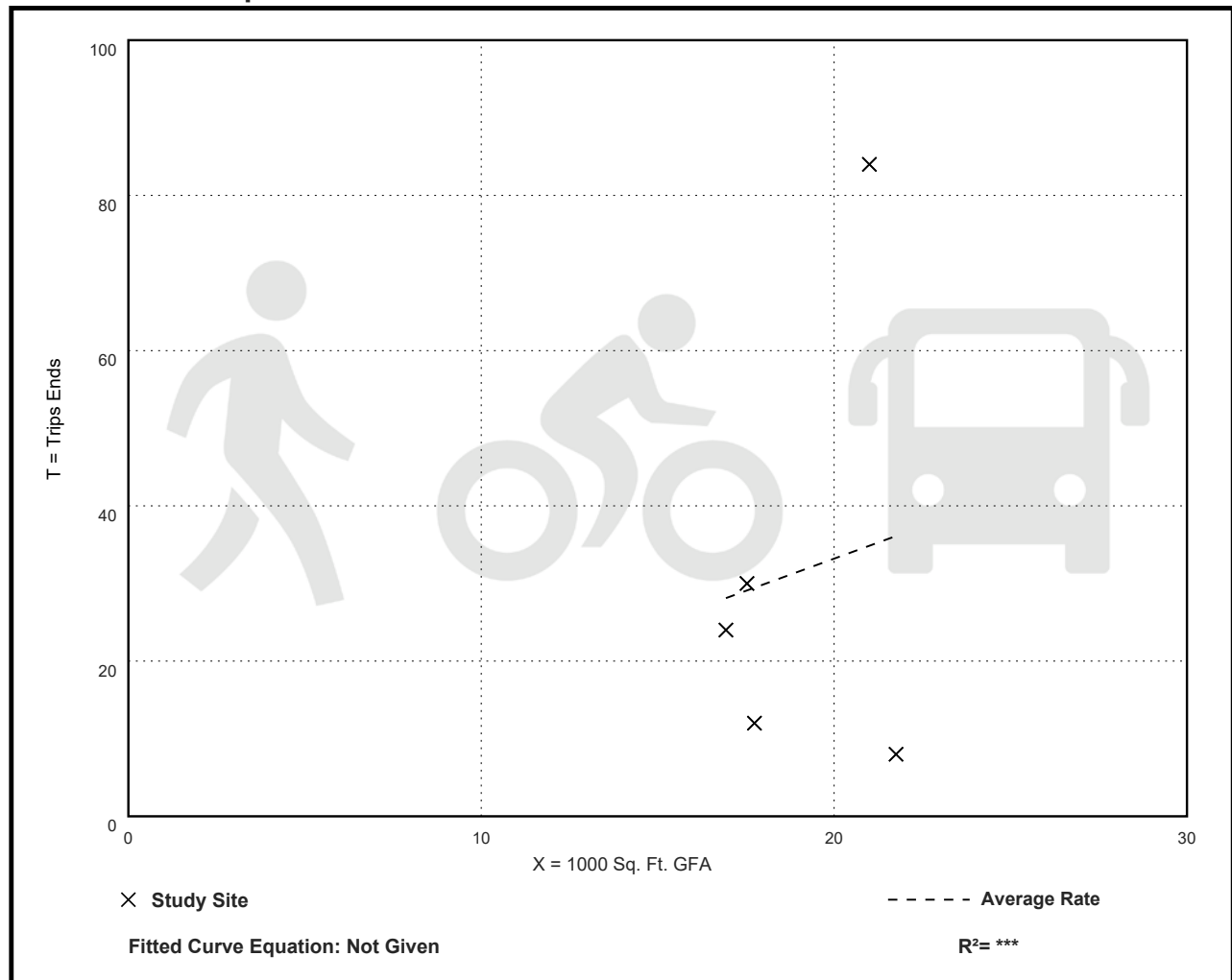
Avg. 1000 Sq. Ft. GFA: 19

Directional Distribution: 50% entering, 50% exiting

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.66	0.37 - 4.00	1.49

Data Plot and Equation



Supermarket (850)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. 1000 Sq. Ft. GFA: 61

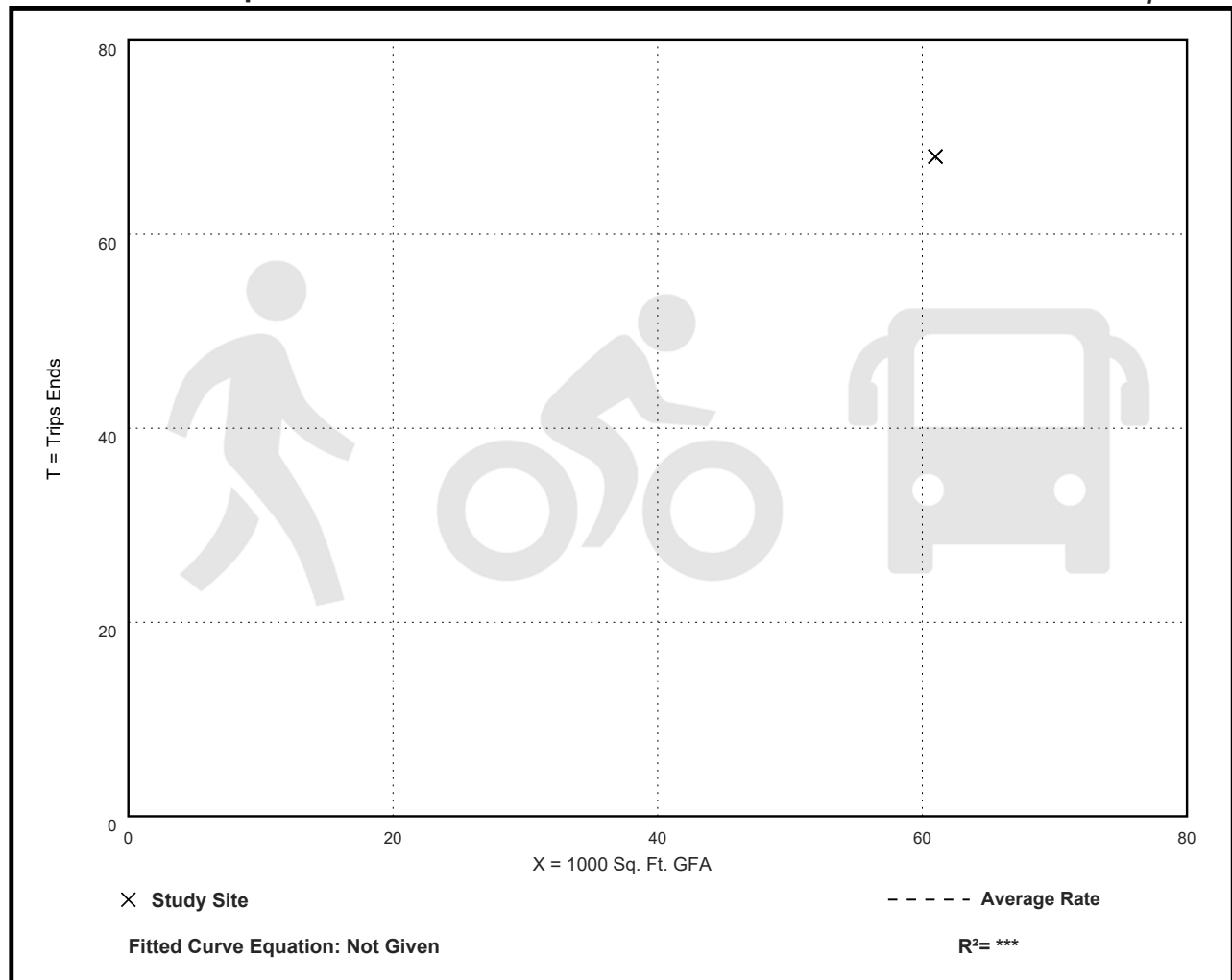
Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.11	1.11 - 1.11	***

Data Plot and Equation

Caution – Small Sample Size



Supermarket (850)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 6

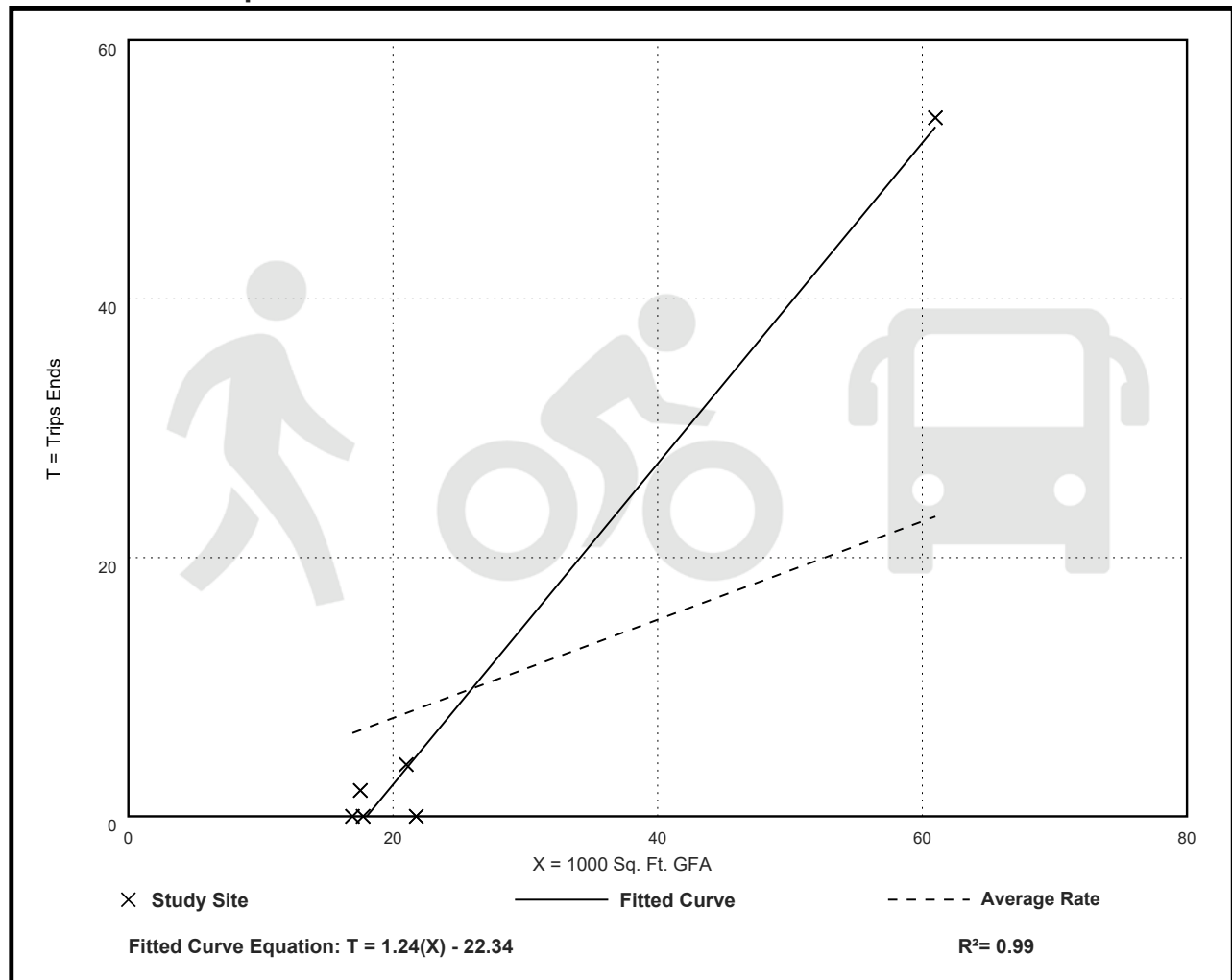
Avg. 1000 Sq. Ft. GFA: 26

Directional Distribution: 50% entering, 50% exiting

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.38	0.00 - 0.89	0.44

Data Plot and Equation



Supermarket (850)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,
AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

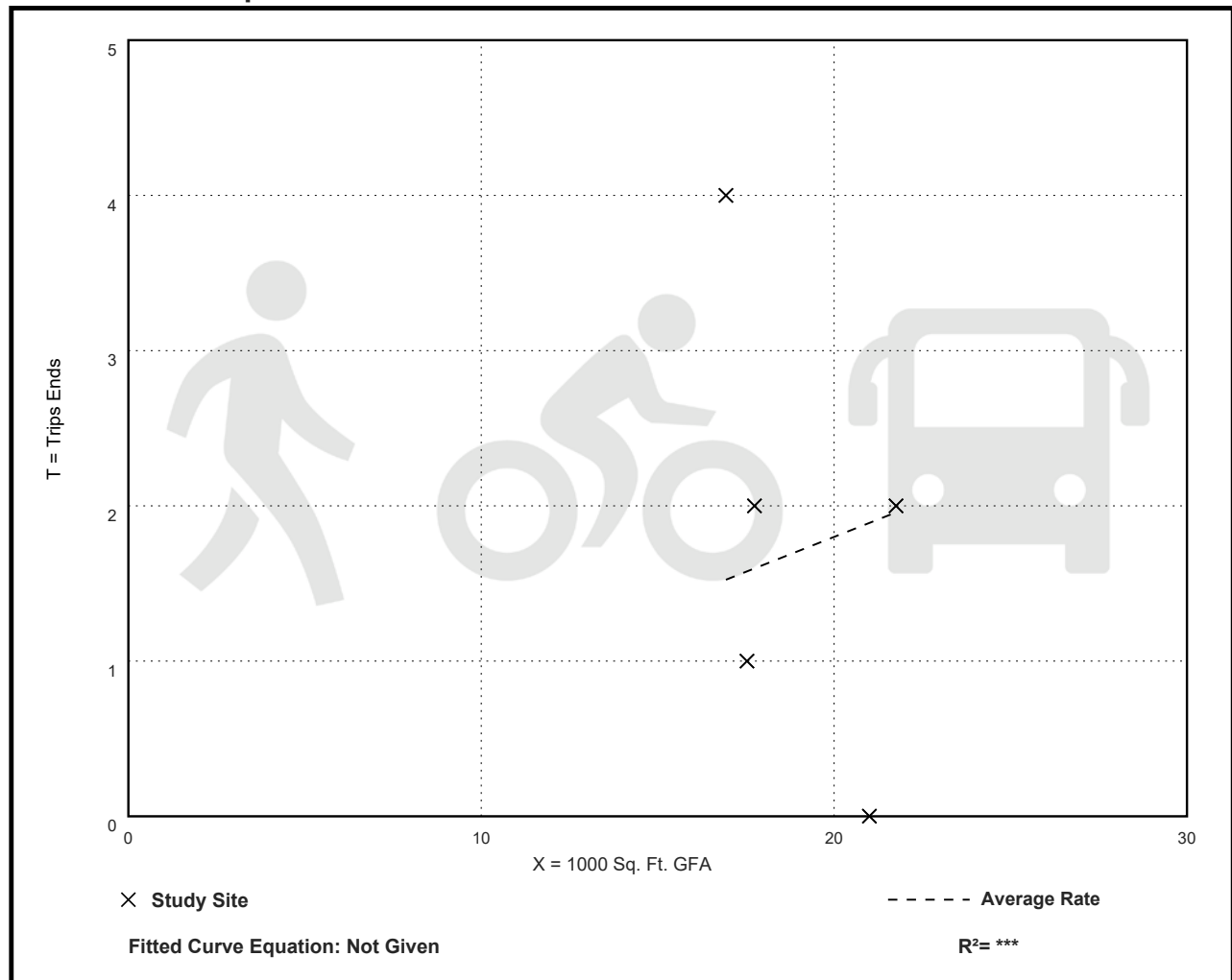
Avg. 1000 Sq. Ft. GFA: 19

Directional Distribution: 78% entering, 22% exiting

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.09	0.00 - 0.24	0.09

Data Plot and Equation



Supermarket (850)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

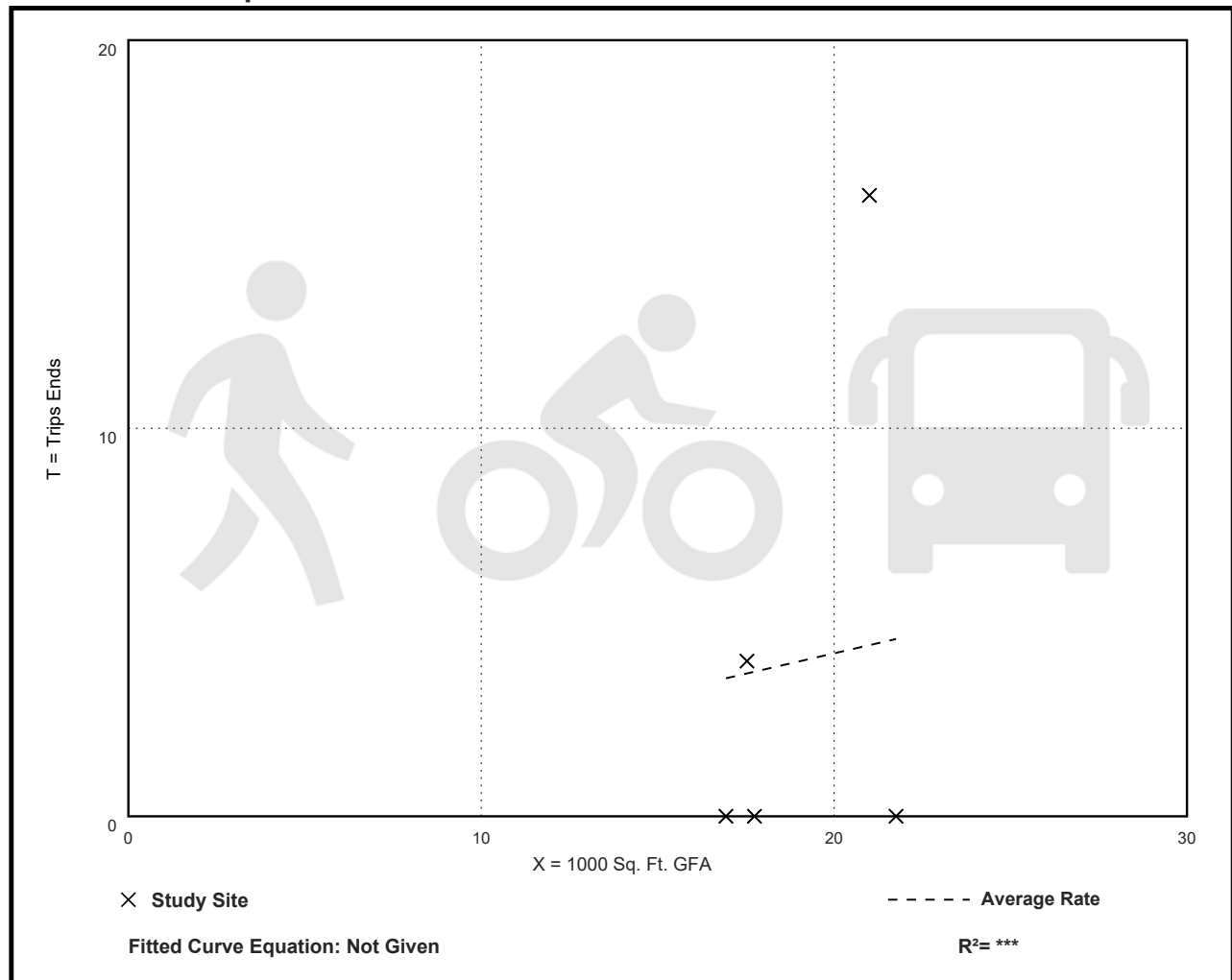
Avg. 1000 Sq. Ft. GFA: 19

Directional Distribution: 50% entering, 50% exiting

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.21	0.00 - 0.76	0.34

Data Plot and Equation



Supermarket (850)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. 1000 Sq. Ft. GFA: 33

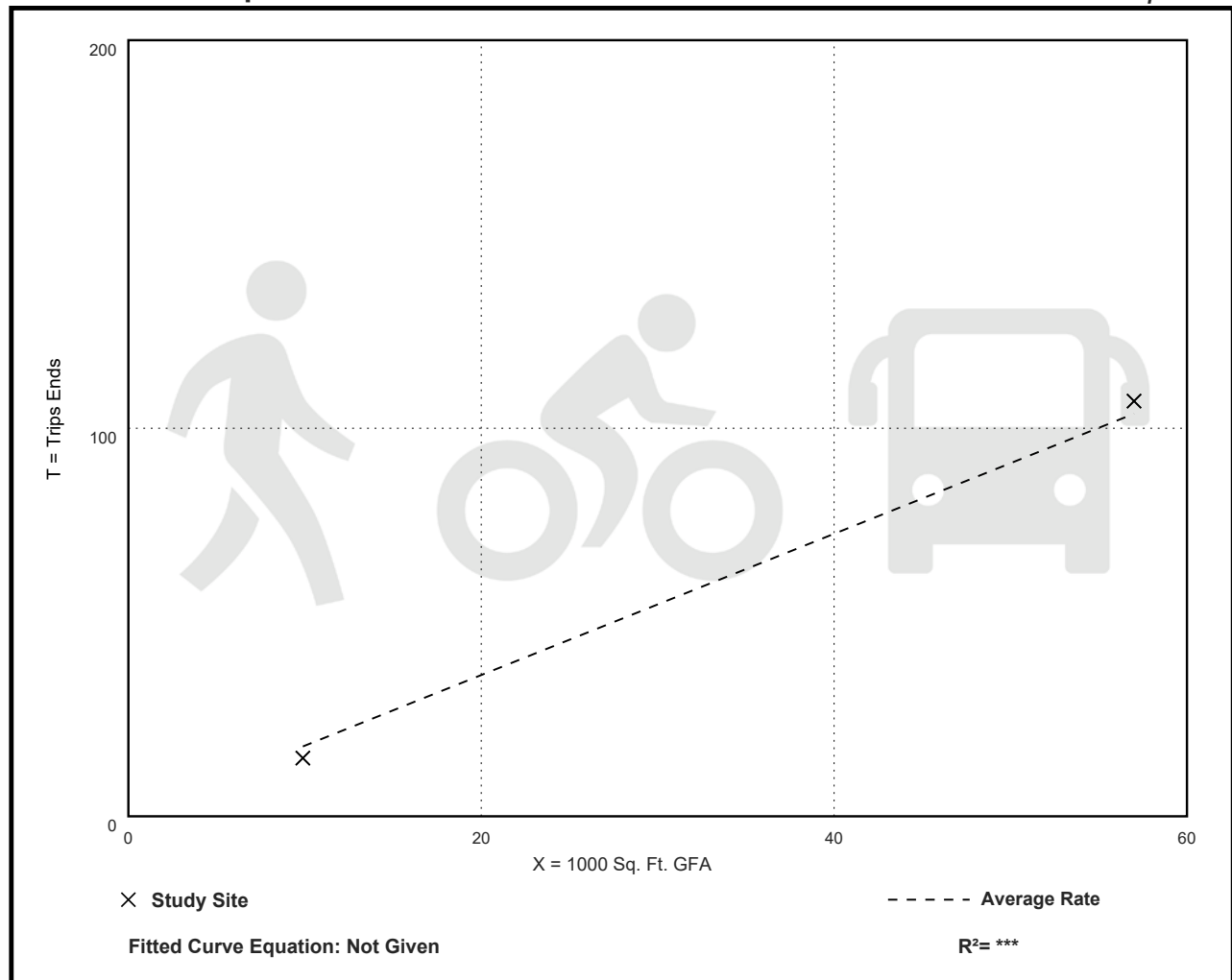
Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.82	1.52 - 1.88	***

Data Plot and Equation

Caution – Small Sample Size



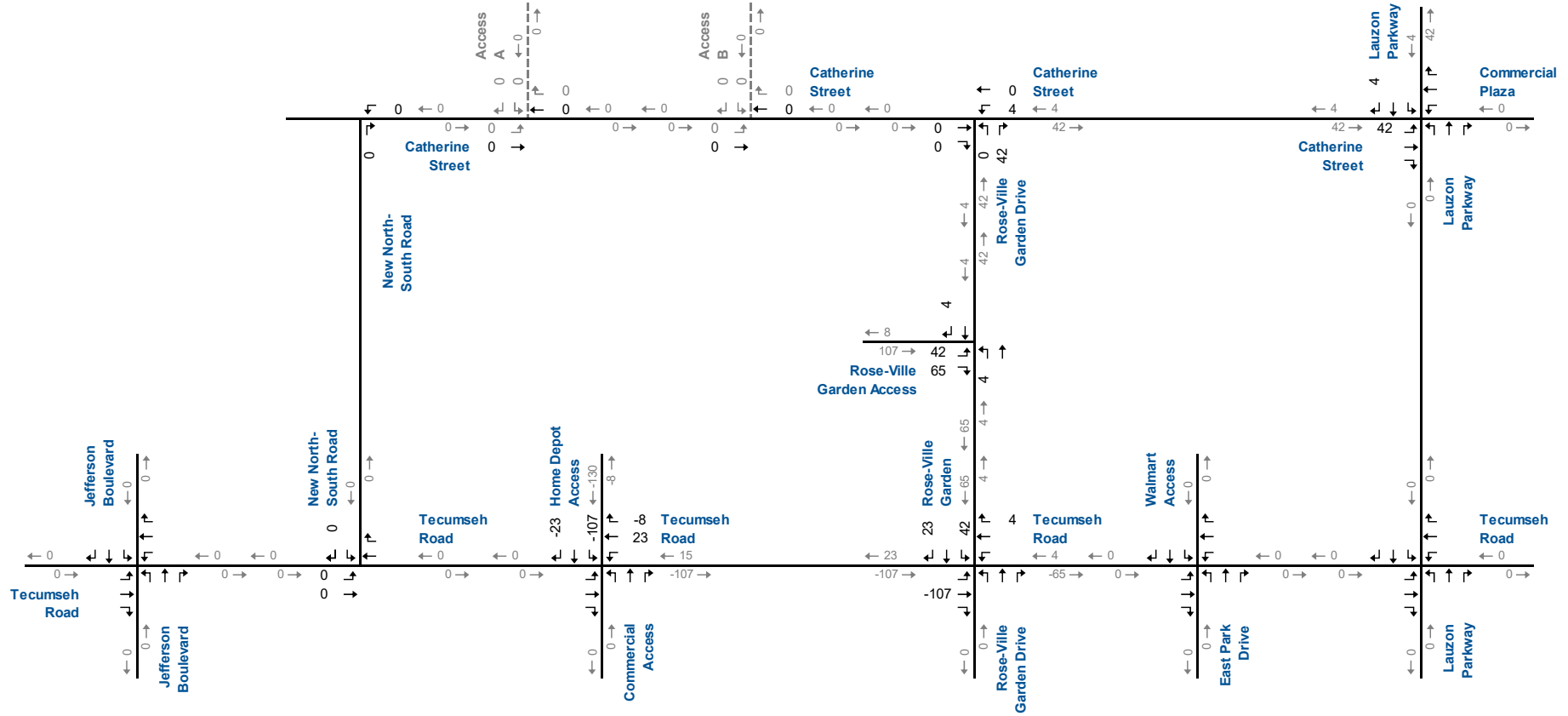
Appendix E

Redirected Home Depot Traffic Volumes





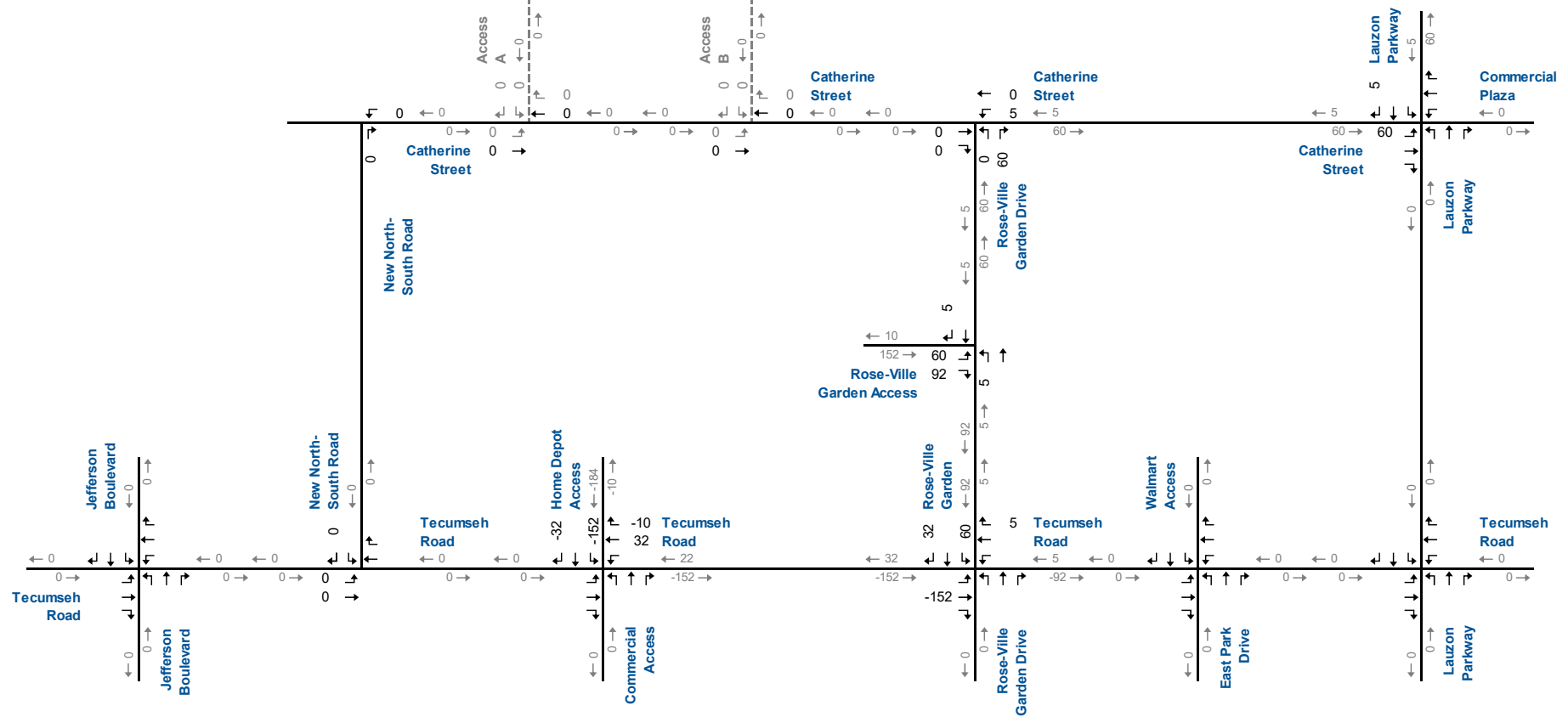
PM Peak Hour



2025 Home Depot Traffic Volumes PM Peak Hour



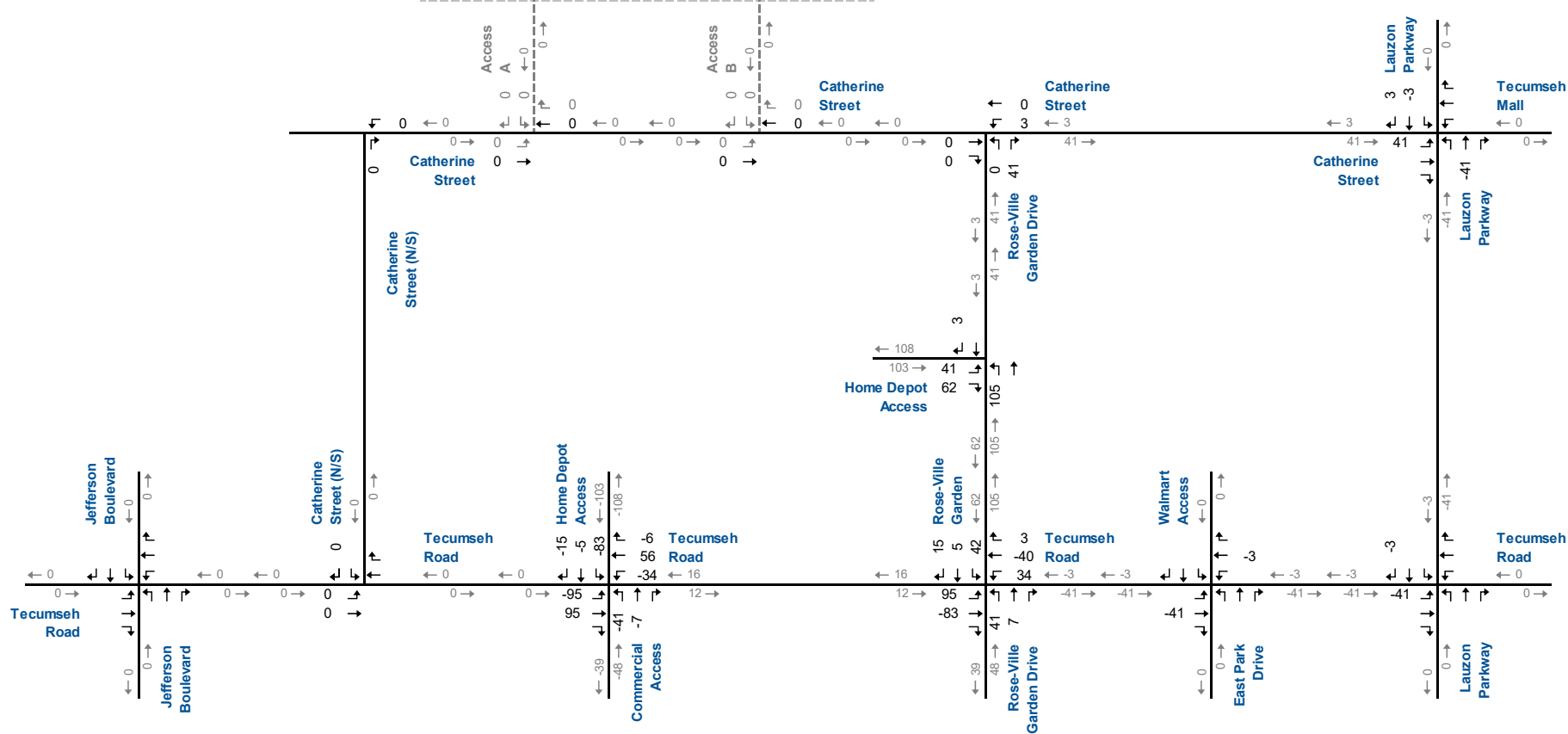
Saturday Peak Hour



2025 Home Depot Traffic Volumes Saturday Peak Hour



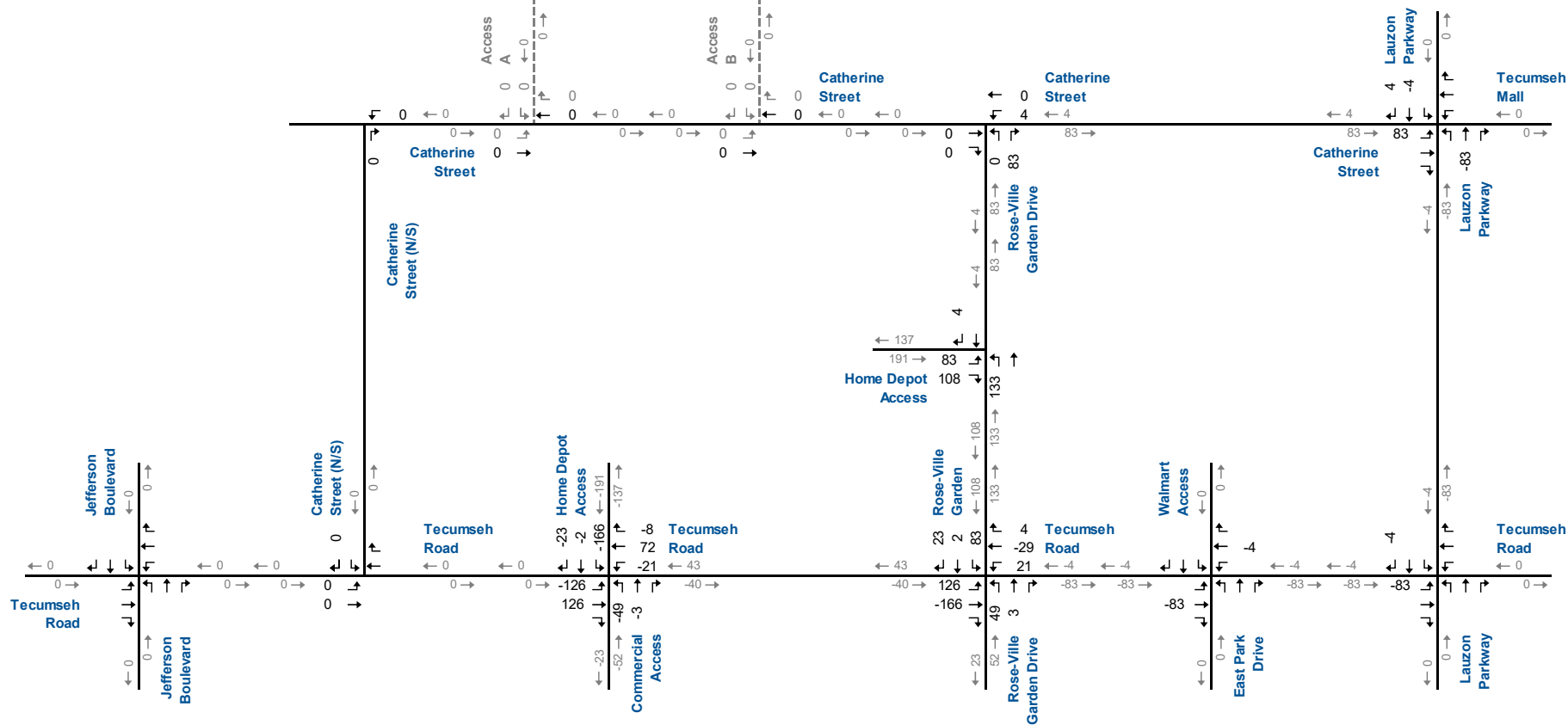
AM Peak Hour



2030-35 Home Depot Traffic Volumes AM Peak Hour



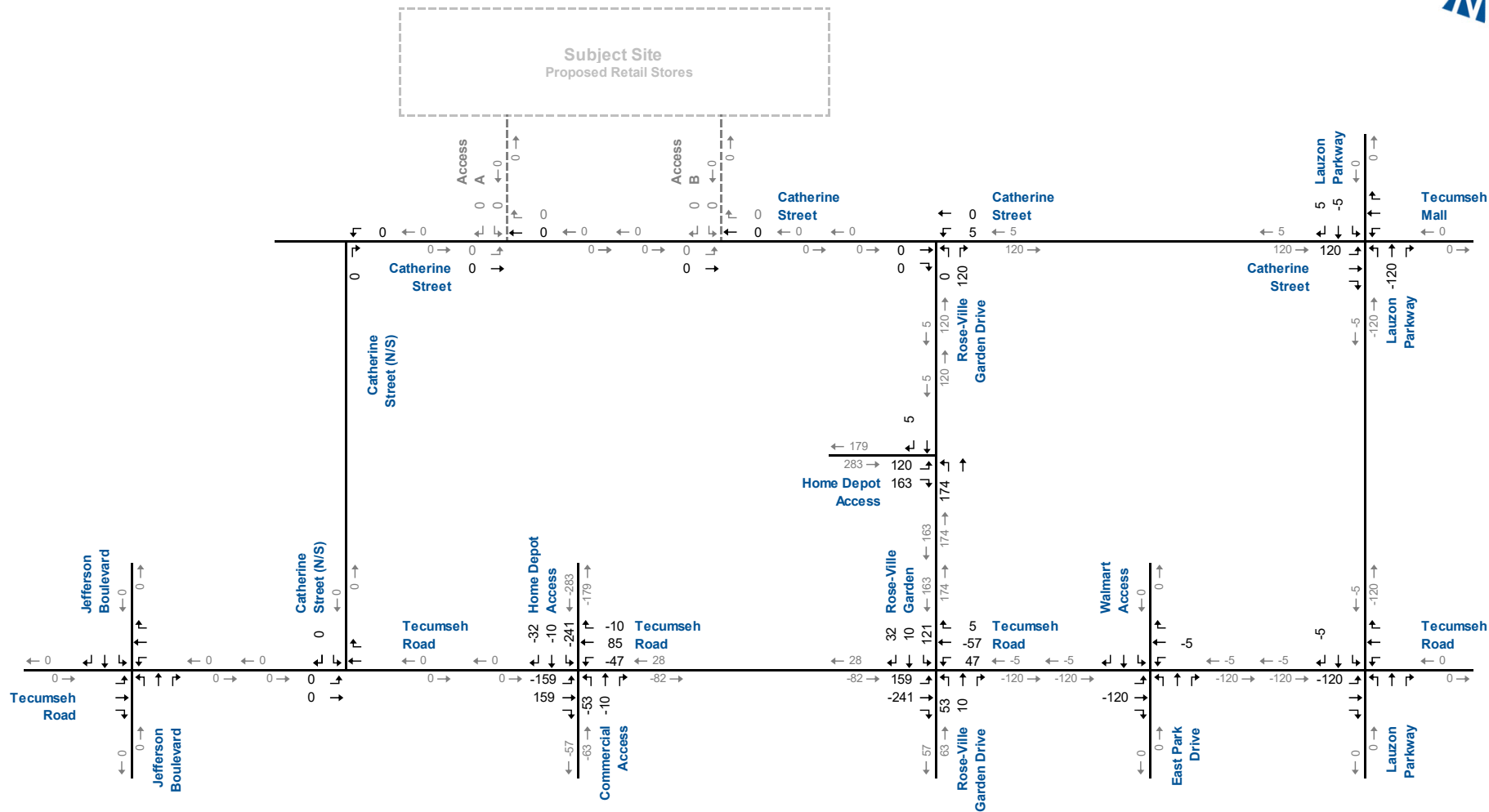
PM Peak Hour



2030-35 Home Depot Traffic Volumes PM Peak Hour



Saturday Peak Hour



2030-35 Home Depot Traffic Volumes Saturday Peak Hour

Appendix F

2025 Background Traffic Operations Reports



Lanes, Volumes, Timings

2025 Background AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔	↔		↔	↔↔↔	↔	↔↔↔	↔
Traffic Volume (vph)	47	642	62	81	693	170	78	160	96	196	232	68
Future Volume (vph)	47	642	62	81	693	170	78	160	96	196	232	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00					0.99		1.00	
Fit		0.987				0.850			0.850		0.966	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4935	0	1671	3505	1599	1671	3471	1553	1787	3411	0
Fit Permitted	0.284			0.303			0.443			0.568		
Satd. Flow (perm)	529	4935	0	533	3505	1599	779	3471	1533	1068	3411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				198			112			38
Link Speed (k/h)		60			60			50				50
Link Distance (m)		230.2			261.9			222.3				200.9
Travel Time (s)		13.8			15.7			16.0				14.5
Confl. Peds. (#/hr)			1	1					1	1		
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 (%)	2%	3%	10%	8%	3%	1%	8%	4%	4%	1%	2%	3%
Adj. Flow (vph)	55	747	72	94	806	198	91	186	112	228	270	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	819	0	94	806	198	91	186	112	228	349	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	5	2		1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	43.0		11.0	43.0	43.0	13.0	35.0	35.0	13.0	35.0	
Total Split (%)	10.8%	42.2%		10.8%	42.2%	42.2%	12.7%	34.3%	34.3%	12.7%	34.3%	
Maximum Green (s)	7.0	38.0		7.0	38.0	38.0	9.0	30.0	30.0	9.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	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	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	62.2	55.6		62.2	55.6	55.6	24.6	14.6	14.6	25.4	17.2	
Actuated g/C Ratio	0.61	0.55		0.61	0.55	0.55	0.24	0.14	0.14	0.25	0.17	
v/c Ratio	0.14	0.30		0.23	0.42	0.21	0.34	0.37	0.36	0.69	0.57	

Lanes, Volumes, Timings

2025 Background AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	8.5	13.7		23.3	38.6	22.5	30.7	40.9	10.4	42.7	39.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.5	13.7		23.3	38.6	22.5	30.7	40.9	10.4	42.7	39.1	
LOS	A	B		C	D	C	C	D	B	D	D	
Approach Delay		13.4			34.4			29.8				40.5
Approach LOS		B			C			C				D
Queue Length 50th (m)	3.9	33.2		20.4	93.9	30.7	14.4	18.6	0.0	39.1	32.6	
Queue Length 95th (m)	9.0	43.8		35.6	109.0	48.7	24.5	26.7	13.1	55.2	43.4	
Internal Link Dist (m)		206.2			237.9			198.3				176.9
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	407	2696		402	1909	961	267	1020	529	329	1030	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.30		0.23	0.42	0.21	0.34	0.18	0.21	0.69	0.34	

Intersection Summary

Area Type: Other

Cycle Length: 102

Actuated Cycle Length: 102

Offset: 36 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 28.7

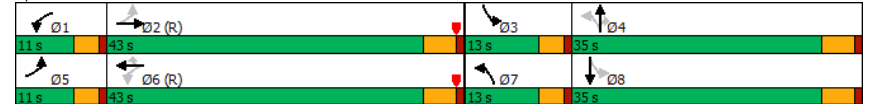
Intersection LOS: C

Intersection Capacity Utilization 69.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary
 1: Jefferson Boulevard & Tecumseh Road

2025 Background AM Peak Hour
 (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔
Traffic Volume (veh/h)	47	642	62	81	693	170	78	160	96	196	232	68
Future Volume (veh/h)	47	642	62	81	693	170	78	160	96	196	232	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1752	1781	1856	1885	1781	1841	1885	1870	1856	
Adj Flow Rate, veh/h	55	747	72	94	806	198	91	186	112	228	270	79
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
Percent Heavy Veh, %	2	3	10	8	3	1	8	4	4	1	2	3
Cap, veh/h	359	2516	241	463	1921	870	254	476	212	324	389	112
Arrive On Green	0.05	0.54	0.54	0.02	0.18	0.18	0.08	0.14	0.14	0.09	0.14	0.14
Sat Flow, veh/h	1781	4701	450	1697	3526	1597	1697	3497	1556	1795	2724	781
Grp Volume(v), veh/h	55	535	284	94	806	198	91	186	112	228	174	175
Grp Sat Flow(s), veh/h/ln	1781	1689	1774	1697	1763	1597	1697	1749	1556	1795	1777	1728
Q Serve(g_s), s	1.3	8.9	9.0	2.4	20.7	10.8	4.5	4.9	6.8	9.0	9.5	9.8
Cycle Q Clear(g_c), s	1.3	8.9	9.0	2.4	20.7	10.8	4.5	4.9	6.8	9.0	9.5	9.8
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	359	1808	950	463	1921	870	254	476	212	324	254	247
V/C Ratio(X)	0.15	0.30	0.30	0.20	0.42	0.23	0.36	0.39	0.53	0.70	0.69	0.71
Avail Cap(c_a), veh/h	385	1808	950	471	1921	870	266	1029	458	324	523	508
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.64	0.64	0.64	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.0	13.1	13.1	9.6	27.5	23.5	33.4	40.2	41.0	36.5	41.5	41.7
Incr Delay (d2), s/veh	0.2	0.4	0.8	0.1	0.4	0.4	0.8	0.5	2.0	6.7	3.3	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	1.3	1.5	0.0	3.8	2.1	2.1	2.5	3.2	6.4	5.2	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	13.5	13.9	9.7	28.0	23.9	34.3	40.7	43.0	43.2	44.8	45.4
LnGrp LOS	B	B	B	A	C	C	C	D	D	D	D	D
Approach Vol, veh/h	874			1098			389			577		
Approach Delay, s/veh	13.5			25.7			39.9			44.4		
Approach LOS	B			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	59.6	13.0	18.9	9.5	60.6	12.3	19.6				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	7.0	38.0	9.0	30.0	7.0	38.0	9.0	30.0				
Max Q Clear Time (g_c+I1), s	4.4	11.0	11.0	8.8	3.3	22.7	6.5	11.8				
Green Ext Time (p_c), s	0.1	6.9	0.0	1.9	0.0	6.5	0.1	2.3				
Intersection Summary												
HCM 6th Ctrl Delay	27.6											
HCM 6th LOS	C											

Lanes, Volumes, Timings
 2: Tecumseh Road & Catherine Street (N/S)

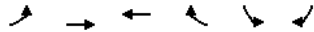
2025 Background AM Peak Hour
 (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	0	934	944	0	0	0
Future Volume (vph)	0	934	944	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1863	5085	5085	0	1863	1863
Fit Permitted						
Satd. Flow (perm)	1863	5085	5085	0	1863	1863
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
Link Speed (k/h)		60	60		50	
Link Distance (m)		261.9	175.4		228.1	
Travel Time (s)		15.7	10.5		16.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1015	1026	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1015	1026	0	0	0
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	11.0	79.0	68.0		23.0	23.0
Total Split (%)	10.8%	77.5%	66.7%		22.5%	22.5%
Maximum Green (s)	7.0	74.0	63.0		18.0	18.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		29.2	29.2			
Actuated g/C Ratio		0.29	0.29			
v/c Ratio		0.70	0.71			
Control Delay		36.2	39.9			
Queue Delay		0.0	0.0			
Total Delay		36.2	39.9			

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

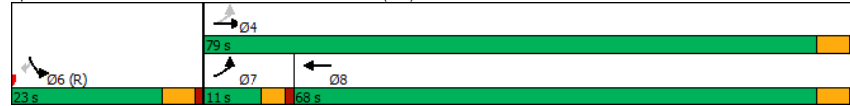


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		D	D			
Approach Delay		36.2	39.9			
Approach LOS		D	D			
Queue Length 50th (m)		75.4	57.5			
Queue Length 95th (m)		83.9	68.1			
Internal Link Dist (m)		237.9	151.4		204.1	
Turn Bay Length (m)						
Base Capacity (vph)		3689	3140			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.28	0.33			

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	38.1
Intersection LOS:	D
Intersection Capacity Utilization:	22.4%
ICU Level of Service:	A
Analysis Period (min):	15

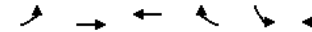
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↑		↑	↑
Traffic Volume (veh/h)	0	934	944	0	0	0
Future Volume (veh/h)	0	934	944	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1015	1026	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	141	1581	1581	0	1055	939
Arrive On Green	0.00	0.31	0.21	0.00	0.00	0.00
Sat Flow, veh/h	1781	5274	5443	0	1781	1585
Grp Volume(v), veh/h	0	1015	1026	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	17.5	18.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	17.5	18.8	0.0	0.0	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	141	1581	1581	0	1055	939
V/C Ratio(X)	0.00	0.64	0.65	0.00	0.00	0.00
Avail Cap(c_a), veh/h	262	3704	3154	0	1055	939
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.00	0.93	0.98	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	30.3	35.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	6.4	7.7	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	30.7	35.8	0.0	0.0	0.0
LnGrp LOS	A	C	D	A	A	A
Approach Vol, veh/h		1015	1026		0	
Approach Delay, s/veh		30.7	35.8		0.0	
Approach LOS		C	D			

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	36.6	65.4	0.0	36.6
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	74.0	18.0	7.0	63.0
Max Q Clear Time (g_c+I1), s	19.5	0.0	0.0	20.8
Green Ext Time (p_c), s	11.1	0.0	0.0	10.8

Intersection Summary

HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Lanes, Volumes, Timings

2025 Background AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	95	858	33	34	800	7	41	7	20	41	5	62
Future Volume (vph)	95	858	33	34	800	7	41	7	20	41	5	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Frt		0.994			0.999			0.960			0.862	
Flt Protected	0.950			0.950				0.971		0.950		
Satd. Flow (prot)	1805	5054	0	1752	5031	0	0	1763	0	1770	1603	0
Flt Permitted	0.275			0.268				0.771		0.733		
Satd. Flow (perm)	522	5054	0	494	5031	0	0	1399	0	1362	1603	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1			22			71	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		175.4			186.0			136.6			186.3	
Travel Time (s)		10.5			11.2			9.8			13.4	
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	2%	0%	3%	3%	0%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	109	986	38	39	920	8	47	8	23	47	6	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	1024	0	39	928	0	0	78	0	47	77	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		1	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	40.0		11.0	40.0		35.0	35.0		35.0	35.0	
Total Split (s)	15.0	51.0		13.0	49.0		38.0	38.0		38.0	38.0	
Total Split (%)	14.7%	50.0%		12.7%	48.0%		37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	11.0	46.0		9.0	44.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		28.0			28.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	82.5	78.0		80.3	72.3			11.6		11.6	11.6	
Actuated g/C Ratio	0.81	0.76		0.79	0.71			0.11		0.11	0.11	
v/c Ratio	0.21	0.26		0.08	0.26			0.44		0.31	0.31	

Lanes, Volumes, Timings

2025 Background AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	3.8	1.5		2.1	4.8					39.2	46.7	15.1
Queue Delay	0.0	0.0		0.0	0.0					0.0	0.0	0.0
Total Delay	3.8	1.5		2.1	4.8					39.2	46.7	15.1
LOS	A	A		A	A					D	D	B
Approach Delay		1.7			4.6					39.2		27.1
Approach LOS		A			A					D		C
Queue Length 50th (m)	0.4	2.1		1.1	20.0					11.0	9.2	1.2
Queue Length 95th (m)	10.3	2.7		2.0	23.2					24.2	19.5	13.6
Internal Link Dist (m)		151.4			162.0					112.6		162.3
Turn Bay Length (m)	35.0			30.0							45.0	
Base Capacity (vph)	571	3866		509	3568					467	440	566
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	0.19	0.26		0.08	0.26					0.17	0.11	0.14

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 7 (7%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.44
 Intersection Signal Delay: 5.6
 Intersection Capacity Utilization 58.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 3: Commercial Access/Home Depot Access & Tecumseh Road



HCM 6th Signalized Intersection Summary
 2025 Background AM Peak Hour
 3: Commercial Access/Home Depot Access & Tecumseh Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔			↔↔		
Traffic Volume (veh/h)	95	858	33	34	800	7	41	7	20	41	5	62
Future Volume (veh/h)	95	858	33	34	800	7	41	7	20	41	5	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1856	1856	1900	1900	1900	1870	1900	1885	1885
Adj Flow Rate, veh/h	109	986	38	39	920	8	47	8	23	47	6	71
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	2	0	3	3	0	0	0	0	2	0	1
Cap, veh/h	602	3500	135	465	3492	30	126	28	41	232	16	184
Arrive On Green	0.04	0.46	0.46	0.09	1.00	1.00	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1810	5045	194	1767	5179	45	563	229	331	1372	126	1492
Grp Volume(v), veh/h	109	665	359	39	600	328	78	0	0	47	0	77
Grp Sat Flow(s),veh/h/ln	1810	1702	1835	1767	1689	1847	1122	0	0	1372	0	1618
Q Serve(g_s), s	1.7	12.3	12.3	0.6	0.0	0.0	3.6	0.0	0.0	0.0	0.0	4.5
Cycle Q Clear(g_c), s	1.7	12.3	12.3	0.6	0.0	0.0	8.1	0.0	0.0	3.4	0.0	4.5
Prop In Lane	1.00		0.11	1.00		0.02	0.60		0.29	1.00		0.92
Lane Grp Cap(c), veh/h	602	2362	1273	465	2277	1246	195	0	0	232	0	199
V/C Ratio(X)	0.18	0.28	0.28	0.08	0.26	0.26	0.40	0.00	0.00	0.20	0.00	0.39
Avail Cap(c_a), veh/h	678	2362	1273	540	2277	1246	485	0	0	507	0	524
HCM Platoon Ratio	0.67	0.67	0.67	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.65	0.98	0.98	0.98	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.8	11.6	11.6	4.4	0.0	0.0	43.2	0.0	0.0	40.7	0.0	41.2
Incr Delay (d2), s/veh	0.1	0.2	0.4	0.1	0.3	0.5	1.3	0.0	0.0	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.2	0.0	0.2	0.3	2.4	0.0	0.0	1.3	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.9	11.8	12.0	4.5	0.3	0.5	44.6	0.0	0.0	41.1	0.0	42.4
LnGrp LOS	A	B	B	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h	1133			967			78			124		
Approach Delay, s/veh	11.1			0.5			44.6			41.9		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	75.8		17.5	10.7	73.8		17.5				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	9.0	46.0		33.0	11.0	44.0		33.0				
Max Q Clear Time (g_c+1), s	2.6	14.3		6.5	3.7	2.0		10.1				
Green Ext Time (p_c), s	0.0	9.4		0.7	0.2	8.8		0.4				

Intersection Summary		
HCM 6th Ctrl Delay	9.5	
HCM 6th LOS	A	

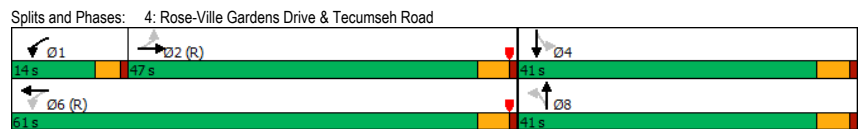
Lanes, Volumes, Timings
 2025 Background AM Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔			↔↔		
Traffic Volume (vph)	60	862	46	94	727	3	57	0	114	21	0	215
Future Volume (vph)	60	862	46	94	727	3	57	0	114	21	0	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00	0.98				
Frt		0.992			0.999			0.850				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4942	0	1626	5031	0	1736	1526	0	1770	1583	0
Fit Permitted	0.352			0.263			0.308			0.612		
Satd. Flow (perm)	656	4942	0	448	5031	0	561	1526	0	1140	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			1			254				179
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				214.6
Travel Time (s)		11.2			16.4			20.9				15.5
Confl. Peds. (#/hr)			10	10			3		5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	11%	3%	2%	4%	2%	4%	2%	2%	2%
Adj. Flow (vph)	63	898	48	98	757	3	59	0	119	22	0	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	946	0	98	760	0	59	119	0	22	224	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2			1	6		8				4
Permitted Phases	2			6				8				4
Detector Phase	2	2			1	6		8	8			4
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		11.0	11.0		11.0		11.0
Minimum Split (s)	28.0	28.0		11.0	28.0		34.0	34.0		34.0		34.0
Total Split (s)	47.0	47.0		14.0	61.0		41.0	41.0		41.0		41.0
Total Split (%)	46.1%	46.1%		13.7%	59.8%		40.2%	40.2%		40.2%		40.2%
Maximum Green (s)	42.0	42.0		10.0	56.0		36.0	36.0		36.0		36.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
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
Recall Mode	C-Max	C-Max		None	C-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)	16.0	16.0		16.0	16.0		22.0	22.0		22.0		22.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0		0
Act Effct Green (s)	69.8	69.8		80.0	79.0		13.0	13.0		13.0		13.0
Actuated g/C Ratio	0.68	0.68		0.78	0.77		0.13	0.13		0.13		0.13
v/c Ratio	0.14	0.28		0.22	0.20		0.83	0.29		0.15		0.63

Lanes, Volumes, Timings 2025 Background AM Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	2.4	1.7		3.7	2.1		112.2	1.7		34.8	15.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	2.4	1.7		3.7	2.1		112.2	1.7		34.8	15.0	
LOS	A	A		A	A		F	A		C	B	
Approach Delay	1.8			2.3			38.3			16.7		
Approach LOS	A			A			D			B		
Queue Length 50th (m)	0.9	5.1		1.6	6.2		12.4	0.0		4.1	12.5	
Queue Length 95th (m)	2.1	6.3		4.5	9.6		#31.6	0.0		9.7	31.8	
Internal Link Dist (m)	162.0		249.0		265.9		190.6					
Turn Bay Length (m)	25.0		50.0		50.0		120.0					
Base Capacity (vph)	448	3386		466	3897		198	702		402	674	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.28		0.21	0.20		0.30	0.17		0.05	0.33	

Intersection Summary
 Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 13 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 6.4
 Intersection Capacity Utilization 63.3%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.



HCM 6th Signalized Intersection Summary 2025 Background AM Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘		
Traffic Volume (veh/h)	60	862	46	94	727	3	57	0	114	21	0	215
Future Volume (veh/h)	60	862	46	94	727	3	57	0	114	21	0	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1841	1870	1737	1856	1870	1841	1870	1841	1870	1870	1870
Adj Flow Rate, veh/h	62	898	48	98	757	3	59	0	119	22	0	224
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	4	2	11	3	2	4	2	4	2	2	2
Cap, veh/h	482	2854	152	469	3585	14	166	0	336	260	0	339
Arrive On Green	0.78	0.78	0.78	0.13	1.00	1.00	0.21	0.00	0.21	0.21	0.00	0.21
Sat Flow, veh/h	703	4881	260	1654	5208	21	1139	0	1574	1266	0	1585
Grp Volume(v), veh/h	62	616	330	98	491	269	59	0	119	22	0	224
Grp Sat Flow(s), veh/h/ln	703	1675	1791	1654	1689	1852	1139	0	1574	1266	0	1585
Q Serve(g_s), s	2.3	5.5	5.5	2.1	0.0	0.0	5.1	0.0	6.6	1.5	0.0	13.2
Cycle Q Clear(g_c), s	2.3	5.5	5.5	2.1	0.0	0.0	18.3	0.0	6.6	8.1	0.0	13.2
Prop In Lane	1.00		0.15	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	482	1959	1047	469	2324	1275	166	0	336	260	0	339
V/C Ratio(X)	0.13	0.31	0.32	0.21	0.21	0.21	0.35	0.00	0.35	0.08	0.00	0.66
Avail Cap(c_a), veh/h	482	1959	1047	524	2324	1275	325	0	556	436	0	559
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	0.96	0.96	0.96	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	5.3	5.3	5.9	0.0	0.0	45.1	0.0	34.1	37.6	0.0	36.7
Incr Delay (d2), s/veh	0.5	0.4	0.8	0.2	0.2	0.4	1.3	0.0	0.6	0.1	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.3	0.6	0.0	0.1	0.2	1.8	0.0	2.8	0.6	0.0	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	5.7	6.1	6.1	0.2	0.4	46.4	0.0	34.7	37.7	0.0	38.9
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	D
Approach Vol, veh/h	1008			858			178			246		
Approach Delay, s/veh	5.8			0.9			38.6			38.8		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.6	64.6		26.8		75.2		26.8				
Change Period (Y+Rc), s	4.0	5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s	10.0	42.0		36.0		56.0		36.0				
Max Q Clear Time (g_c+I1), s	4.1	7.5		15.2		2.0		20.3				
Green Ext Time (p_c), s	0.1	9.7		1.7		7.0		0.9				

Intersection Summary
 HCM 6th Ctrl Delay 10.1
 HCM 6th LOS B

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	152	723	97	89	718	141	61	46	33	77	32	62
Future Volume (vph)	152	723	97	89	718	141	61	46	33	77	32	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00					0.99
Frt		0.982			0.975			0.938				0.901
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	4880	0	1805	4926	0	1671	1782	0	1787	1693	0
Flt Permitted	0.261			0.295			0.657			0.699		
Satd. Flow (perm)	491	4880	0	559	4926	0	1151	1782	0	1315	1693	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			47			37				70
Link Speed (k/h)		60			60			50				50
Link Distance (m)		273.0			268.3			231.1				151.2
Travel Time (s)		16.4			16.1			16.6				10.9
Confl. Peds. (#/hr)			6	6			5					5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	4%	0%	3%	1%	8%	0%	0%	1%	0%	0%
Adj. Flow (vph)	171	812	109	100	807	158	69	52	37	87	36	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	921	0	100	965	0	69	89	0	87	106	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	20.0	51.0		14.0	45.0		37.0	37.0		37.0	37.0	
Total Split (%)	19.6%	50.0%		13.7%	44.1%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	16.0	46.0		10.0	40.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	77.5	69.5		75.7	66.6		12.8	12.8		12.8	12.8	
Actuated g/C Ratio	0.76	0.68		0.74	0.65		0.13	0.13		0.13	0.13	
v/c Ratio	0.36	0.28		0.19	0.30		0.48	0.35		0.53	0.39	

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	10.9	2.3		3.0	4.1		51.9	28.3		52.9	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.9	2.3		3.0	4.1		51.9	28.3		52.9	20.3	
LOS	B	A		A	A		D	C		D	C	
Approach Delay		3.6			4.0			38.6			35.0	
Approach LOS		A			A			D			C	
Queue Length 50th (m)	6.0	5.2		1.7	7.9		13.7	10.0		17.4	6.9	
Queue Length 95th (m)	27.1	12.0		m5.2	14.8		26.4	23.2		31.3	21.3	
Internal Link Dist (m)		249.0			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	589	3335		547	3233		361	584		412	579	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.29	0.28		0.18	0.30		0.19	0.15		0.21	0.18	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 93 (91%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 8.4 Intersection LOS: A
 Intersection Capacity Utilization 56.4% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2025 Background AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	152	723	97	89	718	141	61	46	33	77	32	62
Future Volume (veh/h)	152	723	97	89	718	141	61	46	33	77	32	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1841	1841	1900	1856	1885	1781	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	171	812	109	100	807	158	69	52	37	87	36	70
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	0	3	1	8	0	0	1	0	0
Cap, veh/h	577	2824	377	498	2663	517	195	163	116	220	91	177
Arrive On Green	0.03	0.21	0.21	0.15	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1795	4482	598	1810	4253	826	1218	1028	732	1309	573	1114
Grp Volume(v), veh/h	171	606	315	100	640	325	69	0	89	87	0	106
Grp Sat Flow(s),veh/h/ln	1795	1675	1730	1810	1689	1702	1218	0	1760	1309	0	1687
Q Serve(g_s), s	3.1	15.5	15.7	1.7	0.0	0.0	5.5	0.0	4.6	6.4	0.0	5.8
Cycle Q Clear(g_c), s	3.1	15.5	15.7	1.7	0.0	0.0	11.2	0.0	4.6	11.0	0.0	5.8
Prop In Lane	1.00		0.35	1.00		0.49	1.00		0.42	1.00		0.66
Lane Grp Cap(c), veh/h	577	2111	1090	498	2114	1066	195	0	280	220	0	268
V/C Ratio(X)	0.30	0.29	0.29	0.20	0.30	0.31	0.35	0.00	0.32	0.40	0.00	0.40
Avail Cap(c_a), veh/h	719	2111	1090	542	2114	1066	384	0	552	423	0	529
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.2	21.1	21.1	5.7	0.0	0.0	43.6	0.0	38.0	42.9	0.0	38.5
Incr Delay (d2), s/veh	0.3	0.3	0.7	0.2	0.3	0.7	1.1	0.0	0.6	1.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.2	0.4	0.0	0.2	0.4	2.1	0.0	2.3	2.6	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	21.4	21.8	5.9	0.3	0.7	44.6	0.0	38.7	44.0	0.0	39.5
LnGrp LOS	A	C	C	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h	1092			1065			158			193		
Approach Delay, s/veh	19.0			1.0			41.3			41.5		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	69.3		21.2	11.9	68.9		21.2				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	46.0		32.0	16.0	40.0		32.0				
Max Q Clear Time (g_c+1), s	3.7	17.7		13.2	5.1	2.0		13.0				
Green Ext Time (p_c), s	0.1	8.1		0.8	0.5	9.3		1.0				
Intersection Summary												
HCM 6th Ctrl Delay	14.5											
HCM 6th LOS	B											

Lanes, Volumes, Timings

2025 Background AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	106	614	125	114	664	45	223	287	84	82	346	51
Future Volume (vph)	106	614	125	114	664	45	223	287	84	82	346	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0		120.0		0.0		90.0		70.0	
Storage Lanes	1		0		1		0		1		1	
Taper Length (m)	80.0		60.0		70.0		70.0		70.0		70.0	
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00		0.99
Frt	0.975				0.991		0.966				0.850	
Fit Protected	0.950				0.950		0.950				0.950	
Satd. Flow (prot)	1656		4934		0		1736		5015		0	
Fit Permitted	0.326				0.312		0.382				0.508	
Satd. Flow (perm)	567		4934		0		569		5015		0	
Right Turn on Red			Yes				Yes				Yes	
Satd. Flow (RTOR)	45				11		78				118	
Link Speed (k/h)	60				60		60				60	
Link Distance (m)	268.3				288.0		208.8				230.9	
Travel Time (s)	16.1				17.3		12.5				13.9	
Confl. Peds. (#/hr)	5		7		7		5		3		6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	1%	8%	4%	1%	23%	3%	5%	6%	19%	5%	8%
Adj. Flow (vph)	114	660	134	123	714	48	240	309	90	88	372	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	794	0	123	762	0	240	399	0	88	372	55
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		6		4		8		8		8	
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	37.0	37.0
Total Split (s)	11.0	40.0		11.0	40.0		14.0	40.0		11.0	37.0	37.0
Total Split (%)	10.8%	39.2%		10.8%	39.2%		13.7%	39.2%		10.8%	36.3%	36.3%
Maximum Green (s)	7.0	34.0		7.0	34.0		10.0	34.0		7.0	31.0	31.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)	7.0				7.0		5.0				7.0	
Flash Dont Walk (s)	26.0				26.0		24.0				24.0	
Pedestrian Calls (#/hr)	0				0		0				0	
Act Effct Green (s)	59.7	50.7		59.7	50.7		29.5	19.5		23.3	14.3	14.3
Actuated g/C Ratio	0.59	0.50		0.59	0.50		0.29	0.19		0.23	0.14	0.14
v/c Ratio	0.28	0.32		0.30	0.31		0.78	0.41		0.38	0.54	0.18

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

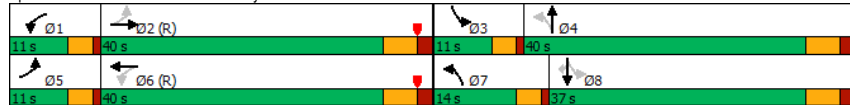
2025 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	11.9	20.9		10.1	15.6		49.2	30.8		28.2	40.4	6.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	11.9	20.9		10.1	15.6		49.2	30.8		28.2	40.4	6.1
LOS	B	C		B	B		D	C		C	D	A
Approach Delay	19.7			14.8			37.7			34.7		
Approach LOS	B			B			D			C		
Queue Length 50th (m)	17.0	49.1		9.3	31.9		41.2	22.3		14.6	27.5	0.1
Queue Length 95th (m)	30.7	57.9		18.6	44.3		#68.0	31.2		26.8	36.7	4.6
Internal Link Dist (m)	244.3		264.0		184.8		206.9		70.0		70.0	
Turn Bay Length (m)	90.0		120.0		90.0		70.0		70.0		70.0	
Base Capacity (vph)	406	2475		413	2498		306	1632		233	1501	529
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	0.28	0.32		0.30	0.31		0.78	0.24		0.38	0.25	0.10

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 63 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 24.8
 Intersection Capacity Utilization 75.1%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

7: Lauzon Parkway & Tecumseh Road

2025 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘		↔ ↗ ↘
Traffic Volume (veh/h)	106	614	125	114	664	45	223	287	84	82	346	51
Future Volume (veh/h)	106	614	125	114	664	45	223	287	84	82	346	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1885	1781	1841	1885	1559	1856	1826	1811	1618	1826	1781
Adj Flow Rate, veh/h	114	660	134	123	714	48	240	309	90	88	372	55
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	8	4	1	23	3	5	6	19	5	8
Cap, veh/h	445	2079	416	420	2386	160	334	738	204	266	775	232
Arrive On Green	0.02	0.16	0.16	0.07	0.48	0.48	0.10	0.19	0.19	0.13	0.31	0.31
Sat Flow, veh/h	1682	4297	860	1753	4926	329	1767	3873	1071	1541	4985	1492
Grp Volume(v), veh/h	114	525	269	123	496	266	240	263	136	88	372	55
Grp Sat Flow(s), veh/h/ln	1682	1716	1726	1753	1716	1824	1767	1662	1621	1541	1662	1492
Q Serve(g_s), s	3.3	13.8	14.1	3.5	8.9	9.0	10.0	7.1	7.6	4.8	6.2	2.8
Cycle Q Clear(g_c), s	3.3	13.8	14.1	3.5	8.9	9.0	10.0	7.1	7.6	4.8	6.2	2.8
Prop In Lane	1.00		0.50	1.00		0.18	1.00		0.66	1.00		1.00
Lane Grp Cap(c), veh/h	445	1660	835	420	1662	884	334	633	309	266	775	232
V/C Ratio(X)	0.26	0.32	0.32	0.29	0.30	0.30	0.72	0.41	0.44	0.33	0.48	0.24
Avail Cap(c_a), veh/h	449	1660	835	423	1662	884	334	1108	540	275	1515	454
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	12.1	27.9	28.0	12.3	15.8	15.9	33.1	36.3	36.5	30.9	31.8	30.6
Incr Delay (d2), s/veh	0.3	0.5	1.0	0.4	0.5	0.9	7.3	0.5	1.2	0.7	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	3.6	4.0	0.4	1.9	2.2	5.9	3.1	3.3	1.8	2.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.4	28.4	29.0	12.7	16.3	16.7	40.4	36.8	37.7	31.6	32.3	31.2
LnGrp LOS	B	C	C	B	B	B	D	D	D	C	C	C
Approach Vol, veh/h	908			885			639			515		
Approach Delay, s/veh	26.6			15.9			38.3			32.1		
Approach LOS	C			B			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	55.3	10.4	25.4	10.7	55.4	14.0	21.9				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	7.0	34.0	7.0	34.0	7.0	34.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	5.5	16.1	6.8	9.6	5.3	11.0	12.0	8.2				
Green Ext Time (p_c), s	0.1	7.4	0.0	3.5	0.1	8.0	0.0	3.7				

Intersection Summary

HCM 6th Ctrl Delay: 26.9
 HCM 6th LOS: C

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2025 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	22	13	54	10	27	25	289	88	56	466	261
Future Volume (vph)	125	22	13	54	10	27	25	289	88	56	466	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor		0.99		1.00			1.00		0.98	1.00	0.99	
Fit		0.945			0.890				0.850		0.946	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1645	0	1245	1457	0	1612	3471	1583	1626	4741	0
Fit Permitted	0.730			0.732			0.335			0.544		
Satd. Flow (perm)	1387	1645	0	955	1457	0	567	3471	1549	930	4741	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			30				98			166
Link Speed (k/h)		50			50			60				60
Link Distance (m)		646.8			106.2			230.9				292.9
Travel Time (s)		46.6			7.6			13.9				17.6
Confl. Peds. (#/hr)			4	4			3		1	1		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	23%	45%	0%	22%	12%	4%	2%	11%	4%	0%
Adj. Flow (vph)	139	24	14	60	11	30	28	321	98	62	518	290
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	38	0	60	41	0	28	321	98	62	808	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8			5	2		1	6
Permitted Phases	4			8			2		2		6	
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	42.0	42.0		42.0	42.0		13.0	47.0	47.0	13.0	47.0	
Total Split (%)	41.2%	41.2%		41.2%	41.2%		12.7%	46.1%	46.1%	12.7%	46.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		9.0	41.0	41.0	9.0	41.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	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	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	16.1	16.1		16.1	16.1		72.5	64.9	64.9	73.8	67.3	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.71	0.64	0.64	0.72	0.66	
v/c Ratio	0.64	0.14		0.40	0.16		0.06	0.15	0.10	0.09	0.25	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2025 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	52.9	25.7		45.2	17.5		8.0	16.6	10.2	4.6	6.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	25.7		45.2	17.5		8.0	16.6	10.2	4.6	6.8	
LOS	D	C		D	B		A	B	B	A	A	
Approach Delay		47.0			33.9			14.6			6.6	
Approach LOS		D			C			B			A	
Queue Length 50th (m)	27.6	4.4		11.4	2.0		1.7	20.8	0.3	2.8	19.7	
Queue Length 95th (m)	44.9	12.7		22.9	11.0		7.1	35.5	16.1	7.9	31.7	
Internal Link Dist (m)		622.8			82.2			206.9			268.9	
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	489	589		337	533		503	2208	1021	742	3186	
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	0.28	0.06		0.18	0.08		0.06	0.15	0.10	0.08	0.25	

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	97 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Red
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	15.1
Intersection LOS:	B
Intersection Capacity Utilization:	59.1%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

2025 Background AM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	125	22	13	54	10	27	25	289	88	56	466	261
Future Volume (veh/h)	125	22	13	54	10	27	25	289	88	56	466	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1559	1233	1900	1574	1722	1841	1870	1737	1841	1900
Adj Flow Rate, veh/h	139	24	14	60	11	30	28	321	98	62	518	290
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	23	45	0	22	12	4	2	11	4	0
Cap, veh/h	262	180	105	198	72	196	483	2190	990	727	2162	1005
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.08	1.00	1.00	0.06	0.65	0.65
Sat Flow, veh/h	1378	1122	654	897	448	1221	1640	3497	1581	1654	3350	1556
Grp Volume(v), veh/h	139	0	38	60	0	41	28	321	98	62	518	290
Grp Sat Flow(s),veh/h/ln	1378	0	1776	897	0	1669	1640	1749	1581	1654	1675	1556
Q Serve(g_s), s	9.8	0.0	1.9	6.3	0.0	2.2	0.6	0.0	0.0	1.3	6.6	8.3
Cycle Q Clear(g_c), s	12.0	0.0	1.9	8.1	0.0	2.2	0.6	0.0	0.0	1.3	6.6	8.3
Prop In Lane	1.00		0.37	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	0	284	198	0	267	483	2190	990	727	2162	1005
V/C Ratio(X)	0.53	0.00	0.13	0.30	0.00	0.15	0.06	0.15	0.10	0.09	0.24	0.29
Avail Cap(c_a), veh/h	528	0	627	371	0	589	566	2190	990	779	2162	1005
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	0.0	36.8	40.3	0.0	36.9	5.8	0.0	0.0	5.3	7.6	7.9
Incr Delay (d2), s/veh	1.7	0.0	0.2	0.9	0.0	0.3	0.0	0.1	0.2	0.0	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	0.0	1.0	1.7	0.0	1.0	0.0	0.1	0.1	0.0	0.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	0.0	37.0	41.1	0.0	37.1	5.9	0.1	0.2	5.4	7.8	8.6
LnGrp LOS	D	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h	177			101			447			870		
Approach Delay, s/veh	42.3			39.5			0.5			7.9		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	69.9		22.3	7.8	71.8		22.3				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	41.0		36.0	9.0	41.0		36.0				
Max Q Clear Time (g_c+I1), s	3.3	2.0		14.0	2.6	10.3		10.1				
Green Ext Time (p_c), s	0.1	3.2		0.8	0.0	7.3		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				11.7								
HCM 6th LOS				B								

Lanes, Volumes, Timings

2025 Background AM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	21	36	3	60	200	3
Future Volume (vph)	21	36	3	60	200	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.915			0.998		
Fit Protected	0.982		0.950			
Satd. Flow (prot)	1674	0	1770	1863	1859	0
Fit Permitted	0.982		0.950			
Satd. Flow (perm)	1674	0	1770	1863	1859	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	122.2			214.6	142.6	
Travel Time (s)	8.8			15.5	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	39	3	65	217	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	62	0	3	65	220	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	20.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC 2025 Background AM Peak Hour
 9: Rose-Ville Gardens Drive & Home Depot Access (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑		↑	↑	↑	
Traffic Vol, veh/h	21	36	3	60	200	3
Future Vol, veh/h	21	36	3	60	200	3
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	39	3	65	217	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	290	219	220	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	701	821	1349	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	700	821	1349	-	-	-
Mov Cap-2 Maneuver	711	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	952	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1349	-	777	-	-
HCM Lane V/C Ratio	0.002	-	0.08	-	-
HCM Control Delay (s)	7.7	-	10	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Lanes, Volumes, Timings 2025 Background AM Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	↑
Traffic Volume (vph)	0	0	203	0	0	81
Future Volume (vph)	0	0	203	0	0	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit						0.850
Fit Protected			0.950			
Satd. Flow (prot)	1863	0	1770	1863	1863	1583
Fit Permitted			0.950			
Satd. Flow (perm)	1863	0	1770	1863	1863	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	52.8			646.8	142.6	
Travel Time (s)	3.8			46.6	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	221	0	0	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	221	0	0	88
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC 2025 Background AM Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	7.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	203	0	0	81
Future Vol, veh/h	0	0	203	0	0	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	221	0	0	88

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1	443
Stage 1	-	-	-	1
Stage 2	-	-	-	442
Critical Hdwy	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	5.42
Follow-up Hdwy	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	1622	-	572
Stage 1	-	-	-	1022
Stage 2	-	-	-	648
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	1622	-	494
Mov Cap-2 Maneuver	-	-	-	504
Stage 1	-	-	-	1022
Stage 2	-	-	-	560

Approach	EB	WB	NB
HCM Control Delay, s	0	7.6	8.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	1084	-	-	1622	-
HCM Lane V/C Ratio	-	0.081	-	-	0.136	-
HCM Control Delay (s)	0	8.6	-	-	7.6	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0.3	-	-	0.5	-

Lanes, Volumes, Timings

1: Jefferson Boulevard & Tecumseh Road

2025 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗		↘	↖ ↗		↘	↖ ↗		↘	↖ ↗		↘
Traffic Volume (vph)	103	1222	118	133	1097	328	149	302	152	286	286	89
Future Volume (vph)	103	1222	118	133	1097	328	149	302	152	286	286	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00		0.99	1.00		1.00
Fit		0.987				0.850			0.850		0.964	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5008	0	1752	3574	1615	1752	3574	1509	1770	3373	0
Fit Permitted	0.123			0.097			0.317			0.363		
Satd. Flow (perm)	229	5008	0	179	3574	1588	583	3574	1488	675	3373	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				341			159			37
Link Speed (k/h)		60			60			50				50
Link Distance (m)		230.2			269.3			222.3				200.9
Travel Time (s)		13.8			16.2			16.0				14.5
Conf. Peds. (#/hr)	5		5	5		5	5		2	2		5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	3%	3%	1%	0%	3%	1%	7%	2%	3%	2%
Adj. Flow (vph)	117	1389	134	151	1247	373	169	343	173	325	325	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	1523	0	151	1247	373	169	343	173	325	426	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	47.0		13.0	49.0	49.0	14.0	35.0	35.0	15.0	36.0	
Total Split (%)	10.0%	42.7%		11.8%	44.5%	44.5%	12.7%	31.8%	31.8%	13.6%	32.7%	
Maximum Green (s)	7.0	42.0		9.0	44.0	44.0	10.0	30.0	30.0	11.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effect Green (s)	62.3	54.3		65.5	55.9	55.9	28.9	18.1	18.1	31.3	19.3	
Actuated g/C Ratio	0.57	0.49		0.60	0.51	0.51	0.26	0.16	0.16	0.28	0.18	
v/c Ratio	0.52	0.61		0.66	0.69	0.38	0.66	0.58	0.46	1.08	0.69	

Lanes, Volumes, Timings

1: Jefferson Boulevard & Tecumseh Road

2025 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	18.3	22.0		43.0	40.5	18.5	41.6	46.1	11.7	108.6	44.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.3	22.0		43.0	40.5	18.5	41.6	46.1	11.7	108.6	44.3	
LOS	B	C		D	D	B	D	D	B	F	D	
Approach Delay		21.7			36.1			36.3			72.2	
Approach LOS		C			D			D			E	
Queue Length 50th (m)	10.0	87.9		31.0	109.5	35.8	29.1	38.1	2.7	-68.9	44.0	
Queue Length 95th (m)	20.1	111.5		#53.4	163.3	35.1	42.9	48.9	19.6	#88.3	56.0	
Internal Link Dist (m)		206.2			245.3			198.3			176.9	
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	227	2482		235	1816	974	260	974	521	301	977	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.52	0.61		0.64	0.69	0.38	0.65	0.35	0.33	1.08	0.44	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 56 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 36.8

Intersection LOS: D

Intersection Capacity Utilization 76.8%

ICU Level of Service D

Analysis Period (min) 15

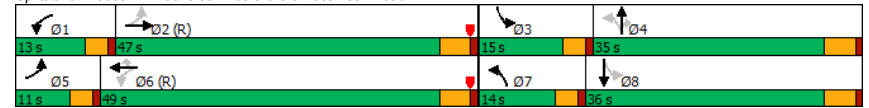
~ Volume exceeds capacity, queue is theoretically infinite.

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: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

1: Jefferson Boulevard & Tecumseh Road

2025 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (veh/h)	103	1222	118	133	1097	328	149	302	152	286	286	89
Future Volume (veh/h)	103	1222	118	133	1097	328	149	302	152	286	286	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1885	1900	1856	1885	1796	1870	1856	1870
Adj Flow Rate, veh/h	117	1389	134	151	1247	373	169	343	173	325	325	101
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	3	3	1	0	3	1	7	2	3	2
Cap, veh/h	228	2341	226	273	1775	796	295	641	270	325	499	152
Arrive On Green	0.06	0.49	0.49	0.02	0.16	0.16	0.09	0.18	0.18	0.10	0.19	0.19
Sat Flow, veh/h	1781	4734	457	1767	3582	1605	1767	3582	1509	1781	2654	811
Grp Volume(v), veh/h	117	999	524	151	1247	373	169	343	173	325	214	212
Grp Sat Flow(s),veh/h/ln	1781	1702	1787	1767	1791	1605	1767	1791	1509	1781	1763	1702
Q Serve(g_s), s	3.4	23.1	23.1	4.5	36.2	23.2	8.5	9.6	11.7	11.0	12.3	12.7
Cycle Q Clear(g_c), s	3.4	23.1	23.1	4.5	36.2	23.2	8.5	9.6	11.7	11.0	12.3	12.7
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	228	1683	883	273	1775	796	295	641	270	325	331	320
V/C Ratio(X)	0.51	0.59	0.59	0.55	0.70	0.47	0.57	0.54	0.64	1.00	0.65	0.66
Avail Cap(c_a), veh/h	231	1683	883	307	1775	796	295	977	412	325	497	480
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	19.9	19.9	17.0	38.3	32.9	33.2	41.0	41.9	39.9	41.3	41.4
Incr Delay (d2), s/veh	1.9	1.5	2.9	1.3	1.7	1.4	2.7	1.0	3.6	50.2	3.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	6.0	6.8	0.9	15.0	8.3	4.3	5.1	5.6	14.0	6.7	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	21.4	22.8	18.3	40.0	34.3	35.9	42.0	45.5	40.2	44.3	44.8
LnGrp LOS	C	C	C	B	D	C	D	D	D	F	D	D
Approach Vol, veh/h	1640			1771			685			751		
Approach Delay, s/veh	22.0			37.0			41.4			64.3		
Approach LOS	C			D			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	59.4	15.0	24.7	10.8	59.5	14.0	25.7				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	9.0	42.0	11.0	30.0	7.0	44.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	6.5	25.1	13.0	13.7	5.4	38.2	10.5	14.7				
Green Ext Time (p_c), s	0.1	12.8	0.0	4.2	0.1	5.0	0.0	3.6				

Intersection Summary

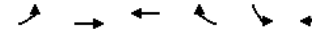
HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

2025 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

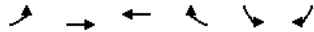


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔	↔	↔	↔
Traffic Volume (vph)	0	1660	1559	0	0	0
Future Volume (vph)	0	1660	1559	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1863	5085	5085	0	1863	1863
Fit Permitted						
Satd. Flow (perm)	1863	5085	5085	0	1863	1863
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
Link Speed (k/h)		50	50		50	
Link Distance (m)		269.3	167.9		212.2	
Travel Time (s)		19.4	12.1		15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1804	1695	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1804	1695	0	0	0
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	11.0	87.0	76.0		23.0	23.0
Total Split (%)	10.0%	79.1%	69.1%		20.9%	20.9%
Maximum Green (s)	7.0	82.0	71.0		18.0	18.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		56.7	56.7			
Actuated g/C Ratio		0.52	0.52			
v/c Ratio		0.69	0.65			
Control Delay		15.8	9.4			
Queue Delay		0.0	0.0			
Total Delay		15.8	9.4			

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

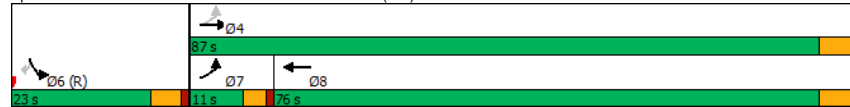


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		B	A			
Approach Delay		15.8	9.4			
Approach LOS		B	A			
Queue Length 50th (m)		126.6	19.4			
Queue Length 95th (m)		m36.4	13.2			
Internal Link Dist (m)		245.3	143.9	188.2		
Turn Bay Length (m)						
Base Capacity (vph)		3790	3282			
Starvation Cap Reductn		0	68			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.48	0.53			

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	12.7
Intersection LOS:	B
Intersection Capacity Utilization:	36.2%
ICU Level of Service:	A
Analysis Period (min):	15
m	Volume for 95th percentile queue is metered by upstream signal.

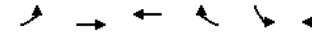
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	0	1660	1559	0	0	0
Future Volume (veh/h)	0	1660	1559	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1804	1695	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	234	2936	2936	0	595	530
Arrive On Green	0.00	0.19	1.00	0.00	0.00	0.00
Sat Flow, veh/h	1781	5274	5443	0	1781	1585
Grp Volume(v), veh/h	0	1804	1695	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	35.6	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	35.6	0.0	0.0	0.0	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	234	2936	2936	0	595	530
V/C Ratio(X)	0.00	0.61	0.58	0.00	0.00	0.00
Avail Cap(c_a), veh/h	345	3806	3296	0	595	530
HCM Platoon Ratio	0.33	0.33	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	0.68	0.88	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	33.4	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	12.6	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	33.5	0.2	0.0	0.0	0.0
LnGrp LOS	A	C	A	A	A	A
Approach Vol, veh/h		1804	1695		0	
Approach Delay, s/veh		33.5	0.2		0.0	
Approach LOS		C	A			

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	68.2	41.8	0.0	68.2
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	82.0	18.0	7.0	71.0
Max Q Clear Time (g_c+I1), s	37.6	0.0	0.0	2.0
Green Ext Time (p_c), s	25.6	0.0	0.0	28.3

Intersection Summary

HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Lanes, Volumes, Timings

2025 Background PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑				↑↑			↑↑	
Traffic Volume (vph)	126	1479	52	21	1418	8	49	3	46	82	2	90
Future Volume (vph)	126	1479	52	21	1418	8	49	3	46	82	2	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Fit	0.995			0.999				0.936			0.853	
Fit Protected	0.950			0.950				0.976			0.950	
Satd. Flow (prot)	1805		0	1805		0	0	1725		0	1787	
Fit Permitted	0.116			0.122				0.746			0.645	
Satd. Flow (perm)	220		0	232		0	0	1318		0	1600	
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	7			1				41			100	
Link Speed (k/h)	60			60				50			50	
Link Distance (m)	167.9			186.0				136.6			134.8	
Travel Time (s)	10.1			11.2				9.8			9.7	
Conf. Peds. (#/hr)	8		9	9		8	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	140	1643	58	23	1576	9	54	3	51	91	2	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	1701	0	23	1585	0	0	108	0	91	102	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6				4			8	
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	40.0		11.0	40.0		35.0	35.0		35.0	35.0	
Total Split (s)	19.0	62.0		11.0	54.0		37.0	37.0		37.0	37.0	
Total Split (%)	17.3%	56.4%		10.0%	49.1%		33.6%	33.6%		33.6%	33.6%	
Maximum Green (s)	15.0	57.0		7.0	49.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0			7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	28.0			28.0			23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0			0			0	0		0	0	
Act Effct Green (s)	86.9	81.7		81.2	73.2		13.9	13.9		13.9	13.9	
Actuated g/C Ratio	0.79	0.74		0.74	0.67		0.13	0.13		0.13	0.13	
v/c Ratio	0.47	0.45		0.08	0.46		0.53	0.59		0.59	0.35	

Lanes, Volumes, Timings

2025 Background PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	25.9	1.6		4.4	9.3					37.6		60.8
Queue Delay	0.0	0.0		0.0	0.1					0.0		0.0
Total Delay	25.9	1.6		4.4	9.4					37.6		60.8
LOS	C	A		A	A					D		E
Approach Delay	3.5			9.3			37.6			35.0		
Approach LOS	A			A			D			D		
Queue Length 50th (m)	11.3	2.9		1.2	54.8					14.3		19.9
Queue Length 95th (m)	27.7	14.1		m3.2	68.3					31.0		35.6
Internal Link Dist (m)	143.9			162.0			112.6			110.8		
Turn Bay Length (m)	35.0			30.0			45.0					
Base Capacity (vph)	390	3756		271	3413					412		352
Starvation Cap Reductn	0	130		0	348					0		0
Spillback Cap Reductn	0	21		0	0					0		0
Storage Cap Reductn	0	0		0	0					0		0
Reduced v/c Ratio	0.36	0.47		0.08	0.52					0.26		0.26

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 93 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 8.6
 Intersection LOS: A
 Intersection Capacity Utilization 60.6%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Commercial Access/Home Depot Access & Tecumseh Road



HCM 6th Signalized Intersection Summary
 3: Commercial Access/Home Depot Access & Tecumseh Major Retail Development, Tecumseh Road, Windsor TIS

2025 Background PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Volume (veh/h)	126	1479	52	21	1418	8	49	3	46	82	2	90
Future Volume (veh/h)	126	1479	52	21	1418	8	49	3	46	82	2	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1900	1900	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	140	1643	58	23	1576	9	54	3	51	91	2	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	0	0	1	0	0	0	0	1	0	0
Cap, veh/h	399	3563	126	288	3555	20	106	20	69	217	4	216
Arrive On Green	0.06	0.70	0.70	0.06	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1810	5062	179	1810	5280	30	416	145	502	1359	32	1580
Grp Volume(v), veh/h	140	1105	596	23	1024	561	108	0	91	0	102	
Grp Sat Flow(s),veh/h/ln	1810	1702	1837	1810	1716	1880	1062	0	0	1359	0	1612
Q Serve(g_s), s	2.3	15.6	15.7	0.4	0.0	0.0	5.6	0.0	0.0	0.0	0.0	6.4
Cycle Q Clear(g_c), s	2.3	15.6	15.7	0.4	0.0	0.0	12.0	0.0	0.0	9.1	0.0	6.4
Prop In Lane	1.00		0.10	1.00		0.02	0.50		0.47	1.00		0.98
Lane Grp Cap(c), veh/h	399	2396	1293	288	2310	1265	194	0	217	0	220	
V/C Ratio(X)	0.35	0.46	0.46	0.08	0.44	0.44	0.56	0.00	0.00	0.42	0.00	0.46
Avail Cap(c_a), veh/h	533	2396	1293	345	2310	1265	418	0	427	0	469	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	0.93	0.93	0.93	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.8	7.1	7.1	5.4	0.0	0.0	46.9	0.0	0.0	44.9	0.0	43.8
Incr Delay (d2), s/veh	0.4	0.4	0.8	0.1	0.6	1.0	2.5	0.0	0.0	1.3	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.3	0.5	0.0	0.3	0.7	3.8	0.0	0.0	3.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.1	7.6	7.9	5.5	0.6	1.0	49.3	0.0	0.0	46.2	0.0	45.3
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h	1841			1608			108			193		
Approach Delay, s/veh	7.4			0.8			49.3			45.7		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	82.4		20.0	10.9	79.1		20.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	57.0		32.0	15.0	49.0		32.0				
Max Q Clear Time (g_c+I1), s	2.4	17.7		14.0	4.3	2.0		11.1				
Green Ext Time (p_c), s	0.0	20.4		0.6	0.3	19.7		1.0				

Intersection Summary		
HCM 6th Ctrl Delay	7.8	
HCM 6th LOS	A	

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

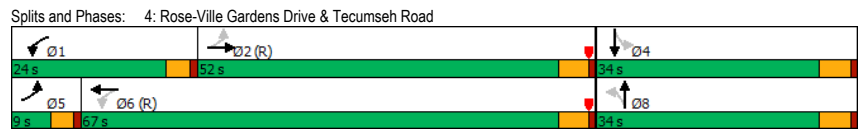
2025 Background PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Volume (vph)	30	1423	63	201	971	4	102	0	190	42	0	223
Future Volume (vph)	30	1423	63	201	971	4	102	0	190	42	0	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					1.00	0.98				
Frt	0.994				0.999		0.850				0.850	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5096	0	1752	5080	0	1787	1574	0	1770	1583	0
Fit Permitted	0.245			0.083			0.339			0.400		
Satd. Flow (perm)	456	5096	0	153	5080	0	636	1574	0	745	1583	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	8			1			281			161		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	186.0			273.0			289.9			219.2		
Travel Time (s)	11.2			16.4			20.9			15.8		
Confl. Peds. (#/hr)			13	13				3	3			
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	3%	2%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	33	1617	72	228	1103	4	116	0	216	46	0	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	1689	0	228	1107	0	116	216	0	46	242	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		8			4		4
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0		7.0	10.0		11.0	11.0		11.0		11.0
Minimum Split (s)	9.0	28.0		11.0	28.0		34.0	34.0		34.0		34.0
Total Split (s)	9.0	52.0		24.0	67.0		34.0	34.0		34.0		34.0
Total Split (%)	8.2%	47.3%		21.8%	60.9%		30.9%	30.9%		30.9%		30.9%
Maximum Green (s)	5.0	47.0		20.0	62.0		29.0	29.0		29.0		29.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.5	4.0		3.5	4.0		3.0	3.0		4.0		4.0
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)	7.0			7.0			7.0	7.0		7.0		7.0
Flash Dont Walk (s)	16.0			16.0			22.0	22.0		22.0		22.0
Pedestrian Calls (#/hr)	0			0			0	0		0		0
Act Effct Green (s)	68.4	61.3		80.8	73.7		20.2	20.2		20.2		20.2
Actuated g/C Ratio	0.62	0.56		0.73	0.67		0.18	0.18		0.18		0.18
v/c Ratio	0.09	0.59		0.71	0.33		1.00	0.42		0.34		0.57

Lanes, Volumes, Timings 2025 Background PM Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	3.1	7.5		31.4	14.4		126.7	3.7		34.7	12.5	
Queue Delay	0.0	0.1		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	3.1	7.6		31.4	14.4		126.7	3.7		34.7	12.5	
LOS	A	A		C	B		F	A		C	B	
Approach Delay	7.5			17.3			46.7			16.1		
Approach LOS	A			B			D			B		
Queue Length 50th (m)	0.7	17.2		36.3	55.0		26.4	0.0		8.8	15.2	
Queue Length 95th (m)	m1.5	128.7		m66.6	74.3		#50.5	6.5		15.9	4.5	
Internal Link Dist (m)	162.0			249.0			265.9			195.2		
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	356	2844		402	3402		167	621		196	535	
Starvation Cap Reductn	0	134		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.62		0.57	0.33		0.69	0.35		0.23	0.45	

Intersection Summary	
Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	102 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	15.2
Intersection Capacity Utilization:	78.9%
Analysis Period (min):	15
# 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.	



HCM 6th Signalized Intersection Summary 2025 Background PM Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↖ ↗			↖ ↗		
Traffic Volume (veh/h)	30	1423	63	201	971	4	102	0	190	42	0	223
Future Volume (veh/h)	30	1423	63	201	971	4	102	0	190	42	0	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1856	1870	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	33	1617	72	228	1103	4	116	0	216	46	0	242
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	3	2	2	1	2	1	2	2	2
Cap, veh/h	324	2727	121	284	3095	11	203	0	402	224	0	404
Arrive On Green	0.02	0.36	0.36	0.03	0.19	0.19	0.25	0.00	0.25	0.25	0.00	0.25
Sat Flow, veh/h	1781	5048	225	1767	5252	19	1147	0	1579	1163	0	1585
Grp Volume(v), veh/h	33	1099	590	228	715	392	116	0	216	46	0	242
Grp Sat Flow(s), veh/h/ln	1781	1716	1842	1767	1702	1867	1147	0	1579	1163	0	1585
Q Serve(g_s), s	0.9	28.6	28.6	5.7	20.0	20.0	10.9	0.0	13.0	3.9	0.0	14.8
Cycle Q Clear(g_c), s	0.9	28.6	28.6	5.7	20.0	20.0	25.7	0.0	13.0	16.9	0.0	14.8
Prop In Lane	1.00		0.12	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	1853	995	284	2006	1100	203	0	402	224	0	404
V/C Ratio(X)	0.10	0.59	0.59	0.80	0.36	0.36	0.57	0.00	0.54	0.21	0.00	0.60
Avail Cap(c_a), veh/h	354	1853	995	468	2006	1100	214	0	416	235	0	418
HCM Platoon Ratio	0.67	0.67	0.67	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.6	25.3	25.3	21.4	26.3	26.3	47.4	0.0	35.4	42.7	0.0	36.1
Incr Delay (d2), s/veh	0.1	1.3	2.3	4.8	0.4	0.7	3.3	0.0	1.3	0.6	0.0	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	0.1	7.2	8.1	0.7	2.9	3.4	4.1	0.0	5.8	1.4	0.0	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.7	26.5	27.6	26.2	26.6	26.9	50.6	0.0	36.7	43.3	0.0	38.8
LnGrp LOS	B	C	C	C	C	C	D	A	D	D	A	D
Approach Vol, veh/h	1722			1335			332			288		
Approach Delay, s/veh	26.6			26.6			41.5			39.5		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	64.4		33.0	7.2	69.8		33.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	20.0	47.0		29.0	5.0	62.0		29.0				
Max Q Clear Time (g_c+I1), s	7.7	30.6		18.9	2.9	22.0		27.7				
Green Ext Time (p_c), s	0.9	13.3		1.8	0.0	15.5		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	214	1382	140	176	1104	208	183	90	116	171	75	108
Future Volume (vph)	214	1382	140	176	1104	208	183	90	116	171	75	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0	0.0	40.0	0.0	25.0	0.0	20.0	0.0	20.0	0.0	0.0	0.0
Storage Lanes	1	0	1	0	1	0	1	0	1	0	1	0
Taper Length (m)	70.0		50.0		100.0		50.0		100.0		50.0	
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	1.00		0.98		0.98		0.98		0.98	
Frt		0.986		0.976		0.916		0.911		0.911		0.911
Fit Protected	0.950		0.950		0.950		0.950		0.950		0.950	
Satd. Flow (prot)	1787	5004	0	1805	4979	0	1787	1733	0	1805	1681	0
Fit Permitted	0.110		0.081		0.502		0.455		0.455		0.455	
Satd. Flow (perm)	207	5004	0	154	4979	0	926	1733	0	864	1681	0
Right Turn on Red		Yes		Yes		Yes		Yes		Yes		Yes
Satd. Flow (RTOR)	19		42		61		68		68		68	
Link Speed (k/h)	60		60		50		50		50		50	
Link Distance (m)	273.0		268.3		231.1		151.2		151.2		151.2	
Travel Time (s)	16.4		16.1		16.6		10.9		10.9		10.9	
Conf. Peds. (#/hr)		6	6		25		25		25		25	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	1%	0%	2%	0%	1%	0%	0%	0%	0%	1%
Adj. Flow (vph)	238	1536	156	196	1227	231	203	100	129	190	83	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	1692	0	196	1458	0	203	229	0	190	203	0
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6	4	4	8	8	8	8	8	8
Permitted Phases	2		6		4		8		8		8	
Detector Phase	5	2	1	6	4	4	8	8	8	8	8	8
Switch Phase												
Minimum Initial (s)	8.0	10.0	8.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	12.0	35.0	12.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	22.0	52.0	19.0	49.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	20.0%	47.3%	17.3%	44.5%	35.5%	35.5%	35.5%	35.5%	35.5%	35.5%	35.5%	35.5%
Maximum Green (s)	18.0	47.0	15.0	44.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None	None	None	None
Walk Time (s)	7.0		7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	23.0		23.0		23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Pedestrian Calls (#/hr)	0		0		0	0	0	0	0	0	0	0
Act Effct Green (s)	71.6	56.6	68.1	54.9	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1
Actuated g/C Ratio	0.65	0.51	0.62	0.50	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.71	0.65	0.71	0.58	0.89	0.48	0.89	0.44	0.89	0.44	0.89	0.44

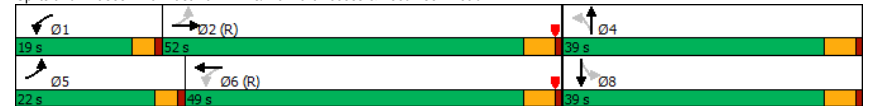
Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	49.3	5.7	40.8	18.3	76.2	27.9	78.3	24.5	78.3	24.5	78.3	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	5.7	40.8	18.3	76.2	27.9	78.3	24.5	78.3	24.5	78.3	24.5
LOS	D	A	D	B	E	C	E	C	E	C	E	C
Approach Delay		11.1		20.9		50.6		50.5		50.5		50.5
Approach LOS		B		C		D		D		D		D
Queue Length 50th (m)	29.7	29.0	33.2	52.6	43.7	31.7	41.0	24.8	41.0	24.8	41.0	24.8
Queue Length 95th (m)	62.3	17.9	55.1	79.9	75.4	51.6	72.8	43.5	72.8	43.5	72.8	43.5
Internal Link Dist (m)		249.0		244.3		207.1		127.2		127.2		127.2
Turn Bay Length (m)	65.0		40.0		25.0		20.0		20.0		20.0	
Base Capacity (vph)	396	2585	323	2505	286	577	267	566	267	566	267	566
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.65	0.61	0.58	0.71	0.40	0.71	0.36	0.71	0.36	0.71	0.36

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 22.2
 Intersection Capacity Utilization 84.9%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2025 Background PM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑			↑↑		
Traffic Volume (veh/h)	214	1382	140	176	1104	208	183	90	116	171	75	108
Future Volume (veh/h)	214	1382	140	176	1104	208	183	90	116	171	75	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1885	1900	1870	1900	1885	1885	1900	1900	1885	1885
Adj Flow Rate, veh/h	238	1536	156	196	1227	231	203	100	129	190	83	120
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	1	0	2	0	1	1	0	0	0	1
Cap, veh/h	312	2368	240	343	2090	393	299	218	281	279	204	295
Arrive On Green	0.18	1.00	1.00	0.02	0.16	0.16	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1795	4707	478	1810	4311	812	1171	736	949	1153	691	999
Grp Volume(v), veh/h	238	1110	582	196	969	489	203	0	229	190	0	203
Grp Sat Flow(s),veh/h/ln	1795	1702	1781	1810	1702	1718	1171	0	1685	1153	0	1690
Q Serve(g_s), s	7.5	0.0	0.0	5.7	29.0	29.0	18.5	0.0	12.2	17.7	0.0	10.6
Cycle Q Clear(g_c), s	7.5	0.0	0.0	5.7	29.0	29.0	29.1	0.0	12.2	29.9	0.0	10.6
Prop In Lane	1.00		0.27	1.00		0.47	1.00		0.56	1.00		0.59
Lane Grp Cap(c), veh/h	312	1712	896	343	1650	833	299	0	498	279	0	500
V/C Ratio(X)	0.76	0.65	0.65	0.57	0.59	0.59	0.68	0.00	0.46	0.68	0.00	0.41
Avail Cap(c_a), veh/h	440	1712	896	455	1650	833	315	0	521	294	0	522
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	0.79	0.79	0.79	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	0.0	12.6	36.0	36.0	42.6	0.0	31.6	43.7	0.0	31.0
Incr Delay (d2), s/veh	3.9	1.5	2.8	1.2	1.2	2.4	6.2	0.0	0.9	6.7	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.6	1.3	1.1	10.7	11.1	7.1	0.0	5.5	6.8	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	1.5	2.8	13.8	37.2	38.4	48.9	0.0	32.5	50.5	0.0	31.8
LnGrp LOS	C	A	A	B	D	D	D	A	C	D	A	C
Approach Vol, veh/h	1930			1654			432			393		
Approach Delay, s/veh	4.4			34.8			40.2			40.8		
Approach LOS	A			C			D			D		
Timer - Assigned Phs	1	2	4	5	6	8						
Phs Duration (G+Y+Rc), s	12.1	60.3	37.5	14.1	58.3	37.5						
Change Period (Y+Rc), s	4.0	5.0	5.0	4.0	5.0	5.0						
Max Green Setting (Gmax), s	15.0	47.0	34.0	18.0	44.0	34.0						
Max Q Clear Time (g_c+1), s	7.7	2.0	31.1	9.5	31.0	31.9						
Green Ext Time (p_c), s	0.4	28.8	1.0	0.6	10.0	0.7						

Intersection Summary		
HCM 6th Ctrl Delay	22.5	
HCM 6th LOS	C	

Lanes, Volumes, Timings

2025 Background PM Peak Hour

7: Lauzon Parkway & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑			↑↑		
Traffic Volume (vph)	208	1262	201	170	878	79	242	715	221	140	429	70
Future Volume (vph)	208	1262	201	170	878	79	242	715	221	140	429	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	0.99		1.00		0.98
Frt		0.979			0.988			0.965				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	5043	0	1805	5061	0	1787	4893	0	1656	5136	1553
Fit Permitted	0.156			0.104			0.408			0.149		
Satd. Flow (perm)	284	5043	0	197	5061	0	764	4893	0	259	5136	1521
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			14			70				109
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Confl. Peds. (#/hr)	21		19	19		21	8		9	9		8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	2%	0%	0%	12%	1%	2%	1%	9%	1%	4%
Adj. Flow (vph)	229	1387	221	187	965	87	266	786	243	154	471	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1608	0	187	1052	0	266	1029	0	154	471	77
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	36.0		11.0	36.0	36.0
Total Split (s)	18.0	44.0		14.0	40.0		16.0	36.0		16.0	36.0	36.0
Total Split (%)	16.4%	40.0%		12.7%	36.4%		14.5%	32.7%		14.5%	32.7%	32.7%
Maximum Green (s)	14.0	38.0		10.0	34.0		12.0	30.0		12.0	30.0	30.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			6.0			6.0	6.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	56.1	41.4		50.2	38.5		41.9	27.9		39.9	26.9	26.9
Actuated g/C Ratio	0.51	0.38		0.46	0.35		0.38	0.25		0.36	0.24	0.24
v/c Ratio	0.73	0.84		0.81	0.59		0.66	0.80		0.66	0.38	0.17

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

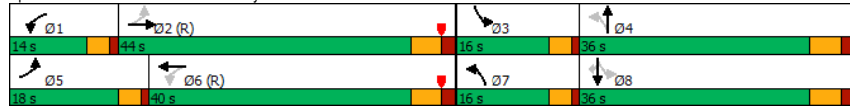
2025 Background PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	45.2	23.4		50.0	31.6		31.5	40.7		43.8	29.1	2.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	45.2	23.4		50.0	31.6		31.5	40.7		43.8	29.1	2.3
LOS	D	C		D	C		C	D		D	C	A
Approach Delay	26.1			34.4			38.8			29.4		
Approach LOS	C			C			D			C		
Queue Length 50th (m)	29.9	96.8		25.5	74.1		39.3	73.1		21.1	23.4	0.9
Queue Length 95th (m)	m#62.7	#103.8		#64.7	90.5		59.5	89.5		47.7	29.4	2.7
Internal Link Dist (m)	244.3			264.0			184.8			206.9		
Turn Bay Length (m)	90.0			120.0			90.0			70.0		
Base Capacity (vph)	332	1917		236	1778		402	1385		248	1400	494
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	0.69	0.84		0.79	0.59		0.66	0.74		0.62	0.34	0.16

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	7 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.84
Intersection Signal Delay:	31.8
Intersection LOS:	C
Intersection Capacity Utilization:	84.0%
ICU Level of Service:	E
Analysis Period (min):	15
# 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: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

7: Lauzon Parkway & Tecumseh Road

2025 Background PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↔			↔ ↔			↔ ↔			↔ ↔		
Traffic Volume (veh/h)	208	1262	201	170	878	79	242	715	221	140	429	70
Future Volume (veh/h)	208	1262	201	170	878	79	242	715	221	140	429	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1900	1870	1900	1900	1722	1885	1870	1885	1767	1885	1841
Adj Flow Rate, veh/h	229	1387	221	187	965	87	266	786	243	154	471	77
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	0	2	0	0	12	1	2	1	9	1	4
Cap, veh/h	354	1777	283	243	1830	165	387	987	302	244	1200	359
Arrive On Green	0.03	0.13	0.13	0.08	0.38	0.38	0.11	0.26	0.26	0.03	0.08	0.08
Sat Flow, veh/h	1753	4499	716	1810	4836	435	1795	3863	1183	1682	5147	1542
Grp Volume(v), veh/h	229	1066	542	187	689	363	266	692	337	154	471	77
Grp Sat Flow(s), veh/h/ln	1753	1729	1757	1810	1729	1813	1795	1702	1642	1682	1716	1542
Q Serve(g_s), s	8.4	32.8	32.9	6.9	17.0	17.1	12.0	20.9	21.2	7.5	9.6	5.2
Cycle Q Clear(g_c), s	8.4	32.8	32.9	6.9	17.0	17.1	12.0	20.9	21.2	7.5	9.6	5.2
Prop In Lane	1.00		0.41	1.00		0.24	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	354	1366	694	243	1308	686	387	869	419	244	1200	359
V/C Ratio(X)	0.65	0.78	0.78	0.77	0.53	0.53	0.69	0.80	0.80	0.63	0.39	0.21
Avail Cap(c_a), veh/h	406	1366	694	261	1308	686	387	928	448	282	1404	421
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.68	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	21.2	43.2	43.2	24.9	26.5	26.6	28.6	38.3	38.4	32.2	43.4	41.3
Incr Delay (d2), s/veh	2.0	3.1	5.9	12.3	1.5	2.9	5.0	4.8	10.0	3.4	0.2	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	2.8	14.9	15.8	3.4	6.5	7.3	5.8	9.4	10.1	3.5	4.7	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.2	46.3	49.2	37.3	28.1	29.5	33.7	43.0	48.4	35.7	43.6	41.7
LnGrp LOS	C	D	D	D	C	C	C	D	D	D	D	D
Approach Vol, veh/h	1837			1239			1295			702		
Approach Delay, s/veh	44.3			29.9			42.5			41.6		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.9	49.5	13.6	34.1	14.7	47.6	16.0	31.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	38.0	12.0	30.0	14.0	34.0	12.0	30.0				
Max Q Clear Time (g_c+I1), s	8.9	34.9	9.5	23.2	10.4	19.1	14.0	11.6				
Green Ext Time (p_c), s	0.1	2.8	0.1	4.3	0.3	8.6	0.0	4.4				

Intersection Summary

HCM 6th Ctrl Delay	39.9
HCM 6th LOS	D

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2025 Background PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	49	24	138	42	144	38	765	190	124	465	273
Future Volume (vph)	201	49	24	138	42	144	38	765	190	124	465	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99	0.99		0.99		0.98	1.00		0.98	1.00	0.99	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1772	0	1570	1592	0	1671	3610	1455	1703	4832	0
Flt Permitted	0.530			0.705			0.334			0.250		
Satd. Flow (perm)	1001	1772	0	1155	1592	0	587	3610	1423	448	4832	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			158				209			165
Link Speed (k/h)		50			50			60				60
Link Distance (m)		646.8			106.2			230.9				292.9
Travel Time (s)		46.6			7.6			13.9				17.6
Confl. Peds. (#/hr)	7		8	8		7	1		1	1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	4%	15%	0%	5%	8%	0%	11%	6%	1%	0%
Adj. Flow (vph)	221	54	26	152	46	158	42	841	209	136	511	300
Shared Lane Traffic (%)												
Lane Group Flow (vph)	221	80	0	152	204	0	42	841	209	136	811	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		36.0	36.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	47.0	47.0		47.0	47.0		11.0	47.0	47.0	16.0	52.0	
Total Split (%)	42.7%	42.7%		42.7%	42.7%		10.0%	42.7%	42.7%	14.5%	47.3%	
Maximum Green (s)	41.0	41.0		41.0	41.0		7.0	41.0	41.0	12.0	46.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	28.2	28.2		28.2	28.2		65.6	56.6	56.6	71.2	63.2	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.60	0.51	0.51	0.65	0.57	
v/c Ratio	0.86	0.17		0.51	0.39		0.10	0.45	0.25	0.35	0.29	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2025 Background PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	67.5	20.8		39.6	10.0		7.0	11.5	1.1	11.3	11.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	67.5	20.8		39.6	10.0		7.0	11.5	1.1	11.3	11.3	
LOS	E	C		D	B		A	B	A	B	B	
Approach Delay		55.1			22.7			9.3				11.3
Approach LOS		E			C			A				B
Queue Length 50th (m)	47.7	9.5		29.4	8.0		2.1	32.7	0.4	10.7	27.7	
Queue Length 95th (m)	70.0	19.2		44.3	23.6		m3.8	40.1	m2.4	24.0	44.6	
Internal Link Dist (m)		622.8			82.2			206.9				268.9
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	373	676		430	692		419	1858	833	428	2844	
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	0.59	0.12		0.35	0.29		0.10	0.45	0.25	0.32	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 79 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Red

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 16.9

Intersection LOS: B

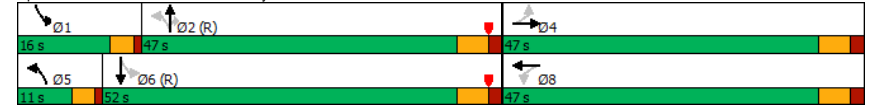
Intersection Capacity Utilization 75.6%

ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

2025 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	201	49	24	138	42	144	38	765	190	124	465	273
Future Volume (veh/h)	201	49	24	138	42	144	38	765	190	124	465	273
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1841	1678	1900	1826	1781	1900	1737	1811	1885	1900
Adj Flow Rate, veh/h	221	54	26	152	46	158	42	841	209	136	511	300
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	4	15	0	5	8	0	11	6	1	0
Cap, veh/h	317	372	179	389	115	395	390	1747	712	418	1717	799
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.09	0.97	0.97	0.06	0.50	0.50
Sat Flow, veh/h	1192	1208	582	1175	374	1283	1697	3610	1470	1725	3431	1596
Grp Volume(v), veh/h	221	0	80	152	0	204	42	841	209	136	511	300
Grp Sat Flow(s),veh/h/ln	1192	0	1790	1175	0	1657	1697	1805	1470	1725	1716	1596
Q Serve(g_s), s	19.8	0.0	3.6	11.8	0.0	10.7	1.3	1.5	0.7	4.3	9.6	12.7
Cycle Q Clear(g_c), s	30.5	0.0	3.6	15.4	0.0	10.7	1.3	1.5	0.7	4.3	9.6	12.7
Prop In Lane	1.00		0.32	1.00		0.77	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	317	0	551	389	0	510	390	1747	712	418	1717	799
V/C Ratio(X)	0.70	0.00	0.15	0.39	0.00	0.40	0.11	0.48	0.29	0.33	0.30	0.38
Avail Cap(c_a), veh/h	394	0	667	465	0	618	420	1747	712	498	1717	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.52	0.52	0.52	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	0.0	27.6	33.1	0.0	30.0	12.4	0.9	0.9	12.3	16.1	16.9
Incr Delay (d2), s/veh	5.0	0.0	0.2	0.9	0.0	0.7	0.1	0.5	0.5	0.4	0.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.4	0.0	1.6	3.8	0.0	4.6	0.2	0.4	0.3	0.8	2.3	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	27.7	34.1	0.0	30.8	12.5	1.4	1.5	12.7	16.6	18.2
LnGrp LOS	D	A	C	C	A	C	B	A	A	B	B	B
Approach Vol, veh/h	301			356			1092			947		
Approach Delay, s/veh	41.9			32.2			1.9			16.5		
Approach LOS	D			C			A			B		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	10.9	59.2	39.9		9.1	61.1	39.9					
Change Period (Y+Rc), s	4.0	6.0	6.0		4.0	6.0	6.0					
Max Green Setting (Gmax), s	12.0	41.0	41.0		7.0	46.0	41.0					
Max Q Clear Time (g_c+I1), s	6.3	3.5	32.5		3.3	14.7	17.4					
Green Ext Time (p_c), s	0.2	13.8	1.4		0.0	9.9	3.3					

Intersection Summary		
HCM 6th Ctrl Delay	15.5	
HCM 6th LOS	B	

Lanes, Volumes, Timings

9: Rose-Ville Gardens Drive & Home Depot Access

2025 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	42	65	4	30	200	4
Future Volume (vph)	42	65	4	30	200	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.918				0.998	
Fit Protected	0.981		0.950			
Satd. Flow (prot)	1678	0	1770	1863	1859	0
Fit Permitted	0.981		0.950			
Satd. Flow (perm)	1678	0	1770	1863	1859	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	140.9			219.2	133.7	
Travel Time (s)	10.1			15.8	9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	71	4	33	217	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	4	33	221	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.8%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC 2025 Background PM Peak Hour
 9: Rose-Ville Gardens Drive & Home Depot Access (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑		↑	↑	↑	
Traffic Vol, veh/h	42	65	4	30	200	4
Future Vol, veh/h	42	65	4	30	200	4
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	71	4	33	217	4
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	260	219	221	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	41	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	729	821	1348	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	727	821	1348	-	-	-
Mov Cap-2 Maneuver	723	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	10.4	0.9	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1348	-	780	-	-	
HCM Lane V/C Ratio	0.003	-	0.149	-	-	
HCM Control Delay (s)	7.7	-	10.4	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.5	-	-	

Lanes, Volumes, Timings 2025 Background PM Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	↑
Traffic Volume (vph)	0	0	204	0	0	72
Future Volume (vph)	0	0	204	0	0	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit						0.850
Fit Protected			0.950			
Satd. Flow (prot)	1863	0	1770	1863	1863	1583
Fit Permitted			0.950			
Satd. Flow (perm)	1863	0	1770	1863	1863	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	51.5			646.8	133.7	
Travel Time (s)	3.7			46.6	9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	222	0	0	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	222	0	0	78
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC 2025 Background PM Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	7.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	204	0	0	72
Future Vol, veh/h	0	0	204	0	0	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	222	0	0	78

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1	0	445	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	444	-
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	-	-	1622	-	571	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	646	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1622	-	493	1084
Mov Cap-2 Maneuver	-	-	-	-	502	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	557	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.6	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	1084	-	-	1622	-
HCM Lane V/C Ratio	-	0.072	-	-	0.137	-
HCM Control Delay (s)	0	8.6	-	-	7.6	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0.2	-	-	0.5	-

Lanes, Volumes, Timings

2025 Background Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔	↔		↔	↔↔↔	↔	↔↔↔	
Traffic Volume (vph)	28	1028	108	171	1128	180	141	74	151	162	109	21
Future Volume (vph)	28	1028	108	171	1128	180	141	74	151	162	109	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00		0.98	0.99		1.00
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5041	0	1770	3574	1599	1770	3574	1615	1805	3453	0
Fit Permitted	0.202			0.178			0.667			0.705		
Satd. Flow (perm)	383	5041	0	331	3574	1564	1238	3574	1585	1332	3453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	18					186			156			21
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	230.2			268.2			222.3			200.9		
Travel Time (s)	13.8			16.1			16.0			14.5		
Confl. Peds. (#/hr)	11		18	18		11	4		6	6		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	3%	2%	1%	1%	2%	1%	0%	0%	1%	5%
Adj. Flow (vph)	29	1060	111	176	1163	186	145	76	156	167	112	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	1171	0	176	1163	186	145	76	156	167	134	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	42.0		18.0	49.0	49.0	13.0	35.0	35.0	13.0	35.0	
Total Split (%)	10.2%	38.9%		16.7%	45.4%	45.4%	12.0%	32.4%	32.4%	12.0%	32.4%	
Maximum Green (s)	7.0	37.0		14.0	44.0	44.0	9.0	30.0	30.0	9.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	67.5	59.5		75.1	67.6	67.6	20.8	10.8	10.8	20.8	10.8	
Actuated g/C Ratio	0.62	0.55		0.70	0.63	0.63	0.19	0.10	0.10	0.19	0.10	
v/c Ratio	0.09	0.42		0.47	0.52	0.18	0.51	0.21	0.52	0.56	0.37	

Lanes, Volumes, Timings

2025 Background Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

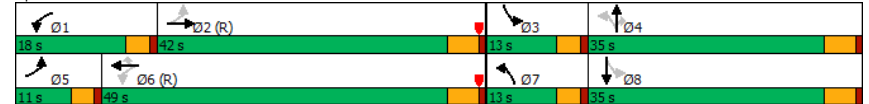
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	6.5	15.0		15.4	2.4	0.4	42.1	45.7	13.8	43.8	40.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.5	15.0		15.4	2.4	0.4	42.1	45.7	13.8	43.8	40.8	
LOS	A	B		B	A	A	D	D	B	D	D	
Approach Delay		14.8			3.7			31.1				42.5
Approach LOS		B			A			C				D
Queue Length 50th (m)	1.7	50.9		12.4	0.0	0.0	27.4	8.3	0.0	31.9	12.5	
Queue Length 95th (m)	4.9	71.0		20.1	0.1	0.0	44.6	15.4	19.3	50.8	21.9	
Internal Link Dist (m)		206.2			244.2			198.3				176.9
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	331	2787		416	2235	1047	283	992	552	296	974	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.09	0.42		0.42	0.52	0.18	0.51	0.08	0.28	0.56	0.14	

Intersection Summary

Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	14.1
Intersection LOS:	B
Intersection Capacity Utilization:	74.0%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary
1: Jefferson Boulevard & Tecumseh Road

2025 Background Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

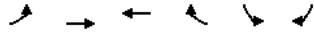
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (veh/h)	28	1028	108	171	1128	180	141	74	151	162	109	21
Future Volume (veh/h)	28	1028	108	171	1128	180	141	74	151	162	109	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1856	1870	1885	1885	1870	1885	1900	1900	1885	1826
Adj Flow Rate, veh/h	29	1060	111	176	1163	186	145	76	156	167	112	22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	3	2	1	1	2	1	0	0	1	5
Cap, veh/h	353	2517	263	375	2010	888	361	542	241	371	453	87
Arrive On Green	0.04	0.53	0.53	0.13	1.00	1.00	0.08	0.15	0.15	0.08	0.15	0.15
Sat Flow, veh/h	1810	4727	494	1781	3582	1582	1781	3582	1591	1810	2993	572
Grp Volume(v), veh/h	29	769	402	176	1163	186	145	76	156	167	66	68
Grp Sat Flow(s),veh/h/ln	1810	1716	1790	1781	1791	1582	1781	1791	1591	1810	1791	1774
Q Serve(g_s), s	0.8	14.6	14.6	4.8	0.0	0.0	7.3	2.0	10.0	8.4	3.5	3.7
Cycle Q Clear(g_c), s	0.8	14.6	14.6	4.8	0.0	0.0	7.3	2.0	10.0	8.4	3.5	3.7
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	353	1827	953	375	2010	888	361	542	241	371	271	268
V/C Ratio(X)	0.08	0.42	0.42	0.47	0.58	0.21	0.40	0.14	0.65	0.45	0.24	0.25
Avail Cap(c_a), veh/h	402	1827	953	488	2010	888	361	995	442	371	497	493
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.1	15.2	15.2	10.2	0.0	0.0	34.5	39.7	43.1	34.9	40.4	40.5
Incr Delay (d2), s/veh	0.1	0.7	1.4	0.6	0.8	0.3	0.7	0.2	4.1	0.9	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	8.2	8.7	2.3	0.4	0.2	5.4	1.5	7.0	6.3	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.2	15.9	16.6	10.7	0.8	0.3	35.2	39.9	47.3	35.7	41.0	41.2
LnGrp LOS	B	B	B	B	A	A	D	D	D	D	D	D
Approach Vol, veh/h	1200			1525			377			301		
Approach Delay, s/veh	16.0			1.9			41.2			38.1		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	62.5	13.0	21.3	8.1	65.6	13.0	21.3				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	14.0	37.0	9.0	30.0	7.0	44.0	9.0	30.0				
Max Q Clear Time (g_c+I1), s	6.8	16.6	10.4	12.0	2.8	2.0	9.3	5.7				
Green Ext Time (p_c), s	0.4	11.7	0.0	1.6	0.0	20.7	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay	14.4											
HCM 6th LOS	B											

Lanes, Volumes, Timings
2: Tecumseh Road & Catherine Street (N/S)

2025 Background Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	0	1340	1479	0	0	0
Future Volume (vph)	0	1340	1479	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1863	5085	5085	0	1863	1863
Fit Permitted						
Satd. Flow (perm)	1863	5085	5085	0	1863	1863
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
Link Speed (k/h)		50	50		50	
Link Distance (m)		268.2	169.1		273.8	
Travel Time (s)		19.3	12.2		19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1457	1608	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1457	1608	0	0	0
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	11.0	85.0	74.0		23.0	23.0
Total Split (%)	10.2%	78.7%	68.5%		21.3%	21.3%
Maximum Green (s)	7.0	80.0	69.0		18.0	18.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		47.9	47.9			
Actuated g/C Ratio		0.44	0.44			
v/c Ratio		0.65	0.71			
Control Delay		32.6	33.2			
Queue Delay		0.0	0.0			
Total Delay		32.6	33.2			

Lanes, Volumes, Timings
 2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

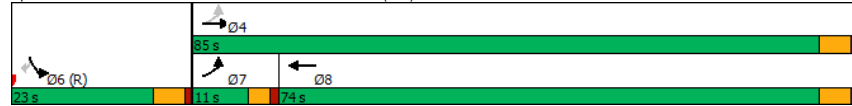


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		C	C			
Approach Delay		32.6	33.2			
Approach LOS		C	C			
Queue Length 50th (m)		91.8	112.7			
Queue Length 95th (m)		101.4	117.9			
Internal Link Dist (m)		244.2	145.1	249.8		
Turn Bay Length (m)						
Base Capacity (vph)		3766	3248			
Starvation Cap Reductn		0	92			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.39	0.51			

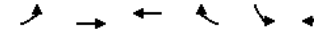
Intersection Summary

Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	32.9
Intersection LOS:	C
Intersection Capacity Utilization:	32.7%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary
 2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗↗↗	↗↗↗		↘	↗
Traffic Volume (veh/h)	0	1340	1479	0	0	0
Future Volume (veh/h)	0	1340	1479	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1457	1608	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	137	2252	2252	0	831	739
Arrive On Green	0.00	0.88	0.59	0.00	0.00	0.00
Sat Flow, veh/h	1781	5274	5443	0	1781	1585
Grp Volume(v), veh/h	0	1457	1608	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	8.5	24.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.5	24.2	0.0	0.0	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	137	2252	2252	0	831	739
V/C Ratio(X)	0.00	0.65	0.71	0.00	0.00	0.00
Avail Cap(c_a), veh/h	251	3782	3262	0	831	739
HCM Platoon Ratio	2.00	2.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	0.00	0.89	0.92	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.1	17.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	2.5	10.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.3	17.9	0.0	0.0	0.0
LnGrp LOS	A	A	B	A	A	A
Approach Vol, veh/h		1457	1608		0	
Approach Delay, s/veh		4.3	17.9		0.0	
Approach LOS		A	B			

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	52.6	55.4	0.0	52.6
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	80.0	18.0	7.0	69.0
Max Q Clear Time (g_c+I1), s	10.5	0.0	0.0	26.2
Green Ext Time (p_c), s	21.6	0.0	0.0	21.4

Intersection Summary

HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings 2025 Background Saturday Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑				↑		↑	↓	↓
Traffic Volume (vph)	159	1335	33	47	1201	9	53	10	47	121	10	128
Future Volume (vph)	159	1335	33	47	1201	9	53	10	47	121	10	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00		0.99		1.00		0.99
Frt		0.996			0.999			0.943				0.861
Fit Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1787	5162	0	1805	5130	0	0	1738	0	1787	1584	0
Fit Permitted	0.169			0.156				0.648		0.646		
Satd. Flow (perm)	318	5162	0	296	5130	0	0	1153	0	1213	1584	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			1			36				135
Link Speed (k/h)		60			60			50				50
Link Distance (m)		169.1			186.0			136.6				148.8
Travel Time (s)		10.1			11.2			9.8				10.7
Conf. Peds. (#/hr)	5		8	8		5	3		2	2		3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	167	1405	35	49	1264	9	56	11	49	127	11	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	1440	0	49	1273	0	0	116	0	127	146	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6				4			8	
Detector Phase	5	2		1	6			4	4		8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	40.0		11.0	40.0		35.0	35.0		35.0	35.0	
Total Split (s)	20.0	58.0		11.0	49.0		39.0	39.0		39.0	39.0	
Total Split (%)	18.5%	53.7%		10.2%	45.4%		36.1%	36.1%		36.1%	36.1%	
Maximum Green (s)	16.0	53.0		7.0	44.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		28.0			28.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	80.5	72.1		75.5	67.5		17.1	17.1		17.1	17.1	
Actuated g/C Ratio	0.75	0.67		0.70	0.62		0.16	0.16		0.16	0.16	
v/c Ratio	0.46	0.42		0.16	0.40		0.54	0.66		0.66	0.40	

Lanes, Volumes, Timings 2025 Background Saturday Peak Hour

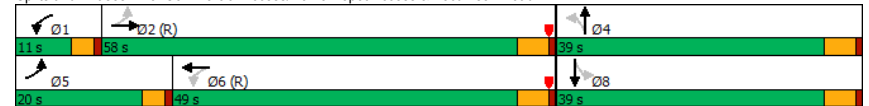
3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	9.6	4.9		2.6	4.4					37.2	58.3	11.1
Queue Delay	0.0	0.3		0.0	0.0					0.0	0.0	0.0
Total Delay	9.6	5.1		2.6	4.4					37.2	58.3	11.1
LOS	A	A		A	A					D	E	B
Approach Delay		5.6			4.4					37.2		33.1
Approach LOS		A			A					D		C
Queue Length 50th (m)	10.2	3.4		0.5	13.7					16.3	26.8	2.1
Queue Length 95th (m)	7.0	101.2		m2.2	25.8					32.9	44.4	18.5
Internal Link Dist (m)		145.1			162.0					112.6		124.8
Turn Bay Length (m)	35.0			30.0							45.0	
Base Capacity (vph)	458	3445		304	3207					387	381	591
Starvation Cap Reductn	0	1145		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	0.36	0.63		0.16	0.40					0.30	0.33	0.25

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 5 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 8.5
 Intersection LOS: A
 Intersection Capacity Utilization 74.7%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Commercial Access/Home Depot Access & Tecumseh Road



HCM 6th Signalized Intersection Summary
 2025 Background Saturday Peak Hour
 3: Commercial Access/Home Depot Access & Tecumseh Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Volume (veh/h)	159	1335	33	47	1201	9	53	10	47	121	10	128
Future Volume (veh/h)	159	1335	33	47	1201	9	53	10	47	121	10	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1900	1900	1900	1885	1900	1900	1900	1885	1900	1870	1870
Adj Flow Rate, veh/h	167	1405	35	49	1264	9	56	11	49	127	11	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	0	0	0	1	0	0	0	0	1	0	2
Cap, veh/h	460	3374	84	313	3342	24	112	32	69	248	21	258
Arrive On Green	0.02	0.21	0.21	0.10	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1795	5204	130	1810	5272	38	363	188	403	1349	122	1499
Grp Volume(v), veh/h	167	934	506	49	823	450	116	0	0	127	0	146
Grp Sat Flow(s),veh/h/ln	1795	1729	1876	1810	1716	1878	954	0	0	1349	0	1621
Q Serve(g_s), s	3.3	25.2	25.2	0.9	0.0	0.0	5.8	0.0	0.0	0.0	0.0	8.9
Cycle Q Clear(g_c), s	3.3	25.2	25.2	0.9	0.0	0.0	14.6	0.0	0.0	13.4	0.0	8.9
Prop In Lane	1.00		0.07	1.00		0.02	0.48		0.42	1.00		0.92
Lane Grp Cap(c), veh/h	460	2242	1216	313	2175	1191	214	0	0	248	0	279
V/C Ratio(X)	0.36	0.42	0.42	0.16	0.38	0.38	0.54	0.00	0.00	0.51	0.00	0.52
Avail Cap(c_a), veh/h	610	2242	1216	340	2175	1191	418	0	0	441	0	510
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	0.92	0.92	0.92	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	24.8	24.8	8.0	0.0	0.0	44.1	0.0	0.0	42.6	0.0	40.7
Incr Delay (d2), s/veh	0.4	0.4	0.8	0.3	0.5	0.8	3.0	0.0	0.0	2.3	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	16.0	17.3	0.4	0.3	0.5	5.4	0.0	0.0	5.7	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	25.2	25.6	8.3	0.5	0.8	47.2	0.0	0.0	44.9	0.0	42.8
LnGrp LOS	A	C	C	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h	1607			1322			116			273		
Approach Delay, s/veh	23.3			0.9			47.2			43.8		
Approach LOS	C			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	75.0		23.6	11.0	73.5		23.6				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	53.0		34.0	16.0	44.0		34.0				
Max Q Clear Time (g_c+1), s	2.9	27.2		16.6	5.3	2.0		15.4				
Green Ext Time (p_c), s	0.0	16.6		0.8	0.5	19.0		2.1				

Intersection Summary		
HCM 6th Ctrl Delay	16.9	
HCM 6th LOS	B	

Lanes, Volumes, Timings
 2025 Background Saturday Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Volume (vph)	30	1285	55	162	1229	5	100	0	157	60	0	182
Future Volume (vph)	30	1285	55	162	1229	5	100	0	157	60	0	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.99	0.98				
Frt		0.994			0.999			0.850				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5098	0	1787	5181	0	1787	1566	0	1770	1583	0
Fit Permitted	0.200			0.141			0.399			0.494		
Satd. Flow (perm)	373	5098	0	265	5181	0	746	1566	0	920	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1			251				164
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				221.3
Travel Time (s)		11.2			16.4			20.9				15.9
Confl. Peds. (#/hr)			9		9			7			8	
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	1%	0%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	33	1339	57	169	1280	5	104	0	164	65	0	198
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	1396	0	169	1285	0	104	164	0	65	198	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		1	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	11.0			11.0	11.0		11.0	11.0
Minimum Split (s)	11.0	28.0		11.0	28.0			34.0	34.0		34.0	34.0
Total Split (s)	11.0	51.0		21.0	61.0			36.0	36.0		36.0	36.0
Total Split (%)	10.2%	47.2%		19.4%	56.5%			33.3%	33.3%		33.3%	33.3%
Maximum Green (s)	7.0	46.0		17.0	56.0			31.0	31.0		31.0	31.0
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.5	4.0			3.0	3.0		4.0	4.0
Recall Mode	None	C-Max		None	C-Max			None	None		None	None
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	74.5	66.5		81.9	74.5			16.9	16.9		16.9	16.9
Actuated g/C Ratio	0.69	0.62		0.76	0.69			0.16	0.16		0.16	0.16
v/c Ratio	0.10	0.44		0.48	0.36			0.90	0.36		0.45	0.51

Lanes, Volumes, Timings 2025 Background Saturday Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	2.9	6.2		8.9	11.6		102.7	2.5		50.8	15.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	2.9	6.2		8.9	11.6		102.7	2.5		50.8	15.7	
LOS	A	A		A	B		F	A		D	B	
Approach Delay	6.1			11.3			41.4			24.3		
Approach LOS	A			B			D			C		
Queue Length 50th (m)	0.8	13.0		10.8	80.6		23.0	0.0		11.4	5.3	
Queue Length 95th (m)	m2.0	104.7		19.9	99.5		#44.7	1.0		22.6	19.6	
Internal Link Dist (m)	162.0			249.0			265.9			197.3		
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	347	3140		441	3573		214	628		264	571	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.44		0.38	0.36		0.49	0.26		0.25	0.35	

Intersection Summary	
Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	14 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.90
Intersection Signal Delay:	12.5
Intersection Capacity Utilization:	73.8%
Analysis Period (min):	15
# 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: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary 2025 Background Saturday Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘		
Traffic Volume (veh/h)	30	1285	55	162	1229	5	100	0	157	60	0	182
Future Volume (veh/h)	30	1285	55	162	1229	5	100	0	157	60	0	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1885	1900	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	33	1339	57	169	1280	5	104	0	164	65	0	198
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	1	0	2	1	2	1	2	2	2
Cap, veh/h	388	2926	125	349	3211	13	207	0	357	233	0	361
Arrive On Green	0.04	0.58	0.58	0.13	1.00	1.00	0.23	0.00	0.23	0.23	0.00	0.23
Sat Flow, veh/h	1781	5060	215	1795	5333	21	1194	0	1568	1214	0	1585
Grp Volume(v), veh/h	33	908	488	169	830	455	104	0	164	65	0	198
Grp Sat Flow(s), veh/h/ln	1781	1716	1844	1795	1729	1896	1194	0	1568	1214	0	1585
Q Serve(g_s), s	0.8	16.4	16.4	4.1	0.0	0.0	9.1	0.0	9.7	5.3	0.0	11.9
Cycle Q Clear(g_c), s	0.8	16.4	16.4	4.1	0.0	0.0	21.0	0.0	9.7	15.0	0.0	11.9
Prop In Lane	1.00		0.12	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	388	1984	1067	349	2082	1141	207	0	357	233	0	361
V/C Ratio(X)	0.09	0.46	0.46	0.48	0.40	0.40	0.50	0.00	0.46	0.28	0.00	0.55
Avail Cap(c_a), veh/h	430	1984	1067	515	2082	1141	278	0	450	306	0	455
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.84	0.84	0.84	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.0	13.1	13.1	9.0	0.0	0.0	46.1	0.0	36.0	42.5	0.0	36.8
Incr Delay (d2), s/veh	0.1	0.7	1.3	1.1	0.5	0.9	1.9	0.0	0.9	0.9	0.0	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	0.4	8.3	9.0	1.9	0.3	0.5	4.7	0.0	6.3	2.8	0.0	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.1	13.7	14.3	10.0	0.5	0.9	48.0	0.0	36.9	43.4	0.0	38.7
LnGrp LOS	A	B	B	B	A	A	D	A	D	D	A	D
Approach Vol, veh/h	1429			1454			268			263		
Approach Delay, s/veh	13.8			1.7			41.2			39.8		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	67.5		29.6	8.4	70.0		29.6				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	46.0		31.0	7.0	56.0		31.0				
Max Q Clear Time (g_c+I1), s	6.1	18.4		17.0	2.8	2.0		23.0				
Green Ext Time (p_c), s	0.6	16.9		1.9	0.0	21.2		1.0				

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Lanes, Volumes, Timings
 2025 Background Saturday Peak Hour
 6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	240	1202	116	186	1018	225	131	78	114	171	84	142
Future Volume (vph)	240	1202	116	186	1018	225	131	78	114	171	84	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	0.97	0.99		1.00	0.97	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5055	0	1805	4981	0	1787	1703	0	1805	1664	0
Fit Permitted	0.150			0.147			0.423			0.492		
Satd. Flow (perm)	285	5055	0	279	4981	0	774	1703	0	931	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	18			52			71			81		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	273.0			268.3			231.1			151.2		
Travel Time (s)	16.4			16.1			16.6			10.9		
Conf. Peds. (#/hr)	4		12	12		4	39		5	5		39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%
Adj. Flow (vph)	247	1239	120	192	1049	232	135	80	118	176	87	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	1359	0	192	1281	0	135	198	0	176	233	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	49.0		21.0	45.0		38.0	38.0		38.0	38.0	
Total Split (%)	23.1%	45.4%		19.4%	41.7%		35.2%	35.2%		35.2%	35.2%	
Maximum Green (s)	21.0	44.0		17.0	40.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0			7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	23.0			23.0			23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0			0			0	0		0	0	
Act Effct Green (s)	72.9	57.9		69.0	55.9		24.1	24.1		24.1	24.1	
Actuated g/C Ratio	0.68	0.54		0.64	0.52		0.22	0.22		0.22	0.22	
v/c Ratio	0.63	0.50		0.55	0.49		0.78	0.46		0.85	0.54	

Lanes, Volumes, Timings
 2025 Background Saturday Peak Hour
 6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	17.1	29.6		24.4	11.4		67.8	24.8		72.3	27.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.1	29.6		24.4	11.4		67.8	24.8		72.3	27.1	
LOS	B	C		C	B		E	C		E	C	
Approach Delay		27.6			13.1			42.2			46.5	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	39.9	107.7		16.2	36.4		28.2	23.7		37.4	29.2	
Queue Length 95th (m)	51.9	127.2		m41.0	m41.0		47.4	41.2		59.0	48.6	
Internal Link Dist (m)		249.0			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	493	2716		427	2603		236	569		284	564	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.50	0.50		0.45	0.49		0.57	0.35		0.62	0.41	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 58 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 25.3
 Intersection LOS: C
 Intersection Capacity Utilization 84.8%
 ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary
 2025 Background Saturday Peak Hour
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	240	1202	116	186	1018	225	131	78	114	171	84	142
Future Volume (veh/h)	240	1202	116	186	1018	225	131	78	114	171	84	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.96	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1885	1900	1885	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	247	1239	120	192	1049	232	135	80	118	176	87	146
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	0	0	1	0	1	0	1	0	0	0
Cap, veh/h	379	2477	240	362	2114	467	246	187	275	277	171	288
Arrive On Green	0.12	0.69	0.69	0.07	0.50	0.50	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1810	4765	461	1810	4206	929	1129	674	995	1171	619	1039
Grp Volume(v), veh/h	247	892	467	192	855	426	135	0	198	176	0	233
Grp Sat Flow(s),veh/h/ln	1810	1716	1796	1810	1716	1705	1129	0	1669	1171	0	1659
Q Serve(g_s), s	7.1	13.2	13.2	5.4	17.8	17.9	12.3	0.0	10.5	15.7	0.0	12.8
Cycle Q Clear(g_c), s	7.1	13.2	13.2	5.4	17.8	17.9	25.1	0.0	10.5	26.2	0.0	12.8
Prop In Lane	1.00		0.26	1.00		0.55	1.00		0.60	1.00		0.63
Lane Grp Cap(c), veh/h	379	1784	934	362	1724	856	246	0	462	277	0	459
V/C Ratio(X)	0.65	0.50	0.50	0.53	0.50	0.50	0.55	0.00	0.43	0.64	0.00	0.51
Avail Cap(c_a), veh/h	566	1784	934	513	1724	856	278	0	510	311	0	507
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.71	0.71	0.71	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	10.0	10.0	12.0	17.8	17.8	43.4	0.0	32.1	42.8	0.0	32.9
Incr Delay (d2), s/veh	1.7	0.9	1.7	0.9	0.7	1.5	2.7	0.0	0.9	4.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.8	6.2	6.9	3.1	9.1	9.3	6.1	0.0	7.2	8.0	0.0	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	10.9	11.8	12.8	18.5	19.3	46.2	0.0	33.0	47.2	0.0	34.1
LnGrp LOS	B	B	B	B	B	B	D	A	C	D	A	C
Approach Vol, veh/h	1606			1473			333			409		
Approach Delay, s/veh	11.8			18.0			38.3			39.8		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2	4	5	6	8						
Phs Duration (G+Y+Rc), s	12.0	61.1	34.9	13.9	59.3	34.9						
Change Period (Y+Rc), s	4.0	5.0	5.0	4.0	5.0	5.0						
Max Green Setting (Gmax), s	17.0	44.0	33.0	21.0	40.0	33.0						
Max Q Clear Time (g_c+1), s	7.4	15.2	27.1	9.1	19.9	28.2						
Green Ext Time (p_c), s	0.5	16.9	1.3	0.8	12.7	1.4						

Intersection Summary		
HCM 6th Ctrl Delay	19.5	
HCM 6th LOS	B	

Lanes, Volumes, Timings
 2025 Background Saturday Peak Hour
 7: Lauzon Parkway & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	216	1176	152	230	1089	93	292	396	188	124	479	223
Future Volume (vph)	216	1176	152	230	1089	93	292	396	188	124	479	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Frt	0.983				0.988		0.952				0.850	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5073	0	1805	5087	0	1770	4882	0	1719	5136	1583
Fit Permitted	0.138			0.100			0.283			0.325		
Satd. Flow (perm)	257	5073	0	190	5087	0	526	4882	0	588	5136	1559
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	22			13			113			240		
Link Speed (k/h)	60			60			60			60		
Link Distance (m)	268.3			288.0			208.8			230.9		
Travel Time (s)	16.1			17.3			12.5			13.9		
Conf. Peds. (#/hr)	12		23	23		12	3		2	2		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	0%	1%	0%	0%	7%	2%	1%	0%	5%	1%	2%
Adj. Flow (vph)	232	1265	163	247	1171	100	314	426	202	133	515	240
Shared Lane Traffic (%)												
Lane Group Flow (vph)	232	1428	0	247	1271	0	314	628	0	133	515	240
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	35.0	35.0
Total Split (s)	17.0	40.0		17.0	40.0		16.0	38.0		13.0	35.0	35.0
Total Split (%)	15.7%	37.0%		15.7%	37.0%		14.8%	35.2%		12.0%	32.4%	32.4%
Maximum Green (s)	13.0	34.0		13.0	34.0		12.0	32.0		9.0	29.0	29.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			5.0	5.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	59.8	45.8		60.6	46.2		35.0	21.1		28.5	17.8	17.8
Actuated g/C Ratio	0.55	0.42		0.56	0.43		0.32	0.20		0.26	0.16	0.16
v/c Ratio	0.75	0.66		0.85	0.58		1.02	0.60		0.54	0.61	0.53

Lanes, Volumes, Timings

2025 Background Saturday Peak Hour
 (230538) Major Retail Development, Tecumseh Road, Windsor TIS

7: Lauzon Parkway & Tecumseh Road

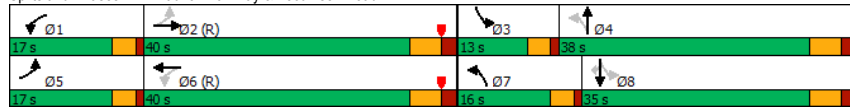


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	46.4	15.6		48.9	25.4		88.4	34.4		28.4	34.7	8.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	46.4	15.6		48.9	25.4		88.4	34.4		28.4	34.7	8.2
LOS	D	B		D	C		F	C		C	C	A
Approach Delay	19.9			29.2			52.4			26.6		
Approach LOS	B			C			D			C		
Queue Length 50th (m)	33.0	32.4		33.4	77.1		~58.6	38.5		15.2	23.5	2.7
Queue Length 95th (m)	#72.8	73.3		#79.8	100.5		#91.8	48.6		30.9	36.5	14.3
Internal Link Dist (m)	244.3		264.0		184.8		206.9		206.9		206.9	
Turn Bay Length (m)	90.0			120.0			90.0			70.0		
Base Capacity (vph)	326	2163		301	2183		308	1526		250	1379	594
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	0.71	0.66		0.82	0.58		1.02	0.41		0.53	0.37	0.40

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 52 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 30.0
 Intersection LOS: C
 Intersection Capacity Utilization 85.2%
 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.

Splits and Phases: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2025 Background Saturday Peak Hour
 (230538) Major Retail Development, Tecumseh Road, Windsor TIS

7: Lauzon Parkway & Tecumseh Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔	↔
Traffic Volume (veh/h)	216	1176	152	230	1089	93	292	396	188	124	479	223
Future Volume (veh/h)	216	1176	152	230	1089	93	292	396	188	124	479	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1900	1885	1900	1900	1796	1870	1885	1900	1826	1885	1870
Adj Flow Rate, veh/h	232	1265	163	247	1171	100	314	426	202	133	515	240
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	1	0	0	7	2	1	0	5	1	2
Cap, veh/h	326	1809	233	299	1920	164	347	859	387	305	1095	336
Arrive On Green	0.03	0.13	0.13	0.10	0.40	0.40	0.11	0.25	0.25	0.03	0.07	0.07
Sat Flow, veh/h	1781	4640	598	1810	4860	415	1781	3466	1563	1739	5147	1578
Grp Volume(v), veh/h	232	943	485	247	833	438	314	422	206	133	515	240
Grp Sat Flow(s),veh/h/ln	1781	1729	1780	1810	1729	1817	1781	1716	1597	1739	1716	1578
Q Serve(g_s), s	8.1	28.2	28.2	8.7	20.7	20.8	12.0	11.4	12.1	6.4	10.4	16.1
Cycle Q Clear(g_c), s	8.1	28.2	28.2	8.7	20.7	20.8	12.0	11.4	12.1	6.4	10.4	16.1
Prop In Lane	1.00		0.34	1.00		0.23	1.00		0.98	1.00		1.00
Lane Grp Cap(c), veh/h	326	1348	694	299	1366	718	347	850	396	305	1095	336
V/C Ratio(X)	0.71	0.70	0.70	0.83	0.61	0.61	0.90	0.50	0.52	0.44	0.47	0.71
Avail Cap(c_a), veh/h	369	1348	694	333	1366	718	347	1017	473	317	1382	424
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	22.2	41.0	41.0	23.0	26.0	26.0	33.0	34.8	35.1	31.6	44.4	47.0
Incr Delay (d2), s/veh	4.6	2.5	4.8	14.5	2.0	3.8	26.0	0.5	1.3	0.9	0.3	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.1	18.6	19.6	7.4	12.1	13.1	12.8	7.7	7.7	4.6	7.5	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	43.5	45.8	37.5	28.1	29.9	59.0	35.4	36.4	32.5	44.7	51.0
LnGrp LOS	C	D	D	D	C	C	E	D	D	C	D	D
Approach Vol, veh/h	1660			1518			942			888		
Approach Delay, s/veh	41.9			30.1			43.5			44.6		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.9	48.1	12.2	32.8	14.3	48.7	16.0	29.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	13.0	34.0	9.0	32.0	13.0	34.0	12.0	29.0				
Max Q Clear Time (g_c+I1), s	10.7	30.2	8.4	14.1	10.1	22.8	14.0	18.1				
Green Ext Time (p_c), s	0.2	3.3	0.0	5.2	0.3	8.0	0.0	4.3				

Intersection Summary

HCM 6th Ctrl Delay 39.1
 HCM 6th LOS D

Lanes, Volumes, Timings

2025 Background Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↙	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖		↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	221	53	31	157	57	154	60	481	211	150	581	268
Future Volume (vph)	221	53	31	157	57	154	60	481	211	150	581	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00	0.99		0.98	1.00	0.99
Fit		0.945			0.890				0.850		0.953	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1786	0	1671	1623	0	1805	3610	1524	1752	4865	0
Fit Permitted	0.350			0.697			0.260			0.365		
Satd. Flow (perm)	663	1786	0	1224	1623	0	493	3610	1490	673	4865	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	34				125				234			119
Link Speed (k/h)	50				50				60			60
Link Distance (m)	651.4				106.2				230.9			292.9
Travel Time (s)	46.9				7.6				13.9			17.6
Conf. Peds. (#/hr)	4		2	2		4	5		1	1		5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	8%	0%	4%	0%	0%	6%	3%	1%	0%
Adj. Flow (vph)	246	59	34	174	63	171	67	534	234	167	646	298
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	93	0	174	234	0	67	534	234	167	944	0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	17.0	53.0		36.0	36.0		11.0	41.0	41.0	14.0	44.0	
Total Split (%)	15.7%	49.1%		33.3%	33.3%		10.2%	38.0%	38.0%	13.0%	40.7%	
Maximum Green (s)	13.0	47.0		30.0	30.0		7.0	35.0	35.0	10.0	38.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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)	4.0	6.0		6.0	6.0		4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0			7.0	7.0		7.0		7.0		7.0	
Flash Dont Walk (s)		22.0		22.0	22.0			23.0	23.0		23.0	
Pedestrian Calls (#/hr)	0			0	0		0		0		0	
Act Effct Green (s)	40.5	38.5		21.5	21.5		53.3	44.3	44.3	58.5	48.7	
Actuated g/C Ratio	0.38	0.36		0.20	0.20		0.49	0.41	0.41	0.54	0.45	
v/c Ratio	0.64	0.14		0.72	0.55		0.20	0.36	0.31	0.37	0.42	

Lanes, Volumes, Timings

2025 Background Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↙	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	31.4	14.2		55.8	21.7		14.6	20.8	4.5	15.9	19.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	31.4	14.2		55.8	21.7		14.6	20.8	4.5	15.9	19.5	
LOS	C	B		E	C		B	C	A	B	B	
Approach Delay		26.7			36.2			15.7			19.0	
Approach LOS		C			D			B			B	
Queue Length 50th (m)	39.0	8.6		36.3	20.9		6.2	34.2	2.1	17.5	45.5	
Queue Length 95th (m)	52.3	17.6		55.2	41.7		m12.7	45.1	m9.5	34.8	66.3	
Internal Link Dist (m)		627.4			82.2			206.9			268.9	
Turn Bay Length (m)	50.0				80.0			20.0			115.0	
Base Capacity (vph)	385	796		340	541		328	1480	749	465	2260	
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	0.12		0.51	0.43		0.20	0.36	0.31	0.36	0.42	

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Red

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 21.6

Intersection LOS: C

Intersection Capacity Utilization 76.4%

ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

2025 Background Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	221	53	31	157	57	154	60	481	211	150	581	268
Future Volume (veh/h)	221	53	31	157	57	154	60	481	211	150	581	268
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1841	1900	1900	1811	1856	1885	1900
Adj Flow Rate, veh/h	246	59	34	174	63	171	67	534	234	167	646	298
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	8	0	4	0	0	6	3	1	0
Cap, veh/h	351	391	226	300	85	231	361	1568	663	474	1554	703
Arrive On Green	0.12	0.35	0.35	0.19	0.19	0.19	0.11	0.87	0.87	0.07	0.45	0.45
Sat Flow, veh/h	1810	1129	651	1234	450	1221	1810	3610	1526	1767	3459	1565
Grp Volume(v), veh/h	246	0	93	174	0	234	67	534	234	167	641	303
Grp Sat Flow(s),veh/h/ln	1810	0	1780	1234	0	1671	1810	1805	1526	1767	1716	1593
Q Serve(g_s), s	11.4	0.0	3.9	14.4	0.0	14.3	2.1	3.0	3.1	5.6	13.7	14.0
Cycle Q Clear(g_c), s	11.4	0.0	3.9	14.4	0.0	14.3	2.1	3.0	3.1	5.6	13.7	14.0
Prop In Lane	1.00		0.37	1.00		0.73	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	351	0	617	300	0	316	361	1568	663	474	1541	716
V/C Ratio(X)	0.70	0.00	0.15	0.58	0.00	0.74	0.19	0.34	0.35	0.35	0.42	0.42
Avail Cap(c_a), veh/h	351	0	775	410	0	464	377	1568	663	512	1541	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.72	0.72	0.72	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	24.3	41.3	0.0	41.3	14.4	4.2	4.2	14.6	20.1	20.2
Incr Delay (d2), s/veh	6.1	0.0	0.2	2.5	0.0	4.9	0.2	0.4	1.1	0.4	0.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.7	0.0	2.7	7.6	0.0	9.8	1.2	1.5	1.6	3.3	8.2	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	0.0	24.5	43.8	0.0	46.2	14.6	4.6	5.3	15.1	21.0	22.1
LnGrp LOS	D	A	C	D	A	D	B	A	A	B	C	C
Approach Vol, veh/h	339			408			835			1111		
Approach Delay, s/veh	32.8			45.2			5.6			20.4		
Approach LOS	C			D			A			C		
Timer - Assigned Phs	1	2	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	11.7	52.9	43.4	10.1	54.5	17.0	26.4					
Change Period (Y+Rc), s	4.0	6.0	6.0	4.0	6.0	4.0	6.0					
Max Green Setting (Gmax), s	10.0	35.0	47.0	7.0	38.0	13.0	30.0					
Max Q Clear Time (g_c+I1), s	7.6	5.1	5.9	4.1	16.0	13.4	16.4					
Green Ext Time (p_c), s	0.1	8.3	0.9	0.0	10.0	0.0	2.9					

Intersection Summary		
HCM 6th Ctrl Delay	21.1	
HCM 6th LOS	C	

Notes
User approved pedestrian interval to be less than phase max green.

Lanes, Volumes, Timings

2025 Background Saturday Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	60	92	5	30	150	5
Future Volume (vph)	60	92	5	30	150	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.918				0.996	
Fit Protected	0.981		0.950			
Satd. Flow (prot)	1678	0	1770	1863	1855	0
Fit Permitted	0.981		0.950			
Satd. Flow (perm)	1678	0	1770	1863	1855	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	144.2			221.3	146.3	
Travel Time (s)	10.4			15.9	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	100	5	33	163	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	165	0	5	33	168	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.8%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC 2025 Background Saturday Peak Hour
 9: Rose-Ville Gardens Drive & Home Depot Access (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	60	92	5	30	150	5
Future Vol, veh/h	60	92	5	30	150	5
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	100	5	33	163	5
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	209	166	168	0	-	0
Stage 1	166	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	779	878	1410	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	776	878	1410	-	-	-
Mov Cap-2 Maneuver	763	-	-	-	-	-
Stage 1	860	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	10.4	1.1	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1410	-	829	-	-	
HCM Lane V/C Ratio	0.004	-	0.199	-	-	
HCM Control Delay (s)	7.6	-	10.4	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.7	-	-	

Lanes, Volumes, Timings 2025 Background Saturday Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	155	0	0	90
Future Volume (vph)	0	0	155	0	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit					0.850	
Fit Protected			0.950			
Satd. Flow (prot)	1863	0	1770	1863	1863	1583
Fit Permitted			0.950			
Satd. Flow (perm)	1863	0	1770	1863	1863	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	60.2			651.4	146.3	
Travel Time (s)	4.3			46.9	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	168	0	0	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	168	0	0	98
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	11.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC 2025 Background Saturday Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	7.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	155	0	0	90
Future Vol, veh/h	0	0	155	0	0	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	168	0	0	98

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1	0	337	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	336	-
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	-	-	1622	-	658	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	724	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1622	-	590	1084
Mov Cap-2 Maneuver	-	-	-	-	586	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	649	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.5	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	1084	-	-	1622	-
HCM Lane V/C Ratio	-	0.09	-	-	0.104	-
HCM Control Delay (s)	0	8.7	-	-	7.5	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0.3	-	-	0.3	-

Appendix G

2025 Total Traffic Operations Reports



Lanes, Volumes, Timings

2025 Total AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	47	681	62	81	716	178	78	160	96	210	232	68
Future Volume (vph)	47	681	62	81	716	178	78	160	96	210	232	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00					0.99		1.00	
Flt		0.987				0.850			0.850		0.966	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4937	0	1671	3505	1599	1671	3471	1553	1787	3411	0
Flt Permitted	0.272			0.285			0.476			0.532		
Satd. Flow (perm)	507	4937	0	501	3505	1599	837	3471	1533	1000	3411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	16					207			112			38
Link Speed (k/h)	60			60			50					50
Link Distance (m)	230.2			261.9			222.3					200.9
Travel Time (s)	13.8			15.7			16.0					14.5
Confl. Peds. (#/hr)		1		1					1		1	
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 (%)	2%	3%	10%	8%	3%	1%	8%	4%	4%	1%	2%	3%
Adj. Flow (vph)	55	792	72	94	833	207	91	186	112	244	270	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	864	0	94	833	207	91	186	112	244	349	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	42.0		11.0	42.0	42.0	13.0	35.0	35.0	14.0	36.0	
Total Split (%)	10.8%	41.2%		10.8%	41.2%	41.2%	12.7%	34.3%	34.3%	13.7%	35.3%	
Maximum Green (s)	7.0	37.0		7.0	37.0	37.0	9.0	30.0	30.0	10.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	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	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effect Green (s)	61.9	55.3		61.9	55.3	55.3	23.9	13.9	13.9	26.5	17.5	
Actuated g/C Ratio	0.61	0.54		0.61	0.54	0.54	0.23	0.14	0.14	0.26	0.17	
v/c Ratio	0.14	0.32		0.24	0.44	0.22	0.34	0.39	0.37	0.73	0.57	

Lanes, Volumes, Timings

2025 Total AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	8.6	14.0		5.6	20.8	10.3	30.6	42.1	10.9	44.2	38.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.6	14.0		5.6	20.8	10.3	30.6	42.1	10.9	44.2	38.8	
LOS	A	B		A	C	B	C	D	B	D	D	
Approach Delay		13.7			17.6			30.4				41.1
Approach LOS		B			B			C				D
Queue Length 50th (m)	3.9	35.7		4.2	95.0	31.7	14.4	18.8	0.0	42.2	32.5	
Queue Length 95th (m)	9.0	46.4		10.1	110.6	41.1	24.5	27.1	13.3	59.0	43.4	
Internal Link Dist (m)		206.2			237.9			198.3				176.9
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	394	2685		384	1901	962	269	1020	529	336	1063	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.32		0.24	0.44	0.22	0.34	0.18	0.21	0.73	0.33	

Intersection Summary

Area Type: Other

Cycle Length: 102

Actuated Cycle Length: 102

Offset: 36 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 22.6

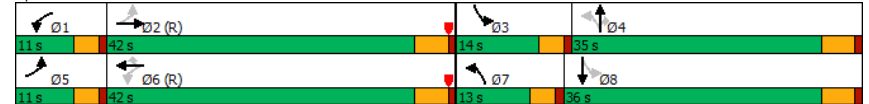
Intersection LOS: C

Intersection Capacity Utilization 70.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

2025 Total AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔
Traffic Volume (veh/h)	47	681	62	81	716	178	78	160	96	210	232	68
Future Volume (veh/h)	47	681	62	81	716	178	78	160	96	210	232	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1752	1781	1856	1885	1781	1841	1885	1870	1856	
Adj Flow Rate, veh/h	55	792	72	94	833	207	91	186	112	244	270	79
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
Percent Heavy Veh, %	2	3	10	8	3	1	8	4	4	1	2	3
Cap, veh/h	366	2529	229	448	1920	869	255	443	197	331	390	112
Arrive On Green	0.05	0.53	0.53	0.04	0.36	0.36	0.08	0.13	0.13	0.10	0.14	0.14
Sat Flow, veh/h	1781	4728	428	1697	3526	1597	1697	3497	1556	1795	2724	781
Grp Volume(v), veh/h	55	565	299	94	833	207	91	186	112	244	174	175
Grp Sat Flow(s), veh/h/ln	1781	1689	1778	1697	1763	1597	1697	1749	1556	1795	1777	1728
Q Serve(g_s), s	1.3	9.5	9.6	2.4	18.2	9.2	4.6	5.0	6.9	10.0	9.5	9.8
Cycle Q Clear(g_c), s	1.3	9.5	9.6	2.4	18.2	9.2	4.6	5.0	6.9	10.0	9.5	9.8
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	366	1806	951	448	1920	869	255	443	197	331	255	248
V/C Ratio(X)	0.15	0.31	0.31	0.21	0.43	0.24	0.36	0.42	0.57	0.74	0.68	0.71
Avail Cap(c_a), veh/h	391	1806	951	456	1920	869	266	1029	458	331	540	525
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.66	0.66	0.66	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.5	13.2	13.3	9.4	20.5	17.7	34.1	41.1	41.9	36.8	41.5	41.6
Incr Delay (d2), s/veh	0.2	0.5	0.9	0.2	0.5	0.4	0.8	0.6	2.6	8.3	3.2	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	1.4	1.6	0.0	2.7	1.7	2.2	2.6	3.3	7.2	5.2	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.7	13.7	14.1	9.6	21.0	18.1	35.0	41.7	44.5	45.1	44.7	45.3
LnGrp LOS	B	B	B	A	C	B	C	D	D	D	D	D
Approach Vol, veh/h	919			1134			389			593		
Approach Delay, s/veh	13.7			19.5			40.9			45.1		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	59.6	14.0	17.9	9.5	60.5	12.3	19.6				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	7.0	37.0	10.0	30.0	7.0	37.0	9.0	31.0				
Max Q Clear Time (g_c+1), s	4.4	11.6	12.0	8.9	3.3	20.2	6.6	11.8				
Green Ext Time (p_c), s	0.1	7.2	0.0	1.9	0.0	7.1	0.1	2.3				

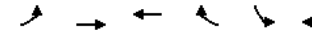
Intersection Summary		
HCM 6th Ctrl Delay	25.5	
HCM 6th LOS	C	

Lanes, Volumes, Timings

2025 Total AM Peak Hour

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

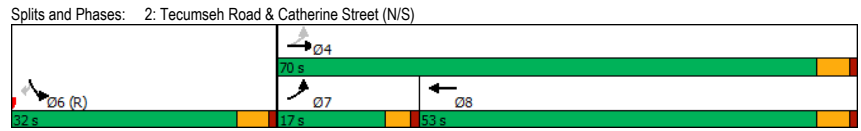


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	64	923	917	14	10	58
Future Volume (vph)	64	923	917	14	10	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	0.0	0.0	
Storage Lanes	1		0	1	1	
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.998			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	5085	5075	0	1770	1583
Fit Permitted	0.125				0.950	
Satd. Flow (perm)	233	5085	5075	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3			63
Link Speed (k/h)	60	60		50		
Link Distance (m)	261.9	175.4		228.1		
Travel Time (s)	15.7	10.5		16.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	1003	997	15	11	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	1003	1012	0	11	63
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	17.0	70.0	53.0		32.0	32.0
Total Split (%)	16.7%	68.6%	52.0%		31.4%	31.4%
Maximum Green (s)	13.0	65.0	48.0		27.0	27.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effect Green (s)	39.5	38.5	27.9		53.5	53.5
Actuated g/C Ratio	0.39	0.38	0.27		0.52	0.52
v/c Ratio	0.32	0.52	0.73		0.01	0.07
Control Delay	21.8	26.6	24.9		15.7	4.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	21.8	26.6	24.9		15.7	4.7

Lanes, Volumes, Timings
 2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	←	→	←	↖	↗	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	C	C	C		B	A
Approach Delay		26.3	24.9		6.4	
Approach LOS		C	C		A	
Queue Length 50th (m)	10.1	60.7	49.3		1.1	0.0
Queue Length 95th (m)	m18.0	69.8	26.0		4.7	7.9
Internal Link Dist (m)		237.9	151.4		204.1	
Turn Bay Length (m)	45.0					
Base Capacity (vph)	286	3240	2389		928	860
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.24	0.31	0.42		0.01	0.07

Intersection Summary
 Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 25.0 Intersection LOS: C
 Intersection Capacity Utilization 43.9% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.



HCM 6th Signalized Intersection Summary
 2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	←	→	←	↖	↗	
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↖↖↖	↖↖		↖	↖
Traffic Volume (veh/h)	64	923	917	14	10	58
Future Volume (veh/h)	64	923	917	14	10	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	70	1003	997	15	11	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	237	1829	1346	20	969	862
Arrive On Green	0.12	0.72	0.52	0.52	0.54	0.54
Sat Flow, veh/h	1781	5274	5351	78	1781	1585
Grp Volume(v), veh/h	70	1003	655	357	11	63
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1856	1781	1585
Q Serve(g_s), s	2.7	9.4	15.3	15.3	0.3	1.9
Cycle Q Clear(g_c), s	2.7	9.4	15.3	15.3	0.3	1.9
Prop In Lane	1.00			0.04	1.00	1.00
Lane Grp Cap(c), veh/h	237	1829	884	482	969	862
V/C Ratio(X)	0.30	0.55	0.74	0.74	0.01	0.07
Avail Cap(c_a), veh/h	359	3254	1602	874	969	862
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.98	0.98	1.00	1.00
Uniform Delay (d), s/veh	23.3	10.6	21.8	21.8	10.7	11.1
Incr Delay (d2), s/veh	0.6	0.2	1.2	2.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	2.1	4.5	5.2	0.1	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.9	10.9	23.0	24.0	10.7	11.2
LnGrp LOS	C	B	C	C	B	B
Approach Vol, veh/h	1073	1012		74		
Approach Delay, s/veh	11.7	23.4		11.1		
Approach LOS	B	C		B		
Timer - Assigned Phs			4	6	7	8
Phs Duration (G+Y+Rc), s			41.5	60.5	10.0	31.5
Change Period (Y+Rc), s			5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s			65.0	27.0	13.0	48.0
Max Q Clear Time (g_c+I1), s			11.4	3.9	4.7	17.3
Green Ext Time (p_c), s			10.9	0.3	0.1	9.2

Intersection Summary
 HCM 6th Ctrl Delay 17.2
 HCM 6th LOS B

Lanes, Volumes, Timings 2025 Total AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑ ↑ ↑	↑ ↑ ↑		↑ ↑ ↑	↑ ↑ ↑			↑	↑	↑	↑	↑
Traffic Volume (vph)	95	857	33	34	791	7	41	7	20	37	5	58
Future Volume (vph)	95	857	33	34	791	7	41	7	20	37	5	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Frt		0.994			0.999			0.960			0.862	
Flt Protected	0.950			0.950				0.971		0.950		
Satd. Flow (prot)	1805	5054	0	1752	5031	0	0	1763	0	1770	1604	0
Flt Permitted	0.278			0.268				0.773		0.733		
Satd. Flow (perm)	528	5054	0	494	5031	0	0	1403	0	1362	1604	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			2			22				67
Link Speed (k/h)		60			60			50				50
Link Distance (m)		175.4			186.0			136.6				186.3
Travel Time (s)		10.5			11.2			9.8				13.4
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	2%	0%	3%	3%	0%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	109	985	38	39	909	8	47	8	23	43	6	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	1023	0	39	917	0	0	78	0	43	73	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		1	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0			11.0	11.0		11.0	11.0
Minimum Split (s)	11.0	40.0		11.0	40.0			35.0	35.0		35.0	35.0
Total Split (s)	16.0	53.0		12.0	49.0			37.0	37.0		37.0	37.0
Total Split (%)	15.7%	52.0%		11.8%	48.0%			36.3%	36.3%		36.3%	36.3%
Maximum Green (s)	12.0	48.0		8.0	44.0			32.0	32.0		32.0	32.0
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
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
Recall Mode	None	C-Max		None	C-Max			None	None		None	None
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0			28.0			23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	82.5	78.0		80.3	72.3			11.6	11.6		11.6	11.6
Actuated g/C Ratio	0.81	0.76		0.79	0.71			0.11	0.11		0.11	0.11
v/c Ratio	0.21	0.26		0.08	0.26			0.44	0.28		0.30	0.30

Lanes, Volumes, Timings 2025 Total AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	2.2	0.6		2.1	4.7			39.1		46.0	15.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	2.2	0.6		2.1	4.7			39.1		46.0	15.4	
LOS	A	A		A	A			D		D	B	
Approach Delay		0.8			4.6			39.1			26.7	
Approach LOS		A			A			D			C	
Queue Length 50th (m)	0.4	2.3		1.1	20.9			11.0		8.4	1.1	
Queue Length 95th (m)	4.9	3.0		1.9	23.1			24.2		18.2	13.2	
Internal Link Dist (m)		151.4			162.0			112.6			162.3	
Turn Bay Length (m)	35.0			30.0						45.0		
Base Capacity (vph)	588	3866		492	3568			455		427	549	
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	0.19	0.26		0.08	0.26			0.17		0.10	0.13	

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	7 (7%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.44
Intersection Signal Delay:	5.0
Intersection LOS:	A
Intersection Capacity Utilization:	58.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 3: Commercial Access/Home Depot Access & Tecumseh Road



HCM 6th Signalized Intersection Summary 2025 Total AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔			↔↔		
Traffic Volume (veh/h)	95	857	33	34	791	7	41	7	20	37	5	58
Future Volume (veh/h)	95	857	33	34	791	7	41	7	20	37	5	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1856	1856	1900	1900	1900	1870	1900	1885	1885
Adj Flow Rate, veh/h	109	985	38	39	909	8	47	8	23	43	6	67
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	2	0	3	3	0	0	0	0	2	0	1
Cap, veh/h	606	3501	135	465	3492	31	128	29	42	233	16	183
Arrive On Green	0.04	0.46	0.46	0.09	1.00	1.00	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1810	5045	194	1767	5179	46	581	232	340	1372	133	1486
Grp Volume(v), veh/h	109	664	359	39	593	324	78	0	0	43	0	73
Grp Sat Flow(s),veh/h/ln	1810	1702	1835	1767	1689	1847	1153	0	0	1372	0	1620
Q Serve(g_s), s	1.7	12.3	12.3	0.6	0.0	0.0	3.6	0.0	0.0	0.0	0.0	4.2
Cycle Q Clear(g_c), s	1.7	12.3	12.3	0.6	0.0	0.0	7.8	0.0	0.0	3.1	0.0	4.2
Prop In Lane	1.00		0.11	1.00		0.02	0.60		0.29	1.00		0.92
Lane Grp Cap(c), veh/h	606	2362	1273	465	2277	1246	198	0	0	233	0	199
V/C Ratio(X)	0.18	0.28	0.28	0.08	0.26	0.26	0.39	0.00	0.00	0.18	0.00	0.37
Avail Cap(c_a), veh/h	701	2362	1273	523	2277	1246	476	0	0	495	0	508
HCM Platoon Ratio	0.67	0.67	0.67	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.98	0.98	0.98	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.8	11.6	11.6	4.4	0.0	0.0	43.1	0.0	0.0	40.6	0.0	41.1
Incr Delay (d2), s/veh	0.1	0.3	0.5	0.1	0.3	0.5	1.3	0.0	0.0	0.4	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.3	0.0	0.2	0.3	2.3	0.0	0.0	1.2	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.9	11.9	12.1	4.5	0.3	0.5	44.3	0.0	0.0	41.0	0.0	42.2
LnGrp LOS	A	B	B	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h	1132			956			78			116		
Approach Delay, s/veh	11.2			0.5			44.3			41.7		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	75.8		17.5	10.7	73.8		17.5				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	8.0	48.0		32.0	12.0	44.0		32.0				
Max Q Clear Time (g_c+11), s	2.6	14.3		6.2	3.7	2.0		9.8				
Green Ext Time (p_c), s	0.0	9.6		0.6	0.2	8.7		0.4				

Intersection Summary		
HCM 6th Ctrl Delay	9.4	
HCM 6th LOS	A	

Lanes, Volumes, Timings 2025 Total AM Peak Hour

4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

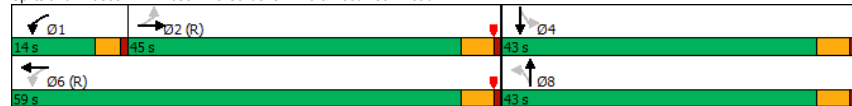
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔			↔↔		
Traffic Volume (vph)	81	836	46	94	718	24	51	56	103	45	23	221
Future Volume (vph)	81	836	46	94	718	24	51	56	103	45	23	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00	0.99				
Frt		0.992			0.995			0.903				0.864
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4942	0	1626	5012	0	1736	1642	0	1770	1609	0
Fit Permitted	0.347			0.271			0.294			0.464		
Satd. Flow (perm)	646	4942	0	462	5012	0	536	1642	0	864	1609	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			7			104				171
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				214.6
Travel Time (s)		11.2			16.4			20.9				15.5
Confl. Peds. (#/hr)			10		10			3				5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	11%	3%	2%	4%	2%	4%	2%	2%	2%
Adj. Flow (vph)	84	871	48	98	748	25	53	58	107	47	24	230
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	919	0	98	773	0	53	165	0	47	254	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2			1	6		8				4
Permitted Phases	2			6				8				4
Detector Phase	2	2			1	6		8	8			4
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		11.0	11.0		11.0		11.0
Minimum Split (s)	28.0	28.0		11.0	28.0		34.0	34.0		34.0		34.0
Total Split (s)	45.0	45.0		14.0	59.0		43.0	43.0		43.0		43.0
Total Split (%)	44.1%	44.1%		13.7%	57.8%		42.2%	42.2%		42.2%		42.2%
Maximum Green (s)	40.0	40.0		10.0	54.0		38.0	38.0		38.0		38.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
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
Recall Mode	C-Max	C-Max		None	C-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)	16.0	16.0			16.0		22.0	22.0		22.0		22.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	69.1	69.1		79.4	78.4		13.6	13.6		13.6		13.6
Actuated g/C Ratio	0.68	0.68		0.78	0.77		0.13	0.13		0.13		0.13
v/c Ratio	0.19	0.27		0.22	0.20		0.75	0.53		0.41		0.70

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	2.7	1.7		3.3	2.1		94.3	22.6		44.2	20.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	2.7	1.7		3.3	2.1		94.3	22.6		44.2	20.2	
LOS	A	A		A	A		F	C		D	C	
Approach Delay	1.8			2.3			40.0			24.0		
Approach LOS	A			A			D			C		
Queue Length 50th (m)	1.3	4.7		1.6	6.0		11.1	12.0		9.5	17.5	
Queue Length 95th (m)	2.4	5.8		4.4	9.3		#25.9	30.1		17.5	20.3	
Internal Link Dist (m)	162.0		249.0		265.9		190.6		120.0		706	
Turn Bay Length (m)	25.0		50.0		50.0		120.0		120.0		706	
Base Capacity (vph)	437	3351		473	3852		199	676		321	706	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.19	0.27		0.21	0.20		0.27	0.24		0.15	0.36	

Intersection Summary
 Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 13 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 8.2 Intersection LOS: A
 Intersection Capacity Utilization 64.9% 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: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘		
Traffic Volume (veh/h)	81	836	46	94	718	24	51	56	103	45	23	221
Future Volume (veh/h)	81	836	46	94	718	24	51	56	103	45	23	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1841	1870	1737	1856	1870	1841	1870	1841	1870	1870	1870
Adj Flow Rate, veh/h	84	871	48	98	748	25	53	58	107	47	24	230
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	4	2	11	3	2	4	2	4	2	2	2
Cap, veh/h	468	2783	153	446	3396	113	162	133	246	244	35	331
Arrive On Green	0.57	0.57	0.57	0.13	1.00	1.00	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	695	4872	268	1654	5033	168	1108	586	1081	1215	152	1456
Grp Volume(v), veh/h	84	598	321	98	501	272	53	0	165	47	0	254
Grp Sat Flow(s), veh/h/ln	695	1675	1790	1654	1689	1824	1108	0	1667	1215	0	1608
Q Serve(g_s), s	6.0	9.5	9.6	2.2	0.0	0.0	4.7	0.0	8.7	3.5	0.0	14.8
Cycle Q Clear(g_c), s	6.0	9.5	9.6	2.2	0.0	0.0	19.5	0.0	8.7	12.2	0.0	14.8
Prop In Lane	1.00		0.15	1.00		0.09	1.00		0.65	1.00		0.91
Lane Grp Cap(c), veh/h	468	1913	1022	446	2279	1231	162	0	379	244	0	365
V/C Ratio(X)	0.18	0.31	0.31	0.22	0.22	0.22	0.33	0.00	0.44	0.19	0.00	0.69
Avail Cap(c_a), veh/h	468	1913	1022	502	2279	1231	323	0	621	420	0	599
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	0.96	0.96	0.96	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.7	11.4	11.4	6.7	0.0	0.0	45.1	0.0	33.8	39.0	0.0	36.2
Incr Delay (d2), s/veh	0.8	0.4	0.8	0.2	0.2	0.4	1.2	0.0	0.8	0.4	0.0	2.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	0.3	0.8	1.0	0.1	0.1	0.2	1.6	0.0	3.9	1.3	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.5	11.8	12.2	7.0	0.2	0.4	46.3	0.0	34.6	39.4	0.0	38.5
LnGrp LOS	B	B	B	A	A	A	D	A	C	D	A	D
Approach Vol, veh/h	1003			871			218			301		
Approach Delay, s/veh	11.9			1.0			37.4			38.7		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.6	63.3		28.2		73.8		28.2				
Change Period (Y+Rc), s	4.0	5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0		38.0		54.0		38.0				
Max Q Clear Time (g_c+I1), s	4.2	11.6		16.8		2.0		21.5				
Green Ext Time (p_c), s	0.1	9.1		2.1		7.1		1.3				

Intersection Summary
 HCM 6th Ctrl Delay 13.6
 HCM 6th LOS B

Lanes, Volumes, Timings

2025 Total AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑			↑↑		
Traffic Volume (vph)	152	710	97	89	734	141	61	46	33	64	32	58
Future Volume (vph)	152	710	97	89	734	141	61	46	33	64	32	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00					0.99
Flt	0.982			0.976			0.938			0.903		
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	4880	0	1805	4930	0	1671	1782	0	1787	1697	0
Flt Permitted	0.256			0.301			0.673			0.699		
Satd. Flow (perm)	482	4880	0	570	4930	0	1179	1782	0	1315	1697	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	31			45			37			65		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	273.0			268.3			231.1			151.2		
Travel Time (s)	16.4			16.1			16.6			10.9		
Confl. Peds. (#/hr)			6	6			5					5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	4%	0%	3%	1%	8%	0%	0%	1%	0%	0%
Adj. Flow (vph)	171	798	109	100	825	158	69	52	37	72	36	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	907	0	100	983	0	69	89	0	72	101	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	20.0	51.0		14.0	45.0		37.0	37.0		37.0	37.0	
Total Split (%)	19.6%	50.0%		13.7%	44.1%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	16.0	46.0		10.0	40.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0			7.0			7.0			7.0		
Flash Dont Walk (s)	23.0			23.0			23.0			23.0		
Pedestrian Calls (#/hr)	0			0			0			0		
Act Effct Green (s)	78.0	70.1		76.3	67.3		12.2	12.2		12.2	12.2	
Actuated g/C Ratio	0.76	0.69		0.75	0.66		0.12	0.12		0.12	0.12	
v/c Ratio	0.36	0.27		0.19	0.30		0.49	0.36		0.46	0.39	

Lanes, Volumes, Timings

2025 Total AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	9.5	5.2		2.4	3.9		53.3	29.2		50.8	21.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.5	5.2		2.4	3.9		53.3	29.2		50.8	21.6	
LOS	A	A		A	A		D	C		D	C	
Approach Delay	5.9			3.8			39.8			33.7		
Approach LOS	A			A			D			C		
Queue Length 50th (m)	7.8	15.0		1.5	8.0		13.8	10.1		14.4	6.9	
Queue Length 95th (m)	26.0	23.2		m4.7	14.6		26.7	23.6		27.3	21.2	
Internal Link Dist (m)	249.0			244.3			207.1			127.2		
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	586	3365		558	3267		369	584		412	577	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.29	0.27		0.18	0.30		0.19	0.15		0.17	0.18	
Intersection Summary												
Area Type:	Other											
Cycle Length:	102											
Actuated Cycle Length:	102											
Offset:	93 (91%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red											
Natural Cycle:	85											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.49											
Intersection Signal Delay:	9.1						Intersection LOS: A					
Intersection Capacity Utilization:	55.8%						ICU Level of Service B					
Analysis Period (min)	15											
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 6: East Park Drive/Walmart Access & Tecumseh Road												

HCM 6th Signalized Intersection Summary

2025 Total AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	152	710	97	89	734	141	61	46	33	64	32	58
Future Volume (veh/h)	152	710	97	89	734	141	61	46	33	64	32	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1841	1841	1900	1856	1885	1781	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	171	798	109	100	825	158	69	52	37	72	36	65
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	0	3	1	8	0	0	1	0	0
Cap, veh/h	573	2829	384	505	2685	511	196	161	114	216	94	170
Arrive On Green	0.03	0.21	0.21	0.15	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1795	4471	607	1810	4270	812	1224	1028	732	1309	603	1089
Grp Volume(v), veh/h	171	597	310	100	651	332	69	0	89	72	0	101
Grp Sat Flow(s),veh/h/ln	1795	1675	1728	1810	1689	1705	1224	0	1760	1309	0	1692
Q Serve(g_s), s	3.1	15.3	15.4	1.7	0.0	0.0	5.5	0.0	4.6	5.3	0.0	5.5
Cycle Q Clear(g_c), s	3.1	15.3	15.4	1.7	0.0	0.0	10.9	0.0	4.6	9.9	0.0	5.5
Prop In Lane	1.00		0.35	1.00		0.48	1.00		0.42	1.00		0.64
Lane Grp Cap(c), veh/h	573	2120	1093	505	2123	1072	196	0	275	216	0	264
V/C Ratio(X)	0.30	0.28	0.28	0.20	0.31	0.31	0.35	0.00	0.32	0.33	0.00	0.38
Avail Cap(c_a), veh/h	715	2120	1093	549	2123	1072	389	0	552	422	0	531
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.1	20.9	20.9	5.6	0.0	0.0	43.5	0.0	38.2	42.6	0.0	38.6
Incr Delay (d2), s/veh	0.3	0.3	0.6	0.2	0.3	0.7	1.1	0.0	0.7	0.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.2	0.3	0.0	0.2	0.4	2.1	0.0	2.3	2.1	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	21.2	21.5	5.8	0.3	0.7	44.6	0.0	38.9	43.5	0.0	39.5
LnGrp LOS	A	C	C	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h	1078			1083			158			173		
Approach Delay, s/veh	18.8			1.0			41.4			41.2		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	69.5		20.9	11.9	69.1		20.9				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	46.0		32.0	16.0	40.0		32.0				
Max Q Clear Time (g_c+1), s	3.7	17.4		12.9	5.1	2.0		11.9				
Green Ext Time (p_c), s	0.1	8.0		0.8	0.5	9.5		0.9				
Intersection Summary												
HCM 6th Ctrl Delay	14.0											
HCM 6th LOS	B											

Lanes, Volumes, Timings

2025 Total AM Peak Hour

7: Lauzon Parkway & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

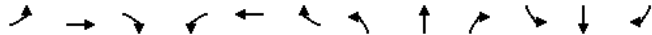
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	91	603	125	114	680	45	223	346	84	102	380	51
Future Volume (vph)	91	603	125	114	680	45	223	346	84	102	380	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00		0.99
Frt		0.974			0.991			0.971				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	4928	0	1736	5017	0	1752	4771	0	1517	4940	1495
Fit Permitted	0.330			0.309			0.364			0.477		
Satd. Flow (perm)	574	4928	0	563	5017	0	670	4771	0	759	4940	1473
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)		47			11		60					118
Link Speed (k/h)		60			60		60					60
Link Distance (m)		268.3			288.0		208.8					230.9
Travel Time (s)		16.1			17.3		12.5					13.9
Confl. Peds. (#/hr)	5		7	7		5	3		6	6		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	1%	8%	4%	1%	23%	3%	5%	6%	19%	5%	8%
Adj. Flow (vph)	98	648	134	123	731	48	240	372	90	110	409	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	782	0	123	779	0	240	462	0	110	409	55
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	37.0	37.0
Total Split (s)	11.0	40.0		11.0	40.0		14.0	40.0		11.0	37.0	37.0
Total Split (%)	10.8%	39.2%		10.8%	39.2%		13.7%	39.2%		10.8%	36.3%	36.3%
Maximum Green (s)	7.0	34.0		7.0	34.0		10.0	34.0		7.0	31.0	31.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			7.0	7.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	59.2	50.2		60.0	52.4		29.8	17.8		23.8	14.8	14.8
Actuated g/C Ratio	0.58	0.49		0.59	0.51		0.29	0.17		0.23	0.15	0.15
v/c Ratio	0.24	0.32		0.30	0.30		0.80	0.52		0.48	0.57	0.18

Lanes, Volumes, Timings

2025 Total AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

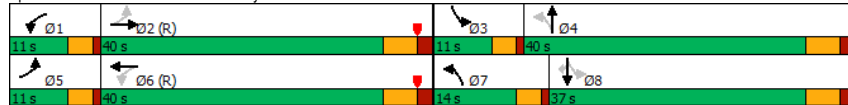


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	7.1	14.1		10.5	15.2		49.9	35.1		31.1	40.2	4.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	7.1	14.1		10.5	15.2		49.9	35.1		31.1	40.2	4.9
LOS	A	B		B	B		D	D		C	D	A
Approach Delay		13.3			14.6			40.2			35.1	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	7.2	37.3		9.5	33.3		40.7	28.2		18.4	30.3	0.3
Queue Length 95th (m)	18.4	41.3		19.1	46.2		#67.5	37.6		32.5	40.0	4.7
Internal Link Dist (m)		244.3			264.0			184.8			206.9	
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	407	2449		411	2582		301	1630		229	1501	529
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	0.24	0.32		0.30	0.30		0.80	0.28		0.48	0.27	0.10

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 63 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 23.9
 Intersection LOS: C
 Intersection Capacity Utilization 75.1%
 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: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2025 Total AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔	↔
Traffic Volume (veh/h)	91	603	125	114	680	45	223	346	84	102	380	51
Future Volume (veh/h)	91	603	125	114	680	45	223	346	84	102	380	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1767	1885	1781	1841	1885	1559	1856	1826	1811	1618	1826	1781
Adj Flow Rate, veh/h	98	648	134	123	731	48	240	372	90	110	409	55
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	8	4	1	23	3	5	6	19	5	8
Cap, veh/h	438	2072	422	424	2398	157	324	746	174	255	775	232
Arrive On Green	0.02	0.16	0.16	0.07	0.49	0.49	0.10	0.18	0.18	0.14	0.31	0.31
Sat Flow, veh/h	1682	4282	872	1753	4934	322	1767	4031	938	1541	4985	1492
Grp Volume(v), veh/h	98	517	265	123	507	272	240	304	158	110	409	55
Grp Sat Flow(s),veh/h/ln	1682	1716	1724	1753	1716	1825	1767	1662	1646	1541	1662	1492
Q Serve(g_s), s	2.9	13.6	13.9	3.5	9.1	9.2	10.0	8.4	8.8	6.1	6.9	2.8
Cycle Q Clear(g_c), s	2.9	13.6	13.9	3.5	9.1	9.2	10.0	8.4	8.8	6.1	6.9	2.8
Prop In Lane	1.00		0.51	1.00		0.18	1.00		0.57	1.00		1.00
Lane Grp Cap(c), veh/h	438	1660	834	424	1667	887	324	615	304	255	775	232
V/C Ratio(X)	0.22	0.31	0.32	0.29	0.30	0.31	0.74	0.49	0.52	0.43	0.53	0.24
Avail Cap(c_a), veh/h	445	1660	834	427	1667	887	324	1108	549	255	1515	454
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	12.1	27.8	27.9	12.2	15.8	15.8	33.8	37.3	37.5	30.8	32.0	30.6
Incr Delay (d2), s/veh	0.2	0.5	1.0	0.4	0.5	0.9	8.7	0.7	1.6	1.1	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	3.6	3.9	0.4	2.0	2.3	6.2	3.7	4.0	2.2	2.8	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	28.3	28.9	12.6	16.3	16.7	42.5	38.0	39.1	31.9	32.7	31.2
LnGrp LOS	B	C	C	B	B	B	D	D	D	C	C	C
Approach Vol, veh/h		880			902			702				574
Approach Delay, s/veh		26.7			15.9			39.8				32.4
Approach LOS		C			B			D				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	55.3	11.0	24.9	10.6	55.6	14.0	21.9				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	7.0	34.0	7.0	34.0	7.0	34.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	5.5	15.9	8.1	10.8	4.9	11.2	12.0	8.9				
Green Ext Time (p_c), s	0.1	7.3	0.0	4.1	0.1	8.1	0.0	4.0				

Intersection Summary

HCM 6th Ctrl Delay 27.6
 HCM 6th LOS C

Lanes, Volumes, Timings

2025 Total AM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	161	36	89	45	24	22	93	274	79	51	453	308
Future Volume (vph)	161	36	89	45	24	22	93	274	79	51	453	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor		0.99		1.00			1.00		0.98	1.00	0.99	
Fit		0.893			0.929				0.850		0.939	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1441	0	1245	1600	0	1612	3471	1583	1626	4709	0
Fit Permitted	0.724			0.634			0.306			0.567		
Satd. Flow (perm)	1376	1441	0	828	1600	0	518	3471	1549	969	4709	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	99				24				88			202
Link Speed (k/h)	50				50				60			60
Link Distance (m)	646.8				106.2				230.9			292.9
Travel Time (s)	46.6				7.6				13.9			17.6
Confl. Peds. (#/hr)			4	4			3		1	1		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	23%	45%	0%	22%	12%	4%	2%	11%	4%	0%
Adj. Flow (vph)	179	40	99	50	27	24	103	304	88	57	503	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	139	0	50	51	0	103	304	88	57	845	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8			5	2		1	6
Permitted Phases	4			8			2		2		6	
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	42.0	42.0		42.0	42.0		13.0	48.0	48.0	12.0	47.0	
Total Split (%)	41.2%	41.2%		41.2%	41.2%		12.7%	47.1%	47.1%	11.8%	46.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		9.0	42.0	42.0	8.0	41.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	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	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	18.7	18.7		18.7	18.7		70.6	62.3	62.3	69.5	61.7	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.69	0.61	0.61	0.68	0.60	
v/c Ratio	0.71	0.40		0.33	0.16		0.23	0.14	0.09	0.08	0.29	

Lanes, Volumes, Timings

2025 Total AM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	53.6	15.1		39.9	20.9		16.7	21.5	13.9	5.8	8.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	53.6	15.1		39.9	20.9		16.7	21.5	13.9	5.8	8.6	
LOS	D	B		D	C		B	C	B	A	A	
Approach Delay		36.8			30.3			19.1				8.4
Approach LOS		D			C			B				A
Queue Length 50th (m)	35.4	7.1		9.2	4.7		11.5	22.1	0.0	3.0	21.9	
Queue Length 95th (m)	54.2	22.4		19.0	13.9		27.8	36.0	16.1	8.6	37.1	
Internal Link Dist (m)		622.8			82.2			206.9				268.9
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	485	572		292	580		459	2118	979	717	2929	
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	0.37	0.24		0.17	0.09		0.22	0.14	0.09	0.08	0.29	

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	97 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Red
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	17.5
Intersection LOS:	B
Intersection Capacity Utilization:	69.4%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

2025 Total AM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	161	36	89	45	24	22	93	274	79	51	453	308
Future Volume (veh/h)	161	36	89	45	24	22	93	274	79	51	453	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1559	1233	1900	1574	1722	1841	1870	1737	1841	1900
Adj Flow Rate, veh/h	179	40	99	50	27	24	103	304	88	57	503	342
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	23	45	0	22	12	4	2	11	4	0
Cap, veh/h	305	94	234	172	181	161	456	2072	937	671	1951	906
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.06	0.59	0.59	0.05	0.58	0.58
Sat Flow, veh/h	1368	482	1194	821	924	822	1640	3497	1581	1654	3350	1556
Grp Volume(v), veh/h	179	0	139	50	0	51	103	304	88	57	503	342
Grp Sat Flow(s),veh/h/ln	1368	0	1676	821	0	1746	1640	1749	1581	1654	1675	1556
Q Serve(g_s), s	12.7	0.0	7.4	5.8	0.0	2.5	2.4	4.0	2.5	1.3	7.5	12.0
Cycle Q Clear(g_c), s	15.2	0.0	7.4	13.2	0.0	2.5	2.4	4.0	2.5	1.3	7.5	12.0
Prop In Lane	1.00		0.71	1.00		0.47	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	0	328	172	0	342	456	2072	937	671	1951	906
V/C Ratio(X)	0.59	0.00	0.42	0.29	0.00	0.15	0.23	0.15	0.09	0.08	0.26	0.38
Avail Cap(c_a), veh/h	520	0	592	301	0	616	494	2072	937	710	1951	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	0.0	36.0	41.8	0.0	34.0	7.6	9.3	9.0	7.0	10.5	11.4
Incr Delay (d2), s/veh	1.8	0.0	0.9	0.9	0.0	0.2	0.2	0.1	0.2	0.1	0.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.1	0.0	3.5	1.4	0.0	1.2	0.0	0.1	0.1	0.0	0.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	0.0	36.8	42.7	0.0	34.2	7.8	9.4	9.1	7.0	10.8	12.6
LnGrp LOS	D	A	D	D	A	C	A	A	A	A	B	B
Approach Vol, veh/h	318			101			495			902		
Approach Delay, s/veh	39.8			38.4			9.0			11.2		
Approach LOS	D			D			A			B		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.6	66.4	26.0		10.6	65.4	26.0					
Change Period (Y+Rc), s	4.0	6.0	6.0		4.0	6.0	6.0					
Max Green Setting (Gmax), s	8.0	42.0	36.0		9.0	41.0	36.0					
Max Q Clear Time (g_c+I1), s	3.3	6.0	17.2		4.4	14.0	15.2					
Green Ext Time (p_c), s	0.0	2.9	1.7		0.1	7.4	0.6					

Intersection Summary		
HCM 6th Ctrl Delay	17.1	
HCM 6th LOS	B	

Lanes, Volumes, Timings

2025 Total AM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	29	36	3	158	253	3
Future Volume (vph)	29	36	3	158	253	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.926			0.999		
Fit Protected	0.978		0.950			
Satd. Flow (prot)	1687	0	1770	1863	1861	0
Fit Permitted	0.978		0.950			
Satd. Flow (perm)	1687	0	1770	1863	1861	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	122.2			214.6	142.6	
Travel Time (s)	8.8			15.5	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	39	3	172	275	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	3	172	278	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.0%
Analysis Period (min)	15
ICU Level of Service A	

HCM 6th TWSC
 9: Rose-Ville Gardens Drive & Home Depot Access (230538) Major Retail Development, Tecumseh Road, Windsor TIS

2025 Total AM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	29	36	3	158	253	3
Future Vol, veh/h	29	36	3	158	253	3
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	39	3	172	275	3
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	455	277	278	0	-	0
Stage 1	277	-	-	-	-	-
Stage 2	178	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	563	762	1285	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	562	762	1285	-	-	-
Mov Cap-2 Maneuver	623	-	-	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	10.8	0.1	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1285	-	693	-	-	
HCM Lane V/C Ratio	0.003	-	0.102	-	-	
HCM Control Delay (s)	7.8	-	10.8	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

Lanes, Volumes, Timings
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

2025 Total AM Peak Hour

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	126	53	203	146	106	81
Future Volume (vph)	126	53	203	146	106	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.960					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1788	0	1770	1863	1770	1583
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1788	0	1770	1863	1770	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	52.8			646.8	142.6	
Travel Time (s)	3.8			46.6	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	58	221	159	115	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	195	0	221	159	115	88
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	37.0%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC 2025 Total AM Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	6.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	126	53	203	146	106	81
Future Vol, veh/h	126	53	203	146	106	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	137	58	221	159	115	88

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	195
Stage 1	-	-	166
Stage 2	-	-	601
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	1378	370
Stage 1	-	-	863
Stage 2	-	-	547
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1378	311
Mov Cap-2 Maneuver	-	-	390
Stage 1	-	-	863
Stage 2	-	-	459

Approach	EB	WB	NB
HCM Control Delay, s	0	4.7	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	878	-	-	1378	-
HCM Lane V/C Ratio	0.295	0.1	-	-	0.16	-
HCM Control Delay (s)	18.1	9.6	-	-	8.1	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1.2	0.3	-	-	0.6	-

Lanes, Volumes, Timings 2025 Total AM Peak Hour
 11: Catherine Street & Access A (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	47	31	33	100	98	35
Future Volume (vph)	47	31	33	100	98	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.899			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1675	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1675	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		128.7	118.7		179.7	
Travel Time (s)		9.3	8.5		12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	34	36	109	107	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	34	145	0	107	38
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.7%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
11: Catherine Street & Access A

2025 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↘		↘	↗
Traffic Vol, veh/h	47	31	33	100	98	35
Future Vol, veh/h	47	31	33	100	98	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	34	36	109	107	38

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	145	0	-	0	227 91
Stage 1	-	-	-	-	91 -
Stage 2	-	-	-	-	136 -
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	1437	-	-	-	761 967
Stage 1	-	-	-	-	933 -
Stage 2	-	-	-	-	890 -
Platoon blocked, %	-	-	-	-	- -
Mov Cap-1 Maneuver	1437	-	-	-	734 967
Mov Cap-2 Maneuver	-	-	-	-	743 -
Stage 1	-	-	-	-	900 -
Stage 2	-	-	-	-	890 -

Approach	EB	WB	SB
HCM Control Delay, s	4.6	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1437	-	-	-	743	967
HCM Lane V/C Ratio	0.036	-	-	-	0.143	0.039
HCM Control Delay (s)	7.6	-	-	-	10.7	8.9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1

Lanes, Volumes, Timings
12: Catherine Street & Access B

2025 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↘		↘	↗
Traffic Volume (vph)	31	98	100	152	82	33
Future Volume (vph)	31	98	100	152	82	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.919			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1712	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1712	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		118.7	52.8		152.1	
Travel Time (s)		8.5	3.8		11.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	107	109	165	89	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	107	274	0	89	36
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.5%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
12: Catherine Street & Access B

2025 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↔	↕
Traffic Vol, veh/h	31	98	100	152	82	33
Future Vol, veh/h	31	98	100	152	82	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	107	109	165	89	36

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	274	0	-	0	367 192
Stage 1	-	-	-	-	192 -
Stage 2	-	-	-	-	175 -
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	1289	-	-	-	633 850
Stage 1	-	-	-	-	841 -
Stage 2	-	-	-	-	855 -
Platoon blocked, %	-	-	-	-	- -
Mov Cap-1 Maneuver	1289	-	-	-	617 850
Mov Cap-2 Maneuver	-	-	-	-	663 -
Stage 1	-	-	-	-	819 -
Stage 2	-	-	-	-	855 -

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1289	-	-	-	663	850
HCM Lane V/C Ratio	0.026	-	-	-	0.134	0.042
HCM Control Delay (s)	7.9	-	-	-	11.3	9.4
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1

Lanes, Volumes, Timings

2025 Total PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	1322	118	133	1204	365	149	302	152	321	286	89
Future Volume (vph)	103	1322	118	133	1204	365	149	302	152	321	286	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00		0.98		1.00	0.99	1.00		1.00
Fit		0.988				0.850			0.850		0.964	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5013	0	1752	3574	1615	1752	3574	1509	1770	3373	0
Fit Permitted	0.091			0.079			0.317			0.363		
Satd. Flow (perm)	170	5013	0	146	3574	1588	583	3574	1488	675	3373	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				346			151			37
Link Speed (k/h)		60			60			50				50
Link Distance (m)		230.2			269.3			222.3				200.9
Travel Time (s)		13.8			16.2			16.0				14.5
Conf. Peds. (#/hr)	5		5	5		5	5		2	2		5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	3%	3%	1%	0%	3%	1%	7%	2%	3%	2%
Adj. Flow (vph)	117	1502	134	151	1368	415	169	343	173	365	325	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	1636	0	151	1368	415	169	343	173	365	426	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	47.0		13.0	49.0	49.0	14.0	35.0	35.0	15.0	36.0	
Total Split (%)	10.0%	42.7%		11.8%	44.5%	44.5%	12.7%	31.8%	31.8%	13.6%	32.7%	
Maximum Green (s)	7.0	42.0		9.0	44.0	44.0	10.0	30.0	30.0	11.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effect Green (s)	62.3	54.3		65.5	55.9	55.9	28.9	18.1	18.1	31.3	19.3	
Actuated g/C Ratio	0.57	0.49		0.60	0.51	0.51	0.26	0.16	0.16	0.28	0.18	
v/c Ratio	0.59	0.66		0.71	0.75	0.42	0.66	0.58	0.47	1.21	0.69	

Lanes, Volumes, Timings

2025 Total PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	26.0	23.0		33.7	42.6	20.5	41.6	46.1	13.0	154.3	44.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	26.0	23.0		33.7	42.6	20.5	41.6	46.1	13.0	154.3	44.3	
LOS	C	C		C	D	C	D	D	B	F	D	
Approach Delay		23.2			37.2			36.6				95.1
Approach LOS		C			D			D				F
Queue Length 50th (m)	10.0	97.8		29.3	170.8	65.3	29.1	38.1	4.3	-71.8	44.0	
Queue Length 95th (m)	#27.9	123.4		#42.0	192.2	89.3	42.9	48.9	21.4	#108.8	56.0	
Internal Link Dist (m)		206.2			245.3			198.3				176.9
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	198	2484		219	1816	977	260	974	515	301	977	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.59	0.66		0.69	0.75	0.42	0.65	0.35	0.34	1.21	0.44	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 56 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 41.2

Intersection LOS: D

Intersection Capacity Utilization 81.3%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

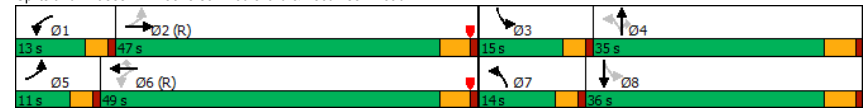
Queue shown is maximum after two cycles.

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: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

2025 Total PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	103	1322	118	133	1204	365	149	302	152	321	286	89
Future Volume (veh/h)	103	1322	118	133	1204	365	149	302	152	321	286	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1885	1900	1856	1885	1796	1870	1856	1870
Adj Flow Rate, veh/h	117	1502	134	151	1368	415	169	343	173	365	325	101
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	3	3	1	0	3	1	7	2	3	2
Cap, veh/h	210	2359	210	257	1775	796	295	641	270	325	499	152
Arrive On Green	0.06	0.49	0.49	0.02	0.16	0.16	0.09	0.18	0.18	0.10	0.19	0.19
Sat Flow, veh/h	1781	4771	425	1767	3582	1605	1767	3582	1509	1781	2654	811
Grp Volume(v), veh/h	117	1072	564	151	1368	415	169	343	173	365	214	212
Grp Sat Flow(s),veh/h/ln	1781	1702	1792	1767	1791	1605	1767	1791	1509	1781	1763	1702
Q Serve(g_s), s	3.4	25.5	25.6	4.5	40.2	26.0	8.5	9.6	11.7	11.0	12.3	12.7
Cycle Q Clear(g_c), s	3.4	25.5	25.6	4.5	40.2	26.0	8.5	9.6	11.7	11.0	12.3	12.7
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	210	1683	886	257	1775	796	295	641	270	325	331	320
V/C Ratio(X)	0.56	0.64	0.64	0.59	0.77	0.52	0.57	0.54	0.64	1.12	0.65	0.66
Avail Cap(c_a), veh/h	213	1683	886	290	1775	796	295	977	412	325	497	480
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.60	0.60	0.60	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	20.5	20.5	18.7	40.0	34.1	33.2	41.0	41.9	39.9	41.3	41.4
Incr Delay (d2), s/veh	3.1	1.9	3.5	1.5	2.0	1.5	2.7	1.0	3.6	87.9	3.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	6.7	7.7	0.9	17.9	9.3	4.3	5.1	5.6	19.1	6.7	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	22.4	24.0	20.2	42.0	35.5	35.9	42.0	45.5	127.8	44.3	44.8
LnGrp LOS	C	C	C	C	D	D	D	D	D	F	D	D
Approach Vol, veh/h	1753			1934			685			791		
Approach Delay, s/veh	23.1			38.9			41.4			83.0		
Approach LOS	C			D			D			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	59.4	15.0	24.7	10.8	59.5	14.0	25.7				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	9.0	42.0	11.0	30.0	7.0	44.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	6.5	27.6	13.0	13.7	5.4	42.2	10.5	14.7				
Green Ext Time (p_c), s	0.1	11.7	0.0	4.2	0.1	1.7	0.0	3.6				

Intersection Summary

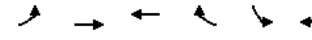
HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

Lanes, Volumes, Timings

2025 Total PM Peak Hour

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

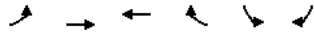


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	174	1621	1509	38	35	194
Future Volume (vph)	174	1621	1509	38	35	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fit			0.996			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	5085	5065	0	1770	1583
Fit Permitted	0.080				0.950	
Satd. Flow (perm)	149	5085	5065	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			4			211
Link Speed (k/h)		50	50		50	
Link Distance (m)		269.3	167.9		212.2	
Travel Time (s)		19.4	12.1		15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	1762	1640	41	38	211
Shared Lane Traffic (%)						
Lane Group Flow (vph)	189	1762	1681	0	38	211
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	24.0	81.0	57.0		29.0	29.0
Total Split (%)	21.8%	73.6%	51.8%		26.4%	26.4%
Maximum Green (s)	20.0	76.0	52.0		24.0	24.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)	65.9	64.9	46.3		35.1	35.1
Actuated g/C Ratio	0.60	0.59	0.42		0.32	0.32
v/c Ratio	0.62	0.59	0.79		0.07	0.33
Control Delay	18.1	11.3	23.8		31.2	6.3
Queue Delay	0.0	0.0	0.1		0.0	0.0
Total Delay	18.1	11.3	24.0		31.2	6.3

Lanes, Volumes, Timings

2025 Total PM Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

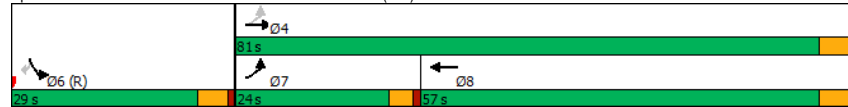


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	B	B	C		C	A
Approach Delay		11.9	24.0		10.1	
Approach LOS		B	C		B	
Queue Length 50th (m)	13.7	109.7	145.0		6.0	0.0
Queue Length 95th (m)	m22.4	m38.8	126.5		16.1	19.4
Internal Link Dist (m)		245.3	143.9		188.2	
Turn Bay Length (m)	45.0					
Base Capacity (vph)	384	3513	2396		564	648
Starvation Cap Reductn	0	0	111		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.49	0.50	0.74		0.07	0.33

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 17.0 Intersection LOS: B
 Intersection Capacity Utilization 59.6% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

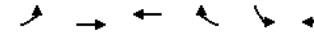
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2025 Total PM Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	174	1621	1509	38	35	194
Future Volume (veh/h)	174	1621	1509	38	35	194
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	1762	1640	41	38	211
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	250	2718	2130	53	671	597
Arrive On Green	0.05	0.36	0.42	0.42	0.38	0.38
Sat Flow, veh/h	1781	5274	5292	128	1781	1585
Grp Volume(v), veh/h	189	1762	1090	591	38	211
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1847	1781	1585
Q Serve(g_s), s	6.3	31.8	30.3	30.3	1.5	10.5
Cycle Q Clear(g_c), s	6.3	31.8	30.3	30.3	1.5	10.5
Prop In Lane	1.00			0.07	1.00	1.00
Lane Grp Cap(c), veh/h	250	2718	1415	768	671	597
V/C Ratio(X)	0.76	0.65	0.77	0.77	0.06	0.35
Avail Cap(c_a), veh/h	431	3528	1609	873	671	597
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.60	0.89	0.89	1.00	1.00
Uniform Delay (d), s/veh	23.9	26.8	27.6	27.6	21.8	24.6
Incr Delay (d2), s/veh	2.8	0.2	1.8	3.3	0.2	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	8.9	10.1	11.2	0.6	16.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.7	26.9	29.4	31.0	22.0	26.3
LnGrp LOS	C	C	C	C	C	C
Approach Vol, veh/h	1951	1681			249	
Approach Delay, s/veh	26.9	30.0			25.6	
Approach LOS	C	C			C	
Timer - Assigned Phs			4		6	7
Phs Duration (G+Y+Rc), s			63.6		46.4	12.8
Change Period (Y+Rc), s			5.0		5.0	4.0
Max Green Setting (Gmax), s			76.0		24.0	20.0
Max Q Clear Time (g_c+I1), s			33.8		12.5	8.3
Green Ext Time (p_c), s			24.1		0.9	0.6

Intersection Summary

HCM 6th Ctrl Delay 28.2
 HCM 6th LOS C

Lanes, Volumes, Timings

2025 Total PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑↑	↓	↑↑	↑↑↑	↓	↑	↑	↓	↑	↑	↓
Traffic Volume (vph)	126	1475	52	21	1412	8	49	3	46	74	2	84
Future Volume (vph)	126	1475	52	21	1412	8	49	3	46	74	2	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99		0.99	1.00		0.99
Frt		0.995			0.999			0.936			0.853	
Fit Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1805	5057	0	1805	5130	0	0	1725	0	1787	1600	0
Fit Permitted	0.118			0.123				0.770		0.642		
Satd. Flow (perm)	224	5057	0	233	5130	0	0	1360	0	1207	1600	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1			41				93
Link Speed (k/h)		60			60			50				50
Link Distance (m)		167.9			186.0			136.6				134.8
Travel Time (s)		10.1			11.2			9.8				9.7
Conf. Peds. (#/hr)	8		9	9		8	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	140	1639	58	23	1569	9	54	3	51	82	2	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	1697	0	23	1578	0	0	108	0	82	95	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6				4			8	
Detector Phase	5	2		1	6			4	4		8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	40.0		11.0	40.0		35.0	35.0		35.0	35.0	
Total Split (s)	19.0	62.0		11.0	54.0		37.0	37.0		37.0	37.0	
Total Split (%)	17.3%	56.4%		10.0%	49.1%		33.6%	33.6%		33.6%	33.6%	
Maximum Green (s)	15.0	57.0		7.0	49.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		28.0			28.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	87.4	82.2		81.8	73.8			13.4		13.4	13.4	
Actuated g/C Ratio	0.79	0.75		0.74	0.67			0.12		0.12	0.12	
v/c Ratio	0.46	0.45		0.08	0.46			0.54		0.56	0.34	

Lanes, Volumes, Timings

2025 Total PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	22.5	3.5		4.0	8.3					38.3		12.6
Queue Delay	0.0	0.0		0.0	0.0					0.0		0.0
Total Delay	22.5	3.6		4.0	8.3					38.3		12.6
LOS	C	A		A	A					D		B
Approach Delay		5.0			8.2					38.3		34.5
Approach LOS		A			A					D		C
Queue Length 50th (m)	9.3	18.2		1.0	51.1					14.4		17.9
Queue Length 95th (m)	29.3	31.7		m2.8	m68.4					31.3		32.8
Internal Link Dist (m)		143.9			162.0					112.6		110.8
Turn Bay Length (m)	35.0			30.0								45.0
Base Capacity (vph)	393	3782		273	3440					424		531
Starvation Cap Reductn	0	205		0	268					0		0
Spillback Cap Reductn	0	0		0	119					0		2
Storage Cap Reductn	0	0		0	0					0		0
Reduced v/c Ratio	0.36	0.47		0.08	0.50					0.25		0.23

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 93 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 8.8
 Intersection LOS: A
 Intersection Capacity Utilization 60.6%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Commercial Access/Home Depot Access & Tecumseh Road



HCM 6th Signalized Intersection Summary 2025 Total PM Peak Hour
 3: Commercial Access/Home Depot Access & Tecumseh Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Volume (veh/h)	126	1475	52	21	1412	8	49	3	46	74	2	84
Future Volume (veh/h)	126	1475	52	21	1412	8	49	3	46	74	2	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1900	1900	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	140	1639	58	23	1569	9	54	3	51	82	2	93
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	0	0	1	0	0	0	0	1	0	0
Cap, veh/h	402	3583	127	322	3576	21	106	20	69	214	5	209
Arrive On Green	0.13	1.00	1.00	0.06	1.00	1.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1810	5062	179	1810	5280	30	430	150	518	1359	34	1578
Grp Volume(v), veh/h	140	1102	595	23	1020	558	108	0	0	82	0	95
Grp Sat Flow(s),veh/h/ln	1810	1702	1837	1810	1716	1879	1097	0	0	1359	0	1612
Q Serve(g_s), s	2.3	0.0	0.0	0.4	0.0	0.0	5.5	0.0	0.0	0.0	0.0	6.0
Cycle Q Clear(g_c), s	2.3	0.0	0.0	0.4	0.0	0.0	11.5	0.0	0.0	8.0	0.0	6.0
Prop In Lane	1.00		0.10	1.00		0.02	0.50		0.47	1.00		0.98
Lane Grp Cap(c), veh/h	402	2410	1300	322	2324	1273	195	0	0	214	0	214
V/C Ratio(X)	0.35	0.46	0.46	0.07	0.44	0.44	0.55	0.00	0.00	0.38	0.00	0.44
Avail Cap(c_a), veh/h	535	2410	1300	380	2324	1273	425	0	0	429	0	469
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.79	0.88	0.88	0.88	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.4	0.0	0.0	4.5	0.0	0.0	47.0	0.0	0.0	44.9	0.0	44.0
Incr Delay (d2), s/veh	0.4	0.5	0.9	0.1	0.5	1.0	2.5	0.0	0.0	1.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.3	0.6	0.0	0.3	0.6	3.8	0.0	0.0	2.7	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.8	0.5	0.9	4.6	0.5	1.0	49.5	0.0	0.0	46.0	0.0	45.4
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h	1837			1601			108			177		
Approach Delay, s/veh	0.9			0.7			49.5			45.7		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2	4	5	6	8						
Phs Duration (G+Y+Rc), s	7.5	82.9	19.6	10.9	79.5	19.6						
Change Period (Y+Rc), s	4.0	5.0	5.0	4.0	5.0	5.0						
Max Green Setting (Gmax), s	7.0	57.0	32.0	15.0	49.0	32.0						
Max Q Clear Time (g_c+1), s	2.4	2.0	13.5	4.3	2.0	10.0						
Green Ext Time (p_c), s	0.0	23.5	0.6	0.3	19.6	1.0						

Intersection Summary		
HCM 6th Ctrl Delay	4.4	
HCM 6th LOS	A	

Lanes, Volumes, Timings 2025 Total PM Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Volume (vph)	84	1357	63	201	946	61	92	129	171	125	107	252
Future Volume (vph)	84	1357	63	201	946	61	92	129	171	125	107	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00						1.00	0.99				
Frt	0.993				0.991		0.913				0.895	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5090	0	1752	5040	0	1787	1695	0	1770	1667	0
Fit Permitted	0.233			0.080			0.178			0.271		
Satd. Flow (perm)	434	5090	0	148	5040	0	334	1695	0	505	1667	0
Right Turn on Red	Yes				Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)	7				12		67				115	
Link Speed (k/h)	60				60		50				50	
Link Distance (m)	186.0				273.0		289.9				219.2	
Travel Time (s)	11.2				16.4		20.9				15.8	
Confl. Peds. (#/hr)	13		13		3		3					
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	3%	2%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	91	1542	72	228	1075	66	105	140	194	136	116	274
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	1614	0	228	1141	0	105	334	0	136	390	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		8			4		4
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0		7.0	10.0		11.0	11.0		11.0		11.0
Minimum Split (s)	9.0	28.0		11.0	28.0		34.0	34.0		34.0		34.0
Total Split (s)	10.0	47.0		22.0	59.0		41.0	41.0		41.0		41.0
Total Split (%)	9.1%	42.7%		20.0%	53.6%		37.3%	37.3%		37.3%		37.3%
Maximum Green (s)	6.0	42.0		18.0	54.0		36.0	36.0		36.0		36.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.5	4.0		3.5	4.0		3.0	3.0		4.0		4.0
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)	7.0			7.0			7.0	7.0		7.0		7.0
Flash Dont Walk (s)	16.0			16.0			22.0	22.0		22.0		22.0
Pedestrian Calls (#/hr)	0			0			0	0		0		0
Act Effct Green (s)	63.0	54.9		74.0	63.9		27.0	27.0		27.0		27.0
Actuated g/C Ratio	0.57	0.50		0.67	0.58		0.25	0.25		0.25		0.25
v/c Ratio	0.27	0.63		0.75	0.39		1.30	0.72		1.11		0.79

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	5.5	12.8		39.5	20.8		230.9	38.0		144.7	31.9	
Queue Delay	0.0	0.1		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.5	12.8		39.5	20.8		230.9	38.0		144.7	31.9	
LOS	A	B		D	C		F	D		F	C	
Approach Delay	12.5			23.9			84.1			61.1		
Approach LOS	B			C			F			E		
Queue Length 50th (m)	4.6	32.5		41.1	64.5		~29.8	55.4		~34.1	43.8	
Queue Length 95th (m)	3.3	148.5		70.3	81.5		#57.7	78.9		m#65.1	63.0	
Internal Link Dist (m)	162.0			249.0			265.9			195.2		
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	335	2542		362	2934		109	599		165	622	
Starvation Cap Reductn	0	89		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.27	0.66		0.63	0.39		0.96	0.56		0.82	0.63	

Intersection Summary	
Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	102 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.30
Intersection Signal Delay:	30.5
Intersection LOS:	C
Intersection Capacity Utilization:	84.9%
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: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘		
Traffic Volume (veh/h)	84	1357	63	201	946	61	92	129	171	125	107	252
Future Volume (veh/h)	84	1357	63	201	946	61	92	129	171	125	107	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1856	1870	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	91	1542	72	228	1075	66	105	140	194	136	116	274
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	3	2	2	1	2	1	2	2	2
Cap, veh/h	292	2306	108	272	2471	152	186	232	321	234	162	382
Arrive On Green	0.01	0.15	0.15	0.03	0.17	0.17	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1781	5035	235	1767	4914	301	1002	709	982	1045	494	1167
Grp Volume(v), veh/h	91	1051	563	228	744	397	105	0	334	136	0	390
Grp Sat Flow(s), veh/h/ln	1781	1716	1839	1767	1702	1811	1002	0	1690	1045	0	1660
Q Serve(g_s), s	2.9	31.8	31.8	6.9	21.6	21.7	11.3	0.0	18.2	13.8	0.0	22.7
Cycle Q Clear(g_c), s	2.9	31.8	31.8	6.9	21.6	21.7	34.0	0.0	18.2	32.0	0.0	22.7
Prop In Lane	1.00		0.13	1.00		0.17	1.00		0.58	1.00		0.70
Lane Grp Cap(c), veh/h	292	1571	842	272	1712	911	186	0	553	234	0	543
V/C Ratio(X)	0.31	0.67	0.67	0.84	0.43	0.44	0.56	0.00	0.60	0.58	0.00	0.72
Avail Cap(c_a), veh/h	313	1571	842	407	1712	911	186	0	553	234	0	543
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.89	0.89	0.89	0.74	0.74	0.74	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.5	38.8	38.8	23.9	31.8	31.8	47.5	0.0	31.0	44.4	0.0	32.5
Incr Delay (d2), s/veh	0.6	2.0	3.7	7.9	0.6	1.1	3.9	0.0	1.9	4.3	0.0	4.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	0.8	13.4	14.7	2.1	6.8	7.3	3.8	0.0	7.9	4.7	0.0	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.1	40.8	42.6	31.8	32.4	33.0	51.3	0.0	32.9	48.8	0.0	37.5
LnGrp LOS	B	D	D	C	C	C	D	A	C	D	A	D
Approach Vol, veh/h	1705			1369			439			526		
Approach Delay, s/veh	40.1			32.5			37.3			40.4		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	55.4		41.0	8.7	60.3		41.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	18.0	42.0		36.0	6.0	54.0		36.0				
Max Q Clear Time (g_c+I1), s	8.9	33.8		34.0	4.9	23.7		36.0				
Green Ext Time (p_c), s	0.7	7.0		0.9	0.0	14.3		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	37.3
HCM 6th LOS	D

Lanes, Volumes, Timings

2025 Total PM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Volume (vph)	214	1380	140	176	1144	208	183	90	116	144	75	100
Future Volume (vph)	214	1380	140	176	1144	208	183	90	116	144	75	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			0.98					0.98
Fit	0.986			0.977			0.916			0.914		
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	5004	0	1805	4983	0	1787	1733	0	1805	1688	0
Fit Permitted	0.102			0.082			0.516			0.452		
Satd. Flow (perm)	192	5004	0	156	4983	0	952	1733	0	859	1688	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	19			39			61			63		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	273.0			268.3			231.1			151.2		
Travel Time (s)	16.4			16.1			16.6			10.9		
Conf. Peds. (#/hr)	6			6			25			25		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	1%	0%	2%	0%	1%	0%	0%	0%	0%	1%
Adj. Flow (vph)	238	1533	156	196	1271	231	203	100	129	160	83	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	1689	0	196	1502	0	203	229	0	160	194	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	22.0	52.0		19.0	49.0		39.0	39.0		39.0	39.0	
Total Split (%)	20.0%	47.3%		17.3%	44.5%		35.5%	35.5%		35.5%	35.5%	
Maximum Green (s)	18.0	47.0		15.0	44.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0			7.0			7.0			7.0		
Flash Dont Walk (s)	23.0			23.0			23.0			23.0		
Pedestrian Calls (#/hr)	0			0			0			0		
Act Effct Green (s)	71.9	56.9		68.4	55.2		26.8	26.8		26.8	26.8	
Actuated g/C Ratio	0.65	0.52		0.62	0.50		0.24	0.24		0.24	0.24	
v/c Ratio	0.73	0.65		0.70	0.60		0.88	0.49		0.77	0.42	

Lanes, Volumes, Timings

2025 Total PM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	48.7	8.4		40.5	18.6		73.3	28.2		60.9	24.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.7	8.4		40.5	18.6		73.3	28.2		60.9	24.7	
LOS	D	A		D	B		E	C		E	C	
Approach Delay	13.4			21.1			49.4			41.1		
Approach LOS	B			C			D			D		
Queue Length 50th (m)	35.6	26.5		33.3	50.9		43.7	31.8		33.3	24.1	
Queue Length 95th (m)	m65.6	34.7		m55.4	83.5		#73.5	51.6		55.2	42.3	
Internal Link Dist (m)	249.0			244.3			207.1			127.2		
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	389	2599		324	2519		294	577		265	565	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.61	0.65		0.60	0.60		0.69	0.40		0.60	0.34	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 22.1
 Intersection LOS: C
 Intersection Capacity Utilization 84.7%
 ICU Level of Service E
 Analysis Period (min) 15
 # 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: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2025 Total PM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔		↔↔↔		↔↔↔		↔↔↔		↔↔↔		↔↔↔	
Traffic Volume (veh/h)	214	1380	140	176	1144	208	183	90	116	144	75	100
Future Volume (veh/h)	214	1380	140	176	1144	208	183	90	116	144	75	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1885	1900	1870	1900	1885	1885	1900	1900	1900	1885
Adj Flow Rate, veh/h	238	1533	156	196	1271	231	203	100	129	160	83	111
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	1	0	2	0	1	1	0	0	0	1
Cap, veh/h	307	2409	245	344	2142	389	296	212	273	268	209	279
Arrive On Green	0.18	1.00	1.00	0.02	0.16	0.16	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1795	4706	479	1810	4338	788	1179	736	949	1153	725	970
Grp Volume(v), veh/h	238	1108	581	196	997	505	203	0	229	160	0	194
Grp Sat Flow(s),veh/h/ln	1795	1702	1781	1810	1702	1723	1179	0	1684	1153	0	1695
Q Serve(g_s), s	7.4	0.0	0.0	5.6	29.9	29.9	18.4	0.0	12.3	14.6	0.0	10.1
Cycle Q Clear(g_c), s	7.4	0.0	0.0	5.6	29.9	29.9	28.5	0.0	12.3	26.9	0.0	10.1
Prop In Lane	1.00		0.27	1.00		0.46	1.00		0.56	1.00		0.57
Lane Grp Cap(c), veh/h	307	1742	912	344	1681	851	296	0	485	268	0	488
V/C Ratio(X)	0.77	0.64	0.64	0.57	0.59	0.59	0.69	0.00	0.47	0.60	0.00	0.40
Avail Cap(c_a), veh/h	438	1742	912	458	1681	851	321	0	521	293	0	524
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	0.0	12.1	35.8	35.8	43.0	0.0	32.3	43.4	0.0	31.5
Incr Delay (d2), s/veh	3.8	1.2	2.4	1.1	1.1	2.2	6.2	0.0	1.0	3.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.5	1.1	1.0	10.6	11.1	7.1	0.0	5.6	5.4	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	1.2	2.4	13.2	36.9	38.0	49.2	0.0	33.3	47.0	0.0	32.3
LnGrp LOS	C	A	A	B	D	D	D	A	C	D	A	C
Approach Vol, veh/h	1927			1698			432			354		
Approach Delay, s/veh	4.1			34.5			40.8			38.9		
Approach LOS	A			C			D			D		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	12.0	61.3	36.7		14.0	59.3	36.7					
Change Period (Y+Rc), s	4.0	5.0	5.0		4.0	5.0	5.0					
Max Green Setting (Gmax), s	15.0	47.0	34.0		18.0	44.0	34.0					
Max Q Clear Time (g_c+I1), s	7.6	2.0	30.5		9.4	31.9	28.9					
Green Ext Time (p_c), s	0.4	28.7	1.1		0.6	9.6	1.2					

Intersection Summary		
HCM 6th Ctrl Delay	22.2	
HCM 6th LOS	C	

Lanes, Volumes, Timings

2025 Total PM Peak Hour

7: Lauzon Parkway & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔		↔↔↔		↔↔↔		↔↔↔		↔↔↔		↔↔↔	
Traffic Volume (vph)	177	1264	201	170	918	79	242	864	221	181	589	70
Future Volume (vph)	177	1264	201	170	918	79	242	864	221	181	589	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00		0.98
Frt		0.979			0.988			0.969				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	5043	0	1805	5063	0	1787	4916	0	1656	5136	1553
Fit Permitted	0.139			0.109			0.309			0.137		
Satd. Flow (perm)	253	5043	0	207	5063	0	579	4916	0	239	5136	1521
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			13			56				109
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	21		19	19		21	8		9	9		8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	2%	0%	0%	12%	1%	2%	1%	9%	1%	4%
Adj. Flow (vph)	195	1389	221	187	1009	87	266	949	243	199	647	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1610	0	187	1096	0	266	1192	0	199	647	77
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	36.0		11.0	36.0	36.0
Total Split (s)	18.0	44.0		14.0	40.0		16.0	36.0		16.0	36.0	36.0
Total Split (%)	16.4%	40.0%		12.7%	36.4%		14.5%	32.7%		14.5%	32.7%	32.7%
Maximum Green (s)	14.0	38.0		10.0	34.0		12.0	30.0		12.0	30.0	30.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			6.0			6.0	6.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	52.9	39.0		48.6	36.8		43.4	29.5		43.0	29.3	29.3
Actuated g/C Ratio	0.48	0.35		0.44	0.33		0.39	0.27		0.39	0.27	0.27
v/c Ratio	0.69	0.89		0.80	0.64		0.74	0.88		0.81	0.47	0.16

Lanes, Volumes, Timings

2025 Total PM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

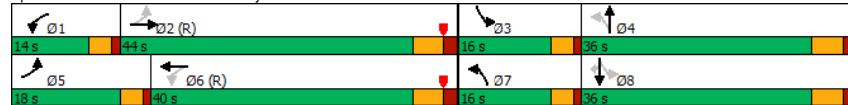


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	44.3	27.8		48.7	33.3		35.7	45.2		56.7	45.1	12.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	44.3	27.8		48.7	33.3		35.7	45.2		56.7	45.1	12.8
LOS	D	C		D	C		D	D		E	D	B
Approach Delay	29.6			35.5			43.4			44.9		
Approach LOS	C			D			D			D		
Queue Length 50th (m)	25.1	98.9		24.2	77.0		38.9	90.0		40.4	54.7	2.0
Queue Length 95th (m)	53.2	#118.1		#63.1	95.2		#63.4	108.7		#66.2	68.7	13.3
Internal Link Dist (m)	244.3			264.0			184.8			206.9		
Turn Bay Length (m)	90.0			120.0			90.0			70.0		
Base Capacity (vph)	314	1806		236	1703		360	1381		248	1400	494
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	0.62	0.89		0.79	0.64		0.74	0.86		0.80	0.46	0.16

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 7 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 37.3
 Intersection LOS: D
 Intersection Capacity Utilization 87.9%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2025 Total PM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔	↔
Traffic Volume (veh/h)	177	1264	201	170	918	79	242	864	221	181	589	70
Future Volume (veh/h)	177	1264	201	170	918	79	242	864	221	181	589	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1900	1870	1900	1900	1722	1885	1870	1885	1767	1885	1841
Adj Flow Rate, veh/h	195	1389	221	187	1009	87	266	949	243	199	647	77
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	0	2	0	0	12	1	2	1	9	1	4
Cap, veh/h	317	1643	261	235	1745	150	365	1081	276	257	1344	403
Arrive On Green	0.03	0.12	0.12	0.08	0.36	0.36	0.11	0.27	0.27	0.03	0.09	0.09
Sat Flow, veh/h	1753	4499	715	1810	4856	418	1795	4044	1032	1682	5147	1544
Grp Volume(v), veh/h	195	1067	543	187	718	378	266	798	394	199	647	77
Grp Sat Flow(s),veh/h/ln	1753	1729	1756	1810	1729	1816	1795	1702	1672	1682	1716	1544
Q Serve(g_s), s	7.5	33.2	33.3	7.1	18.5	18.5	12.0	24.7	24.8	9.3	13.2	5.1
Cycle Q Clear(g_c), s	7.5	33.2	33.3	7.1	18.5	18.5	12.0	24.7	24.8	9.3	13.2	5.1
Prop In Lane	1.00		0.41	1.00		0.23	1.00		0.62	1.00		1.00
Lane Grp Cap(c), veh/h	317	1263	641	235	1243	653	365	910	447	257	1344	403
V/C Ratio(X)	0.61	0.85	0.85	0.79	0.58	0.58	0.73	0.88	0.88	0.77	0.48	0.19
Avail Cap(c_a), veh/h	385	1263	641	250	1243	653	365	928	456	268	1404	421
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.70	0.70	0.70	1.00	1.00	1.00	1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	22.9	45.3	45.3	25.8	28.5	28.5	26.9	38.6	38.6	31.0	43.2	39.5
Incr Delay (d2), s/veh	1.4	5.1	9.5	15.4	2.0	3.7	7.2	9.5	17.7	10.9	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	16.0	17.2	3.9	7.4	8.2	5.8	11.3	12.5	5.0	6.4	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	50.4	54.8	41.2	30.4	32.2	34.1	48.1	56.3	41.9	43.4	39.7
LnGrp LOS	C	D	D	D	C	C	C	D	E	D	D	D
Approach Vol, veh/h	1805			1283			1458			923		
Approach Delay, s/veh	48.9			32.5			47.8			42.8		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.1	46.2	15.3	35.4	13.7	45.5	16.0	34.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	38.0	12.0	30.0	14.0	34.0	12.0	30.0				
Max Q Clear Time (g_c+I1), s	9.1	35.3	11.3	26.8	9.5	20.5	14.0	15.2				
Green Ext Time (p_c), s	0.1	2.5	0.1	2.4	0.3	8.2	0.0	5.3				

Intersection Summary

HCM 6th Ctrl Delay 43.7
 HCM 6th LOS D

Lanes, Volumes, Timings

2025 Total PM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	98	286	114	91	119	217	734	160	105	428	403
Future Volume (vph)	336	98	286	114	91	119	217	734	160	105	428	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99	0.98		1.00	0.99		1.00		0.98	1.00	0.99	
Fit	0.888			0.915			0.850			0.927		
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1613	0	1570	1672	0	1671	3610	1455	1703	4733	0
Fit Permitted	0.558			0.338			0.198			0.258		
Satd. Flow (perm)	1054	1613	0	556	1672	0	348	3610	1423	462	4733	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		169			76			176			215	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		646.8			106.2			230.9			292.9	
Travel Time (s)		46.6			7.6			13.9			17.6	
Conf. Peds. (#/hr)	7		8	8		7	1		1	1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	4%	15%	0%	5%	8%	0%	11%	6%	1%	0%
Adj. Flow (vph)	369	108	314	125	100	131	238	807	176	115	470	443
Shared Lane Traffic (%)												
Lane Group Flow (vph)	369	422	0	125	231	0	238	807	176	115	913	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		36.0	36.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	54.0	54.0		54.0	54.0		19.0	43.0	43.0	13.0	37.0	
Total Split (%)	49.1%	49.1%		49.1%	49.1%		17.3%	39.1%	39.1%	11.8%	33.6%	
Maximum Green (s)	48.0	48.0		48.0	48.0		15.0	37.0	37.0	9.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	42.5	42.5		42.5	42.5		57.2	43.1	43.1	48.6	38.2	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.52	0.39	0.39	0.44	0.35	
v/c Ratio	0.91	0.58		0.58	0.33		0.70	0.57	0.27	0.39	0.51	

Lanes, Volumes, Timings

2025 Total PM Peak Hour

8: Lauzon Parkway & Catherine Street

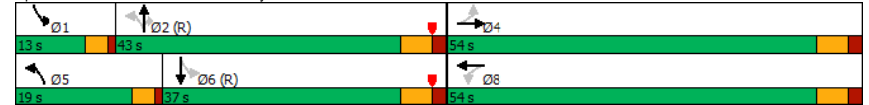
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	58.5	17.9		37.5	15.8		40.6	14.0	0.8	19.6	23.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	58.5	17.9		37.5	15.8		40.6	14.0	0.8	19.6	23.9	
LOS	E	B		D	B		D	B	A	B	C	
Approach Delay		36.8			23.4			17.3			23.4	
Approach LOS		D			C			B			C	
Queue Length 50th (m)	73.9	41.6		21.0	22.2		28.5	26.1	0.1	13.6	48.3	
Queue Length 95th (m)	#124.9	69.6		41.1	39.4		m40.5	m33.4	m0.6	25.3	65.0	
Internal Link Dist (m)		622.8			82.2			206.9			268.9	
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	459	799		242	772		362	1415	664	308	1784	
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	0.80	0.53		0.52	0.30		0.66	0.57	0.27	0.37	0.51	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 79 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 24.3
 Intersection Capacity Utilization 88.9%
 Analysis Period (min) 15
 # 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: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

2025 Total PM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	336	98	286	114	91	119	217	734	160	105	428	403
Future Volume (veh/h)	336	98	286	114	91	119	217	734	160	105	428	403
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1841	1678	1900	1826	1781	1900	1737	1811	1885	1900
Adj Flow Rate, veh/h	369	108	314	125	100	131	238	807	176	115	470	443
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	4	15	0	5	8	0	11	6	1	0
Cap, veh/h	460	183	531	268	318	417	288	1319	537	314	1072	498
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.23	0.73	0.73	0.06	0.31	0.31
Sat Flow, veh/h	1164	427	1241	865	744	974	1697	3610	1470	1725	3431	1595
Grp Volume(v), veh/h	369	0	422	125	0	231	238	807	176	115	470	443
Grp Sat Flow(s),veh/h/ln	1164	0	1668	865	0	1718	1697	1805	1470	1725	1716	1595
Q Serve(g_s), s	33.8	0.0	21.3	14.2	0.0	9.8	10.4	12.0	4.7	4.9	12.0	29.1
Cycle Q Clear(g_c), s	43.5	0.0	21.3	35.6	0.0	9.8	10.4	12.0	4.7	4.9	12.0	29.1
Prop In Lane	1.00		0.74	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	460	0	713	268	0	735	288	1319	537	314	1072	498
V/C Ratio(X)	0.80	0.00	0.59	0.47	0.00	0.31	0.83	0.61	0.33	0.37	0.44	0.89
Avail Cap(c_a), veh/h	470	0	728	275	0	750	325	1319	537	349	1072	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.41	0.41	0.41	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	0.0	24.1	37.8	0.0	20.8	22.2	11.0	10.0	23.3	30.1	36.0
Incr Delay (d2), s/veh	10.0	0.0	1.5	1.8	0.0	0.3	6.6	0.9	0.7	0.7	1.3	20.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.7	0.0	7.6	3.6	0.0	3.5	3.3	3.0	1.3	1.8	5.1	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.0	25.6	39.6	0.0	21.2	28.7	11.9	10.7	24.0	31.4	56.5
LnGrp LOS	D	A	C	D	A	C	C	B	B	C	C	E
Approach Vol, veh/h	791			356			1221			1028		
Approach Delay, s/veh	34.8			27.6			15.0			41.4		
Approach LOS	C			C			B			D		
Timer - Assigned Phs	1	2	4	5	6	8						
Phs Duration (G+Y+Rc), s	10.8	46.2	53.0	16.6	40.4	53.0						
Change Period (Y+Rc), s	4.0	6.0	6.0	4.0	6.0	6.0						
Max Green Setting (Gmax), s	9.0	37.0	48.0	15.0	31.0	48.0						
Max Q Clear Time (g_c+I1), s	6.9	14.0	45.5	12.4	31.1	37.6						
Green Ext Time (p_c), s	0.1	10.3	1.5	0.3	0.0	2.4						

Intersection Summary		
HCM 6th Ctrl Delay	28.9	
HCM 6th LOS	C	

Lanes, Volumes, Timings

2025 Total PM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	56	65	4	270	419	4
Future Volume (vph)	56	65	4	270	419	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.927			0.999		
Fit Protected	0.977		0.950			
Satd. Flow (prot)	1687	0	1770	1863	1861	0
Fit Permitted	0.977		0.950			
Satd. Flow (perm)	1687	0	1770	1863	1861	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	140.9			219.2	133.7	
Travel Time (s)	10.1			15.8	9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	71	4	293	455	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	132	0	4	293	459	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC 2025 Total PM Peak Hour
 9: Rose-Ville Gardens Drive & Home Depot Access (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	56	65	4	270	419	4
Future Vol, veh/h	56	65	4	270	419	4
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	71	4	293	455	4
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	758	457	459	0	-	0
Stage 1	457	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	375	604	1102	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	374	604	1102	-	-	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	13.8	0.1	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1102	-	541	-	-	
HCM Lane V/C Ratio	0.004	-	0.243	-	-	
HCM Control Delay (s)	8.3	-	13.8	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.9	-	-	

Lanes, Volumes, Timings 2025 Total PM Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	446	219	204	393	254	72
Future Volume (vph)	446	219	204	393	254	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.956					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1781	0	1770	1863	1770	1583
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1781	0	1770	1863	1770	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	51.5			646.8	133.7	
Travel Time (s)	3.7			46.6	9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	485	238	222	427	276	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	723	0	222	427	276	78
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					

HCM 6th TWSC 2025 Total PM Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	32.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	446	219	204	393	254	72
Future Vol, veh/h	446	219	204	393	254	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	485	238	222	427	276	78

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	723
Stage 1	-	-	604
Stage 2	-	-	871
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	879	139
Stage 1	-	-	546
Stage 2	-	-	410
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	879	104
Mov Cap-2 Maneuver	-	-	221
Stage 1	-	-	546
Stage 2	-	-	306

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	149.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	221	498	-	-	879	-
HCM Lane V/C Ratio	1.249	0.157	-	-	0.252	-
HCM Control Delay (s)	188.3	13.6	-	-	10.5	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	14.2	0.6	-	-	1	-

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

Lanes, Volumes, Timings 2025 Total PM Peak Hour
 11: Catherine Street & Access A (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	127	85	114	339	364	115
Future Volume (vph)	127	85	114	339	364	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.899			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1675	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1675	0	1770	1583
Link Speed (k/h)		50	50			50
Link Distance (m)		81.3	112.9			190.8
Travel Time (s)		5.9	8.1			13.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	92	124	368	396	125
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	92	492	0	396	125
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	64.1%
ICU Level of Service	C
Analysis Period (min)	15

HCM 6th TWSC
11: Catherine Street & Access A

2025 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	15.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↔	↕
Traffic Vol, veh/h	127	85	114	339	364	115
Future Vol, veh/h	127	85	114	339	364	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	92	124	368	396	125

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	492	0	-	0	676
Stage 1	-	-	-	-	308
Stage 2	-	-	-	-	368
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1071	-	-	-	419
Stage 1	-	-	-	-	745
Stage 2	-	-	-	-	700
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1071	-	-	-	365
Mov Cap-2 Maneuver	-	-	-	-	473
Stage 1	-	-	-	-	649
Stage 2	-	-	-	-	700

Approach	EB	WB	SB
HCM Control Delay, s	5.3	0	33.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1071	-	-	-	473	732
HCM Lane V/C Ratio	0.129	-	-	-	0.836	0.171
HCM Control Delay (s)	8.9	-	-	-	40.8	10.9
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.4	-	-	-	8.3	0.6

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

Lanes, Volumes, Timings
12: Catherine Street & Access B

2025 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↔	↕	↕	↔	↔	↕
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↔	↕
Traffic Volume (vph)	85	364	339	308	301	114
Future Volume (vph)	85	364	339	308	301	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.936			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1744	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1744	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		112.9	51.5		157.4	
Travel Time (s)		8.1	3.7		11.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	396	368	335	327	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	396	703	0	327	124
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	68.1%
ICU Level of Service	C
Analysis Period (min)	15

HCM 6th TWSC
12: Catherine Street & Access B

2025 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	16.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↔		↔	↔
Traffic Vol, veh/h	85	364	339	308	301	114
Future Vol, veh/h	85	364	339	308	301	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	396	368	335	327	124

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	703	0	-	0	1116 536
Stage 1	-	-	-	-	536 -
Stage 2	-	-	-	-	580 -
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	895	-	-	-	~ 230 545
Stage 1	-	-	-	-	587 -
Stage 2	-	-	-	-	560 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	895	-	-	-	~ 206 545
Mov Cap-2 Maneuver	-	-	-	-	342 -
Stage 1	-	-	-	-	527 -
Stage 2	-	-	-	-	560 -

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	57.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	895	-	-	-	342	545
HCM Lane V/C Ratio	0.103	-	-	-	0.957	0.227
HCM Control Delay (s)	9.5	-	-	-	73.8	13.5
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.3	-	-	-	10.2	0.9

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

Lanes, Volumes, Timings

2025 Total Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	28	1176	108	171	1277	232	141	74	151	214	109	21
Future Volume (vph)	28	1176	108	171	1277	232	141	74	151	214	109	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00		0.98	0.99		1.00
Fit		0.987				0.850			0.850		0.975	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5048	0	1770	3574	1599	1770	3574	1615	1805	3453	0
Fit Permitted	0.158			0.143			0.667			0.705		
Satd. Flow (perm)	300	5048	0	266	3574	1564	1238	3574	1585	1332	3453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				213			156			21
Link Speed (k/h)		60			60			50				50
Link Distance (m)		230.2			268.2			222.3				200.9
Travel Time (s)		13.8			16.1			16.0				14.5
Confl. Peds. (#/hr)	11		18	18		11	4		6	6		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	3%	2%	1%	1%	2%	1%	0%	0%	1%	5%
Adj. Flow (vph)	29	1212	111	176	1316	239	145	76	156	221	112	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	1323	0	176	1316	239	145	76	156	221	134	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	5	2		1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	42.0		18.0	49.0	49.0	13.0	35.0	35.0	13.0	35.0	
Total Split (%)	10.2%	38.9%		16.7%	45.4%	45.4%	12.0%	32.4%	32.4%	12.0%	32.4%	
Maximum Green (s)	7.0	37.0		14.0	44.0	44.0	9.0	30.0	30.0	9.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	67.2	59.2		75.2	67.6	67.6	20.8	10.8	10.8	20.8	10.8	
Actuated g/C Ratio	0.62	0.55		0.70	0.63	0.63	0.19	0.10	0.10	0.19	0.10	
v/c Ratio	0.10	0.48		0.52	0.59	0.23	0.51	0.21	0.52	0.75	0.37	

Lanes, Volumes, Timings

2025 Total Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

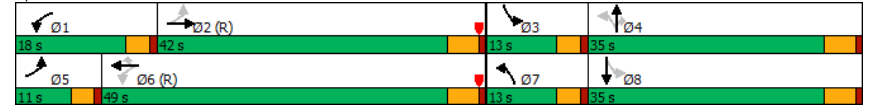
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	6.7	16.0		26.0	9.2	2.4	42.1	45.7	13.8	54.1	40.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.7	16.0		26.0	9.2	2.4	42.1	45.7	13.8	54.1	40.8	
LOS	A	B		C	A	A	D	D	B	D	D	
Approach Delay		15.8			9.9			31.1				49.1
Approach LOS		B			A			C				D
Queue Length 50th (m)	1.7	60.9		18.5	37.0	1.8	27.4	8.3	0.0	43.7	12.5	
Queue Length 95th (m)	4.9	82.9		m36.8	57.1	m0.0	44.6	15.4	19.3	#66.3	21.9	
Internal Link Dist (m)		206.2			244.2			198.3				176.9
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	284	2773		380	2235	1058	283	992	552	296	974	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.48		0.46	0.59	0.23	0.51	0.08	0.28	0.75	0.14	

Intersection Summary

Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	17.7
Intersection LOS:	B
Intersection Capacity Utilization:	79.3%
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.
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

2025 Total Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔
Traffic Volume (veh/h)	28	1176	108	171	1277	232	141	74	151	214	109	21
Future Volume (veh/h)	28	1176	108	171	1277	232	141	74	151	214	109	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1856	1870	1885	1885	1870	1885	1900	1900	1885	1826
Adj Flow Rate, veh/h	29	1212	111	176	1316	239	145	76	156	221	112	22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	3	2	1	1	2	1	0	0	1	5
Cap, veh/h	314	2552	234	340	2010	888	361	542	241	371	453	87
Arrive On Green	0.04	0.53	0.53	0.13	1.00	1.00	0.08	0.15	0.15	0.08	0.15	0.15
Sat Flow, veh/h	1810	4793	439	1781	3582	1582	1781	3582	1591	1810	2993	572
Grp Volume(v), veh/h	29	867	456	176	1316	239	145	76	156	221	66	68
Grp Sat Flow(s),veh/h/ln	1810	1716	1801	1781	1791	1582	1781	1791	1591	1810	1791	1774
Q Serve(g_s), s	0.8	17.1	17.1	4.8	0.0	0.0	7.3	2.0	10.0	9.0	3.5	3.7
Cycle Q Clear(g_c), s	0.8	17.1	17.1	4.8	0.0	0.0	7.3	2.0	10.0	9.0	3.5	3.7
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	314	1827	959	340	2010	888	361	542	241	371	271	268
V/C Ratio(X)	0.09	0.47	0.48	0.52	0.65	0.27	0.40	0.14	0.65	0.60	0.24	0.25
Avail Cap(c_a), veh/h	363	1827	959	453	2010	888	361	995	442	371	497	493
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.58	0.58	0.58	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.1	15.8	15.8	10.9	0.0	0.0	34.5	39.7	43.1	36.6	40.4	40.5
Incr Delay (d2), s/veh	0.1	0.9	1.7	0.7	1.0	0.4	0.7	0.2	4.1	2.6	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	9.3	9.9	2.3	0.5	0.2	5.4	1.5	7.0	8.8	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.3	16.7	17.5	11.6	1.0	0.4	35.2	39.9	47.3	39.2	41.0	41.2
LnGrp LOS	B	B	B	B	A	A	D	D	D	D	D	D
Approach Vol, veh/h	1352			1731			377			355		
Approach Delay, s/veh	16.8			2.0			41.2			39.9		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	62.5	13.0	21.3	8.1	65.6	13.0	21.3				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	14.0	37.0	9.0	30.0	7.0	44.0	9.0	30.0				
Max Q Clear Time (g_c+I1), s	6.8	19.1	11.0	12.0	2.8	2.0	9.3	5.7				
Green Ext Time (p_c), s	0.4	11.9	0.0	1.6	0.0	24.7	0.0	1.1				

Intersection Summary		
HCM 6th Ctrl Delay	14.6	
HCM 6th LOS	B	

Lanes, Volumes, Timings

2025 Total Saturday Peak Hour

2: Tecumseh Road & Catherine Street (N/S)

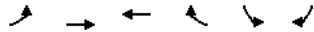
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	219	1321	1433	48	43	247
Future Volume (vph)	219	1321	1433	48	43	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.995			0.850
Fit Protected	0.950			0.950		
Satd. Flow (prot)	1770	5085	5060	0	1770	1583
Fit Permitted	0.086				0.950	
Satd. Flow (perm)	160	5085	5060	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			6			268
Link Speed (k/h)		50	50		50	
Link Distance (m)		268.2	169.1		273.8	
Travel Time (s)		19.3	12.2		19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	238	1436	1558	52	47	268
Shared Lane Traffic (%)						
Lane Group Flow (vph)	238	1436	1610	0	47	268
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	27.0	78.0	51.0		30.0	30.0
Total Split (%)	25.0%	72.2%	47.2%		27.8%	27.8%
Maximum Green (s)	23.0	73.0	46.0		25.0	25.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)	65.4	64.4	42.3		33.6	33.6
Actuated g/C Ratio	0.61	0.60	0.39		0.31	0.31
v/c Ratio	0.65	0.47	0.81		0.09	0.40
Control Delay	42.7	9.6	33.3		31.0	6.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	42.7	9.6	33.4		31.0	6.1

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

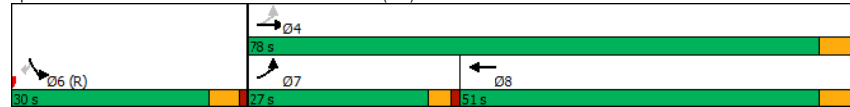


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	D	A	C		C	A
Approach Delay		14.3	33.4		9.8	
Approach LOS		B	C		A	
Queue Length 50th (m)	41.2	44.2	101.9		7.5	0.0
Queue Length 95th (m)	m64.3	33.5	136.3		18.3	20.8
Internal Link Dist (m)		244.2	145.1		249.8	
Turn Bay Length (m)	45.0					
Base Capacity (vph)	439	3437	2158		551	677
Starvation Cap Reductn	0	0	28		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.54	0.42	0.76		0.09	0.40

Intersection Summary

Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.81
Intersection Signal Delay:	22.5
Intersection LOS:	C
Intersection Capacity Utilization:	60.9%
ICU Level of Service:	B
Analysis Period (min):	15
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)

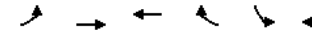


HCM 6th Signalized Intersection Summary

2: Tecumseh Road & Catherine Street (N/S)

2025 Total Saturday Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	219	1321	1433	48	43	247
Future Volume (veh/h)	219	1321	1433	48	43	247
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	238	1436	1558	52	47	268
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	303	2584	1833	61	715	636
Arrive On Green	0.22	1.00	0.72	0.72	0.40	0.40
Sat Flow, veh/h	1781	5274	5243	169	1781	1585
Grp Volume(v), veh/h	238	1436	1045	565	47	268
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1840	1781	1585
Q Serve(g_s), s	8.9	0.0	23.9	23.9	1.8	13.2
Cycle Q Clear(g_c), s	8.9	0.0	23.9	23.9	1.8	13.2
Prop In Lane	1.00			0.09	1.00	1.00
Lane Grp Cap(c), veh/h	303	2584	1229	664	715	636
V/C Ratio(X)	0.79	0.56	0.85	0.85	0.07	0.42
Avail Cap(c_a), veh/h	490	3451	1450	784	715	636
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.93	0.93	1.00	1.00
Uniform Delay (d), s/veh	19.9	0.0	12.9	12.9	19.9	23.3
Incr Delay (d2), s/veh	3.8	0.2	4.1	7.3	0.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	0.1	7.9	9.2	1.2	19.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.8	0.2	17.0	20.2	20.1	25.3
LnGrp LOS	C	A	B	C	C	C
Approach Vol, veh/h	1674	1610		315		
Approach Delay, s/veh	3.5	18.1		24.5		
Approach LOS	A	B		C		

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	59.7	48.3	15.6	44.0
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	73.0	25.0	23.0	46.0
Max Q Clear Time (g_c+I1), s	2.0	15.2	10.9	25.9
Green Ext Time (p_c), s	21.1	1.1	0.8	13.1

Intersection Summary

HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings

2025 Total Saturday Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑	↑↑↑	↓	↑↑↑	↑↑↑	↓	↑	↑	↓	↑	↑	↓
Traffic Volume (vph)	159	1359	33	47	1211	9	53	10	47	108	10	120
Future Volume (vph)	159	1359	33	47	1211	9	53	10	47	108	10	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Frt		0.996			0.999			0.943			0.862	
Fit Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1787	5162	0	1805	5130	0	0	1738	0	1787	1586	0
Fit Permitted	0.168			0.152				0.655		0.642		
Satd. Flow (perm)	316	5162	0	288	5130	0	0	1165	0	1206	1586	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			1			35				126
Link Speed (k/h)		60			60			50				50
Link Distance (m)		169.1			186.0			136.6				148.8
Travel Time (s)		10.1			11.2			9.8				10.7
Conf. Peds. (#/hr)	5		8	8		5	3		2	2		3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	167	1431	35	49	1275	9	56	11	49	114	11	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	1466	0	49	1284	0	0	116	0	114	137	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6				4			8	
Detector Phase	5	2		1	6			4	4		8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	40.0		11.0	40.0		35.0	35.0		35.0	35.0	
Total Split (s)	20.0	60.0		11.0	51.0		37.0	37.0		37.0	37.0	
Total Split (%)	18.5%	55.6%		10.2%	47.2%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)	16.0	55.0		7.0	46.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		28.0			28.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	81.3	73.0		76.6	68.6			16.2		16.2	16.2	
Actuated g/C Ratio	0.75	0.68		0.71	0.64			0.15		0.15	0.15	
v/c Ratio	0.46	0.42		0.16	0.39			0.57		0.63	0.40	

Lanes, Volumes, Timings

2025 Total Saturday Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	11.7	2.7		4.3	7.0						39.6	58.0
Queue Delay	0.0	0.0		0.0	0.0						0.0	0.0
Total Delay	11.7	2.7		4.3	7.0						39.6	58.0
LOS	B	A		A	A						D	E
Approach Delay		3.6			6.9						39.6	32.8
Approach LOS		A			A						D	C
Queue Length 50th (m)	3.4	7.0		0.3	12.7						16.7	24.1
Queue Length 95th (m)	18.4	32.2		m5.7	55.4						33.7	40.9
Internal Link Dist (m)		145.1			162.0						112.6	124.8
Turn Bay Length (m)	35.0			30.0							45.0	
Base Capacity (vph)	460	3490		302	3260						369	357
Starvation Cap Reductn	0	321		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	0.36	0.46		0.16	0.39						0.31	0.32

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 5 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 8.4
 Intersection Capacity Utilization 74.7%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
 Intersection LOS: A
 ICU Level of Service D

Splits and Phases: 3: Commercial Access/Home Depot Access & Tecumseh Road



HCM 6th Signalized Intersection Summary
 3: Commercial Access/Home Depot Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Volume (veh/h)	159	1359	33	47	1211	9	53	10	47	108	10	120
Future Volume (veh/h)	159	1359	33	47	1211	9	53	10	47	108	10	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1900	1900	1900	1885	1900	1900	1900	1885	1900	1870	1870
Adj Flow Rate, veh/h	167	1431	35	49	1275	9	56	11	49	114	11	126
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	0	0	0	1	0	0	0	0	1	0	2
Cap, veh/h	459	3403	83	349	3370	24	112	32	69	244	22	249
Arrive On Green	0.06	0.65	0.65	0.10	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1795	5207	127	1810	5272	37	375	194	416	1349	130	1492
Grp Volume(v), veh/h	167	950	516	49	830	454	116	0	0	114	0	137
Grp Sat Flow(s),veh/h/ln	1795	1729	1876	1810	1716	1878	985	0	0	1349	0	1622
Q Serve(g_s), s	3.3	14.2	14.2	0.9	0.0	0.0	5.8	0.0	0.0	0.0	0.0	8.3
Cycle Q Clear(g_c), s	3.3	14.2	14.2	0.9	0.0	0.0	14.1	0.0	0.0	11.8	0.0	8.3
Prop In Lane	1.00		0.07	1.00		0.02	0.48		0.42	1.00		0.92
Lane Grp Cap(c), veh/h	459	2260	1226	349	2193	1200	214	0	0	244	0	271
V/C Ratio(X)	0.36	0.42	0.42	0.14	0.38	0.38	0.54	0.00	0.00	0.47	0.00	0.51
Avail Cap(c_a), veh/h	610	2260	1226	376	2193	1200	400	0	0	419	0	481
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	0.83	0.83	0.83	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.2	8.9	8.9	5.9	0.0	0.0	44.3	0.0	0.0	42.4	0.0	40.9
Incr Delay (d2), s/veh	0.5	0.5	0.9	0.2	0.4	0.8	3.0	0.0	0.0	2.0	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	6.6	7.3	0.4	0.2	0.5	5.3	0.0	0.0	5.0	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.8	9.4	9.9	6.1	0.4	0.8	47.3	0.0	0.0	44.4	0.0	43.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h	1633			1333			116			251		
Approach Delay, s/veh	9.2			0.7			47.3			43.6		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	75.6		23.0	11.0	74.0		23.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	55.0		32.0	16.0	46.0		32.0				
Max Q Clear Time (g_c+1), s	2.9	16.2		16.1	5.3	2.0		13.8				
Green Ext Time (p_c), s	0.0	21.9		0.8	0.5	19.7		1.9				

Intersection Summary		
HCM 6th Ctrl Delay	9.7	
HCM 6th LOS	A	

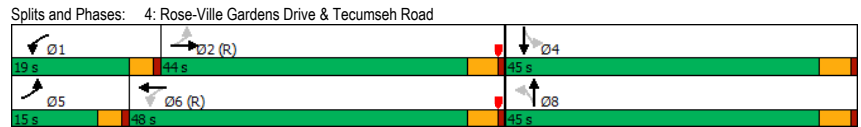
Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Volume (vph)	110	1216	55	162	1204	77	95	161	149	154	149	222
Future Volume (vph)	110	1216	55	162	1204	77	95	161	149	154	149	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					1.00	0.99				
Frt		0.994			0.991			0.930				0.910
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5098	0	1787	5134	0	1787	1723	0	1770	1695	0
Fit Permitted	0.150			0.132			0.213			0.322		
Satd. Flow (perm)	279	5098	0	248	5134	0	399	1723	0	600	1695	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			11			47				79
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				221.3
Travel Time (s)		11.2			16.4			20.9				15.9
Conf. Peds. (#/hr)			9		9			7			8	
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	1%	0%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	120	1267	57	169	1254	84	99	175	155	167	162	241
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1324	0	169	1338	0	99	330	0	167	403	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		1	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	11.0			11.0	11.0		11.0	11.0
Minimum Split (s)	11.0	28.0		11.0	28.0			34.0	34.0		34.0	34.0
Total Split (s)	15.0	44.0		19.0	48.0			45.0	45.0		45.0	45.0
Total Split (%)	13.9%	40.7%		17.6%	44.4%			41.7%	41.7%		41.7%	41.7%
Maximum Green (s)	11.0	39.0		15.0	43.0			40.0	40.0		40.0	40.0
Yellow Time (s)	3.0	4.0		3.0	4.0			4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.5	4.0			3.0	3.0		4.0	4.0
Recall Mode	None	C-Max		None	C-Max			None	None		None	None
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		16.0			16.0			22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	62.7	53.0		68.1	55.8			29.6	29.6		29.6	29.6
Actuated g/C Ratio	0.58	0.49		0.63	0.52			0.27	0.27		0.27	0.27
v/c Ratio	0.43	0.53		0.53	0.50			0.91	0.65		1.02	0.77

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	11.7	12.3		16.8	24.5		102.0	34.5		110.7	35.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.7	12.3		16.8	24.5		102.0	34.5		110.7	35.9	
LOS	B	B		B	C		F	C		F	D	
Approach Delay		12.2			23.6			50.1			57.8	
Approach LOS		B			C			D			E	
Queue Length 50th (m)	2.8	56.9		19.2	101.0		21.0	54.9		34.6	60.0	
Queue Length 95th (m)	13.5	69.7		43.9	126.5		#46.3	75.1		m#63.5	m76.6	
Internal Link Dist (m)		162.0			249.0			265.9			197.3	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	319	2507		373	2656		147	667		222	677	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.38	0.53		0.45	0.50		0.67	0.49		0.75	0.60	

Intersection Summary	
Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	14 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.02
Intersection Signal Delay:	27.3
Intersection Capacity Utilization:	80.2%
Analysis Period (min)	15
# 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.	



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	110	1216	55	162	1204	77	95	161	149	154	149	222
Future Volume (veh/h)	110	1216	55	162	1204	77	95	161	149	154	149	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1870	1885	1900	1885	1900	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	120	1267	57	169	1254	84	99	175	155	167	162	241
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	1	0	2	1	2	1	2	2	2
Cap, veh/h	281	2285	103	296	2287	153	207	316	280	267	235	350
Arrive On Green	0.04	0.30	0.30	0.05	0.31	0.31	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	5046	227	1795	4962	332	990	911	807	1048	679	1010
Grp Volume(v), veh/h	120	861	463	169	874	464	99	0	330	167	0	403
Grp Sat Flow(s), veh/h/ln	1781	1716	1842	1795	1729	1836	990	0	1718	1048	0	1689
Q Serve(g_s), s	3.8	22.7	22.7	5.3	22.7	22.7	10.3	0.0	16.8	16.6	0.0	22.1
Cycle Q Clear(g_c), s	3.8	22.7	22.7	5.3	22.7	22.7	32.4	0.0	16.8	33.3	0.0	22.1
Prop In Lane	1.00		0.12	1.00		0.18	1.00		0.47	1.00		0.60
Lane Grp Cap(c), veh/h	281	1554	834	296	1594	846	207	0	595	267	0	585
V/C Ratio(X)	0.43	0.55	0.55	0.57	0.55	0.55	0.48	0.00	0.55	0.63	0.00	0.69
Avail Cap(c_a), veh/h	351	1554	834	417	1594	846	230	0	636	292	0	625
HCM Platoon Ratio	0.67	0.67	0.67	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	28.5	28.5	18.0	28.0	28.0	44.2	0.0	28.6	42.0	0.0	30.3
Incr Delay (d2), s/veh	0.9	1.3	2.4	1.7	1.1	2.1	1.7	0.0	0.9	4.5	0.0	3.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	2.4	14.1	15.3	3.4	14.0	15.0	4.4	0.0	10.5	7.7	0.0	13.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.0	29.8	30.9	19.8	29.1	30.1	45.9	0.0	29.5	46.5	0.0	33.7
LnGrp LOS	B	C	C	B	C	C	D	A	C	D	A	C
Approach Vol, veh/h		1444			1507			429				570
Approach Delay, s/veh		29.2			28.4			33.3				37.4
Approach LOS		C			C			C				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	53.9		42.4	10.8	54.8		42.4				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	39.0		40.0	11.0	43.0		40.0				
Max Q Clear Time (g_c+I1), s	7.3	24.7		35.3	5.8	24.7		34.4				
Green Ext Time (p_c), s	0.4	10.0		2.1	0.2	12.2		1.4				

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Lanes, Volumes, Timings

2025 Total Saturday Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑↑			↑↑↑		
Traffic Volume (vph)	240	1219	116	186	1077	225	131	78	114	143	84	130
Future Volume (vph)	240	1219	116	186	1077	225	131	78	114	143	84	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.97	0.99		1.00	0.97	
Frt		0.987			0.974			0.911			0.909	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5055	0	1805	4987	0	1787	1703	0	1805	1671	0
Flt Permitted	0.140			0.150			0.419			0.469		
Satd. Flow (perm)	266	5055	0	284	4987	0	766	1703	0	888	1671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			48			70			73	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		273.0			268.3			231.1			151.2	
Travel Time (s)		16.4			16.1			16.6			10.9	
Conf. Peds. (#/hr)	4		12	12		4	39		5	5		39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%
Adj. Flow (vph)	247	1257	120	192	1110	232	135	80	118	147	87	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	1377	0	192	1342	0	135	198	0	147	221	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6				4			8	
Detector Phase	5	2		1	6			4	4		8	8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	51.0		20.0	46.0		37.0	37.0		37.0	37.0	
Total Split (%)	23.1%	47.2%		18.5%	42.6%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)	21.0	46.0		16.0	41.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	75.6	60.6		70.7	58.1		21.8	21.8		21.8	21.8	
Actuated g/C Ratio	0.70	0.56		0.65	0.54		0.20	0.20		0.20	0.20	
v/c Ratio	0.64	0.48		0.55	0.50		0.88	0.50		0.82	0.56	

Lanes, Volumes, Timings

2025 Total Saturday Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	14.4	13.5		24.2	11.6		86.4	27.2		73.2	29.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.4	13.5		24.2	11.6		86.4	27.2		73.2	29.8	
LOS	B	B		C	B		F	C		E	C	
Approach Delay		13.6			13.2			51.2			47.1	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	5.6	79.6		20.3	31.8		29.2	24.8		31.4	29.3	
Queue Length 95th (m)	m16.0	117.1		m41.0	m55.3		48.9	42.6		50.6	48.3	
Internal Link Dist (m)		249.0			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	489	2845		419	2703		226	553		263	546	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.51	0.48		0.46	0.50		0.60	0.36		0.56	0.40	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 58 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 19.9
 Intersection LOS: B
 Intersection Capacity Utilization 85.5%
 ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2025 Total Saturday Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations	↔	↔↔		↔	↔↔		↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	240	1219	116	186	1077	225	131	78	114	143	84	130
Future Volume (veh/h)	240	1219	116	186	1077	225	131	78	114	143	84	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.97		0.96	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1885	1900	1885	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	247	1257	120	192	1110	232	135	80	118	147	87	134
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	0	0	1	0	1	0	1	0	0	0
Cap, veh/h	372	2508	239	402	2155	450	248	183	269	269	178	273
Arrive On Green	0.19	1.00	1.00	0.07	0.51	0.51	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1810	4772	456	1810	4255	889	1140	674	994	1171	655	1009
Grp Volume(v), veh/h	247	904	473	192	895	447	135	0	198	147	0	221
Grp Sat Flow(s),veh/h/ln	1810	1716	1797	1810	1716	1713	1140	0	1668	1171	0	1665
Q Serve(g_s), s	7.3	0.0	0.0	5.4	18.8	18.8	12.2	0.0	10.6	12.8	0.0	12.1
Cycle Q Clear(g_c), s	7.3	0.0	0.0	5.4	18.8	18.8	24.3	0.0	10.6	23.4	0.0	12.1
Prop In Lane	1.00		0.25	1.00		0.52	1.00		0.60	1.00		0.61
Lane Grp Cap(c), veh/h	372	1803	944	402	1737	867	248	0	452	269	0	451
V/C Ratio(X)	0.66	0.50	0.50	0.48	0.52	0.52	0.54	0.00	0.44	0.55	0.00	0.49
Avail Cap(c_a), veh/h	556	1803	944	537	1737	867	277	0	494	299	0	493
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.79	0.63	0.63	0.63	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.3	0.0	0.0	10.6	17.8	17.8	43.3	0.0	32.6	42.3	0.0	33.1
Incr Delay (d2), s/veh	1.6	0.8	1.5	0.6	0.7	1.4	2.6	0.0	1.0	2.5	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	0.4	0.7	3.0	9.3	9.5	6.1	0.0	7.3	6.5	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.9	0.8	1.5	11.2	18.5	19.2	45.9	0.0	33.5	44.7	0.0	34.3
LnGrp LOS	B	A	A	B	B	B	D	A	C	D	A	C
Approach Vol, veh/h	1624			1534			333			368		
Approach Delay, s/veh	3.0			17.8			38.5			38.4		
Approach LOS	A			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	61.8		34.3	14.0	59.7		34.3				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	16.0	46.0		32.0	21.0	41.0		32.0				
Max Q Clear Time (g_c+1), s	7.4	2.0		26.3	9.3	20.8		25.4				
Green Ext Time (p_c), s	0.5	21.8		1.3	0.8	13.3		1.6				

Intersection Summary		
HCM 6th Ctrl Delay	15.3	
HCM 6th LOS	B	

Lanes, Volumes, Timings

2025 Total Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations	↔	↔↔		↔	↔↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	181	1200	152	230	1148	93	292	618	188	159	702	223
Future Volume (vph)	181	1200	152	230	1148	93	292	618	188	159	702	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0		70.0			70.0			
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Frt		0.983			0.989			0.965				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5074	0	1805	5094	0	1770	4951	0	1719	5136	1583
Fit Permitted	0.105			0.099			0.190			0.200		
Satd. Flow (perm)	195	5074	0	188	5094	0	354	4951	0	362	5136	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			13			71				224
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	12		23	23		12	3		2	2		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	0%	1%	0%	0%	7%	2%	1%	0%	5%	1%	2%
Adj. Flow (vph)	195	1290	163	247	1234	100	314	665	202	171	755	240
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1453	0	247	1334	0	314	867	0	171	755	240
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	35.0	35.0
Total Split (s)	14.0	40.0		15.0	41.0		18.0	37.0		16.0	35.0	35.0
Total Split (%)	13.0%	37.0%		13.9%	38.0%		16.7%	34.3%		14.8%	32.4%	32.4%
Maximum Green (s)	10.0	34.0		11.0	35.0		14.0	31.0		12.0	29.0	29.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			5.0	5.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effect Green (s)	51.4	39.5		53.7	40.7		42.1	26.3		36.6	23.5	23.5
Actuated g/C Ratio	0.48	0.37		0.50	0.38		0.39	0.24		0.34	0.22	0.22
v/c Ratio	0.83	0.78		0.96	0.69		0.98	0.69		0.65	0.68	0.47

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

2025 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

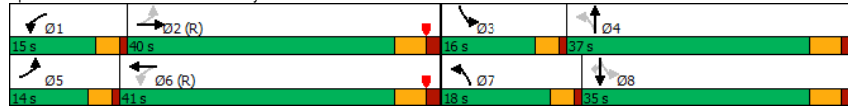


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	64.4	25.1		73.8	31.1		71.7	36.8		36.1	42.4	12.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	64.4	25.1		73.8	31.1		71.7	36.8		36.1	42.4	12.3
LOS	E	C		E	C		E	D		D	D	B
Approach Delay	29.8			37.8			46.1			35.3		
Approach LOS	C			D			D			D		
Queue Length 50th (m)	29.0	78.6		37.2	89.1		49.9	59.9		28.5	51.2	6.8
Queue Length 95th (m)	#70.7	#66.7		#92.5	115.7		#98.0	70.0		m46.5	60.9	m25.2
Internal Link Dist (m)	244.3		264.0		184.8		206.9		70.0		70.0	
Turn Bay Length (m)	90.0		120.0		90.0		70.0		70.0		70.0	
Base Capacity (vph)	238	1871		258	1926		321	1471		276	1379	582
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	0.82	0.78		0.96	0.69		0.98	0.59		0.62	0.55	0.41

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 52 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 36.6
 Intersection LOS: D
 Intersection Capacity Utilization 87.7%
 ICU Level of Service E
 Analysis Period (min) 15
 # 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: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

7: Lauzon Parkway & Tecumseh Road

2025 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	181	1200	152	230	1148	93	292	618	188	159	702	223
Future Volume (veh/h)	181	1200	152	230	1148	93	292	618	188	159	702	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1900	1885	1900	1900	1796	1870	1885	1900	1826	1885	1870
Adj Flow Rate, veh/h	195	1290	163	247	1234	100	314	665	202	171	755	240
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	1	0	0	7	2	1	0	5	1	2
Cap, veh/h	287	1670	211	284	1832	148	344	1023	306	295	1154	354
Arrive On Green	0.03	0.12	0.12	0.10	0.38	0.38	0.13	0.26	0.26	0.03	0.07	0.07
Sat Flow, veh/h	1781	4651	588	1810	4882	396	1781	3927	1173	1739	5147	1579
Grp Volume(v), veh/h	195	959	494	247	874	460	314	580	287	171	755	240
Grp Sat Flow(s),veh/h/ln	1781	1729	1781	1810	1729	1820	1781	1716	1669	1739	1716	1579
Q Serve(g_s), s	7.2	29.1	29.1	9.2	22.8	22.8	14.0	16.2	16.6	8.0	15.4	16.0
Cycle Q Clear(g_c), s	7.2	29.1	29.1	9.2	22.8	22.8	14.0	16.2	16.6	8.0	15.4	16.0
Prop In Lane	1.00		0.33	1.00		0.22	1.00		0.70	1.00		1.00
Lane Grp Cap(c), veh/h	287	1242	639	284	1297	683	344	894	435	295	1154	354
V/C Ratio(X)	0.68	0.77	0.77	0.87	0.67	0.67	0.91	0.65	0.66	0.58	0.65	0.68
Avail Cap(c_a), veh/h	299	1242	639	284	1297	683	344	985	479	326	1382	424
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00	0.66	0.66	0.66
Uniform Delay (d), s/veh	24.2	43.3	43.3	24.5	28.2	28.2	29.0	35.5	35.7	30.9	45.9	46.2
Incr Delay (d2), s/veh	5.0	4.0	7.6	23.7	2.8	5.3	27.9	1.4	3.2	1.4	0.6	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.6	19.4	20.6	8.7	13.3	14.5	12.5	10.2	10.5	5.7	10.2	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	47.3	50.9	48.2	31.0	33.5	56.9	37.0	38.9	32.3	46.6	48.7
LnGrp LOS	C	D	D	D	C	C	E	D	D	C	D	D
Approach Vol, veh/h	1648			1581			1181			1166		
Approach Delay, s/veh	46.2			34.4			42.7			44.9		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	44.8	14.1	34.1	13.3	46.5	18.0	30.2				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	11.0	34.0	12.0	31.0	10.0	35.0	14.0	29.0				
Max Q Clear Time (g_c+I1), s	11.2	31.1	10.0	18.6	9.2	24.8	16.0	18.0				
Green Ext Time (p_c), s	0.0	2.6	0.1	5.8	0.1	7.6	0.0	5.7				

Intersection Summary

HCM 6th Ctrl Delay: 41.9
 HCM 6th LOS: D

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2025 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↗	↘	↙	↕	↘	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖		↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	394	109	357	129	112	127	315	446	178	127	541	442
Future Volume (vph)	394	109	357	129	112	127	315	446	178	127	541	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00	0.99		0.98	1.00	0.99
Fit		0.885			0.920				0.850		0.933	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1663	0	1671	1697	0	1805	3610	1524	1752	4751	0
Fit Permitted	0.334			0.395			0.127			0.470		
Satd. Flow (perm)	633	1663	0	694	1697	0	241	3610	1490	866	4751	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		191			52				198			189
Link Speed (k/h)		50			50				60			60
Link Distance (m)		651.4			106.2				230.9			292.9
Travel Time (s)		46.9			7.6				13.9			17.6
Conf. Peds. (#/hr)	4		2	2		4	5		1	1		5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	8%	0%	4%	0%	0%	6%	3%	1%	0%
Adj. Flow (vph)	438	121	397	143	124	141	350	496	198	141	601	491
Shared Lane Traffic (%)												
Lane Group Flow (vph)	438	518	0	143	265	0	350	496	198	141	1092	0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	17.0	52.0		35.0	35.0		20.0	45.0	45.0	11.0	36.0	
Total Split (%)	15.7%	48.1%		32.4%	32.4%		18.5%	41.7%	41.7%	10.2%	33.3%	
Maximum Green (s)	13.0	46.0		29.0	29.0		16.0	39.0	39.0	7.0	30.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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)	4.0	6.0		6.0	6.0		4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0		
Flash Dont Walk (s)		22.0		22.0	22.0		23.0	23.0		23.0		
Pedestrian Calls (#/hr)		0		0	0		0	0		0		
Act Effct Green (s)	43.3	41.3		24.3	24.3		56.7	43.7	43.7	43.7	34.7	
Actuated g/C Ratio	0.40	0.38		0.22	0.22		0.52	0.40	0.40	0.40	0.32	
v/c Ratio	1.11	0.69		0.92	0.63		0.98	0.34	0.27	0.35	0.66	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2025 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↗	↘	↙	↕	↘	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	106.5	21.6		94.5	36.2		83.8	15.8	1.9	18.6	28.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	106.5	21.6		94.5	36.2		83.8	15.8	1.9	18.6	28.9	
LOS	F	C		F	D		F	B	A	B	C	
Approach Delay		60.5			56.7			35.9			27.7	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	~80.7	57.8		30.2	41.4		69.9	24.4	0.6	16.3	65.2	
Queue Length 95th (m)	#148.5	92.9		#63.8	67.2		m#121.1	m33.8	m2.7	29.3	84.7	
Internal Link Dist (m)		627.4			82.2			206.9			268.9	
Turn Bay Length (m)	50.0				80.0			20.0			115.0	
Base Capacity (vph)	394	817		186	493		358	1461	721	408	1656	
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	1.11	0.63		0.77	0.54		0.98	0.34	0.27	0.35	0.66	

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Red

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 41.9

Intersection LOS: D

Intersection Capacity Utilization 97.8%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

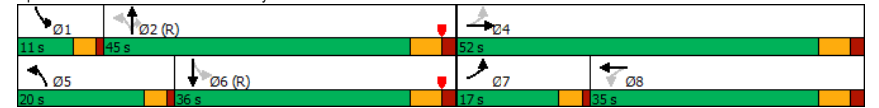
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

2025 Total Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	394	109	357	129	112	127	315	446	178	127	541	442
Future Volume (veh/h)	394	109	357	129	112	127	315	446	178	127	541	442
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1841	1900	1900	1811	1856	1885	1900
Adj Flow Rate, veh/h	438	121	397	143	124	141	350	496	198	141	601	491
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	8	0	4	0	0	6	3	1	0
Cap, veh/h	438	166	544	207	217	247	335	1304	550	384	953	440
Arrive On Green	0.12	0.43	0.43	0.27	0.27	0.27	0.20	0.48	0.48	0.06	0.28	0.28
Sat Flow, veh/h	1810	389	1277	840	809	920	1810	3610	1524	1767	3431	1583
Grp Volume(v), veh/h	438	0	518	143	0	265	350	496	198	141	601	491
Grp Sat Flow(s),veh/h/ln	1810	0	1666	840	0	1729	1810	1805	1524	1767	1716	1583
Q Serve(g_s), s	13.0	0.0	28.0	18.0	0.0	14.3	16.0	9.4	8.8	6.2	16.6	30.0
Cycle Q Clear(g_c), s	13.0	0.0	28.0	29.0	0.0	14.3	16.0	9.4	8.8	6.2	16.6	30.0
Prop In Lane	1.00		0.77	1.00		0.53	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	438	0	710	207	0	464	335	1304	550	384	953	440
V/C Ratio(X)	1.00	0.00	0.73	0.69	0.00	0.57	1.05	0.38	0.36	0.37	0.63	1.12
Avail Cap(c_a), veh/h	438	0	710	207	0	464	335	1304	550	384	953	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.63	0.63	0.63	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	0.0	25.8	45.2	0.0	34.1	29.8	20.4	20.2	25.4	34.1	39.0
Incr Delay (d2), s/veh	42.8	0.0	4.2	10.4	0.0	2.1	51.5	0.5	1.2	0.6	3.2	78.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.0	0.0	15.7	7.4	0.0	9.7	13.4	5.7	4.9	4.1	10.6	28.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.6	0.0	30.0	55.6	0.0	36.2	81.3	20.9	21.4	25.9	37.3	117.6
LnGrp LOS	E	A	C	E	A	D	F	C	C	C	D	F
Approach Vol, veh/h	956			408			1044			1233		
Approach Delay, s/veh	50.9			43.0			41.2			68.0		
Approach LOS	D			D			D			E		
Timer - Assigned Phs	1	2	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	11.0	45.0	52.0	20.0	36.0	17.0	35.0					
Change Period (Y+Rc), s	4.0	6.0	6.0	4.0	6.0	4.0	6.0					
Max Green Setting (Gmax), s	7.0	39.0	46.0	16.0	30.0	13.0	29.0					
Max Q Clear Time (g_c+I1), s	8.2	11.4	30.0	18.0	32.0	15.0	31.0					
Green Ext Time (p_c), s	0.0	7.2	5.0	0.0	0.0	0.0	0.0					

Intersection Summary		
HCM 6th Ctrl Delay	53.0	
HCM 6th LOS	D	

Notes
User approved pedestrian interval to be less than phase max green.

Lanes, Volumes, Timings

2025 Total Saturday Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	81	92	5	343	433	5
Future Volume (vph)	81	92	5	343	433	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.928			0.999		
Fit Protected	0.977		0.950			
Satd. Flow (prot)	1689	0	1770	1863	1861	0
Fit Permitted	0.977		0.950			
Satd. Flow (perm)	1689	0	1770	1863	1861	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	144.2			221.3	146.3	
Travel Time (s)	10.4			15.9	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	100	5	373	471	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	188	0	5	373	476	0
Sign Control	Stop		Free		Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.9%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
 9: Rose-Ville Gardens Drive & Home Depot Access (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	81	92	5	343	433	5
Future Vol, veh/h	81	92	5	343	433	5
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	100	5	373	471	5

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	857	474	476	0	- 0
Stage 1	474	-	-	-	-
Stage 2	383	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	328	590	1086	-	-
Stage 1	626	-	-	-	-
Stage 2	689	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	326	590	1086	-	-
Mov Cap-2 Maneuver	447	-	-	-	-
Stage 1	623	-	-	-	-
Stage 2	689	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1086	-	513	-	-
HCM Lane V/C Ratio	0.005	-	0.367	-	-
HCM Control Delay (s)	8.3	-	16	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	1.7	-	-

Lanes, Volumes, Timings
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	555	283	155	524	334	90
Future Volume (vph)	555	283	155	524	334	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.954					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1777	0	1770	1863	1770	1583
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1777	0	1770	1863	1770	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	60.2			651.4	146.3	
Travel Time (s)	4.3			46.9	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	603	308	168	570	363	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	911	0	168	570	363	98
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	83.6%
ICU Level of Service E	
Analysis Period (min)	15

HCM 6th TWSC
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

2025 Total Saturday Peak Hour

Intersection						
Int Delay, s/veh	72.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	555	283	155	524	334	90
Future Vol, veh/h	555	283	155	524	334	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	603	308	168	570	363	98

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	911
Stage 1	-	-	757
Stage 2	-	-	906
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	748	~ 107
Stage 1	-	-	463
Stage 2	-	-	394
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	748	~ 83
Mov Cap-2 Maneuver	-	-	~ 204
Stage 1	-	-	463
Stage 2	-	-	~ 305

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	\$ 326.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	204	408	-	-	748	-
HCM Lane V/C Ratio	1.78	0.24	-	-	0.225	-
HCM Control Delay (s)	\$ 410	16.6	-	-	11.2	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	25.3	0.9	-	-	0.9	-

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

Lanes, Volumes, Timings
 11: Catherine Street & Access A (230538) Major Retail Development, Tecumseh Road, Windsor TIS

2025 Total Saturday Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	160	107	144	343	461	146
Future Volume (vph)	160	107	144	343	461	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit			0.905			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1686	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1686	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		126.5	106.5		164.6	
Travel Time (s)		9.1	7.7		11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	116	157	373	501	159
Shared Lane Traffic (%)						
Lane Group Flow (vph)	174	116	530	0	501	159
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	73.1%
ICU Level of Service	D
Analysis Period (min)	15

HCM 6th TWSC
11: Catherine Street & Access A

2025 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	51.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↔	↕
Traffic Vol, veh/h	160	107	144	343	461	146
Future Vol, veh/h	160	107	144	343	461	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	174	116	157	373	501	159

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	530	0	808
Stage 1	-	-	344
Stage 2	-	-	464
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	1037	-	350
Stage 1	-	-	718
Stage 2	-	-	633
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1037	-	291
Mov Cap-2 Maneuver	-	-	413
Stage 1	-	-	597
Stage 2	-	-	633

Approach	EB	WB	SB
HCM Control Delay, s	5.5	0	113.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1037	-	-	-	413	699
HCM Lane V/C Ratio	0.168	-	-	-	1.213	0.227
HCM Control Delay (s)	9.2	-	-	-	145.7	11.7
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.6	-	-	-	20.3	0.9

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

Lanes, Volumes, Timings
12: Catherine Street & Access B

2025 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↔	↕
Traffic Volume (vph)	107	461	343	515	377	144
Future Volume (vph)	107	461	343	515	377	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.919			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1712	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1712	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		106.5	60.2		134.0	
Travel Time (s)		7.7	4.3		9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	501	373	560	410	157
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	501	933	0	410	157
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	86.4%
ICU Level of Service	E
Analysis Period (min)	15

HCM 6th TWSC
12: Catherine Street & Access B

2025 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	58.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Vol, veh/h	107	461	343	515	377	144
Future Vol, veh/h	107	461	343	515	377	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	501	373	560	410	157

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	933	0	-	0	1386 653
Stage 1	-	-	-	-	653 -
Stage 2	-	-	-	-	733 -
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	734	-	-	-	~ 158 467
Stage 1	-	-	-	-	518 -
Stage 2	-	-	-	-	475 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	734	-	-	-	~ 133 467
Mov Cap-2 Maneuver	-	-	-	-	~ 268 -
Stage 1	-	-	-	-	436 -
Stage 2	-	-	-	-	475 -

Approach	EB	WB	SB
HCM Control Delay, s	2	0	214.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	734	-	-	-	268	467
HCM Lane V/C Ratio	0.158	-	-	-	1.529	0.335
HCM Control Delay (s)	10.8	-	-	-	290.5	16.5
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	0.6	-	-	-	24.1	1.5

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

Appendix H

2030 Background Traffic Operations Reports



Lanes, Volumes, Timings

2030 Background AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔
Traffic Volume (vph)	51	698	67	89	753	185	85	174	104	214	252	74
Future Volume (vph)	51	698	67	89	753	185	85	174	104	214	252	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0		95.0		0.0		65.0		60.0	
Storage Lanes	1		1		1		1		1		1	
Taper Length (m)	60.0		70.0		55.0		50.0		50.0		0	
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00		1.00		0.850		0.850		0.850		0.966	
Fit Protected	0.950		0.950		0.950		0.950		0.950		0.950	
Satd. Flow (prot)	1770	4935	0	1671	3505	1599	1671	3471	1553	1787	3411	0
Fit Permitted	0.250		0.273		0.500		0.466		0.466		0.466	
Satd. Flow (perm)	466	4935	0	480	3505	1599	880	3471	1533	876	3411	0
Right Turn on Red	Yes		Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)	17		215		121		40		50		14.5	
Link Speed (k/h)	60		60		50		50		50		50	
Link Distance (m)	230.2		261.9		222.3		200.9		200.9		200.9	
Travel Time (s)	13.8		15.7		16.0		14.5		14.5		14.5	
Confl. Peds. (#/hr)	1		1		1		1		1		1	
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 (%)	2%	3%	10%	8%	3%	1%	8%	4%	4%	1%	2%	3%
Adj. Flow (vph)	59	812	78	103	876	215	99	202	121	249	293	86
Shared Lane Traffic (%)	0											
Lane Group Flow (vph)	59	890	0	103	876	215	99	202	121	249	379	0
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	NA	NA
Protected Phases	5	2	1	6	7	4	4	3	8	8	8	8
Permitted Phases	2		6		6		4		4		8	
Detector Phase	5	2	1	6	6	7	4	4	3	8	8	8
Switch Phase	0											
Minimum Initial (s)	7.0	10.0	7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	10.0	10.0
Minimum Split (s)	11.0	40.0	11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	35.0	35.0
Total Split (s)	11.0	40.0	11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	35.0	38.0
Total Split (%)	10.8%	39.2%	10.8%	39.2%	39.2%	12.7%	34.3%	34.3%	15.7%	37.3%	37.3%	37.3%
Maximum Green (s)	7.0	35.0	7.0	35.0	35.0	9.0	30.0	30.0	12.0	33.0	33.0	33.0
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	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	3.0	3.0	3.0
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None	None	None
Walk Time (s)	7.0		7.0		7.0		7.0		7.0		7.0	
Flash Dont Walk (s)	28.0		28.0		28.0		23.0		23.0		23.0	
Pedestrian Calls (#/hr)	0		0		0		0		0		0	
Act Effct Green (s)	60.9	54.3	60.9	54.3	54.3	23.0	13.0	13.0	29.1	18.5	18.5	18.5
Actuated g/C Ratio	0.60	0.53	0.60	0.53	0.53	0.23	0.13	0.13	0.29	0.18	0.18	0.18
v/c Ratio	0.16	0.34	0.28	0.47	0.23	0.37	0.46	0.40	0.70	0.58	0.58	0.58

Lanes, Volumes, Timings

2030 Background AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

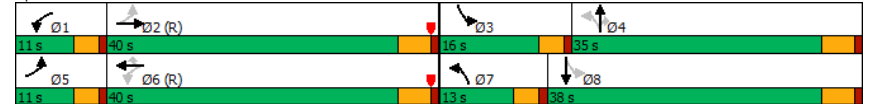
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	9.2	14.6		26.0	41.4	23.9	30.7	44.1	11.4	40.9	38.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.2	14.6		26.0	41.4	23.9	30.7	44.1	11.4	40.9	38.5	
LOS	A	B		C	D	C	D	D	B	D	D	
Approach Delay	14.3		36.9		31.6		39.4		39.4		39.4	
Approach LOS	B		D		C		D		D		D	
Queue Length 50th (m)	4.3	37.7		22.4	102.3	34.2	15.5	20.9	0.0	42.7	35.5	
Queue Length 95th (m)	9.9	49.3		38.1	117.6	53.0	25.9	29.5	14.0	59.3	46.2	
Internal Link Dist (m)	206.2		237.9		198.3		176.9		176.9		176.9	
Turn Bay Length (m)	55.0		95.0		65.0		60.0		45.0		45.0	
Base Capacity (vph)	367	2636		368	1866	951	268	1020	536	356	1130	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.34		0.28	0.47	0.23	0.37	0.20	0.23	0.70	0.34	

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	36 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	30.0
Intersection LOS:	C
Intersection Capacity Utilization:	70.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

1: Jefferson Boulevard & Tecumseh Road

2030 Background AM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (veh/h)	51	698	67	89	753	185	85	174	104	214	252	74
Future Volume (veh/h)	51	698	67	89	753	185	85	174	104	214	252	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1752	1781	1856	1885	1781	1841	1841	1885	1870	1856
Adj Flow Rate, veh/h	59	812	78	103	876	215	99	202	121	249	293	86
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
Percent Heavy Veh, %	2	3	10	8	3	1	8	4	4	1	2	3
Cap, veh/h	329	2454	235	432	1873	848	258	416	185	351	418	120
Arrive On Green	0.06	0.52	0.52	0.02	0.18	0.18	0.08	0.12	0.12	0.12	0.15	0.15
Sat Flow, veh/h	1781	4702	449	1697	3526	1597	1697	3497	1556	1795	2721	784
Grp Volume(v), veh/h	59	582	308	103	876	215	99	202	121	249	189	190
Grp Sat Flow(s), veh/h/ln	1781	1689	1774	1697	1763	1597	1697	1749	1556	1795	1777	1727
Q Serve(g_s), s	1.5	10.2	10.2	2.7	22.8	11.9	5.0	5.5	7.6	12.0	10.3	10.6
Cycle Q Clear(g_c), s	1.5	10.2	10.2	2.7	22.8	11.9	5.0	5.5	7.6	12.0	10.3	10.6
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	329	1763	926	432	1873	848	258	416	185	351	273	266
V/C Ratio(X)	0.18	0.33	0.33	0.24	0.47	0.25	0.38	0.49	0.65	0.71	0.69	0.71
Avail Cap(c_a), veh/h	352	1763	926	438	1873	848	267	1029	458	351	575	559
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.64	0.64	0.64	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	14.1	14.1	10.4	29.1	24.6	34.8	42.0	42.9	33.6	40.9	41.0
Incr Delay (d2), s/veh	0.3	0.5	1.0	0.2	0.5	0.5	0.9	0.9	3.9	6.5	3.2	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	1.6	2.0	0.1	5.1	2.6	2.4	2.9	3.8	6.7	5.5	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	14.6	15.1	10.5	29.6	25.1	35.7	42.9	46.8	40.1	44.0	44.6
LnGrp LOS	B	B	B	B	C	C	D	D	D	D	D	D
Approach Vol, veh/h	949			1194			422			628		
Approach Delay, s/veh	14.6			27.2			42.3			42.7		
Approach LOS	B			C			D			D		

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	58.2	16.0	17.1	9.7	59.2	12.5	20.7
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	7.0	35.0	12.0	30.0	7.0	35.0	9.0	33.0
Max Q Clear Time (g_c+I1), s	4.7	12.2	14.0	9.6	3.5	24.8	7.0	12.6
Green Ext Time (p_c), s	0.1	7.2	0.0	2.0	0.0	5.5	0.1	2.6

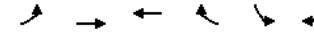
Intersection Summary		
HCM 6th Ctrl Delay	28.5	
HCM 6th LOS	C	

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

2030 Background AM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

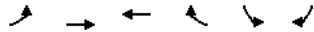


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	0	1016	1027	0	0	0
Future Volume (vph)	0	1016	1027	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1863	5085	5085	0	1863	1863
Fit Permitted						
Satd. Flow (perm)	1863	5085	5085	0	1863	1863
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50		50		50	
Link Distance (m)	261.9		175.4		228.1	
Travel Time (s)	18.9		12.6		16.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1104	1116	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1104	1116	0	0	0
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8	6		
Permitted Phases	4			6		
Detector Phase	7	4	8	6		
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0	10.0	10.0	
Minimum Split (s)	11.0	23.0	23.0	23.0	23.0	
Total Split (s)	11.0	79.0	68.0	23.0	23.0	
Total Split (%)	10.8%	77.5%	66.7%	22.5%	22.5%	
Maximum Green (s)	7.0	74.0	63.0	18.0	18.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0		7.0		7.0	
Flash Dont Walk (s)	11.0		11.0		11.0	
Pedestrian Calls (#/hr)	0		0		0	
Act Effct Green (s)	31.7		31.7			
Actuated g/C Ratio	0.31		0.31			
v/c Ratio	0.70		0.71			
Control Delay	33.9		42.8			
Queue Delay	0.0		0.0			
Total Delay	33.9		42.8			

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

2030 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

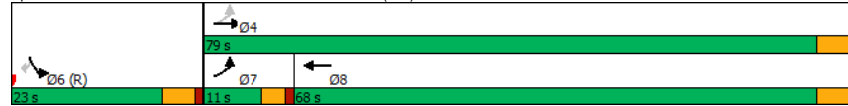


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		C	D			
Approach Delay		33.9	42.8			
Approach LOS		C	D			
Queue Length 50th (m)		82.0	76.3			
Queue Length 95th (m)		89.7	87.8			
Internal Link Dist (m)		237.9	151.4	204.1		
Turn Bay Length (m)						
Base Capacity (vph)		3689	3140			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.30	0.36			

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green	
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	38.4
Intersection LOS:	D
Intersection Capacity Utilization:	24.0%
ICU Level of Service:	A
Analysis Period (min):	15

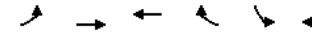
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2: Tecumseh Road & Catherine Street (N/S)

2030 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	0	1016	1027	0	0	0
Future Volume (veh/h)	0	1016	1027	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1104	1116	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	159	1803	1803	0	978	870
Arrive On Green	0.00	0.12	0.35	0.00	0.00	0.00
Sat Flow, veh/h	1781	5274	5443	0	1781	1585
Grp Volume(v), veh/h	0	1104	1116	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	21.0	18.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	21.0	18.5	0.0	0.0	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	159	1803	1803	0	978	870
V/C Ratio(X)	0.00	0.61	0.62	0.00	0.00	0.00
Avail Cap(c_a), veh/h	280	3704	3154	0	978	870
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	38.4	27.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	9.3	6.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	38.7	27.7	0.0	0.0	0.0
LnGrp LOS	A	D	C	A	A	A
Approach Vol, veh/h		1104	1116		0	
Approach Delay, s/veh		38.7	27.7		0.0	
Approach LOS		D	C			

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	41.0	61.0	0.0	41.0
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	74.0	18.0	7.0	63.0
Max Q Clear Time (g_c+I1), s	23.0	0.0	0.0	20.5
Green Ext Time (p_c), s	13.0	0.0	0.0	12.7

Intersection Summary

HCM 6th Ctrl Delay	33.2
HCM 6th LOS	C

Lanes, Volumes, Timings

2030 Background AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Mall Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1029	33	0	910	7	0	0	20	0	0	62
Future Volume (vph)	0	1029	33	0	910	7	0	0	20	0	0	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.995			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5063	0	0	5032	0	0	0	1644	0	0	1627
Flt Permitted												
Satd. Flow (perm)	0	5063	0	0	5032	0	0	0	1644	0	0	1627
Link Speed (k/h)		60			60				50			50
Link Distance (m)		175.4			186.0				136.6			186.3
Travel Time (s)		10.5			11.2				9.8			13.4
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	2%	0%	3%	3%	0%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	0	1183	38	0	1046	8	0	0	23	0	0	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1221	0	0	1054	0	0	0	23	0	0	71
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2030 Background AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Mall Development, Tecumseh Road, Windsor TIS

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Vol, veh/h	0	1029	33	0	910	7	0	0	20	0	0	62
Future Vol, veh/h	0	1029	33	0	910	7	0	0	20	0	0	62
Conflicting Peds, #/hr	2	0	1	1	0	2	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	2	0	3	3	0	0	0	0	2	0	1
Mvmt Flow	0	1183	38	0	1046	8	0	0	23	0	0	71

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	0	-
Stage 1	0	-	0	-
Stage 2	0	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	15.2	15.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	375	-	-	-	-	424
HCM Lane V/C Ratio	0.061	-	-	-	-	0.168
HCM Control Delay (s)	15.2	-	-	-	-	15.2
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.6

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	155	901	50	136	758	3	103	7	124	42	5	215
Future Volume (vph)	155	901	50	136	758	3	103	7	124	42	5	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00	0.98				
Frt		0.992			0.999			0.858				0.853
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4942	0	1626	5031	0	1736	1543	0	1770	1589	0
Flt Permitted	0.340			0.241			0.364			0.599		
Satd. Flow (perm)	633	4942	0	411	5031	0	664	1543	0	1116	1589	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			1			129				205
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				214.6
Travel Time (s)		11.2			16.4			20.9				15.5
Confl. Peds. (#/hr)			10	10			3		5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	11%	3%	2%	4%	2%	4%	2%	2%	2%
Adj. Flow (vph)	161	939	52	142	790	3	107	7	129	44	5	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	991	0	142	793	0	107	136	0	44	229	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	28.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	57.0	57.0		11.0	68.0		34.0	34.0		34.0	34.0	
Total Split (%)	55.9%	55.9%		10.8%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	52.0	52.0		7.0	63.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
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	
Recall Mode	C-Max	C-Max		None	C-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)	16.0	16.0		16.0	22.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	63.2	63.2		75.2	74.2		17.8	17.8		17.8	17.8	
Actuated g/C Ratio	0.62	0.62		0.74	0.73		0.17	0.17		0.17	0.17	
v/c Ratio	0.41	0.32		0.37	0.22		0.92	0.36		0.23	0.51	

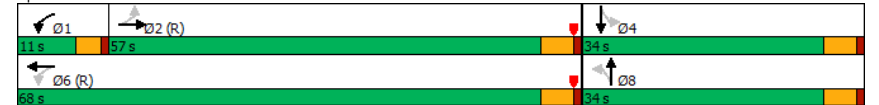
Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	11.7	4.0		5.9	2.8		106.7	9.4		30.7	7.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.7	4.0		5.9	2.8		106.7	9.4		30.7	7.9	
LOS	B	A		A	A		F	A		C	A	
Approach Delay		5.1			3.3			52.2				11.6
Approach LOS		A			A			D				B
Queue Length 50th (m)	5.7	2.7		2.5	6.6		22.3	1.2		8.1	11.8	
Queue Length 95th (m)	36.8	84.6		5.9	9.9		#44.6	15.9		13.4	5.3	
Internal Link Dist (m)		162.0			249.0			265.9			190.6	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	392	3065		386	3659		188	531		317	598	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.41	0.32		0.37	0.22		0.57	0.26		0.14	0.38	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 13 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 9.5
 Intersection Capacity Utilization 65.3%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	155	901	50	136	758	3	103	7	124	42	5	215
Future Volume (veh/h)	155	901	50	136	758	3	103	7	124	42	5	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1841	1870	1737	1856	1870	1841	1870	1841	1870	1870	1870
Adj Flow Rate, veh/h	161	939	52	142	790	3	107	7	129	44	5	224
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	4	2	11	3	2	4	2	4	2	2	2
Cap, veh/h	445	2672	148	414	3413	13	207	20	372	290	9	384
Arrive On Green	0.55	0.55	0.55	0.13	1.00	1.00	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	682	4870	269	1654	5209	20	1133	82	1507	1248	35	1556
Grp Volume(v), veh/h	161	645	346	142	512	281	107	0	136	44	0	229
Grp Sat Flow(s),veh/h/ln	682	1675	1789	1654	1689	1852	1133	0	1588	1248	0	1590
Q Serve(g_s), s	14.2	11.0	11.0	3.6	0.0	0.0	9.4	0.0	7.2	3.1	0.0	12.9
Cycle Q Clear(g_c), s	14.2	11.0	11.0	3.6	0.0	0.0	22.3	0.0	7.2	10.3	0.0	12.9
Prop In Lane	1.00		0.15	1.00		0.01	1.00		0.95	1.00		0.98
Lane Grp Cap(c), veh/h	445	1838	982	414	2213	1213	207	0	392	290	0	392
V/C Ratio(X)	0.36	0.35	0.35	0.34	0.23	0.23	0.52	0.00	0.35	0.15	0.00	0.58
Avail Cap(c_a), veh/h	445	1838	982	416	2213	1213	249	0	452	337	0	452
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	12.9	12.9	7.9	0.0	0.0	43.6	0.0	31.7	35.9	0.0	33.8
Incr Delay (d2), s/veh	2.3	0.5	1.0	0.5	0.2	0.4	2.0	0.0	0.5	0.2	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	1.3	1.6	0.1	0.1	0.3	3.3	0.0	3.0	1.1	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	13.4	13.9	8.4	0.2	0.4	45.6	0.0	32.2	36.1	0.0	35.3
LnGrp LOS	B	B	B	A	A	A	D	A	C	D	A	D
Approach Vol, veh/h	1152			935			243			273		
Approach Delay, s/veh	13.9			1.5			38.1			35.4		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.9	61.0		30.2		71.8		30.2				
Change Period (Y+Rc), s	4.0	5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s	7.0	52.0		29.0		63.0		29.0				
Max Q Clear Time (g_c+I1), s	5.6	16.2		14.9		2.0		24.3				
Green Ext Time (p_c), s	0.1	12.0		1.6		7.4		0.6				

Intersection Summary		
HCM 6th Ctrl Delay	14.0	
HCM 6th LOS	B	

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	152	769	105	97	781	141	66	46	35	77	32	62
Future Volume (vph)	152	769	105	97	781	141	66	46	35	77	32	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00			0.99		
Frt	0.982			0.977			0.936			0.901		
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	4880	0	1805	4935	0	1671	1778	0	1787	1693	0
Fit Permitted	0.245			0.266			0.657			0.698		
Satd. Flow (perm)	461	4880	0	504	4935	0	1151	1778	0	1313	1693	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			42			39			70	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		273.0			268.3			231.1			151.2	
Travel Time (s)		16.4			16.1			16.6			10.9	
Confl. Peds. (#/hr)			6		6			5				5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	4%	0%	3%	1%	8%	0%	0%	1%	0%	0%
Adj. Flow (vph)	171	864	118	109	878	158	74	52	39	87	36	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	982	0	109	1036	0	74	91	0	87	106	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			8		8
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0		35.0
Total Split (s)	20.0	51.0		14.0	45.0		37.0	37.0		37.0		37.0
Total Split (%)	19.6%	50.0%		13.7%	44.1%		36.3%	36.3%		36.3%		36.3%
Maximum Green (s)	16.0	46.0		10.0	40.0		32.0	32.0		32.0		32.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
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
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0		23.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effct Green (s)	76.6	67.1		75.7	66.6		12.8	12.8		12.8		12.8
Actuated g/C Ratio	0.75	0.66		0.74	0.65		0.13	0.13		0.13		0.13
v/c Ratio	0.37	0.31		0.23	0.32		0.51	0.35		0.53		0.39

Lanes, Volumes, Timings

2030 Background AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	12.9	4.2		3.3	4.6		53.6	27.9		52.9	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.9	4.2		3.3	4.6		53.6	27.9		52.9	20.3	
LOS	B	A		A	A		D	C		D	C	
Approach Delay	5.5			4.5			39.5			35.0		
Approach LOS	A			A			D			C		
Queue Length 50th (m)	8.4	5.0		2.1	9.5		14.8	10.0		17.4	6.9	
Queue Length 95th (m)	33.1	29.3		m5.3	m15.7		28.0	23.4		31.3	21.3	
Internal Link Dist (m)	249.0				244.3		207.1				127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	570	3218		511	3237		361	584		411	579	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.30	0.31		0.21	0.32		0.20	0.16		0.21	0.18	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 93 (91%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 9.3
 Intersection Capacity Utilization 56.4%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

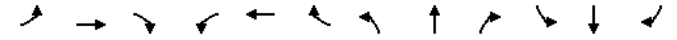
Splits and Phases: 6: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2030 Background AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	152	769	105	97	781	141	66	46	35	77	32	62
Future Volume (veh/h)	152	769	105	97	781	141	66	46	35	77	32	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1841	1841	1900	1856	1885	1781	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	171	864	118	109	878	158	74	52	39	87	36	70
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	0	3	1	8	0	0	1	0	0
Cap, veh/h	552	2797	380	517	2688	481	200	163	122	223	93	181
Arrive On Green	0.08	0.63	0.63	0.15	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1795	4470	608	1810	4316	773	1219	1004	753	1307	573	1114
Grp Volume(v), veh/h	171	646	336	109	686	350	74	0	91	87	0	106
Grp Sat Flow(s), veh/h/ln	1795	1675	1728	1810	1689	1712	1219	0	1756	1307	0	1687
Q Serve(g_s), s	3.2	9.1	9.2	1.9	0.0	0.0	5.9	0.0	4.7	6.4	0.0	5.7
Cycle Q Clear(g_c), s	3.2	9.1	9.2	1.9	0.0	0.0	11.6	0.0	4.7	11.1	0.0	5.7
Prop In Lane	1.00		0.35	1.00		0.45	1.00		0.43	1.00		0.66
Lane Grp Cap(c), veh/h	552	2096	1081	517	2103	1066	200	0	285	223	0	274
V/C Ratio(X)	0.31	0.31	0.31	0.21	0.33	0.33	0.37	0.00	0.32	0.39	0.00	0.39
Avail Cap(c_a), veh/h	694	2096	1081	559	2103	1066	384	0	551	421	0	529
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.90	0.90	0.90	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.1	8.9	8.9	5.0	0.0	0.0	43.4	0.0	37.7	42.6	0.0	38.2
Incr Delay (d2), s/veh	0.3	0.4	0.7	0.2	0.4	0.7	1.1	0.0	0.6	1.1	0.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	0.1	0.2	0.4	0.0	0.2	0.4	2.2	0.0	2.4	2.6	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	5.4	9.2	9.6	5.2	0.4	0.7	44.5	0.0	38.4	43.8	0.0	39.1
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h	1153			1145			165			193		
Approach Delay, s/veh	8.8			0.9			41.1			41.2		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.6	68.8		21.6	11.9	68.5		21.6				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	46.0		32.0	16.0	40.0		32.0				
Max Q Clear Time (g_c+I1), s	3.9	11.2		13.6	5.2	2.0		13.1				
Green Ext Time (p_c), s	0.2	9.3		0.8	0.5	10.2		1.0				

Intersection Summary

HCM 6th Ctrl Delay 9.8
 HCM 6th LOS A

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

2030 Background AM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	97	668	136	124	723	49	242	312	92	90	376	56
Future Volume (vph)	97	668	136	124	723	49	242	312	92	90	376	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	1.00		1.00		1.00	
Fit		0.975			0.990			0.966				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	4934	0	1736	5009	0	1752	4742	0	1517	4940	1495
Fit Permitted	0.307			0.275			0.357			0.490		
Satd. Flow (perm)	534	4934	0	502	5009	0	657	4742	0	780	4940	1473
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			11			78				118
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Confl. Peds. (#/hr)	5		7	7		5	3		6	6		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	1%	8%	4%	1%	23%	3%	5%	6%	19%	5%	8%
Adj. Flow (vph)	104	718	146	133	777	53	260	335	99	97	404	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	864	0	133	830	0	260	434	0	97	404	60
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	37.0	37.0
Total Split (s)	11.0	40.0		11.0	40.0		14.0	40.0		11.0	37.0	37.0
Total Split (%)	10.8%	39.2%		10.8%	39.2%		13.7%	39.2%		10.8%	36.3%	36.3%
Maximum Green (s)	7.0	34.0		7.0	34.0		10.0	34.0		7.0	31.0	31.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			7.0	7.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	59.3	50.3		60.1	52.5		29.9	19.9		23.7	14.7	14.7
Actuated g/C Ratio	0.58	0.49		0.59	0.51		0.29	0.20		0.23	0.14	0.14
v/c Ratio	0.27	0.35		0.35	0.32		0.87	0.44		0.42	0.57	0.19

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

2030 Background AM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	8.7	18.3		11.1	15.4		58.8	31.3		27.7	39.4	6.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	8.7	18.3		11.1	15.4		58.8	31.3		27.7	39.4	6.6
LOS	A	B		B	B		E	C		C	D	A
Approach Delay		17.2			14.8			41.6				33.9
Approach LOS		B			B			D				C
Queue Length 50th (m)	14.1	56.2		10.3	36.0		44.8	24.7		16.0	29.8	0.6
Queue Length 95th (m)	16.1	43.3		20.4	49.4		#80.1	33.9		28.7	39.3	6.3
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	387	2454		380	2581		300	1632		232	1501	529
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	0.27	0.35		0.35	0.32		0.87	0.27		0.42	0.27	0.11

Intersection Summary

Area Type: Other

Cycle Length: 102

Actuated Cycle Length: 102

Offset: 63 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 24.8

Intersection LOS: C

Intersection Capacity Utilization 76.7%

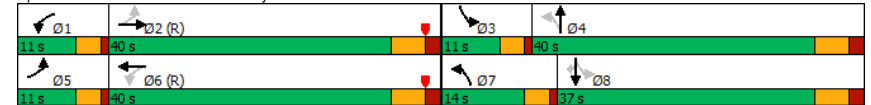
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2030 Background AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	97	668	136	124	723	49	242	312	92	90	376	56
Future Volume (veh/h)	97	668	136	124	723	49	242	312	92	90	376	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1885	1781	1841	1885	1559	1856	1826	1811	1618	1826	1781
Adj Flow Rate, veh/h	104	718	146	133	777	53	260	335	99	97	404	60
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	8	4	1	23	3	5	6	19	5	8
Cap, veh/h	422	2075	417	398	2388	162	325	720	202	260	775	232
Arrive On Green	0.02	0.16	0.16	0.07	0.49	0.49	0.10	0.19	0.19	0.13	0.31	0.31
Sat Flow, veh/h	1682	4293	863	1753	4920	334	1767	3857	1085	1541	4985	1492
Grp Volume(v), veh/h	104	572	292	133	541	289	260	286	148	97	404	60
Grp Sat Flow(s),veh/h/ln	1682	1716	1725	1753	1716	1823	1767	1662	1618	1541	1662	1492
Q Serve(g_s), s	3.0	15.1	15.4	3.8	9.8	9.9	10.0	7.8	8.3	5.3	6.8	3.1
Cycle Q Clear(g_c), s	3.0	15.1	15.4	3.8	9.8	9.9	10.0	7.8	8.3	5.3	6.8	3.1
Prop In Lane	1.00		0.50	1.00		0.18	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	422	1658	834	398	1665	885	325	620	302	260	775	232
V/C Ratio(X)	0.25	0.35	0.35	0.33	0.32	0.33	0.80	0.46	0.49	0.37	0.52	0.26
Avail Cap(c_a), veh/h	428	1658	834	400	1665	885	325	1108	539	263	1515	454
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	12.2	28.5	28.6	12.6	16.0	16.1	34.9	36.9	37.1	30.7	32.0	30.7
Incr Delay (d2), s/veh	0.3	0.5	1.1	0.5	0.5	1.0	13.2	0.6	1.5	0.9	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	4.1	4.4	0.5	2.1	2.5	7.3	3.4	3.7	2.0	2.8	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	29.1	29.7	13.1	16.6	17.0	48.1	37.6	38.6	31.5	32.6	31.4
LnGrp LOS	B	C	C	B	B	B	D	D	D	C	C	C
Approach Vol, veh/h	968			963			694			561		
Approach Delay, s/veh	27.5			16.2			41.7			32.3		
Approach LOS	C			B			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	55.3	10.8	25.0	10.6	55.5	14.0	21.9				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	7.0	34.0	7.0	34.0	7.0	34.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	5.8	17.4	7.3	10.3	5.0	11.9	12.0	8.8				
Green Ext Time (p_c), s	0.1	7.7	0.0	3.8	0.1	8.6	0.0	4.0				

Intersection Summary												
HCM 6th Ctrl Delay	28.0											
HCM 6th LOS	C											

Lanes, Volumes, Timings

2030 Background AM Peak Hour

8: Lauzon Parkway & Catherine Street

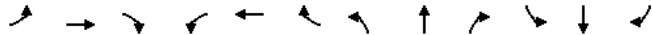
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	145	22	13	54	10	27	25	296	88	56	507	261
Future Volume (vph)	145	22	13	54	10	27	25	296	88	56	507	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor		0.99		1.00			1.00		0.98	1.00	0.99	
Frt		0.945				0.890			0.850		0.949	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1645	0	1245	1457	0	1612	3471	1583	1626	4755	0
Fit Permitted	0.730			0.732			0.318			0.538		
Satd. Flow (perm)	1387	1645	0	955	1457	0	539	3471	1549	920	4755	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			30				98		150	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		646.8			106.2			230.9			292.9	
Travel Time (s)		46.6			7.6			13.9			17.6	
Confl. Peds. (#/hr)			4		4			3		1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	23%	45%	0%	22%	12%	4%	2%	11%	4%	0%
Adj. Flow (vph)	161	24	14	60	11	30	28	329	98	62	563	290
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	38	0	60	41	0	28	329	98	62	853	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	43.0	43.0		43.0	43.0		13.0	46.0	46.0	13.0	46.0	
Total Split (%)	42.2%	42.2%		42.2%	42.2%		12.7%	45.1%	45.1%	12.7%	45.1%	
Maximum Green (s)	37.0	37.0		37.0	37.0		9.0	40.0	40.0	9.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	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	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	17.5	17.5		17.5	17.5		71.0	63.4	63.4	72.4	65.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.70	0.62	0.62	0.71	0.65	
v/c Ratio	0.68	0.13		0.37	0.15		0.06	0.15	0.10	0.09	0.27	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2030 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

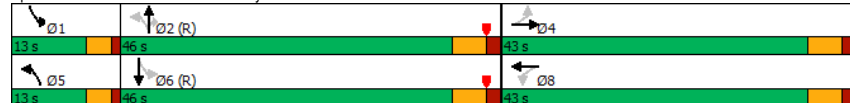


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	53.1	24.4		41.9	16.5		9.9	19.2	12.0	5.2	7.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	53.1	24.4		41.9	16.5		9.9	19.2	12.0	5.2	7.7	
LOS	D	C		D	B		A	B	B	A	A	
Approach Delay	47.6			31.6			17.1			7.6		
Approach LOS	D			C			B			A		
Queue Length 50th (m)	31.9	4.3		11.2	1.9		2.2	24.4	0.4	3.1	23.0	
Queue Length 95th (m)	50.1	12.3		22.2	10.6		7.5	37.3	16.4	8.6	36.8	
Internal Link Dist (m)	622.8		82.2		206.9		115.0		268.9			
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	503	605		346	547		478	2157	999	723	3125	
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	0.06		0.17	0.07		0.06	0.15	0.10	0.09	0.27	

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	97 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Red
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	16.4
Intersection Capacity Utilization:	60.0%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	B

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

2030 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	145	22	13	54	10	27	25	296	88	56	507	261
Future Volume (veh/h)	145	22	13	54	10	27	25	296	88	56	507	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1559	1233	1900	1574	1722	1841	1870	1737	1841	1900
Adj Flow Rate, veh/h	161	24	14	60	11	30	28	329	98	62	563	290
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	23	45	0	22	12	4	2	11	4	0
Cap, veh/h	282	196	114	211	78	213	458	2141	968	710	2115	982
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.08	1.00	1.00	0.06	0.63	0.63
Sat Flow, veh/h	1379	1122	655	897	448	1222	1640	3497	1581	1654	3350	1556
Grp Volume(v), veh/h	161	0	38	60	0	41	28	329	98	62	563	290
Grp Sat Flow(s), veh/h/ln	1379	0	1777	897	0	1670	1640	1749	1581	1654	1675	1556
Q Serve(g_s), s	11.4	0.0	1.8	6.2	0.0	2.1	0.6	0.0	0.0	1.3	7.6	8.6
Cycle Q Clear(g_c), s	13.5	0.0	1.8	8.0	0.0	2.1	0.6	0.0	0.0	1.3	7.6	8.6
Prop In Lane	1.00		0.37	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	0	310	211	0	291	458	2141	968	710	2115	982
V/C Ratio(X)	0.57	0.00	0.12	0.28	0.00	0.14	0.06	0.15	0.10	0.09	0.27	0.30
Avail Cap(c_a), veh/h	542	0	645	380	0	606	541	2141	968	762	2115	982
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	0.0	35.5	38.9	0.0	35.6	6.3	0.0	0.0	5.8	8.3	8.5
Incr Delay (d2), s/veh	1.8	0.0	0.2	0.7	0.0	0.2	0.1	0.1	0.2	0.1	0.3	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	4.7	0.0	0.9	1.6	0.0	1.0	0.0	0.1	0.1	0.0	0.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.2	0.0	35.7	39.6	0.0	35.9	6.4	0.1	0.2	5.9	8.6	9.3
LnGrp LOS	D	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h	199			101			455			915		
Approach Delay, s/veh	41.8			38.1			0.5			8.7		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	68.4		23.8	7.8	70.4		23.8				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	40.0		37.0	9.0	40.0		37.0				
Max Q Clear Time (g_c+I1), s	3.3	2.0		15.5	2.6	10.6		10.0				
Green Ext Time (p_c), s	0.1	3.2		0.9	0.0	7.7		0.7				

Intersection Summary

HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Lanes, Volumes, Timings
 9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	41	62	105	60	200	3
Future Volume (vph)	41	62	105	60	200	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919				0.998	
Fit Protected	0.980		0.950			
Satd. Flow (prot)	1678	0	1770	1863	1859	0
Fit Permitted	0.980		0.950			
Satd. Flow (perm)	1678	0	1770	1863	1859	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	122.2			214.6	142.6	
Travel Time (s)	8.8			15.5	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	67	114	65	217	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	0	114	65	220	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
 9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	41	62	105	60	200	3
Future Vol, veh/h	41	62	105	60	200	3
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	67	114	65	217	3

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	512	219	220
Stage 1	219	-	-
Stage 2	293	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	522	821	1349
Stage 1	817	-	-
Stage 2	757	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	478	821	1349
Mov Cap-2 Maneuver	562	-	-
Stage 1	748	-	-
Stage 2	757	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1349	-	694	-
HCM Lane V/C Ratio	0.085	-	0.161	-
HCM Control Delay (s)	7.9	-	11.2	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.3	-	0.6	-

Lanes, Volumes, Timings

2030 Background AM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	203	0	0	101
Future Volume (vph)	0	0	203	0	0	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected			0.950			
Satd. Flow (prot)	1863	0	1770	1863	1863	1583
Fit Permitted			0.950			
Satd. Flow (perm)	1863	0	1770	1863	1863	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	52.8			646.8	142.6	
Travel Time (s)	3.8			46.6	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	221	0	0	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	221	0	0	110
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2030 Background AM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	7.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	203	0	0	101
Future Vol, veh/h	0	0	203	0	0	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	221	0	0	110

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	1
Stage 2	-	-	-
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	1622	572
Stage 1	-	-	1022
Stage 2	-	-	648
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	494
Mov Cap-2 Maneuver	-	-	504
Stage 1	-	-	1022
Stage 2	-	-	560

Approach	EB	WB	NB
HCM Control Delay, s	0	7.6	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	1084	-	-	1622	-
HCM Lane V/C Ratio	-	0.101	-	-	0.136	-
HCM Control Delay (s)	0	8.7	-	-	7.6	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0.3	-	-	0.5	-

Lanes, Volumes, Timings

1: Jefferson Boulevard & Tecumseh Road

2030 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔
Traffic Volume (vph)	112	1330	128	145	1194	357	163	329	165	311	311	97
Future Volume (vph)	112	1330	128	145	1194	357	163	329	165	311	311	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00		0.99	1.00		1.00
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5008	0	1752	3574	1615	1752	3574	1509	1770	3372	0
Fit Permitted	0.094			0.072			0.302			0.317		
Satd. Flow (perm)	175	5008	0	133	3574	1588	556	3574	1488	590	3372	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	16					341			156			38
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	230.2			269.3			222.3			200.9		
Travel Time (s)	13.8			16.2			16.0			14.5		
Conf. Peds. (#/hr)	5		5	5		5	5		2	2		5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	3%	3%	1%	0%	3%	1%	7%	2%	3%	2%
Adj. Flow (vph)	127	1511	145	165	1357	406	185	374	188	353	353	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	1656	0	165	1357	406	185	374	188	353	463	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	10.0		9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0		13.0	35.0		35.0	13.0	35.0
Total Split (s)	11.0	45.0		15.0	49.0		13.0	35.0		35.0	15.0	37.0
Total Split (%)	10.0%	40.9%		13.6%	44.5%		11.8%	31.8%		31.8%	13.6%	33.6%
Maximum Green (s)	7.0	40.0		11.0	44.0		9.0	30.0		30.0	11.0	32.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		4.0	3.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		28.0			28.0			23.0			23.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	60.6	52.6		66.4	55.5		28.5	18.5		18.5	32.5	20.5
Actuated g/C Ratio	0.55	0.48		0.60	0.50		0.26	0.17		0.17	0.30	0.19
v/c Ratio	0.64	0.69		0.73	0.75		0.42	0.76		0.62	0.50	1.21

Lanes, Volumes, Timings

1: Jefferson Boulevard & Tecumseh Road

2030 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	30.7	24.8		44.0	33.3	10.8	51.0	46.8	14.2	153.7	44.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.7	24.8		44.0	33.3	10.8	51.0	46.8	14.2	153.7	44.0	
LOS	C	C		D	C	B	D	D	B	F	D	
Approach Delay		25.2			29.5			39.6				91.5
Approach LOS		C			C			D				F
Queue Length 50th (m)	11.1	104.7		35.4	123.9	34.3	31.9	41.7	6.2	-69.4	47.7	
Queue Length 95th (m)	#34.4	130.9		#60.4	144.7	50.9	#47.6	53.0	24.3	#108.0	60.0	
Internal Link Dist (m)		206.2			245.3			198.3				176.9
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	198	2404		243	1803	970	242	974	519	292	1007	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.69		0.68	0.75	0.42	0.76	0.38	0.36	1.21	0.46	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 56 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 39.1

Intersection LOS: D

Intersection Capacity Utilization 81.6%

ICU Level of Service D

Analysis Period (min) 15

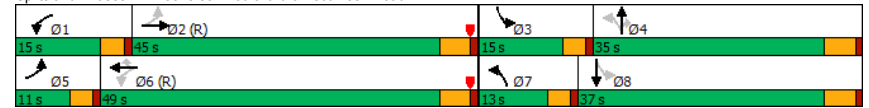
~ Volume exceeds capacity, queue is theoretically infinite.

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: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

1: Jefferson Boulevard & Tecumseh Road

2030 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔↔↔	↔
Traffic Volume (veh/h)	112	1330	128	145	1194	357	163	329	165	311	311	97
Future Volume (veh/h)	112	1330	128	145	1194	357	163	329	165	311	311	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1885	1900	1856	1885	1796	1870	1856	1870
Adj Flow Rate, veh/h	127	1511	145	165	1357	406	185	374	188	353	353	110
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	3	3	1	0	3	1	7	2	3	2
Cap, veh/h	210	2286	219	252	1739	779	286	675	285	323	548	168
Arrive On Green	0.06	0.48	0.48	0.02	0.16	0.16	0.08	0.19	0.19	0.10	0.21	0.21
Sat Flow, veh/h	1781	4737	454	1767	3582	1605	1767	3582	1510	1781	2651	814
Grp Volume(v), veh/h	127	1086	570	165	1357	406	185	374	188	353	233	230
Grp Sat Flow(s),veh/h/ln	1781	1702	1787	1767	1791	1605	1767	1791	1510	1781	1763	1702
Q Serve(g_s), s	3.8	26.7	26.7	5.0	40.0	25.5	9.0	10.4	12.7	11.0	13.3	13.6
Cycle Q Clear(g_c), s	3.8	26.7	26.7	5.0	40.0	25.5	9.0	10.4	12.7	11.0	13.3	13.6
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	210	1643	862	252	1739	779	286	675	285	323	364	352
V/C Ratio(X)	0.61	0.66	0.66	0.65	0.78	0.52	0.65	0.55	0.66	1.09	0.64	0.65
Avail Cap(c_a), veh/h	212	1643	862	314	1739	779	286	977	412	323	513	495
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	21.6	21.6	20.6	40.6	34.5	33.9	40.4	41.4	39.3	39.9	40.0
Incr Delay (d2), s/veh	4.8	2.1	4.0	2.4	2.6	1.8	5.0	1.0	3.7	77.2	2.6	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	7.4	8.3	1.2	18.7	9.7	5.1	5.5	6.0	17.5	7.1	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	23.7	25.6	23.1	43.1	36.3	38.9	41.4	45.1	116.4	42.5	42.9
LnGrp LOS	C	C	C	C	D	D	D	D	D	F	D	D
Approach Vol, veh/h	1783			1928			747			816		
Approach Delay, s/veh	24.6			40.0			41.7			74.6		
Approach LOS	C			D			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	58.1	15.0	25.7	10.9	58.4	13.0	27.7				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	11.0	40.0	11.0	30.0	7.0	44.0	9.0	32.0				
Max Q Clear Time (g_c+I1), s	7.0	28.7	13.0	14.7	5.8	42.0	11.0	15.6				
Green Ext Time (p_c), s	0.2	9.5	0.0	4.5	0.0	1.9	0.0	4.0				
Intersection Summary												
HCM 6th Ctrl Delay	40.4											
HCM 6th LOS	D											

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

2030 Background PM Peak Hour

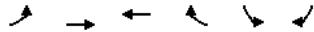
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	0	1806	1696	0	0	0
Future Volume (vph)	0	1806	1696	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1863	5085	5085	0	1863	1863
Fit Permitted						
Satd. Flow (perm)	1863	5085	5085	0	1863	1863
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
Link Speed (k/h)		50	50		50	
Link Distance (m)		269.3	167.9		212.2	
Travel Time (s)		19.4	12.1		15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1963	1843	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1963	1843	0	0	0
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	11.0	87.0	76.0		23.0	23.0
Total Split (%)	10.0%	79.1%	69.1%		20.9%	20.9%
Maximum Green (s)	7.0	82.0	71.0		18.0	18.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		61.7	61.7			
Actuated g/C Ratio		0.56	0.56			
v/c Ratio		0.69	0.65			
Control Delay		12.0	13.5			
Queue Delay		0.0	0.0			
Total Delay		12.0	13.5			

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

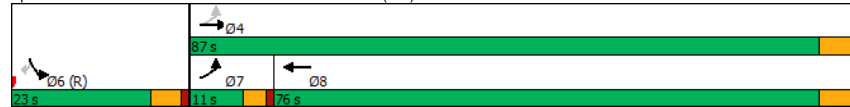


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		B	B			
Approach Delay		12.0	13.5			
Approach LOS		B	B			
Queue Length 50th (m)		129.5	76.1			
Queue Length 95th (m)		m18.6	65.2			
Internal Link Dist (m)		245.3	143.9		188.2	
Turn Bay Length (m)						
Base Capacity (vph)		3790	3291			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.52	0.56			

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 12.8 Intersection LOS: B
 Intersection Capacity Utilization 39.1% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

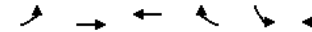
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	0	1806	1696	0	0	0
Future Volume (veh/h)	0	1806	1696	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1963	1843	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	168	3153	3153	0	519	462
Arrive On Green	0.00	0.20	0.62	0.00	0.00	0.00
Sat Flow, veh/h	1781	5274	5443	0	1781	1585
Grp Volume(v), veh/h	0	1963	1843	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	38.6	23.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	38.6	23.8	0.0	0.0	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	168	3153	3153	0	519	462
V/C Ratio(X)	0.00	0.62	0.58	0.00	0.00	0.00
Avail Cap(c_a), veh/h	280	3806	3296	0	519	462
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.57	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	32.1	12.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	11.2	2.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	32.2	12.8	0.0	0.0	0.0
LnGrp LOS	A	C	B	A	A	A
Approach Vol, veh/h		1963	1843		0	
Approach Delay, s/veh		32.2	12.8		0.0	
Approach LOS		C	B			

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	72.9	37.1	0.0	72.9
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	82.0	18.0	7.0	71.0
Max Q Clear Time (g_c+I1), s	40.6	0.0	0.0	25.8
Green Ext Time (p_c), s	27.4	0.0	0.0	26.6

Intersection Summary

HCM 6th Ctrl Delay 22.8
 HCM 6th LOS C

Lanes, Volumes, Timings

2030 Background PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1735	52	0	1590	8	0	0	46	0	0	90
Future Volume (vph)	0	1735	52	0	1590	8	0	0	46	0	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.996			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5068	0	0	5131	0	0	0	1644	0	0	1644
Flt Permitted												
Satd. Flow (perm)	0	5068	0	0	5131	0	0	0	1644	0	0	1644
Link Speed (k/h)		60			60				50			50
Link Distance (m)		167.9			186.0				136.6			134.8
Travel Time (s)		10.1			11.2				9.8			9.7
Confl. Peds. (#/hr)	8		9	9		8	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	0	1928	58	0	1767	9	0	0	51	0	0	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1986	0	0	1776	0	0	0	51	0	0	100
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC

2030 Background PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

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	0	1735	52	0	1590	8	0	0	46	0	0	90
Future Vol, veh/h	0	1735	52	0	1590	8	0	0	46	0	0	90
Conflicting Peds, #/hr	8	0	9	9	0	8	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	1	0	0
Mvmt Flow	0	1928	58	0	1767	9	0	0	51	0	0	100

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	0	209
Stage 1	0	-	0	0
Stage 2	0	-	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	207
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	28	29.6
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	207	-	-	-	-	244
HCM Lane V/C Ratio	0.247	-	-	-	-	0.41
HCM Control Delay (s)	28	-	-	-	-	29.6
HCM Lane LOS	D	-	-	-	-	D
HCM 95th %tile Q(veh)	0.9	-	-	-	-	1.9

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔		↔	↔	
Traffic Volume (vph)	156	1474	69	240	1036	4	160	3	207	83	2	223
Future Volume (vph)	156	1474	69	240	1036	4	160	3	207	83	2	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					1.00	0.98				
Fit		0.993			0.999			0.852				0.851
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5090	0	1752	5080	0	1787	1578	0	1770	1585	0
Fit Permitted	0.209			0.070			0.422			0.433		
Satd. Flow (perm)	389	5090	0	129	5080	0	792	1578	0	807	1585	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			1			235				242
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				213.5
Travel Time (s)		11.2			16.4			20.9				15.4
Conf. Peds. (#/hr)			13		13			3				3
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	3%	2%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	170	1675	78	273	1177	4	182	3	235	90	2	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	1753	0	273	1181	0	182	238	0	90	244	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		1	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		7.0	10.0		11.0	11.0		11.0		11.0
Minimum Split (s)	9.0	28.0		11.0	28.0		34.0	34.0		34.0		34.0
Total Split (s)	16.0	49.0		23.0	56.0		38.0	38.0		38.0		38.0
Total Split (%)	14.5%	44.5%		20.9%	50.9%		34.5%	34.5%		34.5%		34.5%
Maximum Green (s)	12.0	44.0		19.0	51.0		33.0	33.0		33.0		33.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.5	4.0		3.5	4.0		3.0	3.0		4.0		4.0
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)		7.0			7.0			7.0				7.0
Flash Dont Walk (s)		16.0			16.0			22.0				22.0
Pedestrian Calls (#/hr)		0			0			0				0
Act Effct Green (s)	63.7	52.9		74.5	59.7		26.5	26.5		26.5		26.5
Actuated g/C Ratio	0.58	0.48		0.68	0.54		0.24	0.24		0.24		0.24
v/c Ratio	0.49	0.72		0.82	0.43		0.95	0.43		0.46		0.43

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	20.5	12.2		46.1	25.0		95.0	6.5		33.3		3.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	20.5	12.2		46.1	25.0		95.0	6.5		33.3		3.9
LOS	C	B		D	C		F	A		C		A
Approach Delay		12.9			28.9			44.9				11.8
Approach LOS		B			C			D				B
Queue Length 50th (m)	5.5	50.9		53.7	68.0		39.9	0.5		16.5		7.4
Queue Length 95th (m)	25.4	156.2		m#86.4	86.1		#72.2	18.7		30.1		0.4
Internal Link Dist (m)		162.0			249.0			265.9				189.5
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	383	2451		367	2756		237	637		242		644
Starvation Cap Reductn	0	0		0	0		0	0		0		0
Spillback Cap Reductn	0	0		0	0		0	0		0		0
Storage Cap Reductn	0	0		0	0		0	0		0		0
Reduced v/c Ratio	0.44	0.72		0.74	0.43		0.77	0.37		0.37		0.38

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 102 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 21.7
 Intersection Capacity Utilization 82.7%
 Analysis Period (min) 15
 # 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: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑			↑↑		
Traffic Volume (veh/h)	156	1474	69	240	1036	4	160	3	207	83	2	223
Future Volume (veh/h)	156	1474	69	240	1036	4	160	3	207	83	2	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1856	1870	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	170	1675	78	273	1177	4	182	3	235	90	2	242
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	3	2	2	1	2	1	2	2	2
Cap, veh/h	333	2318	108	316	2641	9	263	6	469	266	4	472
Arrive On Green	0.07	0.46	0.46	0.04	0.17	0.17	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1781	5036	234	1767	5253	18	1145	20	1563	1140	13	1574
Grp Volume(v), veh/h	170	1141	612	273	763	418	182	0	238	90	0	244
Grp Sat Flow(s),veh/h/ln	1781	1716	1839	1767	1702	1867	1145	0	1583	1140	0	1587
Q Serve(g_s), s	5.5	29.6	29.6	9.5	22.2	22.2	17.2	0.0	13.6	7.8	0.0	14.0
Cycle Q Clear(g_c), s	5.5	29.6	29.6	9.5	22.2	22.2	31.2	0.0	13.6	21.4	0.0	14.0
Prop In Lane	1.00		0.13	1.00		0.01	1.00		0.99	1.00		0.99
Lane Grp Cap(c), veh/h	333	1579	847	316	1711	939	263	0	475	266	0	476
V/C Ratio(X)	0.51	0.72	0.72	0.86	0.45	0.45	0.69	0.00	0.50	0.34	0.00	0.51
Avail Cap(c_a), veh/h	403	1579	847	423	1711	939	263	0	475	266	0	476
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	24.0	24.0	28.2	32.1	32.1	44.7	0.0	31.7	40.5	0.0	31.8
Incr Delay (d2), s/veh	1.5	2.9	5.3	10.2	0.6	1.1	7.5	0.0	0.8	1.1	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	8.8	10.1	4.0	6.9	7.7	6.7	0.0	5.6	2.7	0.0	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	26.9	29.3	38.4	32.7	33.1	52.2	0.0	32.5	41.6	0.0	33.1
LnGrp LOS	B	C	C	D	C	C	D	A	C	D	A	C
Approach Vol, veh/h	1923			1454			420			334		
Approach Delay, s/veh	26.8			33.9			41.1			35.4		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.4	55.6		38.0	11.7	60.3		38.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	19.0	44.0		33.0	12.0	51.0		33.0				
Max Q Clear Time (g_c+I1), s	11.5	31.6		23.4	7.5	24.2		33.2				
Green Ext Time (p_c), s	0.8	10.6		2.0	0.3	13.9		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	31.4	
HCM 6th LOS	C	

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑			↑↑		
Traffic Volume (vph)	214	1466	153	191	1201	208	199	90	126	171	75	108
Future Volume (vph)	214	1466	153	191	1201	208	199	90	126	171	75	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			0.98			0.98		
Frt	0.986				0.978		0.912				0.911	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	5004	0	1805	4988	0	1787	1726	0	1805	1681	0
Fit Permitted	0.089			0.075			0.515			0.452		
Satd. Flow (perm)	167	5004	0	142	4988	0	950	1726	0	859	1681	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			37			67				69
Link Speed (k/h)		60			60			50				50
Link Distance (m)		273.0			268.3			231.1				151.2
Travel Time (s)		16.4			16.1			16.6				10.9
Confl. Peds. (#/hr)			6		6			25				25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	1%	0%	2%	0%	1%	1%	0%	0%	0%	1%
Adj. Flow (vph)	238	1629	170	212	1334	231	221	100	140	190	83	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	1799	0	212	1565	0	221	240	0	190	203	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4				8	
Detector Phase	5	2		1	6		4	4			8	8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	21.0	51.0		19.0	49.0		40.0	40.0		40.0	40.0	
Total Split (%)	19.1%	46.4%		17.3%	44.5%		36.4%	36.4%		36.4%	36.4%	
Maximum Green (s)	17.0	46.0		15.0	44.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	69.2	54.5		67.1	53.5		28.9	28.9		28.9	28.9	
Actuated g/C Ratio	0.63	0.50		0.61	0.49		0.26	0.26		0.26	0.26	
v/c Ratio	0.78	0.72		0.77	0.64		0.89	0.48		0.84	0.41	

Lanes, Volumes, Timings

2030 Background PM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

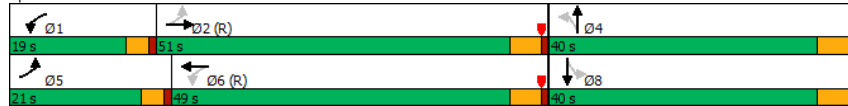


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	58.8	7.2		47.7	17.5		72.6	26.3		68.1	23.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	58.8	7.2		47.7	17.5		72.6	26.3		68.1	23.0	
LOS	E	A		D	B		E	C		E	C	
Approach Delay		13.2			21.1			48.5			44.8	
Approach LOS		B			C			D			D	
Queue Length 50th (m)	38.9	18.4		35.7	55.3		47.2	31.9		40.0	24.0	
Queue Length 95th (m)	m65.2	31.7		m57.6	79.7		#82.0	52.7		#71.3	42.7	
Internal Link Dist (m)		249.0			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	358	2490		315	2443		302	594		273	581	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.66	0.72		0.67	0.64		0.73	0.40		0.70	0.35	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 22.4
 Intersection LOS: C
 Intersection Capacity Utilization 88.6%
 ICU Level of Service E
 Analysis Period (min) 15
 # 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: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2030 Background PM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	214	1466	153	191	1201	208	199	90	126	171	75	108
Future Volume (veh/h)	214	1466	153	191	1201	208	199	90	126	171	75	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1885	1870	1885	1900	1870	1900	1885	1885	1900	1900	1900	1885
Adj Flow Rate, veh/h	238	1629	170	212	1334	231	221	100	140	190	83	120
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	1	0	2	0	1	1	0	0	0	1
Cap, veh/h	303	2290	239	333	2078	360	311	213	298	281	211	304
Arrive On Green	0.19	0.98	0.98	0.05	0.32	0.32	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1795	4694	489	1810	4375	757	1171	700	980	1143	691	999
Grp Volume(v), veh/h	238	1180	619	212	1038	527	221	0	240	190	0	203
Grp Sat Flow(s),veh/h/ln	1795	1702	1779	1810	1702	1728	1171	0	1680	1143	0	1690
Q Serve(g_s), s	7.7	3.0	3.0	6.4	28.7	28.7	20.2	0.0	12.8	17.8	0.0	10.4
Cycle Q Clear(g_c), s	7.7	3.0	3.0	6.4	28.7	28.7	30.7	0.0	12.8	30.5	0.0	10.4
Prop In Lane	1.00		0.27	1.00		0.44	1.00		0.58	1.00		0.59
Lane Grp Cap(c), veh/h	303	1661	868	333	1617	821	311	0	512	281	0	515
V/C Ratio(X)	0.78	0.71	0.71	0.64	0.64	0.64	0.71	0.00	0.47	0.68	0.00	0.39
Avail Cap(c_a), veh/h	414	1661	868	435	1617	821	327	0	534	297	0	538
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.65	0.74	0.74	0.74	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.3	0.7	0.7	12.7	29.5	29.5	42.3	0.0	31.0	43.4	0.0	30.2
Incr Delay (d2), s/veh	4.5	1.7	3.3	1.5	1.5	2.9	7.4	0.0	1.0	6.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.9	1.6	1.3	9.0	9.5	7.8	0.0	5.6	6.7	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	2.4	4.0	14.2	30.9	32.3	49.7	0.0	32.0	49.8	0.0	30.9
LnGrp LOS	C	A	A	B	C	C	D	A	C	D	A	C
Approach Vol, veh/h		2037			1777			461				393
Approach Delay, s/veh		5.3			29.4			40.5				40.1
Approach LOS		A			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.8	58.7		38.5	14.2	57.3		38.5				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	46.0		35.0	17.0	44.0		35.0				
Max Q Clear Time (g_c+I1), s	8.4	5.0		32.7	9.7	30.7		32.5				
Green Ext Time (p_c), s	0.4	28.9		0.9	0.6	10.6		0.8				

Intersection Summary

HCM 6th Ctrl Delay 20.9
 HCM 6th LOS C

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

2030 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↖	↖	↖	↖↖	↖	↖	↖↖	↖	↖	↖↖	↖
Traffic Volume (vph)	189	1373	219	185	955	86	263	778	240	153	467	77
Future Volume (vph)	189	1373	219	185	955	86	263	778	240	153	467	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	0.99		1.00		1.00	0.98
Fit		0.979			0.988			0.965				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	5043	0	1805	5060	0	1787	4894	0	1656	5136	1553
Fit Permitted	0.141			0.098			0.398			0.139		
Satd. Flow (perm)	257	5043	0	186	5060	0	746	4894	0	242	5136	1521
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			14			69				149
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Confl. Peds. (#/hr)	21		19	19		21	8		9	9		8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	2%	0%	0%	12%	1%	2%	1%	9%	1%	4%
Adj. Flow (vph)	208	1509	241	203	1049	95	289	855	264	168	513	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	208	1750	0	203	1144	0	289	1119	0	168	513	85
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	36.0		11.0	36.0	36.0
Total Split (s)	19.0	48.0		14.0	43.0		12.0	36.0		12.0	36.0	36.0
Total Split (%)	17.3%	43.6%		12.7%	39.1%		10.9%	32.7%		10.9%	32.7%	32.7%
Maximum Green (s)	15.0	42.0		10.0	37.0		8.0	30.0		8.0	30.0	30.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			6.0			6.0	6.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	57.2	43.2		52.8	40.8		38.8	28.8		38.8	28.8	28.8
Actuated g/C Ratio	0.52	0.39		0.48	0.37		0.35	0.26		0.35	0.26	0.26
v/c Ratio	0.69	0.88		0.86	0.61		0.86	0.84		0.89	0.38	0.17

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

2030 Background PM Peak Hour

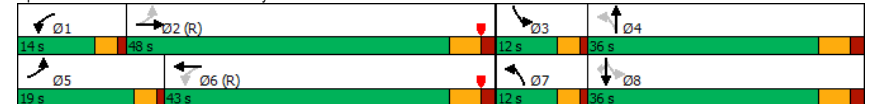
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	41.4	24.6		57.3	30.1		52.2	42.5		80.4	32.3	4.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	41.4	24.6		57.3	30.1		52.2	42.5		80.4	32.3	4.3
LOS	D	C		E	C		D	D		F	C	A
Approach Delay		26.3			34.2			44.5				39.8
Approach LOS		C			C			D				D
Queue Length 50th (m)	29.0	45.1		28.6	76.9		46.0	81.5		29.1	25.7	0.0
Queue Length 95th (m)	m52.5	89.0		#73.1	95.8		#86.0	99.5		#63.3	44.2	4.8
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	340	1998		236	1883		338	1384		188	1400	523
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	0.61	0.88		0.86	0.61		0.86	0.81		0.89	0.37	0.16

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	7 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.89
Intersection Signal Delay:	34.8
Intersection LOS:	C
Intersection Capacity Utilization:	88.8%
ICU Level of Service:	E
Analysis Period (min):	15
#	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: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2030 Background PM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	189	1373	219	185	955	86	263	778	240	153	467	77
Future Volume (veh/h)	189	1373	219	185	955	86	263	778	240	153	467	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1900	1870	1900	1900	1722	1885	1870	1885	1767	1885	1841
Adj Flow Rate, veh/h	208	1509	241	203	1049	95	289	855	264	168	513	85
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	0	2	0	0	12	1	2	1	9	1	4
Cap, veh/h	331	1790	285	238	1899	172	335	1016	312	212	1354	406
Arrive On Green	0.03	0.13	0.13	0.08	0.39	0.39	0.07	0.26	0.26	0.02	0.09	0.09
Sat Flow, veh/h	1753	4499	717	1810	4834	437	1795	3861	1185	1682	5147	1544
Grp Volume(v), veh/h	208	1159	591	203	750	394	289	753	366	168	513	85
Grp Sat Flow(s),veh/h/ln	1753	1729	1757	1810	1729	1813	1795	1702	1643	1682	1716	1544
Q Serve(g_s), s	7.5	36.0	36.1	7.3	18.5	18.5	8.0	23.0	23.2	7.9	10.4	5.6
Cycle Q Clear(g_c), s	7.5	36.0	36.1	7.3	18.5	18.5	8.0	23.0	23.2	7.9	10.4	5.6
Prop In Lane	1.00		0.41	1.00		0.24	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	331	1376	699	238	1358	712	335	895	432	212	1354	406
V/C Ratio(X)	0.63	0.84	0.85	0.85	0.55	0.55	0.86	0.84	0.85	0.79	0.38	0.21
Avail Cap(c_a), veh/h	413	1376	699	249	1358	712	335	928	448	212	1404	421
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.60	0.60	0.60	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95
Uniform Delay (d), s/veh	20.9	44.4	44.5	25.0	25.9	25.9	35.6	38.4	38.4	31.9	41.7	39.6
Incr Delay (d2), s/veh	1.2	4.0	7.6	23.1	1.6	3.1	19.9	7.0	14.0	17.3	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	16.8	17.9	4.7	6.8	7.7	8.6	10.4	11.3	5.0	4.9	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	48.4	52.1	48.2	27.5	29.0	55.6	45.4	52.4	49.2	41.9	39.9
LnGrp LOS	C	D	D	D	C	C	E	D	D	D	D	D
Approach Vol, veh/h	1958			1347			1408			766		
Approach Delay, s/veh	46.7			31.1			49.3			43.3		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.3	49.8	12.0	34.9	13.9	49.2	12.0	34.9				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	42.0	8.0	30.0	15.0	37.0	8.0	30.0				
Max Q Clear Time (g_c+I1), s	9.3	38.1	9.9	25.2	9.5	20.5	10.0	12.4				
Green Ext Time (p_c), s	0.1	3.6	0.0	3.4	0.4	9.9	0.0	4.7				

Intersection Summary	
HCM 6th Ctrl Delay	43.0
HCM 6th LOS	D

Lanes, Volumes, Timings

2030 Background PM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	242	49	24	138	42	144	38	796	190	124	506	273
Future Volume (vph)	242	49	24	138	42	144	38	796	190	124	506	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99	0.99		0.99	0.98		1.00		0.98	1.00	0.99	
Frt	0.951				0.884				0.850		0.947	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1772		0	1570	1592	0	1671	3610	1455	1703	4843
Fit Permitted	0.553			0.705			0.316			0.224		
Satd. Flow (perm)	1045	1772	0	1155	1592	0	556	3610	1423	401	4843	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			158				209		150	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)	621.8			106.2			230.9			292.9		
Travel Time (s)	44.8			7.6			13.9			17.6		
Confl. Peds. (#/hr)	7		8	8		7	1		1	1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	4%	15%	0%	5%	8%	0%	11%	6%	1%	0%
Adj. Flow (vph)	266	54	26	152	46	158	42	875	209	136	556	300
Shared Lane Traffic (%)												
Lane Group Flow (vph)	266	80	0	152	204	0	42	875	209	136	856	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		36.0	36.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	48.0	48.0		48.0	48.0		11.0	48.0	48.0	14.0	51.0	
Total Split (%)	43.6%	43.6%		43.6%	43.6%		10.0%	43.6%	43.6%	12.7%	46.4%	
Maximum Green (s)	42.0	42.0		42.0	42.0		7.0	42.0	42.0	10.0	45.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			23.0	23.0		23.0	
Pedestrian Calls (#/hr)	0	0		0	0			0	0		0	
Act Effect Green (s)	32.2	32.2		32.2	32.2		62.0	53.0	53.0	67.1	59.2	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.56	0.48	0.48	0.61	0.54	
v/c Ratio	0.87	0.15		0.45	0.35		0.11	0.50	0.26	0.39	0.32	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2030 Background PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	63.1	18.6		34.4	8.8		5.9	10.2	0.7	13.9	13.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	63.1	18.6		34.4	8.8		5.9	10.2	0.7	13.9	13.7	
LOS	E	B		C	A		A	B	A	B	B	
Approach Delay	52.8			19.7			8.3			13.7		
Approach LOS	D			B			A			B		
Queue Length 50th (m)	56.5	9.0		27.7	7.5		1.5	25.8	0.0	12.1	33.8	
Queue Length 95th (m)	81.3	18.2		42.0	22.3		m2.9	33.6	m0.8	26.0	51.8	
Internal Link Dist (m)	597.8			82.2			206.9			268.9		
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	399	692		441	705		384	1740	794	363	2676	
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	0.67	0.12		0.34	0.29		0.11	0.50	0.26	0.37	0.32	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 79 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 17.1 Intersection LOS: B
 Intersection Capacity Utilization 77.9% ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

2030 Background PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	242	49	24	138	42	144	38	796	190	124	506	273
Future Volume (veh/h)	242	49	24	138	42	144	38	796	190	124	506	273
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1841	1678	1900	1826	1781	1900	1737	1811	1885	1900
Adj Flow Rate, veh/h	266	54	26	152	46	158	42	875	209	136	556	300
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	4	15	0	5	8	0	11	6	1	0
Cap, veh/h	359	410	197	428	127	435	356	1635	666	379	1611	749
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.09	0.91	0.91	0.06	0.47	0.47
Sat Flow, veh/h	1192	1208	582	1176	374	1284	1697	3610	1470	1725	3431	1596
Grp Volume(v), veh/h	266	0	80	152	0	204	42	875	209	136	556	300
Grp Sat Flow(s), veh/h/ln	1192	0	1790	1176	0	1658	1697	1805	1470	1725	1716	1596
Q Serve(g_s), s	23.8	0.0	3.4	11.3	0.0	10.2	1.4	4.9	2.1	4.6	11.3	13.5
Cycle Q Clear(g_c), s	34.0	0.0	3.4	14.7	0.0	10.2	1.4	4.9	2.1	4.6	11.3	13.5
Prop In Lane	1.00		0.32	1.00		0.77	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	359	0	607	428	0	562	356	1635	666	379	1611	749
V/C Ratio(X)	0.74	0.00	0.13	0.36	0.00	0.36	0.12	0.54	0.31	0.36	0.35	0.40
Avail Cap(c_a), veh/h	410	0	684	478	0	633	386	1635	666	428	1611	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.47	0.47	0.47	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	0.0	25.1	30.2	0.0	27.4	14.1	3.1	2.9	14.2	18.5	19.1
Incr Delay (d2), s/veh	6.9	0.0	0.1	0.7	0.0	0.6	0.1	0.6	0.6	0.6	0.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.6	0.0	1.5	3.5	0.0	4.2	0.3	1.0	0.6	1.0	3.2	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	0.0	25.3	30.9	0.0	28.0	14.2	3.7	3.5	14.7	19.1	20.7
LnGrp LOS	D	A	C	C	A	C	B	A	A	B	B	C
Approach Vol, veh/h	346			356			1126			992		
Approach Delay, s/veh	42.1			29.2			4.0			19.0		
Approach LOS	D			C			A			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	55.8		43.3	9.1	57.6		43.3				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	42.0		42.0	7.0	45.0		42.0				
Max Q Clear Time (g_c+I1), s	6.6	6.9		36.0	3.4	15.5		16.7				
Green Ext Time (p_c), s	0.1	14.0		1.3	0.0	10.3		3.4				

Intersection Summary

HCM 6th Ctrl Delay 17.1
 HCM 6th LOS B

Lanes, Volumes, Timings
 9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	83	108	133	30	200	4
Future Volume (vph)	83	108	133	30	200	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.924				0.998	
Fit Protected	0.979		0.950			
Satd. Flow (prot)	1685	0	1770	1863	1859	0
Fit Permitted	0.979		0.950			
Satd. Flow (perm)	1685	0	1770	1863	1859	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	140.9			213.5	134.3	
Travel Time (s)	10.1			15.4	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	117	145	33	217	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	207	0	145	33	221	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.4%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
 9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	6.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	83	108	133	30	200	4
Future Vol, veh/h	83	108	133	30	200	4
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	117	145	33	217	4

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	542	219	221
Stage 1	219	-	-
Stage 2	323	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	501	821	1348
Stage 1	817	-	-
Stage 2	734	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	447	821	1348
Mov Cap-2 Maneuver	538	-	-
Stage 1	729	-	-
Stage 2	734	-	-

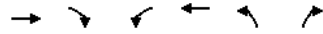
Approach	EB	NB	SB
HCM Control Delay, s	12.8	6.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1348	-	668	-
HCM Lane V/C Ratio	0.107	-	0.311	-
HCM Control Delay (s)	8	-	12.8	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.4	-	1.3	-

Lanes, Volumes, Timings

2030 Background PM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	204	0	0	113
Future Volume (vph)	0	0	204	0	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected			0.950			
Satd. Flow (prot)	1863	0	1770	1863	1863	1583
Fit Permitted			0.950			
Satd. Flow (perm)	1863	0	1770	1863	1863	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	76.5			621.8	134.3	
Travel Time (s)	5.5			44.8	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	222	0	0	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	222	0	0	123
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2030 Background PM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	204	0	0	113
Future Vol, veh/h	0	0	204	0	0	113
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	222	0	0	123

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	1
Stage 2	-	-	444
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	1622	571
Stage 1	-	-	1022
Stage 2	-	-	646
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	493
Mov Cap-2 Maneuver	-	-	502
Stage 1	-	-	1022
Stage 2	-	-	557

Approach	EB	WB	NB
HCM Control Delay, s	0	7.6	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	1084	-	-	1622	-
HCM Lane V/C Ratio	-	0.113	-	-	0.137	-
HCM Control Delay (s)	0	8.7	-	-	7.6	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0.4	-	-	0.5	-

Lanes, Volumes, Timings

2030 Background Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	31	1119	117	186	1227	196	154	81	164	176	118	23
Future Volume (vph)	31	1119	117	186	1227	196	154	81	164	176	118	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00		0.98	0.99		1.00
Fit		0.986				0.850			0.850		0.975	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5041	0	1770	3574	1599	1770	3574	1615	1805	3453	0
Fit Permitted	0.174			0.152			0.659			0.700		
Satd. Flow (perm)	330	5041	0	283	3574	1564	1223	3574	1585	1322	3453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				188			169		21	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		230.2			268.2			222.3			200.9	
Travel Time (s)		13.8			16.1			16.0			14.5	
Confl. Peds. (#/hr)	11		18	18		11	4		6	6		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	3%	2%	1%	1%	2%	1%	0%	0%	1%	5%
Adj. Flow (vph)	32	1154	121	192	1265	202	159	84	169	181	146	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	1275	0	192	1265	202	159	84	169	181	146	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	41.0		19.0	49.0	49.0	13.0	35.0	35.0	13.0	35.0	
Total Split (%)	10.2%	38.0%		17.6%	45.4%	45.4%	12.0%	32.4%	32.4%	12.0%	32.4%	
Maximum Green (s)	7.0	36.0		15.0	44.0	44.0	9.0	30.0	30.0	9.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	66.2	58.2		75.0	67.4	67.4	21.0	11.0	11.0	21.0	11.0	
Actuated g/C Ratio	0.61	0.54		0.69	0.62	0.62	0.19	0.10	0.10	0.19	0.10	
v/c Ratio	0.11	0.47		0.54	0.57	0.19	0.56	0.23	0.54	0.61	0.39	

Lanes, Volumes, Timings

2030 Background Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	6.9	16.4		24.5	3.2	0.5	43.7	45.7	13.6	45.5	41.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.9	16.4		24.5	3.2	0.5	43.7	45.7	13.6	45.5	41.6	
LOS	A	B		C	A	A	D	D	B	D	D	
Approach Delay		16.1			5.3			31.7			43.7	
Approach LOS		B			A			C			D	
Queue Length 50th (m)	1.9	59.4		19.6	0.0	0.0	30.2	9.2	0.0	34.8	13.9	
Queue Length 95th (m)	5.3	81.3		32.3	0.0	0.0	48.4	16.6	19.7	54.4	23.5	
Internal Link Dist (m)		206.2			244.2			198.3			176.9	
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	298	2726		403	2228	1046	283	992	562	298	974	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.11	0.47		0.48	0.57	0.19	0.56	0.08	0.30	0.61	0.15	

Intersection Summary

Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.61
Intersection Signal Delay:	15.5
Intersection LOS:	B
Intersection Capacity Utilization:	75.9%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary
1: Jefferson Boulevard & Tecumseh Road

2030 Background Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔	
Traffic Volume (veh/h)	31	1119	117	186	1227	196	154	81	164	176	118	23
Future Volume (veh/h)	31	1119	117	186	1227	196	154	81	164	176	118	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1856	1870	1885	1885	1870	1885	1900	1900	1885	1826
Adj Flow Rate, veh/h	32	1154	121	192	1265	202	159	84	169	181	122	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	3	2	1	1	2	1	0	0	1	5
Cap, veh/h	329	2453	257	353	1975	872	365	568	253	375	475	91
Arrive On Green	0.04	0.52	0.52	0.14	1.00	1.00	0.08	0.16	0.16	0.08	0.16	0.16
Sat Flow, veh/h	1810	4726	495	1781	3582	1582	1781	3582	1592	1810	2992	574
Grp Volume(v), veh/h	32	838	437	192	1265	202	159	84	169	181	72	74
Grp Sat Flow(s),veh/h/ln	1810	1716	1790	1781	1791	1582	1781	1791	1592	1810	1791	1774
Q Serve(g_s), s	0.9	16.8	16.8	5.4	0.0	0.0	8.0	2.2	10.8	9.0	3.8	4.0
Cycle Q Clear(g_c), s	0.9	16.8	16.8	5.4	0.0	0.0	8.0	2.2	10.8	9.0	3.8	4.0
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	329	1781	929	353	1975	872	365	568	253	375	284	281
V/C Ratio(X)	0.10	0.47	0.47	0.54	0.64	0.23	0.44	0.15	0.67	0.48	0.25	0.26
Avail Cap(c_a), veh/h	374	1781	929	472	1975	872	365	995	442	375	497	493
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.7	16.5	16.5	11.2	0.0	0.0	34.2	39.1	42.8	34.5	39.8	39.9
Incr Delay (d2), s/veh	0.1	0.9	1.7	0.8	1.0	0.4	0.8	0.2	4.3	1.0	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	9.2	9.8	2.5	0.5	0.2	5.9	1.6	7.6	6.8	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	17.4	18.2	12.0	1.0	0.4	35.0	39.3	47.1	35.5	40.5	40.6
LnGrp LOS	B	B	B	B	A	A	C	D	D	D	D	D
Approach Vol, veh/h	1307			1659			412			327		
Approach Delay, s/veh	17.5			2.2			40.8			37.7		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.8	61.1	13.0	22.1	8.3	64.5	13.0	22.1				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	15.0	36.0	9.0	30.0	7.0	44.0	9.0	30.0				
Max Q Clear Time (g_c+I1), s	7.4	18.8	11.0	12.8	2.9	2.0	10.0	6.0				
Green Ext Time (p_c), s	0.4	11.2	0.0	1.8	0.0	23.2	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay	15.0											
HCM 6th LOS	B											

Lanes, Volumes, Timings
2: Tecumseh Road & Catherine Street (N/S)

2030 Background Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (vph)	0	1458	1609	0	0	0
Future Volume (vph)	0	1458	1609	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1863	5085	5085	0	1863	1863
Fit Permitted						
Satd. Flow (perm)	1863	5085	5085	0	1863	1863
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
Link Speed (k/h)		50	50		50	
Link Distance (m)		268.2	169.1		273.8	
Travel Time (s)		19.3	12.2		19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1585	1749	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1585	1749	0	0	0
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	11.0	85.0	74.0		23.0	23.0
Total Split (%)	10.2%	78.7%	68.5%		21.3%	21.3%
Maximum Green (s)	7.0	80.0	69.0		18.0	18.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		52.2	52.2			
Actuated g/C Ratio		0.48	0.48			
v/c Ratio		0.65	0.71			
Control Delay		27.1	37.7			
Queue Delay		0.0	0.0			
Total Delay		27.1	37.7			

Lanes, Volumes, Timings
 2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		C	D			
Approach Delay		27.1	37.7			
Approach LOS		C	D			
Queue Length 50th (m)		90.7	137.3			
Queue Length 95th (m)		100.8	147.4			
Internal Link Dist (m)		244.2	145.1	249.8		
Turn Bay Length (m)						
Base Capacity (vph)		3766	3248			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.42	0.54			

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green

Natural Cycle: 60

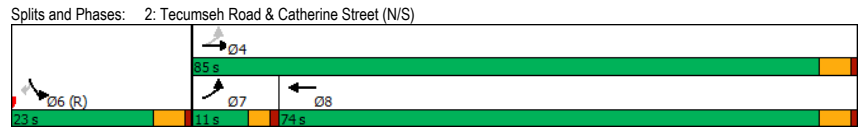
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 32.6 Intersection LOS: C

Intersection Capacity Utilization 35.3% ICU Level of Service A

Analysis Period (min) 15



HCM 6th Signalized Intersection Summary
 2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	0	1458	1609	0	0	0
Future Volume (veh/h)	0	1458	1609	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1585	1749	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	131	2515	2515	0	739	658
Arrive On Green	0.00	0.98	0.49	0.00	0.00	0.00
Sat Flow, veh/h	1781	5274	5443	0	1781	1585
Grp Volume(v), veh/h	0	1585	1749	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	1.3	28.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.3	28.6	0.0	0.0	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	131	2515	2515	0	739	658
V/C Ratio(X)	0.00	0.63	0.70	0.00	0.00	0.00
Avail Cap(c_a), veh/h	245	3782	3262	0	739	658
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.86	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.4	21.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.4	14.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	0.6	21.6	0.0	0.0	0.0
LnGrp LOS	A	A	C	A	A	A
Approach Vol, veh/h		1585	1749		0	
Approach Delay, s/veh		0.6	21.6		0.0	
Approach LOS		A	C			

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	58.2	49.8	0.0	58.2
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	80.0	18.0	7.0	69.0
Max Q Clear Time (g_c+I1), s	3.3	0.0	0.0	30.6
Green Ext Time (p_c), s	25.8	0.0	0.0	22.6

Intersection Summary

HCM 6th Ctrl Delay 11.6

HCM 6th LOS B

Lanes, Volumes, Timings

2030 Background Saturday Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1612	33	0	1356	9	0	0	47	0	0	128
Future Volume (vph)	0	1612	33	0	1356	9	0	0	47	0	0	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.997			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5171	0	0	5131	0	0	0	1644	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	5171	0	0	5131	0	0	0	1644	0	0	1611
Link Speed (k/h)		60			60				50			50
Link Distance (m)		169.1			186.0				136.6			148.8
Travel Time (s)		10.1			11.2				9.8			10.7
Confl. Peds. (#/hr)	5		8	8		5	3		2	2		3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	0	1697	35	0	1427	9	0	0	49	0	0	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1732	0	0	1436	0	0	0	49	0	0	135
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.5%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2030 Background Saturday Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Vol, veh/h	0	1612	33	0	1356	9	0	0	47	0	0	128
Future Vol, veh/h	0	1612	33	0	1356	9	0	0	47	0	0	128
Conflicting Peds, #/hr	5	0	8	8	0	5	3	0	2	2	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	0	0	0	1	0	0	0	0	1	0	2
Mvmt Flow	0	1697	35	0	1427	9	0	0	49	0	0	135

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	0	-
Stage 1	0	-	0	-
Stage 2	0	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	22.7	24.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	252	-	-	-	-	313
HCM Lane V/C Ratio	0.196	-	-	-	-	0.43
HCM Control Delay (s)	22.7	-	-	-	-	24.9
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q(veh)	0.7	-	-	-	-	2.1

Lanes, Volumes, Timings
 2030 Background Saturday Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	189	1288	60	223	1291	5	161	10	170	121	10	182
Future Volume (vph)	189	1288	60	223	1291	5	161	10	170	121	10	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.99	0.98				
Fit		0.993			0.999			0.859				0.858
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5093	0	1787	5181	0	1787	1583	0	1770	1598	0
Fit Permitted	0.154			0.121			0.462			0.505		
Satd. Flow (perm)	287	5093	0	228	5181	0	864	1583	0	941	1598	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1			177				198
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				218.2
Travel Time (s)		11.2			16.4			20.9				15.7
Confl. Peds. (#/hr)			9		9			7				8
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	1%	0%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	205	1342	63	232	1345	5	168	11	177	132	11	198
Shared Lane Traffic (%)												
Lane Group Flow (vph)	205	1405	0	232	1350	0	168	188	0	132	209	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		1	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	11.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	22.0	46.0		24.0	48.0		38.0	38.0		38.0	38.0	
Total Split (%)	20.4%	42.6%		22.2%	44.4%		35.2%	35.2%		35.2%	35.2%	
Maximum Green (s)	18.0	41.0		20.0	43.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.5	4.0		3.0	3.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	68.6	55.8		74.7	58.9		23.3	23.3		23.3	23.3	
Actuated g/C Ratio	0.64	0.52		0.69	0.55		0.22	0.22		0.22	0.22	
v/c Ratio	0.60	0.53		0.62	0.48		0.90	0.39		0.65	0.42	

Lanes, Volumes, Timings
 2030 Background Saturday Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	16.0	13.9		16.2	24.7		84.8	7.9		49.1	7.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.0	13.9		16.2	24.7		84.8	7.9		49.1	7.4	
LOS	B	B		B	C		F	A		D	A	
Approach Delay		14.2			23.5			44.2			23.5	
Approach LOS		B			C			D			C	
Queue Length 50th (m)	12.6	82.8		28.0	93.4		36.4	1.9		22.0	1.2	
Queue Length 95th (m)	19.3	114.5		51.2	126.9		57.7	18.0		36.0	10.1	
Internal Link Dist (m)		162.0			249.0			265.9			194.2	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	442	2633		447	2827		264	606		287	625	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.46	0.53		0.52	0.48		0.64	0.31		0.46	0.33	

Intersection Summary

Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	14 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.90
Intersection Signal Delay:	21.5
Intersection LOS:	C
Intersection Capacity Utilization:	78.3%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary 2030 Background Saturday Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	189	1288	60	223	1291	5	161	10	170	121	10	182
Future Volume (veh/h)	189	1288	60	223	1291	5	161	10	170	121	10	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1885	1900	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	205	1342	62	232	1345	5	168	11	177	132	11	198
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	1	0	2	1	2	1	2	2	2
Cap, veh/h	348	2569	119	350	2769	10	262	25	409	276	23	415
Arrive On Green	0.08	0.51	0.51	0.09	0.52	0.52	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	5039	233	1795	5334	20	1182	93	1493	1189	84	1514
Grp Volume(v), veh/h	205	914	490	232	872	478	168	0	188	132	0	209
Grp Sat Flow(s),veh/h/ln	1781	1716	1841	1795	1729	1896	1182	0	1586	1189	0	1598
Q Serve(g_s), s	5.8	19.2	19.2	6.5	17.5	17.5	14.9	0.0	10.5	11.1	0.0	11.8
Cycle Q Clear(g_c), s	5.8	19.2	19.2	6.5	17.5	17.5	26.7	0.0	10.5	21.7	0.0	11.8
Prop In Lane	1.00		0.13	1.00		0.01	1.00		0.94	1.00		0.95
Lane Grp Cap(c), veh/h	348	1749	939	350	1795	984	262	0	435	276	0	438
V/C Ratio(X)	0.59	0.52	0.52	0.66	0.49	0.49	0.64	0.00	0.43	0.48	0.00	0.48
Avail Cap(c_a), veh/h	508	1749	939	528	1795	984	299	0	485	314	0	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.0	17.7	17.7	14.4	16.7	16.7	43.9	0.0	32.3	41.2	0.0	32.7
Incr Delay (d2), s/veh	1.6	1.1	2.1	2.1	0.8	1.4	3.8	0.0	0.7	1.8	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	10.4	11.3	3.7	9.2	10.1	7.7	0.0	6.8	5.7	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	18.8	19.8	16.5	17.5	18.1	47.7	0.0	33.0	43.0	0.0	33.9
LnGrp LOS	B	B	B	B	B	B	D	A	C	D	A	C
Approach Vol, veh/h	1609			1582			356			341		
Approach Delay, s/veh	18.6			17.5			39.9			37.4		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	60.1		34.6	12.3	61.1		34.6				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	20.0	41.0		33.0	18.0	43.0		33.0				
Max Q Clear Time (g_c+I1), s	8.5	21.2		23.7	7.8	19.5		28.7				
Green Ext Time (p_c), s	0.9	13.5		1.9	0.6	14.6		0.9				

Intersection Summary		
HCM 6th Ctrl Delay	21.7	
HCM 6th LOS	C	

Lanes, Volumes, Timings 2030 Background Saturday Peak Hour
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

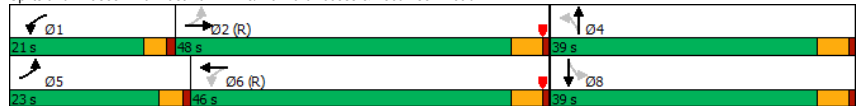
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	240	1253	126	202	1108	225	143	78	124	171	84	142
Future Volume (vph)	240	1253	126	202	1108	225	143	78	124	171	84	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.97	0.99		1.00	0.97	
Frt		0.986			0.975			0.908				0.906
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5049	0	1805	4993	0	1787	1696	0	1805	1664	0
Fit Permitted	0.132			0.128			0.428			0.476		
Satd. Flow (perm)	251	5049	0	243	4993	0	783	1696	0	901	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			46			78				82
Link Speed (k/h)		60			60			50				50
Link Distance (m)		273.0			268.3			231.1				151.2
Travel Time (s)		16.4			16.1			16.6				10.9
Confl. Peds. (#/hr)	4		12	12		4	39		5	5		39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%
Adj. Flow (vph)	247	1292	130	208	1142	232	147	80	128	176	87	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	1422	0	208	1374	0	147	208	0	176	233	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			8		8
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0		35.0
Total Split (s)	23.0	48.0		21.0	46.0		39.0	39.0		39.0		39.0
Total Split (%)	21.3%	44.4%		19.4%	42.6%		36.1%	36.1%		36.1%		36.1%
Maximum Green (s)	19.0	43.0		17.0	41.0		34.0	34.0		34.0		34.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)		7.0			7.0			7.0				7.0
Flash Dont Walk (s)		23.0			23.0			23.0				23.0
Pedestrian Calls (#/hr)		0			0			0				0
Act Effct Green (s)	71.4	56.5		69.6	55.6		24.5	24.5		24.5		24.5
Actuated g/C Ratio	0.66	0.52		0.64	0.51		0.23	0.23		0.23		0.23
v/c Ratio	0.68	0.54		0.61	0.53		0.83	0.47		0.86		0.53

Lanes, Volumes, Timings
 2030 Background Saturday Peak Hour
 6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	16.9	21.8		29.5	11.7		72.7	24.0		74.3	26.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.9	21.8		29.5	11.7		72.7	24.0		74.3	26.3	
LOS	B	C		C	B		E	C		E	C	
Approach Delay		21.1			14.0			44.2			47.0	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	13.0	108.3		21.9	39.4		31.0	24.3		37.5	28.8	
Queue Length 95th (m)	22.2	129.8		m46.9	m44.1		51.1	41.9		58.9	47.7	
Internal Link Dist (m)		249.0			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	444	2650		408	2592		246	587		283	580	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	0.54		0.51	0.53		0.60	0.35		0.62	0.40	

Intersection Summary	
Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	58 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.86
Intersection Signal Delay:	23.0
Intersection LOS:	C
Intersection Capacity Utilization:	86.3%
ICU Level of Service:	E
Analysis Period (min):	15
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary
 2030 Background Saturday Peak Hour
 6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	240	1253	126	202	1108	225	143	78	124	171	84	142
Future Volume (veh/h)	240	1253	126	202	1108	225	143	78	124	171	84	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.96	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1885	1900	1885	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	247	1292	130	208	1142	232	147	80	128	176	87	146
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	0	0	1	0	1	0	1	0	0	0
Cap, veh/h	361	2421	244	398	2117	430	252	180	288	275	174	293
Arrive On Green	0.19	1.00	1.00	0.08	0.49	0.49	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1810	4746	478	1810	4278	869	1129	640	1024	1162	620	1040
Grp Volume(v), veh/h	247	934	488	208	916	458	147	0	208	176	0	233
Grp Sat Flow(s), veh/h/ln	1810	1716	1793	1810	1716	1716	1129	0	1663	1162	0	1660
Q Serve(g_s), s	7.5	0.0	0.0	6.0	19.9	19.9	13.5	0.0	11.1	15.8	0.0	12.7
Cycle Q Clear(g_c), s	7.5	0.0	0.0	6.0	19.9	19.9	26.2	0.0	11.1	26.9	0.0	12.7
Prop In Lane	1.00		0.27	1.00		0.51	1.00		0.62	1.00		0.63
Lane Grp Cap(c), veh/h	361	1750	914	398	1698	849	252	0	468	275	0	467
V/C Ratio(X)	0.68	0.53	0.53	0.52	0.54	0.54	0.58	0.00	0.44	0.64	0.00	0.50
Avail Cap(c_a), veh/h	510	1750	914	541	1698	849	290	0	524	313	0	522
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.82	0.65	0.65	0.65	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	0.0	11.1	18.8	18.8	43.4	0.0	31.9	42.9	0.0	32.4
Incr Delay (d2), s/veh	1.9	1.0	1.8	0.7	0.8	1.6	3.1	0.0	0.9	4.5	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	3.6	0.4	0.8	3.4	9.9	10.1	6.7	0.0	7.5	8.0	0.0	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.1	1.0	1.8	11.8	19.6	20.4	46.5	0.0	32.8	47.4	0.0	33.6
LnGrp LOS	B	A	A	B	B	C	D	A	C	D	A	C
Approach Vol, veh/h	1669			1582			355			409		
Approach Delay, s/veh	3.3			18.8			38.5			39.5		
Approach LOS	A			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.5	60.1		35.4	14.2	58.4		35.4				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	43.0		34.0	19.0	41.0		34.0				
Max Q Clear Time (g_c+I1), s	8.0	2.0		28.2	9.5	21.9		28.9				
Green Ext Time (p_c), s	0.5	21.9		1.4	0.7	13.0		1.5				

Intersection Summary	
HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Lanes, Volumes, Timings

2030 Background Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑		↓	↑↑↑		↓	↑↑↑		↓	↑↑↑		↓
Traffic Volume (vph)	180	1279	165	250	1185	101	318	430	205	135	521	243
Future Volume (vph)	180	1279	165	250	1185	101	318	430	205	135	521	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	1.00		1.00		1.00	0.98
Frt		0.983			0.988			0.952				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5073	0	1805	5087	0	1770	4882	0	1719	5136	1583
Flt Permitted	0.121			0.084			0.270			0.267		
Satd. Flow (perm)	225	5073	0	159	5087	0	502	4882	0	483	5136	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			14			112				222
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	12		23	23		12	3		2	2		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	0%	1%	0%	0%	7%	2%	1%	0%	5%	1%	2%
Adj. Flow (vph)	194	1375	177	269	1274	109	342	462	220	145	560	261
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	1552	0	269	1383	0	342	682	0	145	560	261
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	35.0	35.0
Total Split (s)	14.0	41.0		16.0	43.0		16.0	37.0		14.0	35.0	35.0
Total Split (%)	13.0%	38.0%		14.8%	39.8%		14.8%	34.3%		13.0%	32.4%	32.4%
Maximum Green (s)	10.0	35.0		12.0	37.0		12.0	31.0		10.0	29.0	29.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			5.0	5.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	57.1	45.3		61.5	47.5		35.1	21.1		30.3	18.7	18.7
Actuated g/C Ratio	0.53	0.42		0.57	0.44		0.32	0.20		0.28	0.17	0.17
v/c Ratio	0.75	0.73		0.99	0.62		1.13	0.65		0.59	0.63	0.58

Lanes, Volumes, Timings

2030 Background Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	47.7	19.4		80.0	25.0		121.0	36.1		36.1	38.3	13.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	47.7	19.4		80.0	25.0		121.0	36.1		36.1	38.3	13.7
LOS	D	B		F	C		F	D		D	D	B
Approach Delay		22.6			34.0			64.5				31.3
Approach LOS		C			C			E				C
Queue Length 50th (m)	27.3	39.8		42.7	83.2		~63.8	43.3		17.1	27.2	3.2
Queue Length 95th (m)	#57.5	85.7		#101.0	108.4		#109.1	53.7		39.7	43.4	25.3
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	262	2140		273	2245		303	1481		251	1379	581
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	0.74	0.73		0.99	0.62		1.13	0.46		0.58	0.41	0.45

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 52 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 35.6

Intersection LOS: D

Intersection Capacity Utilization 88.9%

ICU Level of Service E

Analysis Period (min) 15

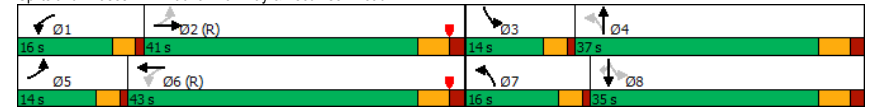
~ Volume exceeds capacity, queue is theoretically infinite.

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: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary
7: Lauzon Parkway & Tecumseh Road

2030 Background Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	180	1279	165	250	1185	101	318	430	205	135	521	243
Future Volume (veh/h)	180	1279	165	250	1185	101	318	430	205	135	521	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1900	1885	1900	1900	1796	1870	1885	1900	1826	1885	1870
Adj Flow Rate, veh/h	194	1375	177	269	1274	109	342	462	220	145	560	261
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	1	0	0	7	2	1	0	5	1	2
Cap, veh/h	288	1709	220	295	1919	164	344	878	400	306	1154	354
Arrive On Green	0.03	0.12	0.12	0.11	0.39	0.39	0.11	0.25	0.25	0.03	0.07	0.07
Sat Flow, veh/h	1781	4640	597	1810	4859	416	1781	3453	1573	1739	5147	1579
Grp Volume(v), veh/h	194	1025	527	269	907	476	342	459	223	145	560	261
Grp Sat Flow(s),veh/h/ln	1781	1729	1779	1810	1729	1816	1781	1716	1595	1739	1716	1579
Q Serve(g_s), s	7.1	31.2	31.2	10.2	23.2	23.2	12.0	12.4	13.1	6.8	11.3	17.5
Cycle Q Clear(g_c), s	7.1	31.2	31.2	10.2	23.2	23.2	12.0	12.4	13.1	6.8	11.3	17.5
Prop In Lane	1.00		0.34	1.00		0.23	1.00		0.99	1.00		1.00
Lane Grp Cap(c), veh/h	288	1274	655	295	1365	717	344	873	406	306	1154	354
V/C Ratio(X)	0.67	0.80	0.80	0.91	0.66	0.66	0.99	0.53	0.55	0.47	0.49	0.74
Avail Cap(c_a), veh/h	302	1274	655	295	1365	717	344	985	458	326	1382	424
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	0.85
Uniform Delay (d), s/veh	23.5	43.7	43.7	25.7	26.8	26.8	34.3	34.7	34.9	30.7	44.0	46.9
Incr Delay (d2), s/veh	4.4	4.4	8.3	30.9	2.6	4.8	46.6	0.6	1.4	1.0	0.3	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.4	20.5	21.8	10.1	13.3	14.4	11.4	8.2	8.2	4.9	8.0	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	48.1	51.9	56.6	29.4	31.6	80.8	35.3	36.3	31.7	44.3	51.9
LnGrp LOS	C	D	D	E	C	C	F	D	D	C	D	D
Approach Vol, veh/h	1746			1652			1024			966		
Approach Delay, s/veh	47.0			34.5			50.7			44.5		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	45.8	12.8	33.5	13.1	48.6	16.0	30.2				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	12.0	35.0	10.0	31.0	10.0	37.0	12.0	29.0				
Max Q Clear Time (g_c+1), s	12.2	33.2	8.8	15.1	9.1	25.2	14.0	19.5				
Green Ext Time (p_c), s	0.0	1.7	0.1	5.3	0.1	8.8	0.0	4.3				

Intersection Summary			
HCM 6th Ctrl Delay	43.4		
HCM 6th LOS	D		

Lanes, Volumes, Timings
8: Lauzon Parkway & Catherine Street

2030 Background Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔			↔↔			↔↔			↔↔		
Traffic Volume (vph)	281	53	31	157	57	154	60	469	211	150	632	268
Future Volume (vph)	281	53	31	157	57	154	60	469	211	150	632	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0		80.0		0.0		20.0		115.0	
Storage Lanes	1		0		1		0		1		1	
Taper Length (m)	65.0				7.5		65.0				75.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	1.00		0.99		1.00		0.99		1.00		0.98	
Frt	0.945				0.890				0.850		0.955	
Fit Protected	0.950				0.950				0.950		0.950	
Satd. Flow (prot)	1805		1786		0		1671		1623		0	
Fit Permitted	0.346				0.697				0.236		0.351	
Satd. Flow (perm)	656		1786		0		1224		1623		0	
Right Turn on Red			Yes				Yes				Yes	
Satd. Flow (RTOR)	34				124				234		105	
Link Speed (k/h)	50				50				60		60	
Link Distance (m)	644.8				106.2				230.9		292.9	
Travel Time (s)	46.4				7.6				13.9		17.6	
Confl. Peds. (#/hr)	4		2		2		4		5		1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	8%	0%	4%	0%	0%	6%	3%	1%	0%
Adj. Flow (vph)	312	59	34	174	63	171	67	521	234	167	702	298
Shared Lane Traffic (%)												
Lane Group Flow (vph)	312	93	0	174	234	0	67	521	234	167	1000	0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4				8		2			2	6	
Detector Phase	7	4			8	8	5	2		2	1	6
Switch Phase												
Minimum Initial (s)	7.0	11.0			11.0	11.0	7.0	11.0		7.0	11.0	
Minimum Split (s)	11.0	35.0			35.0	35.0	11.0	36.0		36.0	11.0	36.0
Total Split (s)	21.0	56.0			35.0	35.0	11.0	36.0		36.0	16.0	41.0
Total Split (%)	19.4%	51.9%			32.4%	32.4%	10.2%	33.3%		33.3%	14.8%	38.0%
Maximum Green (s)	17.0	50.0			29.0	29.0	7.0	30.0		30.0	12.0	35.0
Yellow Time (s)	3.0	4.0			4.0	4.0	3.0	4.0		4.0	3.0	4.0
All-Red Time (s)	1.0	2.0			2.0	2.0	1.0	2.0		2.0	1.0	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)	4.0	6.0			6.0	6.0	4.0	6.0		6.0	4.0	6.0
Lead/Lag	Lead				Lag	Lag	Lead	Lag		Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0	4.0	3.0	4.0		4.0	3.0	4.0
Recall Mode	None	None			None	None	None	C-Max		C-Max	None	C-Max
Walk Time (s)	7.0	7.0			7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	22.0				22.0	22.0		23.0		23.0		23.0
Pedestrian Calls (#/hr)	0				0		0		0		0	
Act Effect Green (s)	44.1	42.1			21.2	21.2	48.5	39.5		39.5	55.5	45.1
Actuated g/C Ratio	0.41	0.39			0.20	0.20	0.45	0.37		0.37	0.51	0.42
v/c Ratio	0.70	0.13			0.72	0.56	0.23	0.39		0.34	0.38	0.48

Lanes, Volumes, Timings

2030 Background Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	30.8	12.7		56.8	22.2		15.1	21.7	3.7	18.1	22.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	30.8	12.7		56.8	22.2		15.1	21.7	3.7	18.1	22.8	
LOS	C	B		E	C		B	C	A	B	C	
Approach Delay	26.6			37.0			16.0			22.1		
Approach LOS	C			D			B			C		
Queue Length 50th (m)	48.3	8.1		36.3	21.1		6.1	31.2	0.6	19.1	53.8	
Queue Length 95th (m)	63.2	16.6		55.9	42.5		m12.1	41.2	m5.8	36.9	75.7	
Internal Link Dist (m)	620.8			82.2			206.9			268.9		
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	448	845		328	526		289	1321	693	457	2096	
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	0.70	0.11		0.53	0.44		0.23	0.39	0.34	0.37	0.48	

Intersection Summary

Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Red
Natural Cycle:	95
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	23.1
Intersection LOS:	C
Intersection Capacity Utilization:	79.8%
ICU Level of Service:	D
Analysis Period (min):	15
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

2030 Background Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	281	53	31	157	57	154	60	469	211	150	632	268
Future Volume (veh/h)	281	53	31	157	57	154	60	469	211	150	632	268
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	0.99		0.99	1.00		0.99	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1841	1900	1900	1811	1856	1885	1900
Adj Flow Rate, veh/h	312	59	34	174	63	171	67	521	234	167	702	298
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	8	0	4	0	0	6	3	1	0
Cap, veh/h	408	427	246	299	85	230	324	1440	608	450	1483	621
Arrive On Green	0.15	0.38	0.38	0.19	0.19	0.19	0.11	0.80	0.80	0.07	0.42	0.42
Sat Flow, veh/h	1810	1129	651	1234	450	1221	1810	3610	1525	1767	3552	1486
Grp Volume(v), veh/h	312	0	93	174	0	234	67	521	234	167	678	322
Grp Sat Flow(s), veh/h/ln	1810	0	1780	1234	0	1671	1810	1805	1525	1767	1716	1607
Q Serve(g_s), s	14.4	0.0	3.7	14.4	0.0	14.3	2.2	4.4	4.8	5.9	15.5	15.8
Cycle Q Clear(g_c), s	14.4	0.0	3.7	14.4	0.0	14.3	2.2	4.4	4.8	5.9	15.5	15.8
Prop In Lane	1.00		0.37	1.00		0.73	1.00	1.00	1.00	1.00	0.92	
Lane Grp Cap(c), veh/h	408	0	673	299	0	315	324	1440	608	450	1433	671
V/C Ratio(X)	0.76	0.00	0.14	0.58	0.00	0.74	0.21	0.36	0.38	0.37	0.47	0.48
Avail Cap(c_a), veh/h	417	0	824	398	0	449	339	1440	608	514	1433	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.68	0.68	0.68	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	22.0	41.4	0.0	41.4	16.6	7.0	7.1	16.6	22.8	22.9
Incr Delay (d2), s/veh	8.1	0.0	0.1	2.5	0.0	5.4	0.2	0.5	1.3	0.5	1.1	2.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	10.6	0.0	2.6	7.6	0.0	9.9	1.4	2.3	2.3	3.7	9.3	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.5	0.0	22.2	44.0	0.0	46.7	16.8	7.5	8.3	17.1	23.9	25.4
LnGrp LOS	D	A	C	D	A	D	B	A	A	B	C	C
Approach Vol, veh/h	405			408			822			1167		
Approach Delay, s/veh	33.2			45.6			8.5			23.4		
Approach LOS	C			D			A			C		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	49.1		46.8	10.1	51.1	20.5	26.3				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	12.0	30.0		50.0	7.0	35.0	17.0	29.0				
Max Q Clear Time (g_c+I1), s	7.9	6.8		5.7	4.2	17.8	16.4	16.4				
Green Ext Time (p_c), s	0.2	7.4		0.9	0.0	9.2	0.1	2.8				

Intersection Summary

HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Lanes, Volumes, Timings
 9: Rose-Ville Gardens Drive & Rose-Ville Gardens Drive
 2030 Background Saturday Peak Hour
 Major Retail Development, Tecumseh Road, Windsor TIS

	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	120	163	174	30	150	5
Future Volume (vph)	120	163	174	30	150	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.922			0.996		
Fit Protected	0.979		0.950			
Satd. Flow (prot)	1681	0	1770	1863	1855	0
Fit Permitted	0.979		0.950			
Satd. Flow (perm)	1681	0	1770	1863	1855	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	144.2			218.2	147.0	
Travel Time (s)	10.4			15.7	10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	177	189	33	163	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	307	0	189	33	168	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
 9: Rose-Ville Gardens Drive & Rose-Ville Gardens Drive
 2030 Background Saturday Peak Hour
 Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	8.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	120	163	174	30	150	5
Future Vol, veh/h	120	163	174	30	150	5
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	130	177	189	33	163	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	577	166	168
Stage 1	166	-	-
Stage 2	411	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	478	878	1410
Stage 1	863	-	-
Stage 2	669	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	414	878	1410
Mov Cap-2 Maneuver	510	-	-
Stage 1	747	-	-
Stage 2	669	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	6.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1410	-	672	-
HCM Lane V/C Ratio	0.134	-	0.458	-
HCM Control Delay (s)	7.9	-	14.8	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.5	-	2.4	-

Lanes, Volumes, Timings 2030 Background Saturday Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↘		↙	↘	↙	↘
Traffic Volume (vph)	0	0	155	0	0	150
Future Volume (vph)	0	0	155	0	0	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected			0.950			
Satd. Flow (prot)	1863	0	1770	1863	1863	1583
Fit Permitted			0.950			
Satd. Flow (perm)	1863	0	1770	1863	1863	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	58.7			644.8	147.0	
Travel Time (s)	4.2			46.4	10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	168	0	0	163
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	168	0	0	163
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	12.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC 2030 Background Saturday Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	8.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↘		↙	↘	↙	↘
Traffic Vol, veh/h	0	0	155	0	0	150
Future Vol, veh/h	0	0	155	0	0	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	168	0	0	163

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	1
Stage 2	-	-	336
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	1622	658
Stage 1	-	-	1022
Stage 2	-	-	724
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	590
Mov Cap-2 Maneuver	-	-	586
Stage 1	-	-	1022
Stage 2	-	-	649

Approach	EB	WB	NB
HCM Control Delay, s	0	7.5	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	1084	-	-	1622	-
HCM Lane V/C Ratio	-	0.15	-	-	0.104	-
HCM Control Delay (s)	0	8.9	-	-	7.5	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0.5	-	-	0.3	-

Appendix I

2030 Total Traffic Operations Reports



Lanes, Volumes, Timings

2030 Total AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	
Traffic Volume (vph)	51	737	67	89	776	193	85	174	104	228	252	74	
Future Volume (vph)	51	737	67	89	776	193	85	174	104	228	252	74	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (m)	55.0			50.0			65.0			45.0			0.0
Storage Lanes	1			1			1			1			0
Taper Length (m)	60.0			70.0			55.0			50.0			
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Ped Bike Factor	1.00			1.00			0.99			1.00			
Fit	0.987			0.850			0.850			0.966			
Fit Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1770	4937	0	1671	3505	1599	1671	3471	1553	1787	3411	0	
Fit Permitted	0.240			0.257			0.504			0.466			
Satd. Flow (perm)	447	4937	0	452	3505	1599	887	3471	1533	876	3411	0	
Right Turn on Red	Yes			Yes			Yes			Yes			
Satd. Flow (RTOR)	16			224			121			40			
Link Speed (k/h)	60			60			50			50			
Link Distance (m)	230.2			261.9			222.3			200.9			
Travel Time (s)	13.8			15.7			16.0			14.5			
Confl. Peds. (#/hr)	1			1			1			1			
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 (%)	2%	3%	10%	8%	3%	1%	8%	4%	4%	1%	2%	3%	
Adj. Flow (vph)	59	857	78	103	902	224	99	202	121	265	293	86	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	59	935	0	103	902	224	99	202	121	265	379	0	
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	NA		
Protected Phases	5	2	1	6	7	4	4	3	8				
Permitted Phases	2		6		6		4		4		8		
Detector Phase	5	2	1	6	6	7	4	4	3	8			
Switch Phase													
Minimum Initial (s)	7.0	10.0	7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0			
Minimum Split (s)	11.0	40.0	11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0			
Total Split (s)	11.0	40.0	11.0	40.0	40.0	13.0	35.0	35.0	16.0	38.0			
Total Split (%)	10.8%	39.2%	10.8%	39.2%	39.2%	12.7%	34.3%	34.3%	15.7%	37.3%			
Maximum Green (s)	7.0	35.0	7.0	35.0	35.0	9.0	30.0	30.0	12.0	33.0			
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0			
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0			
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	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	3.0			
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None			
Walk Time (s)	7.0		7.0		7.0		7.0		7.0		7.0		
Flash Dont Walk (s)	28.0		28.0		28.0		23.0		23.0		23.0		
Pedestrian Calls (#/hr)	0		0		0		0		0		0		
Act Effct Green (s)	60.8	54.2	60.8	54.2	54.2	23.0	13.0	13.0	29.2	18.6			
Actuated g/C Ratio	0.60	0.53	0.60	0.53	0.53	0.23	0.13	0.13	0.29	0.18			
v/c Ratio	0.17	0.36	0.29	0.48	0.23	0.37	0.46	0.40	0.74	0.58			

Lanes, Volumes, Timings

2030 Total AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

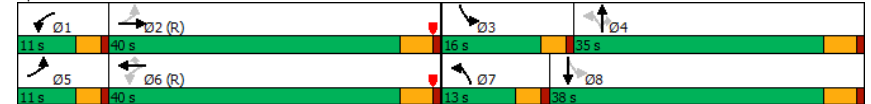
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	9.3	14.9		7.4	21.7	9.7	30.6	44.1	11.4	43.5	38.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.3	14.9		7.4	21.7	9.7	30.6	44.1	11.4	43.5	38.4	
LOS	A	B		A	C	A	C	D	B	D	D	
Approach Delay	14.6			18.3			31.6			40.5		
Approach LOS	B			B			C			D		
Queue Length 50th (m)	4.3	40.1		6.7	103.4	27.8	15.5	20.9	0.0	46.0	35.5	
Queue Length 95th (m)	9.9	52.0		14.7	119.2	29.1	25.9	29.5	14.0	63.2	46.2	
Internal Link Dist (m)	206.2			237.9			198.3			176.9		
Turn Bay Length (m)	55.0			95.0			65.0			45.0		
Base Capacity (vph)	357	2631		353	1862	954	269	1020	536	357	1130	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.36		0.29	0.48	0.23	0.37	0.20	0.23	0.74	0.34	

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	36 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	23.2
Intersection LOS:	C
Intersection Capacity Utilization:	71.5%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road

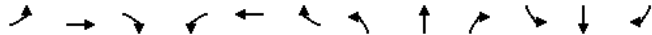


HCM 6th Signalized Intersection Summary

2030 Total AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (veh/h)	51	737	67	89	776	193	85	174	104	228	252	74
Future Volume (veh/h)	51	737	67	89	776	193	85	174	104	228	252	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1752	1781	1856	1885	1781	1841	1885	1870	1856	
Adj Flow Rate, veh/h	59	857	78	103	902	224	99	202	121	265	293	86
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
Percent Heavy Veh, %	2	3	10	8	3	1	8	4	4	1	2	3
Cap, veh/h	320	2467	224	418	1873	848	258	416	185	351	418	120
Arrive On Green	0.06	0.52	0.52	0.02	0.18	0.18	0.08	0.12	0.12	0.12	0.15	0.15
Sat Flow, veh/h	1781	4727	429	1697	3526	1597	1697	3497	1556	1795	2721	784
Grp Volume(v), veh/h	59	611	324	103	902	224	99	202	121	265	189	190
Grp Sat Flow(s),veh/h/ln	1781	1689	1778	1697	1763	1597	1697	1749	1556	1795	1777	1727
Q Serve(g_s), s	1.5	10.8	10.8	2.7	23.5	12.4	5.0	5.5	7.6	12.0	10.3	10.6
Cycle Q Clear(g_c), s	1.5	10.8	10.8	2.7	23.5	12.4	5.0	5.5	7.6	12.0	10.3	10.6
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	320	1763	928	418	1873	848	258	416	185	351	273	266
V/C Ratio(X)	0.18	0.35	0.35	0.25	0.48	0.26	0.38	0.49	0.65	0.76	0.69	0.71
Avail Cap(c_a), veh/h	343	1763	928	424	1873	848	267	1029	458	351	575	559
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.66	0.66	0.66	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	14.2	14.2	10.4	29.4	24.8	34.8	42.0	42.9	34.5	40.9	41.0
Incr Delay (d2), s/veh	0.3	0.5	1.0	0.2	0.6	0.5	0.9	0.9	3.9	9.0	3.2	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	1.8	2.1	0.1	5.4	2.8	2.4	2.9	3.8	7.5	5.5	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	14.8	15.3	10.6	30.0	25.3	35.7	42.9	46.8	43.5	44.0	44.6
LnGrp LOS	B	B	B	B	C	C	D	D	D	D	D	D
Approach Vol, veh/h	994			1229			422			644		
Approach Delay, s/veh	14.8			27.5			42.3			44.0		
Approach LOS	B			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	58.2	16.0	17.1	9.7	59.2	12.5	20.7				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	7.0	35.0	12.0	30.0	7.0	35.0	9.0	33.0				
Max Q Clear Time (g_c+1), s	4.7	12.8	14.0	9.6	3.5	25.5	7.0	12.6				
Green Ext Time (p_c), s	0.1	7.5	0.0	2.0	0.0	5.3	0.1	2.6				

Intersection Summary

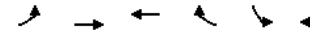
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Lanes, Volumes, Timings

2030 Total AM Peak Hour

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

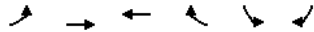


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	64	1005	1000	14	10	58
Future Volume (vph)	64	1005	1000	14	10	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.998			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	5085	5075	0	1770	1583
Fit Permitted	0.117				0.950	
Satd. Flow (perm)	218	5085	5075	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3			63
Link Speed (k/h)		50	50		50	
Link Distance (m)		261.9	175.4		228.1	
Travel Time (s)		18.9	12.6		16.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	1092	1087	15	11	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	1092	1102	0	11	63
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	17.0	71.0	54.0		31.0	31.0
Total Split (%)	16.7%	69.6%	52.9%		30.4%	30.4%
Maximum Green (s)	13.0	66.0	49.0		26.0	26.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)	41.8	40.8	30.3		51.2	51.2
Actuated g/C Ratio	0.41	0.40	0.30		0.50	0.50
v/c Ratio	0.32	0.54	0.73		0.01	0.08
Control Delay	19.1	25.0	26.6		17.1	5.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	19.1	25.0	26.6		17.1	5.2

Lanes, Volumes, Timings

2030 Total AM Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

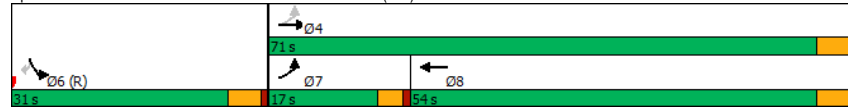


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	B	C	C		B	A
Approach Delay		24.6	26.6		6.9	
Approach LOS		C	C		A	
Queue Length 50th (m)	9.7	64.6	50.0		1.2	0.0
Queue Length 95th (m)	m17.2	74.6	53.5		5.0	8.3
Internal Link Dist (m)		237.9	151.4		204.1	
Turn Bay Length (m)	45.0					
Base Capacity (vph)	286	3290	2439		888	826
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.24	0.33	0.45		0.01	0.08

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 25.0 Intersection LOS: C
 Intersection Capacity Utilization 45.5% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

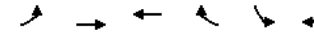
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2030 Total AM Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑↑↑↑	↑↑↑↑		↔	↔
Traffic Volume (veh/h)	64	1005	1000	14	10	58
Future Volume (veh/h)	64	1005	1000	14	10	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	70	1092	1087	15	11	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	238	2060	1583	22	888	790
Arrive On Green	0.02	0.13	0.31	0.31	0.50	0.50
Sat Flow, veh/h	1781	5274	5358	72	1781	1585
Grp Volume(v), veh/h	70	1092	713	389	11	63
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1857	1781	1585
Q Serve(g_s), s	2.6	20.3	18.8	18.8	0.3	2.1
Cycle Q Clear(g_c), s	2.6	20.3	18.8	18.8	0.3	2.1
Prop In Lane	1.00			0.04	1.00	1.00
Lane Grp Cap(c), veh/h	238	2060	1038	567	888	790
V/C Ratio(X)	0.29	0.53	0.69	0.69	0.01	0.08
Avail Cap(c_a), veh/h	359	3304	1635	892	888	790
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.90	0.90	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	35.2	31.2	31.2	12.9	13.4
Incr Delay (d2), s/veh	0.6	0.2	0.8	1.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	8.4	7.6	8.3	0.1	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.2	35.4	32.0	32.6	12.9	13.6
LnGrp LOS	C	D	C	C	B	B
Approach Vol, veh/h	1162	1102		74		
Approach Delay, s/veh	34.7	32.2		13.5		
Approach LOS	C	C		B		
Timer - Assigned Phs			4		6	7
Phs Duration (G+Y+Rc), s			46.2		55.8	10.0
Change Period (Y+Rc), s			5.0		5.0	4.0
Max Green Setting (Gmax), s			66.0		26.0	13.0
Max Q Clear Time (g_c+I1), s			22.3		4.1	4.6
Green Ext Time (p_c), s			12.4		0.3	0.1

Intersection Summary

HCM 6th Ctrl Delay 32.9
 HCM 6th LOS C

Lanes, Volumes, Timings

2030 Total AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1028	33	0	901	7	0	0	20	0	0	58
Future Volume (vph)	0	1028	33	0	901	7	0	0	20	0	0	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.995			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5063	0	0	5032	0	0	0	1644	0	0	1627
Flt Permitted												
Satd. Flow (perm)	0	5063	0	0	5032	0	0	0	1644	0	0	1627
Link Speed (k/h)		60			60				50			50
Link Distance (m)		175.4			186.0				136.6			186.3
Travel Time (s)		10.5			11.2				9.8			13.4
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	2%	0%	3%	3%	0%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	0	1182	38	0	1036	8	0	0	23	0	0	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1220	0	0	1044	0	0	0	23	0	0	67
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2030 Total AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Vol, veh/h	0	1028	33	0	901	7	0	0	20	0	0	58
Future Vol, veh/h	0	1028	33	0	901	7	0	0	20	0	0	58
Conflicting Peds, #/hr	2	0	1	1	0	2	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	2	0	3	3	0	0	0	0	2	0	1
Mvmt Flow	0	1182	38	0	1036	8	0	0	23	0	0	67

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	0	-
Stage 1	0	-	0	-
Stage 2	0	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	15.2	15
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	376	-	-	-	-	427
HCM Lane V/C Ratio	0.061	-	-	-	-	0.156
HCM Control Delay (s)	15.2	-	-	-	-	15
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.5

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	176	875	50	136	749	24	97	63	113	66	28	221
Future Volume (vph)	176	875	50	136	749	24	97	63	113	66	28	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00	0.99				
Flt		0.992			0.995			0.904				0.867
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4942	0	1626	5012	0	1736	1645	0	1770	1615	0
Flt Permitted	0.336			0.248			0.302			0.483		
Satd. Flow (perm)	626	4942	0	423	5012	0	551	1645	0	900	1615	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			9			88				209
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				214.6
Travel Time (s)		11.2			16.4			20.9				15.5
Confl. Peds. (#/hr)			10	10			3		5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	11%	3%	2%	4%	2%	4%	2%	2%	2%
Adj. Flow (vph)	183	911	52	142	780	25	101	66	118	69	29	230
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	963	0	142	805	0	101	184	0	69	259	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	28.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	57.0	57.0		11.0	68.0		34.0	34.0		34.0	34.0	
Total Split (%)	55.9%	55.9%		10.8%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	52.0	52.0		7.0	63.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
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	
Recall Mode	C-Max	C-Max		None	C-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)	16.0	16.0		16.0	22.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	62.7	62.7		74.7	73.7		18.3	18.3		18.3	18.3	
Actuated g/C Ratio	0.61	0.61		0.73	0.72		0.18	0.18		0.18	0.18	
v/c Ratio	0.48	0.32		0.36	0.22		1.02	0.50		0.43	0.56	

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	9.2	1.7		5.6	3.0		138.7	23.0		37.8	9.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.2	1.7		5.6	3.0		138.7	23.0		37.8	9.3	
LOS	A	A		A	A		F	C		D	A	
Approach Delay		2.9			3.3			64.0				15.3
Approach LOS		A			A			E				B
Queue Length 50th (m)	4.5	2.8		2.5	6.4		~23.0	17.7		13.4	9.7	
Queue Length 95th (m)	33.1	4.4		5.7	9.5		#46.1	35.1		20.2	6.0	
Internal Link Dist (m)		162.0			249.0			265.9			190.6	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	384	3040		392	3621		156	530		255	608	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.48	0.32		0.36	0.22		0.65	0.35		0.27	0.43	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 13 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 11.0 Intersection LOS: B
 Intersection Capacity Utilization 66.8% ICU Level of Service C
 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: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	176	875	50	136	749	24	97	63	113	66	28	221
Future Volume (veh/h)	176	875	50	136	749	24	97	63	113	66	28	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1841	1870	1737	1856	1870	1841	1870	1841	1870	1870	1870
Adj Flow Rate, veh/h	183	911	52	142	780	25	101	66	118	69	29	230
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	4	2	11	3	2	4	2	4	2	2	2
Cap, veh/h	433	2611	149	415	3245	104	199	155	277	269	47	370
Arrive On Green	0.54	0.54	0.54	0.13	1.00	1.00	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	674	4861	277	1654	5041	161	1103	599	1071	1195	181	1432
Grp Volume(v), veh/h	183	627	336	142	522	283	101	0	184	69	0	259
Grp Sat Flow(s),veh/h/ln	674	1675	1788	1654	1689	1825	1103	0	1670	1195	0	1613
Q Serve(g_s), s	17.6	10.9	10.9	3.7	0.0	0.0	9.1	0.0	9.4	5.2	0.0	14.5
Cycle Q Clear(g_c), s	17.6	10.9	10.9	3.7	0.0	0.0	23.6	0.0	9.4	14.6	0.0	14.5
Prop In Lane	1.00		0.15	1.00		0.09	1.00		0.64	1.00		0.89
Lane Grp Cap(c), veh/h	433	1800	960	415	2174	1175	199	0	431	269	0	416
V/C Ratio(X)	0.42	0.35	0.35	0.34	0.24	0.24	0.51	0.00	0.43	0.26	0.00	0.62
Avail Cap(c_a), veh/h	433	1800	960	417	2174	1175	228	0	475	301	0	458
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.0	13.4	13.5	8.3	0.0	0.0	43.9	0.0	31.5	37.6	0.0	33.4
Incr Delay (d2), s/veh	3.0	0.5	1.0	0.5	0.2	0.5	2.0	0.0	0.7	0.5	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	1.5	1.8	0.1	0.1	0.3	3.1	0.0	4.0	1.8	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.0	14.0	14.5	8.8	0.2	0.5	45.9	0.0	32.2	38.1	0.0	35.7
LnGrp LOS	B	B	B	A	A	A	D	A	C	D	A	D
Approach Vol, veh/h	1146			947			285			328		
Approach Delay, s/veh	14.8			1.6			37.0			36.2		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2	4		6		8					
Phs Duration (G+Y+Rc), s	10.9	59.8	31.3		70.7		31.3					
Change Period (Y+Rc), s	4.0	5.0	5.0		5.0		5.0					
Max Green Setting (Gmax), s	7.0	52.0	29.0		63.0		29.0					
Max Q Clear Time (g_c+I1), s	5.7	19.6	16.6		2.0		25.6					
Green Ext Time (p_c), s	0.1	11.6	1.8		7.6		0.6					

Intersection Summary		
HCM 6th Ctrl Delay	15.1	
HCM 6th LOS	B	

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	152	756	105	97	797	141	66	46	35	64	32	58
Future Volume (vph)	152	756	105	97	797	141	66	46	35	64	32	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00					0.99
Frt	0.982				0.978		0.936				0.903	
Fit Protected	0.950				0.950		0.950				0.950	
Satd. Flow (prot)	1787	4880	0	1805	4940	0	1671	1778	0	1787	1697	0
Fit Permitted	0.240				0.271		0.674				0.698	
Satd. Flow (perm)	451	4880	0	514	4940	0	1180	1778	0	1313	1697	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	32			40			39			65		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	273.0			268.3			231.1			151.2		
Travel Time (s)	16.4			16.1			16.6			10.9		
Confl. Peds. (#/hr)			6		6		5				5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	4%	0%	3%	1%	8%	0%	0%	1%	0%	0%
Adj. Flow (vph)	171	849	118	109	896	158	74	52	39	72	36	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	967	0	109	1054	0	74	91	0	72	101	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			8		8
Permitted Phases	2		6		4		8				8	
Detector Phase	5	2		1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	20.0	51.0		14.0	45.0		37.0	37.0		37.0	37.0	
Total Split (%)	19.6%	50.0%		13.7%	44.1%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	16.0	46.0		10.0	40.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0		7.0		7.0		7.0		7.0		7.0	
Flash Dont Walk (s)	23.0		23.0		23.0		23.0		23.0		23.0	
Pedestrian Calls (#/hr)	0		0		0		0		0		0	
Act Effct Green (s)	76.9	67.4		76.0	66.9		12.5	12.5		12.5	12.5	
Actuated g/C Ratio	0.75	0.66		0.75	0.66		0.12	0.12		0.12	0.12	
v/c Ratio	0.38	0.30		0.22	0.32		0.51	0.36		0.45	0.38	

Lanes, Volumes, Timings

2030 Total AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R2658) Major Retail Development, Tecumseh Road, Windsor TIS

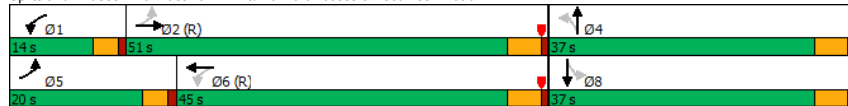


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	10.8	5.5		2.9	4.2		53.8	28.3		49.7	21.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.8	5.5		2.9	4.2		53.8	28.3		49.7	21.2	
LOS	B	A		A	A		D	C		D	C	
Approach Delay	6.3			4.1			39.8			33.0		
Approach LOS	A			A			D			C		
Queue Length 50th (m)	9.3	15.9		2.0	9.5		14.8	10.1		14.3	6.9	
Queue Length 95th (m)	31.9	29.1		m4.9	m15.5		28.1	23.5		27.0	21.0	
Internal Link Dist (m)	249.0		244.3		207.1		127.2					
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	565	3233		519	3255		370	584		411	577	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.30	0.30		0.21	0.32		0.20	0.16		0.18	0.18	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 93 (91%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 9.2
 Intersection LOS: A
 Intersection Capacity Utilization 55.8%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2030 Total AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R2658) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑ ↑ ↑			↑ ↑ ↑			↑ ↑ ↑			↑ ↑ ↑		
Traffic Volume (veh/h)	152	756	105	97	797	141	66	46	35	64	32	58
Future Volume (veh/h)	152	756	105	97	797	141	66	46	35	64	32	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00	1.00		0.99	0.99	0.99	0.99		0.99
Parking Bus, Adj	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1885	1841	1841	1900	1856	1885	1781	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	171	849	118	109	896	158	74	52	39	72	36	65
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	0	3	1	8	0	0	1	0	0
Cap, veh/h	547	2802	387	525	2708	475	201	160	120	219	96	174
Arrive On Green	0.08	0.63	0.63	0.15	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1795	4460	617	1810	4331	760	1224	1003	753	1307	603	1089
Grp Volume(v), veh/h	171	637	330	109	698	356	74	0	91	72	0	101
Grp Sat Flow(s), veh/h/ln	1795	1675	1726	1810	1689	1714	1224	0	1756	1307	0	1692
Q Serve(g_s), s	3.2	8.9	9.0	1.9	0.0	0.0	5.9	0.0	4.7	5.3	0.0	5.4
Cycle Q Clear(g_c), s	3.2	8.9	9.0	1.9	0.0	0.0	11.3	0.0	4.7	10.0	0.0	5.4
Prop In Lane	1.00	0.36	1.00	0.44	1.00	0.43	1.00	0.43	1.00	0.64	0.64	0.64
Lane Grp Cap(c), veh/h	547	2105	1085	525	2112	1072	201	0	280	219	0	270
V/C Ratio(X)	0.31	0.30	0.30	0.21	0.33	0.33	0.37	0.00	0.32	0.33	0.00	0.37
Avail Cap(c_a), veh/h	689	2105	1085	567	2112	1072	389	0	551	420	0	531
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.90	0.90	0.90	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	8.7	8.7	4.9	0.0	0.0	43.4	0.0	38.0	42.4	0.0	38.3
Incr Delay (d2), s/veh	0.3	0.4	0.7	0.2	0.4	0.8	1.1	0.0	0.7	0.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.2	0.4	0.0	0.2	0.4	2.2	0.0	2.4	2.1	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.3	9.1	9.4	5.1	0.4	0.8	44.5	0.0	38.7	43.3	0.0	39.2
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h	1138			1163			165			173		
Approach Delay, s/veh	8.6			0.9			41.3			40.9		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.6	69.1		21.3	11.9	68.8		21.3				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	46.0		32.0	16.0	40.0		32.0				
Max Q Clear Time (g_c+I1), s	3.9	11.0		13.3	5.2	2.0		12.0				
Green Ext Time (p_c), s	0.2	9.1		0.8	0.5	10.5		0.9				

Intersection Summary

HCM 6th Ctrl Delay 9.4
 HCM 6th LOS A

Lanes, Volumes, Timings

2030 Total AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	82	657	136	124	739	49	242	371	92	110	410	56
Future Volume (vph)	82	657	136	124	739	49	242	371	92	110	410	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	1.00		1.00		1.00	0.99
Frt		0.974			0.991			0.970				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	4928	0	1736	5016	0	1752	4765	0	1517	4940	1495
Fit Permitted	0.300			0.280			0.339			0.446		
Satd. Flow (perm)	522	4928	0	511	5016	0	624	4765	0	710	4940	1473
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	47				11				63			118
Link Speed (k/h)	60				60				60			60
Link Distance (m)	268.3			288.0			208.8			230.9		
Travel Time (s)	16.1			17.3			12.5			13.9		
Conf. Peds. (#/hr)	5		7	7		5	3		6	6		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	1%	8%	4%	1%	23%	3%	5%	6%	19%	5%	8%
Adj. Flow (vph)	88	706	146	133	795	53	260	399	99	118	441	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	852	0	133	848	0	260	498	0	118	441	60
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	37.0	37.0
Total Split (s)	11.0	40.0		11.0	40.0		14.0	40.0		11.0	37.0	37.0
Total Split (%)	10.8%	39.2%		10.8%	39.2%		13.7%	39.2%		10.8%	36.3%	36.3%
Maximum Green (s)	7.0	34.0		7.0	34.0		10.0	34.0		7.0	31.0	31.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			7.0	7.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	58.7	49.7		59.5	51.9		30.3	18.3		24.3	15.3	15.3
Actuated g/C Ratio	0.58	0.49		0.58	0.51		0.30	0.18		0.24	0.15	0.15
v/c Ratio	0.23	0.35		0.35	0.33		0.88	0.55		0.53	0.59	0.19

Lanes, Volumes, Timings

2030 Total AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

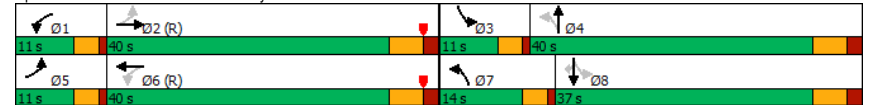
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	6.3	13.6		11.4	15.9		60.4	35.2		31.1	38.9	5.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	6.3	13.6		11.4	15.9		60.4	35.2		31.1	38.9	5.3
LOS	A	B		B	B		E	D		C	D	A
Approach Delay		12.9			15.3			43.8				34.2
Approach LOS		B			B			D				C
Queue Length 50th (m)	6.4	40.0		10.6	37.6		44.2	30.5		19.5	32.6	0.7
Queue Length 95th (m)	13.4	40.9		20.9	51.6		#61.4	40.0		27.9	42.4	6.4
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	378	2423		382	2555		296	1630		224	1501	529
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	0.35		0.35	0.33		0.88	0.31		0.53	0.29	0.11

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 63 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 24.7
 Intersection LOS: C
 Intersection Capacity Utilization 76.7%
 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: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2030 Total AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔	↔		↔	↔		↔	↔		↔
Traffic Volume (veh/h)	82	657	136	124	739	49	242	371	92	110	410	56
Future Volume (veh/h)	82	657	136	124	739	49	242	371	92	110	410	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1885	1781	1841	1885	1559	1856	1826	1811	1618	1826	1781
Adj Flow Rate, veh/h	88	706	146	133	795	53	260	399	99	118	441	60
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	8	4	1	23	3	5	6	19	5	8
Cap, veh/h	410	2042	417	397	2372	158	323	766	183	252	806	241
Arrive On Green	0.02	0.16	0.16	0.07	0.48	0.48	0.10	0.19	0.19	0.14	0.32	0.32
Sat Flow, veh/h	1682	4280	874	1753	4928	327	1767	4007	958	1541	4985	1493
Grp Volume(v), veh/h	88	564	288	133	553	295	260	328	170	118	441	60
Grp Sat Flow(s),veh/h/ln	1682	1716	1723	1753	1716	1825	1767	1662	1643	1541	1662	1493
Q Serve(g_s), s	2.6	14.9	15.2	3.8	10.2	10.2	10.0	9.0	9.5	6.6	7.4	3.0
Cycle Q Clear(g_c), s	2.6	14.9	15.2	3.8	10.2	10.2	10.0	9.0	9.5	6.6	7.4	3.0
Prop In Lane	1.00		0.51	1.00		0.18	1.00		0.58	1.00		1.00
Lane Grp Cap(c), veh/h	410	1637	822	397	1651	878	323	635	314	252	806	241
V/C Ratio(X)	0.21	0.34	0.35	0.33	0.33	0.34	0.81	0.52	0.54	0.47	0.55	0.25
Avail Cap(c_a), veh/h	420	1637	822	400	1651	878	323	1108	548	252	1515	454
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.96
Uniform Delay (d), s/veh	12.5	28.8	28.9	12.9	16.4	16.4	34.6	37.0	37.2	30.6	31.4	30.0
Incr Delay (d2), s/veh	0.2	0.6	1.1	0.5	0.5	1.0	13.9	0.8	1.7	1.3	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	4.2	4.5	0.5	2.2	2.6	7.4	3.9	4.2	2.4	3.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	29.3	30.0	13.4	16.9	17.4	48.5	37.8	39.0	31.9	32.1	30.6
LnGrp LOS	B	C	C	B	B	B	D	D	D	C	C	C
Approach Vol, veh/h	940			981			758			619		
Approach Delay, s/veh	28.0			16.6			41.8			31.9		
Approach LOS	C			B			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	54.7	11.0	25.5	10.4	55.1	14.0	22.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	7.0	34.0	7.0	34.0	7.0	34.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	5.8	17.2	8.6	11.5	4.6	12.2	12.0	9.4				
Green Ext Time (p_c), s	0.0	7.6	0.0	4.4	0.1	8.7	0.0	4.3				

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Lanes, Volumes, Timings

2030 Total AM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔	↔		↔	↔		↔	↔		↔
Traffic Volume (vph)	181	36	89	45	24	22	93	281	79	51	494	308
Future Volume (vph)	181	36	89	45	24	22	93	281	79	51	494	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99		1.00				1.00		0.98	1.00	0.99	
Frt	0.893				0.929				0.850		0.942	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1441	0	1245	1600	0	1612	3471	1583	1626	4723	0
Fit Permitted	0.724			0.641			0.285			0.562		
Satd. Flow (perm)	1376	1441	0	837	1600	0	483	3471	1549	961	4723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		99			24				88		185	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)	646.8				106.2		230.9				292.9	
Travel Time (s)	46.6				7.6		13.9				17.6	
Confl. Peds. (#/hr)			4		4		3		1		1	3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	23%	45%	0%	22%	12%	4%	2%	11%	4%	0%
Adj. Flow (vph)	201	40	99	50	27	24	103	312	88	57	549	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	139	0	50	51	0	103	312	88	57	891	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	42.0	42.0		42.0	42.0		13.0	49.0	49.0	11.0	47.0	
Total Split (%)	41.2%	41.2%		41.2%	41.2%		12.7%	48.0%	48.0%	10.8%	46.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		9.0	43.0	43.0	7.0	41.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	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	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			23.0	23.0		23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	20.4	20.4		20.4	20.4		69.2	60.8	60.8	67.6	60.0	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.68	0.60	0.60	0.66	0.59	
v/c Ratio	0.73	0.38		0.30	0.15		0.25	0.15	0.09	0.08	0.31	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

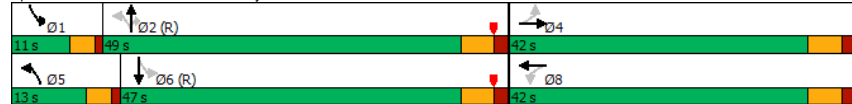
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	53.1	14.1		37.1	19.8		18.8	23.4	15.1	6.5	9.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	53.1	14.1		37.1	19.8		18.8	23.4	15.1	6.5	9.8	
LOS	D	B		D	B		B	C	B	A	A	
Approach Delay		37.2			28.4			21.0			9.6	
Approach LOS		D			C			C			A	
Queue Length 50th (m)	39.6	6.9		8.9	4.6		12.5	23.9	0.0	3.2	25.7	
Queue Length 95th (m)	59.1	21.7		18.4	13.5		28.6	37.4	16.1	9.2	42.7	
Internal Link Dist (m)		622.8			82.2			206.9			268.9	
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	485	572		295	580		431	2070	959	682	2856	
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	0.41	0.24		0.17	0.09		0.24	0.15	0.09	0.08	0.31	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 97 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 18.6
 Intersection Capacity Utilization 69.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	181	36	89	45	24	22	93	281	79	51	494	308
Future Volume (veh/h)	181	36	89	45	24	22	93	281	79	51	494	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1559	1233	1900	1574	1722	1841	1870	1737	1841	1900
Adj Flow Rate, veh/h	201	40	99	50	27	24	103	312	88	57	549	342
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	23	45	0	22	12	4	2	11	4	0
Cap, veh/h	325	101	250	184	194	172	434	2023	915	622	1905	885
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.02	0.19	0.19	0.05	0.57	0.57
Sat Flow, veh/h	1368	483	1194	821	925	822	1640	3497	1581	1654	3350	1556
Grp Volume(v), veh/h	201	0	139	50	0	51	103	312	88	57	549	342
Grp Sat Flow(s), veh/h/ln	1368	0	1677	821	0	1746	1640	1749	1581	1654	1675	1556
Q Serve(g_s), s	14.3	0.0	7.3	5.7	0.0	2.4	2.5	7.6	4.7	1.4	8.6	12.4
Cycle Q Clear(g_c), s	16.7	0.0	7.3	13.0	0.0	2.4	2.5	7.6	4.7	1.4	8.6	12.4
Prop In Lane	1.00		0.71	1.00		0.47	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	352	184	0	366	434	2023	915	622	1905	885
V/C Ratio(X)	0.62	0.00	0.40	0.27	0.00	0.14	0.24	0.15	0.10	0.09	0.29	0.39
Avail Cap(c_a), veh/h	521	0	592	302	0	616	472	2023	915	645	1905	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	0.0	34.7	40.3	0.0	32.8	8.6	20.5	19.3	7.7	11.4	12.2
Incr Delay (d2), s/veh	1.9	0.0	0.7	0.8	0.0	0.2	0.2	0.1	0.2	0.1	0.4	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	5.6	0.0	3.4	1.4	0.0	1.2	0.1	0.5	0.3	0.0	0.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.5	0.0	35.5	41.1	0.0	33.0	8.9	20.6	19.5	7.8	11.7	13.4
LnGrp LOS	D	A	D	D	A	C	A	C	B	A	B	B
Approach Vol, veh/h		340			101			503			948	
Approach Delay, s/veh		39.1			37.0			18.0			12.1	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	65.0		27.4	10.6	64.0		27.4				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	43.0		36.0	9.0	41.0		36.0				
Max Q Clear Time (g_c+I1), s	3.4	9.6		18.7	4.5	14.4		15.0				
Green Ext Time (p_c), s	0.0	3.0		1.7	0.1	7.8		0.6				

Intersection Summary

HCM 6th Ctrl Delay 19.8
 HCM 6th LOS B

Lanes, Volumes, Timings

2030 Total AM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	49	62	105	158	253	3
Future Volume (vph)	49	62	105	158	253	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.925			0.999		
Fit Protected	0.978		0.950			
Satd. Flow (prot)	1685	0	1770	1863	1861	0
Fit Permitted	0.978		0.950			
Satd. Flow (perm)	1685	0	1770	1863	1861	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	122.2			214.6	142.6	
Travel Time (s)	8.8			15.5	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	67	114	172	275	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	114	172	278	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.8%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC

2030 Total AM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	49	62	105	158	253	3
Future Vol, veh/h	49	62	105	158	253	3
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	67	114	172	275	3

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	677	277	278
Stage 1	277	-	-
Stage 2	400	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	418	762	1285
Stage 1	770	-	-
Stage 2	677	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	381	762	1285
Mov Cap-2 Maneuver	488	-	-
Stage 1	701	-	-
Stage 2	677	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	3.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1285	-	611	-
HCM Lane V/C Ratio	0.089	-	0.197	-
HCM Control Delay (s)	8.1	-	12.3	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.3	-	0.7	-

Lanes, Volumes, Timings

2030 Total AM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	126	53	203	146	106	101
Future Volume (vph)	126	53	203	146	106	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.960					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1788	0	1770	1863	1770	1583
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1788	0	1770	1863	1770	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	52.8			646.8	142.6	
Travel Time (s)	3.8			46.6	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	58	221	159	115	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	195	0	221	159	115	110
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.0%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2030 Total AM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	6.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	126	53	203	146	106	101
Future Vol, veh/h	126	53	203	146	106	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	137	58	221	159	115	110

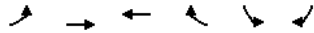
Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	195
Stage 1	-	-	166
Stage 2	-	-	601
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	1378	370
Stage 1	-	-	863
Stage 2	-	-	547
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1378	311
Mov Cap-2 Maneuver	-	-	390
Stage 1	-	-	863
Stage 2	-	-	459

Approach	EB	WB	NB
HCM Control Delay, s	0	4.7	14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	878	-	-	1378	-
HCM Lane V/C Ratio	0.295	0.125	-	-	0.16	-
HCM Control Delay (s)	18.1	9.7	-	-	8.1	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1.2	0.4	-	-	0.6	-

Lanes, Volumes, Timings
11: Catherine Street & Access A

2030 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Volume (vph)	47	31	33	100	98	35
Future Volume (vph)	47	31	33	100	98	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.899			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1675	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1675	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		128.7	118.7		179.7	
Travel Time (s)		9.3	8.5		12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	34	36	109	107	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	34	145	0	107	38
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.7%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
11: Catherine Street & Access A

2030 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Vol, veh/h	47	31	33	100	98	35
Future Vol, veh/h	47	31	33	100	98	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	34	36	109	107	38

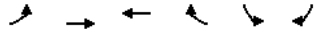
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	145	0	0
Stage 1	-	-	91
Stage 2	-	-	136
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1437	-	761
Stage 1	-	-	933
Stage 2	-	-	890
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1437	-	734
Mov Cap-2 Maneuver	-	-	743
Stage 1	-	-	900
Stage 2	-	-	890

Approach	EB	WB	SB
HCM Control Delay, s	4.6	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1437	-	-	-	743	967
HCM Lane V/C Ratio	0.036	-	-	-	0.143	0.039
HCM Control Delay (s)	7.6	-	-	-	10.7	8.9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1

Lanes, Volumes, Timings
12: Catherine Street & Access B

2030 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Volume (vph)	31	98	100	152	82	33
Future Volume (vph)	31	98	100	152	82	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.919			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1712	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1712	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		118.7	52.8		152.1	
Travel Time (s)		8.5	3.8		11.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	107	109	165	89	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	107	274	0	89	36
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.5%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
12: Catherine Street & Access B

2030 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Vol, veh/h	31	98	100	152	82	33
Future Vol, veh/h	31	98	100	152	82	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	107	109	165	89	36

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	274	0	0
Stage 1	-	-	192
Stage 2	-	-	175
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1289	-	633
Stage 1	-	-	841
Stage 2	-	-	855
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1289	-	617
Mov Cap-2 Maneuver	-	-	663
Stage 1	-	-	819
Stage 2	-	-	855

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1289	-	-	-	663	850
HCM Lane V/C Ratio	0.026	-	-	-	0.134	0.042
HCM Control Delay (s)	7.9	-	-	-	11.3	9.4
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1

Lanes, Volumes, Timings

2030 Total PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔
Traffic Volume (vph)	112	1430	128	145	1301	394	163	329	165	346	311	97
Future Volume (vph)	112	1430	128	145	1301	394	163	329	165	346	311	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0			50.0			95.0			0.0		
Storage Lanes	1			1			1			1		
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00			0.98			1.00			0.99		
Frt	0.988			0.850			0.850			0.964		
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5013	0	1752	3574	1615	1752	3574	1509	1770	3372	0
Flt Permitted	0.076			0.073			0.286			0.342		
Satd. Flow (perm)	142	5013	0	135	3574	1588	526	3574	1488	636	3372	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	15			346			146			37		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	230.2			269.3			222.3			200.9		
Travel Time (s)	13.8			16.2			16.0			14.5		
Conf. Peds. (#/hr)	5			5			5			5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	3%	3%	1%	0%	3%	1%	7%	2%	3%	2%
Adj. Flow (vph)	127	1625	145	165	1478	448	185	374	188	393	353	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	1770	0	165	1478	448	185	374	188	393	463	0
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	NA	NA
Protected Phases	5	2	1	6	7	4	4	3	8	8	8	8
Permitted Phases	2			6			4			8		
Detector Phase	5	2	1	6	6	7	4	4	3	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	10.0	10.0
Minimum Split (s)	11.0	40.0	11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	35.0	35.0
Total Split (s)	11.0	47.0	13.0	49.0	49.0	14.0	35.0	35.0	15.0	36.0	36.0	36.0
Total Split (%)	10.0%	42.7%	11.8%	44.5%	44.5%	12.7%	31.8%	31.8%	13.6%	32.7%	32.7%	32.7%
Maximum Green (s)	7.0	42.0	9.0	44.0	44.0	10.0	30.0	30.0	11.0	31.0	31.0	31.0
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None	None	None
Walk Time (s)	7.0			7.0			7.0			7.0		
Flash Dont Walk (s)	28.0			28.0			23.0			23.0		
Pedestrian Calls (#/hr)	0			0			0			0		
Act Effect Green (s)	61.0	53.0	64.5	54.7	54.7	30.2	19.3	19.3	32.3	32.3	20.3	20.3
Actuated g/C Ratio	0.55	0.48	0.59	0.50	0.50	0.27	0.18	0.18	0.29	0.18	0.18	0.18
v/c Ratio	0.70	0.73	0.79	0.83	0.46	0.73	0.60	0.49	1.31	0.71	0.71	0.71

Lanes, Volumes, Timings

2030 Total PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	39.0	25.6		39.6	43.6	19.5	45.7	45.4	15.2	191.8	44.5	44.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	25.6		39.6	43.6	19.5	45.7	45.4	15.2	191.8	44.5	44.5
LOS	D	C		D	D	B	D	D	B	F	D	D
Approach Delay	26.5			38.1			37.9			112.1		
Approach LOS	C			D			D			F		
Queue Length 50th (m)	11.3	113.0		23.4	186.0	68.9	31.6	41.4	8.2	-84.9	48.1	48.1
Queue Length 95th (m)	#40.7	141.9		#42.3	#211.1	49.0	45.6	52.3	26.3	#123.1	60.1	60.1
Internal Link Dist (m)	206.2			245.3			198.3			176.9		
Turn Bay Length (m)	55.0			95.0			65.0			45.0		
Base Capacity (vph)	182	2421		211	1778	964	256	974	512	300	976	976
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.73		0.78	0.83	0.46	0.72	0.38	0.37	1.31	0.47	0.47
Intersection Summary												
Area Type:	Other											
Cycle Length:	110											
Actuated Cycle Length:	110											
Offset:	56 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red											
Natural Cycle:	110											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	1.31											
Intersection Signal Delay:	45.5						Intersection LOS: D					
Intersection Capacity Utilization:	86.5%						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:	1: Jefferson Boulevard & Tecumseh Road											

HCM 6th Signalized Intersection Summary

2030 Total PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔
Traffic Volume (veh/h)	112	1430	128	145	1301	394	163	329	165	346	311	97
Future Volume (veh/h)	112	1430	128	145	1301	394	163	329	165	346	311	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1885	1900	1856	1885	1796	1870	1856	1870
Adj Flow Rate, veh/h	127	1625	145	165	1478	448	185	374	188	393	353	110
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	3	3	1	0	3	1	7	2	3	2
Cap, veh/h	196	2306	206	237	1739	779	293	675	285	323	524	161
Arrive On Green	0.06	0.48	0.48	0.02	0.16	0.16	0.09	0.19	0.19	0.10	0.20	0.20
Sat Flow, veh/h	1781	4771	425	1767	3582	1605	1767	3582	1510	1781	2651	814
Grp Volume(v), veh/h	127	1159	611	165	1478	448	185	374	188	393	233	230
Grp Sat Flow(s),veh/h/ln	1781	1702	1792	1767	1791	1605	1767	1791	1510	1781	1763	1702
Q Serve(g_s), s	3.8	29.3	29.4	5.0	44.1	28.4	9.3	10.4	12.7	11.0	13.4	13.8
Cycle Q Clear(g_c), s	3.8	29.3	29.4	5.0	44.1	28.4	9.3	10.4	12.7	11.0	13.4	13.8
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	196	1646	866	237	1739	779	293	675	285	323	348	336
V/C Ratio(X)	0.65	0.70	0.71	0.70	0.85	0.57	0.63	0.55	0.66	1.22	0.67	0.68
Avail Cap(c_a), veh/h	198	1646	866	268	1739	779	293	977	412	323	497	480
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.57	0.57	0.57	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	22.3	22.3	22.2	42.3	35.7	32.8	40.4	41.4	39.3	40.8	40.9
Incr Delay (d2), s/veh	7.1	2.6	4.8	3.8	3.2	1.8	4.4	1.0	3.7	122.3	3.1	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	8.1	9.1	1.3	22.4	10.7	4.9	5.5	6.0	23.5	7.3	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	24.8	27.1	26.1	45.5	37.5	37.2	41.4	45.1	161.6	43.9	44.4
LnGrp LOS	C	C	C	C	D	D	D	D	D	F	D	D
Approach Vol, veh/h	1897			2091			747			856		
Approach Delay, s/veh	26.0			42.2			41.3			98.1		
Approach LOS	C			D			D			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	58.2	15.0	25.7	10.9	58.4	14.0	26.7				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	9.0	42.0	11.0	30.0	7.0	44.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	7.0	31.4	13.0	14.7	5.8	46.1	11.3	15.8				
Green Ext Time (p_c), s	0.1	9.3	0.0	4.5	0.0	0.0	0.0	3.9				

Intersection Summary

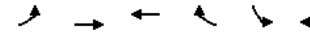
HCM 6th Ctrl Delay	45.1
HCM 6th LOS	D

Lanes, Volumes, Timings

2030 Total PM Peak Hour

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

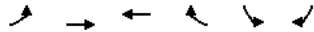


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	174	1767	1646	38	35	194
Future Volume (vph)	174	1767	1646	38	35	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.997			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	5085	5070	0	1770	1583
Fit Permitted	0.075				0.950	
Satd. Flow (perm)	140	5085	5070	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			4			211
Link Speed (k/h)		50	50		50	
Link Distance (m)		269.3	167.9		212.2	
Travel Time (s)		19.4	12.1		15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	1921	1789	41	38	211
Shared Lane Traffic (%)						
Lane Group Flow (vph)	189	1921	1830	0	38	211
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	22.0	81.0	59.0		29.0	29.0
Total Split (%)	20.0%	73.6%	53.6%		26.4%	26.4%
Maximum Green (s)	18.0	76.0	54.0		24.0	24.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)	68.7	67.7	49.6		32.3	32.3
Actuated g/C Ratio	0.62	0.62	0.45		0.29	0.29
v/c Ratio	0.64	0.61	0.80		0.07	0.34
Control Delay	21.9	9.6	23.6		32.7	6.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	21.9	9.6	23.6		32.7	6.6

Lanes, Volumes, Timings

2030 Total PM Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

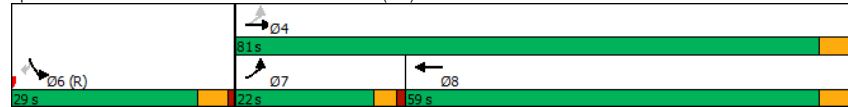


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	C	A	C		C	A
Approach Delay		10.7	23.6		10.6	
Approach LOS		B	C		B	
Queue Length 50th (m)	13.6	119.8	87.9		6.3	0.0
Queue Length 95th (m)	m22.7	m27.7	m86.9		16.1	19.4
Internal Link Dist (m)		245.3	143.9		188.2	
Turn Bay Length (m)	45.0					
Base Capacity (vph)	354	3513	2490		519	613
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.53	0.55	0.73		0.07	0.34

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 16.3 Intersection LOS: B
 Intersection Capacity Utilization 62.3% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

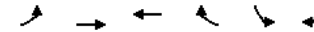
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2030 Total PM Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	174	1767	1646	38	35	194
Future Volume (veh/h)	174	1767	1646	38	35	194
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	1921	1789	41	38	211
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	241	2851	2285	52	625	556
Arrive On Green	0.08	0.56	0.44	0.44	0.35	0.35
Sat Flow, veh/h	1781	5274	5304	118	1781	1585
Grp Volume(v), veh/h	189	1921	1186	644	38	211
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1849	1781	1585
Q Serve(g_s), s	6.0	29.3	32.6	32.7	1.6	11.0
Cycle Q Clear(g_c), s	6.0	29.3	32.6	32.7	1.6	11.0
Prop In Lane	1.00			0.06	1.00	1.00
Lane Grp Cap(c), veh/h	241	2851	1514	823	625	556
V/C Ratio(X)	0.79	0.67	0.78	0.78	0.06	0.38
Avail Cap(c_a), veh/h	395	3528	1671	908	625	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	17.2	26.0	26.0	23.7	26.8
Incr Delay (d2), s/veh	2.8	0.2	2.3	4.1	0.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	5.0	10.4	11.7	0.7	16.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.9	17.4	28.3	30.2	23.9	28.7
LnGrp LOS	C	B	C	C	C	C
Approach Vol, veh/h	2110	1830		249		
Approach Delay, s/veh	18.1	28.9		28.0		
Approach LOS	B	C		C		
Timer - Assigned Phs			4		6	7
Phs Duration (G+Y+Rc), s			66.4		43.6	12.5
Change Period (Y+Rc), s			5.0		5.0	4.0
Max Green Setting (Gmax), s			76.0		24.0	18.0
Max Q Clear Time (g_c+I1), s			31.3		13.0	8.0
Green Ext Time (p_c), s			28.0		0.8	0.5

Intersection Summary

HCM 6th Ctrl Delay 23.4
 HCM 6th LOS C

Lanes, Volumes, Timings

2030 Total PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1731	52	0	1584	8	0	0	46	0	0	84
Future Volume (vph)	0	1731	52	0	1584	8	0	0	46	0	0	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.996			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5068	0	0	5131	0	0	0	1644	0	0	1644
Flt Permitted												
Satd. Flow (perm)	0	5068	0	0	5131	0	0	0	1644	0	0	1644
Link Speed (k/h)		60			60				50			50
Link Distance (m)		167.9			186.0				136.6			134.8
Travel Time (s)		10.1			11.2				9.8			9.7
Confl. Peds. (#/hr)	8		9	9		8	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	0	1923	58	0	1760	9	0	0	51	0	0	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1981	0	0	1769	0	0	0	51	0	0	93
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.0%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2030 Total PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

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	0	1731	52	0	1584	8	0	0	46	0	0	84
Future Vol, veh/h	0	1731	52	0	1584	8	0	0	46	0	0	84
Conflicting Peds, #/hr	8	0	9	9	0	8	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	1	0	0
Mvmt Flow	0	1923	58	0	1760	9	0	0	51	0	0	93

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	0	210
Stage 1	0	-	0	0
Stage 2	0	-	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	208
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	27.9	28.5
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	208	-	-	-	-	245
HCM Lane V/C Ratio	0.246	-	-	-	-	0.381
HCM Control Delay (s)	27.9	-	-	-	-	28.5
HCM Lane LOS	D	-	-	-	-	D
HCM 95th %tile Q(veh)	0.9	-	-	-	-	1.7

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	210	1408	69	240	1011	61	150	132	188	166	109	252
Future Volume (vph)	210	1408	69	240	1011	61	150	132	188	166	109	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					1.00	0.99				
Frt		0.993			0.992			0.910			0.895	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5090	0	1752	5045	0	1787	1689	0	1770	1667	0
Flt Permitted	0.155			0.084			0.277			0.324		
Satd. Flow (perm)	289	5090	0	155	5045	0	520	1689	0	604	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			9			75				116
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				213.5
Travel Time (s)		11.2			16.4			20.9				15.4
Conf. Peds. (#/hr)			13	13			3		3			
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	3%	2%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	228	1600	78	273	1149	66	170	143	214	180	118	274
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	1678	0	273	1215	0	170	357	0	180	392	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		1	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	9.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	23.0	45.0		22.0	44.0		43.0	43.0		43.0	43.0	
Total Split (%)	20.9%	40.9%		20.0%	40.0%		39.1%	39.1%		39.1%	39.1%	
Maximum Green (s)	19.0	40.0		18.0	39.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.5	4.0		3.5	4.0		3.0	3.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		16.0			16.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	61.0	45.8		65.0	47.9		33.9	33.9		33.9	33.9	
Actuated g/C Ratio	0.55	0.42		0.59	0.44		0.31	0.31		0.31	0.31	
v/c Ratio	0.65	0.79		0.83	0.55		1.06	0.62		0.97	0.66	

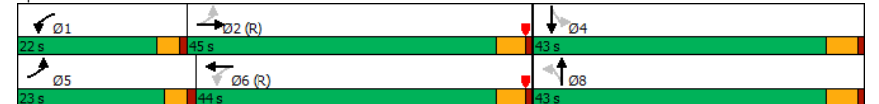
Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	40.9	19.8		51.2	33.3		126.3	29.8		89.9	21.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.9	19.8		51.2	33.3		126.3	29.8		89.9	21.3	
LOS	D	B		D	C		F	C		F	C	
Approach Delay		22.4			36.6			60.9				42.9
Approach LOS		C			D			E				D
Queue Length 50th (m)	29.0	141.7		56.8	70.6		37.1	51.2		34.1	36.0	
Queue Length 95th (m)	48.8	158.2		#85.2	88.8		#79.3	82.1		m#80.0	61.9	
Internal Link Dist (m)		162.0			249.0			265.9			189.5	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	426	2124		353	2202		179	632		208	651	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.54	0.79		0.77	0.55		0.95	0.56		0.87	0.60	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	102 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.06
Intersection Signal Delay:	34.2
Intersection LOS:	C
Intersection Capacity Utilization:	88.3%
ICU Level of Service:	E
Analysis Period (min):	15
#	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: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	210	1408	69	240	1011	61	150	132	188	166	109	252
Future Volume (veh/h)	210	1408	69	240	1011	61	150	132	188	166	109	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1856	1870	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	228	1600	78	273	1149	66	170	143	214	180	118	274
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	3	2	2	1	2	1	2	2	2
Cap, veh/h	337	2053	100	314	2122	122	209	233	349	239	173	401
Arrive On Green	0.10	0.41	0.41	0.04	0.14	0.14	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	5023	245	1767	4935	283	1000	675	1010	1024	500	1161
Grp Volume(v), veh/h	228	1093	585	273	792	423	170	0	357	180	0	392
Grp Sat Flow(s),veh/h/ln	1781	1716	1836	1767	1702	1814	1000	0	1685	1024	0	1661
Q Serve(g_s), s	8.0	30.4	30.4	10.4	23.8	23.8	15.8	0.0	19.3	18.7	0.0	22.2
Cycle Q Clear(g_c), s	8.0	30.4	30.4	10.4	23.8	23.8	38.0	0.0	19.3	38.0	0.0	22.2
Prop In Lane	1.00		0.13	1.00		0.16	1.00		0.60	1.00		0.70
Lane Grp Cap(c), veh/h	337	1402	751	314	1464	780	209	0	582	239	0	574
V/C Ratio(X)	0.68	0.78	0.78	0.87	0.54	0.54	0.81	0.00	0.61	0.75	0.00	0.68
Avail Cap(c_a), veh/h	471	1402	751	393	1464	780	209	0	582	239	0	574
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.68	0.68	0.68	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.6	28.2	28.2	28.9	37.1	37.1	48.4	0.0	29.9	46.0	0.0	30.8
Incr Delay (d2), s/veh	2.9	4.3	7.9	11.9	1.0	1.8	21.4	0.0	1.9	13.5	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	10.4	11.9	5.1	9.1	9.9	7.9	0.0	8.1	7.4	0.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	32.6	36.1	40.8	38.1	39.0	69.7	0.0	31.8	59.5	0.0	34.5
LnGrp LOS	C	C	D	D	D	D	E	A	C	E	A	C
Approach Vol, veh/h	1906			1488			527			572		
Approach Delay, s/veh	32.4			38.8			44.0			42.4		
Approach LOS	C			D			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	50.0		43.0	14.7	52.3		43.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	18.0	40.0		38.0	19.0	39.0		38.0				
Max Q Clear Time (g_c+1), s	12.4	32.4		40.0	10.0	25.8		40.0				
Green Ext Time (p_c), s	0.7	6.6		0.0	0.7	8.8		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	37.2	
HCM 6th LOS	D	

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	214	1464	153	191	1241	208	199	90	126	144	75	100
Future Volume (vph)	214	1464	153	191	1241	208	199	90	126	144	75	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			0.98			0.98		
Frt	0.986				0.978		0.912				0.914	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	5004	0	1805	4987	0	1787	1726	0	1805	1688	0
Fit Permitted	0.083			0.074			0.527			0.447		
Satd. Flow (perm)	156	5004	0	141	4987	0	972	1726	0	849	1688	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			35			67				64
Link Speed (k/h)		60			60			50				50
Link Distance (m)		273.0			268.3			231.1				151.2
Travel Time (s)		16.4			16.1			16.6				10.9
Confl. Peds. (#/hr)			6		6			25				25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	1%	0%	2%	0%	1%	1%	0%	0%	0%	1%
Adj. Flow (vph)	238	1627	170	212	1379	231	221	100	140	160	83	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	1797	0	212	1610	0	221	240	0	160	194	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6				4			8	
Detector Phase	5	2		1	6			4	4		8	8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	21.0	51.0		19.0	49.0		40.0	40.0		40.0	40.0	
Total Split (%)	19.1%	46.4%		17.3%	44.5%		36.4%	36.4%		36.4%	36.4%	
Maximum Green (s)	17.0	46.0		15.0	44.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		23.0			23.0			23.0			23.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	69.6	55.0		67.6	54.0		28.4	28.4		28.4	28.4	
Actuated g/C Ratio	0.63	0.50		0.61	0.49		0.26	0.26		0.26	0.26	
v/c Ratio	0.79	0.72		0.77	0.65		0.88	0.48		0.73	0.40	

Lanes, Volumes, Timings

2030 Total PM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

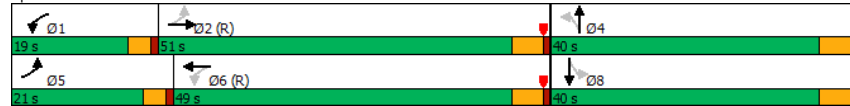


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	55.3	10.0		47.1	19.5		71.7	26.7		55.7	23.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	55.3	10.0		47.1	19.5		71.7	26.7		55.7	23.3	
LOS	E	A		D	B		E	C		E	C	
Approach Delay		15.3			22.7			48.2			38.0	
Approach LOS		B			C			D			D	
Queue Length 50th (m)	44.1	31.2		36.8	55.4		47.4	32.3		32.6	23.4	
Queue Length 95th (m)	m60.5	43.1		m58.5	90.5		#80.3	52.7		54.6	41.5	
Internal Link Dist (m)		249.0			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	353	2511		315	2464		309	594		270	580	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.67	0.72		0.67	0.65		0.72	0.40		0.59	0.33	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 23.1
 Intersection Capacity Utilization 88.3%
 Analysis Period (min) 15
 # 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: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2030 Total PM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑ ↑ ↑	↑ ↑ ↑	↑	↑ ↑ ↑	↑ ↑ ↑	↑	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	214	1464	153	191	1241	208	199	90	126	144	75	100
Future Volume (veh/h)	214	1464	153	191	1241	208	199	90	126	144	75	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1885	1900	1870	1900	1885	1885	1900	1900	1900	1885
Adj Flow Rate, veh/h	238	1627	170	212	1379	231	221	100	140	160	83	111
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	1	0	2	0	1	1	0	0	0	1
Cap, veh/h	293	2314	241	268	2128	356	313	210	294	275	218	291
Arrive On Green	0.09	0.49	0.49	0.05	0.32	0.32	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1795	4693	489	1810	4400	737	1180	700	980	1143	726	970
Grp Volume(v), veh/h	238	1179	618	212	1067	543	221	0	240	160	0	194
Grp Sat Flow(s), veh/h/ln	1795	1702	1779	1810	1702	1732	1180	0	1679	1143	0	1696
Q Serve(g_s), s	7.2	29.6	29.7	6.3	29.5	29.5	20.0	0.0	12.8	14.6	0.0	9.9
Cycle Q Clear(g_c), s	7.2	29.6	29.7	6.3	29.5	29.5	30.0	0.0	12.8	27.5	0.0	9.9
Prop In Lane	1.00		0.28	1.00		0.43	1.00		0.58	1.00		0.57
Lane Grp Cap(c), veh/h	293	1679	877	268	1646	838	313	0	504	275	0	509
V/C Ratio(X)	0.81	0.70	0.70	0.79	0.65	0.65	0.71	0.00	0.48	0.58	0.00	0.38
Avail Cap(c_a), veh/h	411	1679	877	372	1646	838	334	0	534	296	0	540
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.66	0.66	0.66	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	21.6	21.7	22.0	29.2	29.2	42.2	0.0	31.4	42.6	0.0	30.4
Incr Delay (d2), s/veh	4.2	1.2	2.4	5.1	1.3	2.6	6.9	0.0	1.0	3.2	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	1.5	6.4	7.0	1.6	8.8	9.3	7.7	0.0	5.7	5.3	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.3	22.9	24.0	27.1	30.5	31.8	49.2	0.0	32.4	45.9	0.0	31.1
LnGrp LOS	C	C	C	C	C	C	D	A	C	D	A	C
Approach Vol, veh/h	2035			1822			461			354		
Approach Delay, s/veh	23.5			30.5			40.4			37.8		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.7	59.2		38.0	13.8	58.2		38.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	46.0		35.0	17.0	44.0		35.0				
Max Q Clear Time (g_c+I1), s	8.3	31.7		32.0	9.2	31.5		29.5				
Green Ext Time (p_c), s	0.4	12.3		1.1	0.6	10.2		1.3				

Intersection Summary

HCM 6th Ctrl Delay 29.0
 HCM 6th LOS C

Lanes, Volumes, Timings

2030 Total PM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑		↓	↑↑↑		↓	↑↑↑		↓	↑↑↑		↓
Traffic Volume (vph)	158	1375	219	185	995	86	263	927	240	194	627	77
Future Volume (vph)	158	1375	219	185	995	86	263	927	240	194	627	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	1.00		1.00		1.00	
Fit		0.979			0.988			0.969				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	5043	0	1805	5063	0	1787	4916	0	1656	5136	1553
Fit Permitted	0.115			0.107			0.304			0.129		
Satd. Flow (perm)	210	5043	0	203	5063	0	570	4916	0	225	5136	1521
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			13			58				149
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	21		19	19		21	8		9	9		8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	2%	0%	0%	12%	1%	2%	1%	9%	1%	4%
Adj. Flow (vph)	174	1511	241	203	1093	95	289	1019	264	213	689	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	1752	0	203	1188	0	289	1283	0	213	689	85
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	36.0		11.0	36.0	36.0
Total Split (s)	18.0	46.0		13.0	41.0		14.0	36.0		15.0	37.0	37.0
Total Split (%)	16.4%	41.8%		11.8%	37.3%		12.7%	32.7%		13.6%	33.6%	33.6%
Maximum Green (s)	14.0	40.0		9.0	35.0		10.0	30.0		11.0	31.0	31.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			6.0			6.0	6.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	53.1	40.0		48.5	37.5		42.0	30.0		44.0	31.0	31.0
Actuated g/C Ratio	0.48	0.36		0.44	0.34		0.38	0.27		0.40	0.28	0.28
v/c Ratio	0.67	0.95		0.92	0.69		0.88	0.93		0.91	0.48	0.16

Lanes, Volumes, Timings

2030 Total PM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	44.1	33.8		69.8	33.7		53.3	49.8		73.9	46.4	8.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	44.1	33.8		69.8	33.7		53.3	49.8		73.9	46.4	8.8
LOS	D	C		E	C		D	D		E	D	A
Approach Delay		34.8			39.0			50.4				49.1
Approach LOS		C			D			D				D
Queue Length 50th (m)	24.5	91.3		28.3	83.2		43.7	99.4		44.2	57.7	2.0
Queue Length 95th (m)	m45.1	#165.5		#76.0	103.5		#87.8	#128.8		#79.1	72.6	m8.0
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	299	1853		220	1732		328	1382		233	1447	535
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	0.58	0.95		0.92	0.69		0.88	0.93		0.91	0.48	0.16

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	7 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	42.4
Intersection LOS:	D
Intersection Capacity Utilization:	93.2%
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.
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2030 Total PM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔	↔		↔	↔		↔	↔		↔
Traffic Volume (veh/h)	158	1375	219	185	995	86	263	927	240	194	627	77
Future Volume (veh/h)	158	1375	219	185	995	86	263	927	240	194	627	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1900	1870	1900	1900	1722	1885	1870	1885	1767	1885	1841
Adj Flow Rate, veh/h	174	1511	241	203	1093	95	289	1019	264	213	689	85
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	0	2	0	0	12	1	2	1	9	1	4
Cap, veh/h	291	1640	261	222	1775	154	336	1095	283	244	1445	434
Arrive On Green	0.03	0.12	0.12	0.08	0.37	0.37	0.09	0.27	0.27	0.03	0.09	0.09
Sat Flow, veh/h	1753	4498	716	1810	4852	421	1795	4031	1043	1682	5147	1545
Grp Volume(v), veh/h	174	1161	591	203	779	409	289	860	423	213	689	85
Grp Sat Flow(s),veh/h/ln	1753	1729	1756	1810	1729	1815	1795	1702	1670	1682	1716	1545
Q Serve(g_s), s	6.6	36.5	36.6	7.7	20.3	20.3	10.0	27.1	27.1	9.8	14.0	5.6
Cycle Q Clear(g_c), s	6.6	36.5	36.6	7.7	20.3	20.3	10.0	27.1	27.1	9.8	14.0	5.6
Prop In Lane	1.00		0.41	1.00		0.23	1.00		0.62	1.00		1.00
Lane Grp Cap(c), veh/h	291	1261	640	222	1265	664	336	925	454	244	1445	434
V/C Ratio(X)	0.60	0.92	0.92	0.91	0.62	0.62	0.86	0.93	0.93	0.87	0.48	0.20
Avail Cap(c_a), veh/h	372	1261	640	222	1265	664	336	928	456	244	1450	435
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79	0.79
Uniform Delay (d), s/veh	23.1	46.8	46.9	26.2	28.6	28.6	32.1	39.0	39.1	30.9	42.2	38.4
Incr Delay (d2), s/veh	1.2	8.4	14.9	37.6	2.2	4.3	19.5	15.5	26.1	23.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	18.5	20.2	6.5	7.9	8.8	8.2	13.0	14.6	6.4	6.6	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.4	55.2	61.8	63.8	30.8	32.8	51.6	54.5	65.2	53.9	42.5	38.6
LnGrp LOS	C	E	E	E	C	C	D	D	E	D	D	D
Approach Vol, veh/h	1926			1391			1572			987		
Approach Delay, s/veh	54.4			36.2			56.8			44.6		
Approach LOS	D			D			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	46.1	15.0	35.9	12.9	46.2	14.0	36.9				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	9.0	40.0	11.0	30.0	14.0	35.0	10.0	31.0				
Max Q Clear Time (g_c+1), s	9.7	38.6	11.8	29.1	8.6	22.3	12.0	16.0				
Green Ext Time (p_c), s	0.0	1.3	0.0	0.7	0.3	8.4	0.0	5.7				

Intersection Summary												
HCM 6th Ctrl Delay	49.1											
HCM 6th LOS	D											

Lanes, Volumes, Timings

2030 Total PM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔	↔		↔	↔		↔	↔		↔
Traffic Volume (vph)	377	98	286	114	91	119	217	765	160	105	469	403
Future Volume (vph)	377	98	286	114	91	119	217	765	160	105	469	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99	0.98		1.00	0.99		1.00		0.98	1.00	0.99	
Frt	0.888				0.915				0.850		0.931	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1613	0	1570	1672	0	1671	3610	1455	1703	4755	0
Fit Permitted	0.568			0.361			0.166			0.222		
Satd. Flow (perm)	1073	1613	0	594	1672	0	292	3610	1423	398	4755	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		172			77				176		194	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)	621.8				106.2		230.9				292.9	
Travel Time (s)	44.8				7.6		13.9				17.6	
Conf. Peds. (#/hr)	7		8	8		7	1		1	1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	4%	15%	0%	5%	8%	0%	11%	6%	1%	0%
Adj. Flow (vph)	414	108	314	125	100	131	238	841	176	115	515	443
Shared Lane Traffic (%)												
Lane Group Flow (vph)	414	422	0	125	231	0	238	841	176	115	958	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		36.0	36.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	55.0	55.0		55.0	55.0		19.0	42.0	42.0	13.0	36.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		17.3%	38.2%	38.2%	11.8%	32.7%	
Maximum Green (s)	49.0	49.0		49.0	49.0		15.0	36.0	36.0	9.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			23.0	23.0		23.0	
Pedestrian Calls (#/hr)	0	0		0	0			0	0		0	
Act Effect Green (s)	45.7	45.7		45.7	45.7		54.1	39.8	39.8	45.0	34.6	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.49	0.36	0.36	0.41	0.31	
v/c Ratio	0.93	0.55		0.51	0.31		0.76	0.64	0.28	0.44	0.59	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

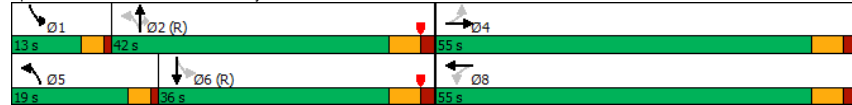
2030 Total PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	59.3	16.1		31.1	14.5		45.5	14.2	0.7	22.4	27.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	59.3	16.1		31.1	14.5		45.5	14.2	0.7	22.4	27.6	
LOS	E	B		C	B		D	B	A	C	C	
Approach Delay		37.5			20.3			18.3			27.1	
Approach LOS		D			C			B			C	
Queue Length 50th (m)	82.5	38.4		19.4	20.8		29.8	31.9	0.0	14.5	56.4	
Queue Length 95th (m)	#144.3	67.7		38.9	38.5		m38.4	m42.5	m0.3	25.8	72.1	
Internal Link Dist (m)		597.8			82.2			206.9			268.9	
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	477	813		264	787		332	1306	627	271	1627	
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	0.87	0.52		0.47	0.29		0.72	0.64	0.28	0.42	0.59	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	79 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Red
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.93
Intersection Signal Delay:	25.7
Intersection LOS:	C
Intersection Capacity Utilization:	91.2%
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.
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

2030 Total PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	377	98	286	114	91	119	217	765	160	105	469	403
Future Volume (veh/h)	377	98	286	114	91	119	217	765	160	105	469	403
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1841	1678	1900	1826	1781	1900	1737	1811	1885	1900
Adj Flow Rate, veh/h	414	108	314	125	100	131	238	841	176	115	515	443
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	4	15	0	5	8	0	11	6	1	0
Cap, veh/h	484	190	553	288	331	434	275	1250	509	288	1002	466
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45	0.23	0.69	0.69	0.06	0.29	0.29
Sat Flow, veh/h	1165	427	1242	865	744	974	1697	3610	1470	1725	3431	1595
Grp Volume(v), veh/h	414	0	422	125	0	231	238	841	176	115	515	443
Grp Sat Flow(s), veh/h/ln	1165	0	1669	865	0	1718	1697	1805	1470	1725	1716	1595
Q Serve(g_s), s	38.9	0.0	20.7	13.8	0.0	9.5	10.7	14.8	5.3	5.1	13.8	29.9
Cycle Q Clear(g_c), s	48.3	0.0	20.7	34.4	0.0	9.5	10.7	14.8	5.3	5.1	13.8	29.9
Prop In Lane	1.00		0.74	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	484	0	743	288	0	765	275	1250	509	288	1002	466
V/C Ratio(X)	0.86	0.00	0.57	0.43	0.00	0.30	0.87	0.67	0.35	0.40	0.51	0.95
Avail Cap(c_a), veh/h	484	0	743	288	0	765	308	1250	509	320	1002	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.32	0.32	0.32	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	0.0	22.6	35.4	0.0	19.5	22.8	13.3	11.9	25.0	32.4	38.2
Incr Delay (d2), s/veh	14.4	0.0	1.3	1.5	0.0	0.3	7.7	0.9	0.6	0.9	1.9	31.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	12.3	0.0	6.9	3.4	0.0	3.2	3.4	3.4	1.5	2.0	6.1	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.5	0.0	23.9	36.9	0.0	19.9	30.5	14.3	12.5	25.9	34.3	69.3
LnGrp LOS	D	A	C	D	A	B	C	B	B	C	C	E
Approach Vol, veh/h		836			356			1255				1073
Approach Delay, s/veh		36.6			25.8			17.1				47.8
Approach LOS		D			C			B				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	44.1		55.0	16.9	38.1		55.0				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	36.0		49.0	15.0	30.0		49.0				
Max Q Clear Time (g_c+I1), s	7.1	16.8		50.3	12.7	31.9		36.4				
Green Ext Time (p_c), s	0.1	9.7		0.0	0.2	0.0		2.7				

Intersection Summary

HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Lanes, Volumes, Timings

2030 Total PM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	97	108	133	270	419	4
Future Volume (vph)	97	108	133	270	419	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.929				0.999	
Fit Protected	0.977		0.950			
Satd. Flow (prot)	1691	0	1770	1863	1861	0
Fit Permitted	0.977		0.950			
Satd. Flow (perm)	1691	0	1770	1863	1861	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	140.9			213.5	134.3	
Travel Time (s)	10.1			15.4	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	117	145	293	455	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	222	0	145	293	459	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC

2030 Total PM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	97	108	133	270	419	4
Future Vol, veh/h	97	108	133	270	419	4
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	117	145	293	455	4

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1040	457	459
Stage 1	457	-	-
Stage 2	583	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	255	604	1102
Stage 1	638	-	-
Stage 2	558	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	221	604	1102
Mov Cap-2 Maneuver	355	-	-
Stage 1	554	-	-
Stage 2	558	-	-

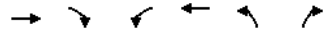
Approach	EB	NB	SB
HCM Control Delay, s	20.4	2.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1102	-	453	-
HCM Lane V/C Ratio	0.131	-	0.492	-
HCM Control Delay (s)	8.8	-	20.4	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.5	-	2.7	-

Lanes, Volumes, Timings

2030 Total PM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	446	219	204	393	254	113
Future Volume (vph)	446	219	204	393	254	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.956					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1781	0	1770	1863	1770	1583
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1781	0	1770	1863	1770	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	76.5			621.8	134.3	
Travel Time (s)	5.5			44.8	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	485	238	222	427	276	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	723	0	222	427	276	123
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

HCM 6th TWSC

2030 Total PM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	31.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	446	219	204	393	254	113
Future Vol, veh/h	446	219	204	393	254	113
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	485	238	222	427	276	123

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	723
Stage 1	-	-	604
Stage 2	-	-	871
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	879	139
Stage 1	-	-	546
Stage 2	-	-	410
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	879	104
Mov Cap-2 Maneuver	-	-	221
Stage 1	-	-	546
Stage 2	-	-	306

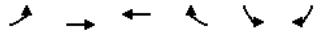
Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	134.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	221	498	-	-	879	-
HCM Lane V/C Ratio	1.249	0.247	-	-	0.252	-
HCM Control Delay (s)	188.3	14.6	-	-	10.5	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	14.2	1	-	-	1	-

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

Lanes, Volumes, Timings
11: Catherine Street & Access A

2030 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↔		↔	↔
Traffic Volume (vph)	127	85	114	339	364	115
Future Volume (vph)	127	85	114	339	364	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.899			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1675	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1675	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		81.3	118.1		190.8	
Travel Time (s)		5.9	8.5		13.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	92	124	368	396	125
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	92	492	0	396	125
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	64.1%
ICU Level of Service	C
Analysis Period (min)	15

HCM 6th TWSC
11: Catherine Street & Access A

2030 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	15.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↔		↔	↔
Traffic Vol, veh/h	127	85	114	339	364	115
Future Vol, veh/h	127	85	114	339	364	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	92	124	368	396	125

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	492	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1071	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1071	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	5.3	0	33.6
HCM LOS			D

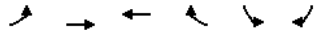
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1071	-	-	-	473	732
HCM Lane V/C Ratio	0.129	-	-	-	0.836	0.171
HCM Control Delay (s)	8.9	-	-	-	40.8	10.9
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.4	-	-	-	8.3	0.6

Notes

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

Lanes, Volumes, Timings
12: Catherine Street & Access B

2030 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Volume (vph)	85	364	339	308	301	114
Future Volume (vph)	85	364	339	308	301	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.936			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1744	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1744	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		118.1	76.5		157.4	
Travel Time (s)		8.5	5.5		11.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	396	368	335	327	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	396	703	0	327	124
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	68.1%
ICU Level of Service	C
Analysis Period (min)	15

HCM 6th TWSC
12: Catherine Street & Access B

2030 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	16.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Vol, veh/h	85	364	339	308	301	114
Future Vol, veh/h	85	364	339	308	301	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	396	368	335	327	124

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	703	0	0
Stage 1	-	-	536
Stage 2	-	-	580
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	895	-	230
Stage 1	-	-	587
Stage 2	-	-	560
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	895	-	206
Mov Cap-2 Maneuver	-	-	342
Stage 1	-	-	527
Stage 2	-	-	560

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	57.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	895	-	-	-	342	545
HCM Lane V/C Ratio	0.103	-	-	-	0.957	0.227
HCM Control Delay (s)	9.5	-	-	-	73.8	13.5
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.3	-	-	-	10.2	0.9

Notes

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

Lanes, Volumes, Timings

2030 Total Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗		↘	↖ ↗		↘	↖ ↗		↘	↖ ↗		↘
Traffic Volume (vph)	31	1267	117	186	1376	248	154	81	164	228	118	23
Future Volume (vph)	31	1267	117	186	1376	248	154	81	164	228	118	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0		70.0		55.0		50.0		50.0			0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00		1.00		0.98		1.00		0.98		1.00	
Frt	0.987		0.850		0.850		0.850		0.975		0.975	
Flt Protected	0.950		0.950		0.950		0.950		0.950		0.950	
Satd. Flow (prot)	1805	5048	0	1770	3574	1599	1770	3574	1615	1805	3453	0
Flt Permitted	0.130		0.123		0.659		0.700		0.700		0.700	
Satd. Flow (perm)	247	5048	0	229	3574	1564	1223	3574	1585	1322	3453	0
Right Turn on Red	Yes		Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)	16		212		21		21		21		21	
Link Speed (k/h)	60		60		50		50		50		50	
Link Distance (m)	230.2		268.2		222.3		200.9		200.9		200.9	
Travel Time (s)	13.8		16.1		16.0		14.5		14.5		14.5	
Conf. Peds. (#/hr)	11	18	18	11	4	6	6	6	6	6	6	4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	3%	2%	1%	1%	2%	1%	0%	0%	1%	5%
Adj. Flow (vph)	32	1306	121	192	1419	256	159	84	169	235	122	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	1427	0	192	1419	256	159	84	169	235	146	0
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	NA	NA
Protected Phases	5	2	1	6	7	4	4	3	8	8	8	8
Permitted Phases	2		6		6		4		4		8	
Detector Phase	5	2	1	6	6	7	4	4	3	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	10.0	10.0
Minimum Split (s)	11.0	40.0	11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	35.0	35.0
Total Split (s)	11.0	44.0	16.0	49.0	49.0	13.0	35.0	35.0	13.0	35.0	35.0	35.0
Total Split (%)	10.2%	40.7%	14.8%	45.4%	45.4%	12.0%	32.4%	32.4%	12.0%	32.4%	32.4%	32.4%
Maximum Green (s)	7.0	39.0	12.0	44.0	44.0	9.0	30.0	30.0	9.0	30.0	30.0	30.0
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None	None	None
Walk Time (s)	7.0		7.0		7.0		7.0		7.0		7.0	
Flash Dont Walk (s)	28.0		28.0		28.0		23.0		23.0		23.0	
Pedestrian Calls (#/hr)	0		0		0		0		0		0	
Act Effct Green (s)	67.2	59.2	75.0	67.4	67.4	21.0	11.0	11.0	21.0	11.0	11.0	11.0
Actuated g/C Ratio	0.62	0.55	0.69	0.62	0.62	0.19	0.10	0.10	0.19	0.10	0.10	0.10
v/c Ratio	0.13	0.51	0.62	0.64	0.24	0.56	0.23	0.54	0.79	0.39	0.39	0.39

Lanes, Volumes, Timings

2030 Total Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	7.0	16.4	34.1	8.5	1.9	43.7	45.7	13.6	57.7	41.6	41.6	41.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	16.4	34.1	8.5	1.9	43.7	45.7	13.6	57.7	41.6	41.6	41.6
LOS	A	B	C	A	A	D	D	B	E	D	D	D
Approach Delay	16.2		10.2		31.7		51.5		51.5		51.5	
Approach LOS	B		B		C		D		D		D	
Queue Length 50th (m)	1.9	69.1	25.2	24.7	0.0	30.2	9.2	0.0	46.7	13.9	13.9	13.9
Queue Length 95th (m)	5.3	88.4	m42.2	58.0	m6.6	48.4	16.6	19.7	#73.8	23.5	23.5	23.5
Internal Link Dist (m)	206.2		244.2		198.3		176.9		176.9		176.9	
Turn Bay Length (m)	55.0		95.0		65.0		45.0		45.0		45.0	
Base Capacity (vph)	254	2772	330	2228	1055	283	992	562	298	974	974	974
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.51	0.58	0.64	0.24	0.56	0.08	0.30	0.79	0.15	0.15	0.15

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 18.3

Intersection LOS: B

Intersection Capacity Utilization 82.9%

ICU Level of Service E

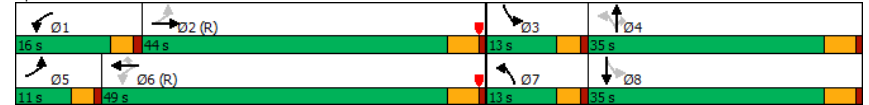
Analysis Period (min) 15

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: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

1: Jefferson Boulevard & Tecumseh Road

2030 Total Saturday Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔
Traffic Volume (veh/h)	31	1267	117	186	1376	248	154	81	164	228	118	23
Future Volume (veh/h)	31	1267	117	186	1376	248	154	81	164	228	118	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1856	1870	1885	1885	1870	1885	1900	1900	1885	1826
Adj Flow Rate, veh/h	32	1306	121	192	1419	256	159	84	169	235	122	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	3	2	1	1	2	1	0	0	1	5
Cap, veh/h	295	2490	231	321	1975	872	365	568	253	375	475	91
Arrive On Green	0.04	0.52	0.52	0.14	1.00	1.00	0.08	0.16	0.16	0.08	0.16	0.16
Sat Flow, veh/h	1810	4787	444	1781	3582	1582	1781	3582	1592	1810	2992	574
Grp Volume(v), veh/h	32	936	491	192	1419	256	159	84	169	235	72	74
Grp Sat Flow(s),veh/h/ln	1810	1716	1800	1781	1791	1582	1781	1791	1592	1810	1791	1774
Q Serve(g_s), s	0.9	19.4	19.4	5.4	0.0	0.0	8.0	2.2	10.8	9.0	3.8	4.0
Cycle Q Clear(g_c), s	0.9	19.4	19.4	5.4	0.0	0.0	8.0	2.2	10.8	9.0	3.8	4.0
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	295	1785	936	321	1975	872	365	568	253	375	284	281
V/C Ratio(X)	0.11	0.52	0.52	0.60	0.72	0.29	0.44	0.15	0.67	0.63	0.25	0.26
Avail Cap(c_a), veh/h	340	1785	936	392	1975	872	365	995	442	375	497	493
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.56	0.56	0.56	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.6	17.1	17.1	12.3	0.0	0.0	34.2	39.1	42.8	36.5	39.8	39.9
Incr Delay (d2), s/veh	0.2	1.1	2.1	1.0	1.3	0.5	0.8	0.2	4.3	3.3	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	10.4	11.2	2.6	0.6	0.2	5.9	1.6	7.6	9.3	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	18.2	19.2	13.3	1.3	0.5	35.0	39.3	47.1	39.8	40.5	40.6
LnGrp LOS	B	B	B	B	A	A	C	D	D	D	D	D
Approach Vol, veh/h	1459			1867			412			381		
Approach Delay, s/veh	18.4			2.4			40.8			40.1		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	61.2	13.0	22.1	8.3	64.5	13.0	22.1				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	12.0	39.0	9.0	30.0	7.0	44.0	9.0	30.0				
Max Q Clear Time (g_c+I1), s	7.4	21.4	11.0	12.8	2.9	2.0	10.0	6.0				
Green Ext Time (p_c), s	0.3	12.5	0.0	1.8	0.0	27.1	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay	15.4											
HCM 6th LOS	B											

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

2030 Total Saturday Peak Hour

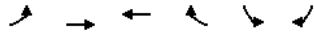
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	219	1439	1563	48	43	247
Future Volume (vph)	219	1439	1563	48	43	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.996			0.850
Fit Protected	0.950			0.950		
Satd. Flow (prot)	1770	5085	5065	0	1770	1583
Fit Permitted	0.080				0.950	
Satd. Flow (perm)	149	5085	5065	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			5			268
Link Speed (k/h)		50	50		50	
Link Distance (m)		268.2	169.1		273.8	
Travel Time (s)		19.3	12.2		19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	238	1564	1699	52	47	268
Shared Lane Traffic (%)						
Lane Group Flow (vph)	238	1564	1751	0	47	268
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	24.0	78.0	54.0		30.0	30.0
Total Split (%)	22.2%	72.2%	50.0%		27.8%	27.8%
Maximum Green (s)	20.0	73.0	49.0		25.0	25.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)	67.9	66.9	45.8		31.1	31.1
Actuated g/C Ratio	0.63	0.62	0.42		0.29	0.29
v/c Ratio	0.68	0.50	0.81		0.09	0.41
Control Delay	44.0	8.7	48.5		32.3	6.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	44.0	8.7	48.5		32.3	6.4

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	D	A	D		C	A
Approach Delay		13.4	48.5		10.2	
Approach LOS		B	D		B	
Queue Length 50th (m)	40.4	42.5	148.9		7.9	0.0
Queue Length 95th (m)	m64.1	36.2	165.2		18.3	20.8
Internal Link Dist (m)		244.2	145.1		249.8	
Turn Bay Length (m)	45.0					
Base Capacity (vph)	393	3437	2300		510	647
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.61	0.46	0.76		0.09	0.41

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 29.0

Intersection LOS: C

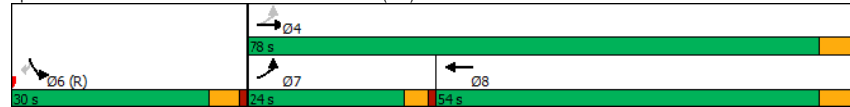
Intersection Capacity Utilization 63.4%

ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)

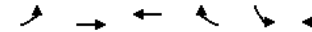


HCM 6th Signalized Intersection Summary

2: Tecumseh Road & Catherine Street (N/S)

2030 Total Saturday Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	219	1439	1563	48	43	247
Future Volume (veh/h)	219	1439	1563	48	43	247
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	238	1564	1699	52	47	268
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	279	2832	2125	65	628	559
Arrive On Green	0.20	1.00	0.42	0.42	0.35	0.35
Sat Flow, veh/h	1781	5274	5259	156	1781	1585
Grp Volume(v), veh/h	238	1564	1136	615	47	268
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1842	1781	1585
Q Serve(g_s), s	8.1	0.0	31.5	31.5	1.9	14.2
Cycle Q Clear(g_c), s	8.1	0.0	31.5	31.5	1.9	14.2
Prop In Lane	1.00			0.08	1.00	1.00
Lane Grp Cap(c), veh/h	279	2832	1421	769	628	559
V/C Ratio(X)	0.85	0.55	0.80	0.80	0.07	0.48
Avail Cap(c_a), veh/h	431	3451	1544	836	628	559
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	0.0	27.5	27.5	23.2	27.2
Incr Delay (d2), s/veh	8.0	0.1	2.9	5.2	0.2	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	0.1	17.3	19.1	1.4	19.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.1	0.1	30.4	32.7	23.5	30.1
LnGrp LOS	C	A	C	C	C	C
Approach Vol, veh/h	1802	1751		315		
Approach Delay, s/veh	3.8	31.2		29.2		
Approach LOS	A	C		C		

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	64.9	43.1	14.8	50.1
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	73.0	25.0	20.0	49.0
Max Q Clear Time (g_c+I1), s	2.0	16.2	10.1	33.5
Green Ext Time (p_c), s	24.7	1.0	0.7	11.6

Intersection Summary

HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Lanes, Volumes, Timings
 3: Commercial Access/Home Depot Access & Tecumseh Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1636	33	0	1366	9	0	0	47	0	0	120
Future Volume (vph)	0	1636	33	0	1366	9	0	0	47	0	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.997			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5171	0	0	5131	0	0	0	1644	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	5171	0	0	5131	0	0	0	1644	0	0	1611
Link Speed (k/h)		60			60				50			50
Link Distance (m)		169.1			186.0				136.6			148.8
Travel Time (s)		10.1			11.2				9.8			10.7
Confl. Peds. (#/hr)	5		8	8		5	3		2	2		3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	0	1722	35	0	1438	9	0	0	49	0	0	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1757	0	0	1447	0	0	0	49	0	0	126
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC
 3: Commercial Access/Home Depot Access & Tecumseh Retail Development, Tecumseh Road, Windsor TIS

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Vol, veh/h	0	1636	33	0	1366	9	0	0	47	0	0	120
Future Vol, veh/h	0	1636	33	0	1366	9	0	0	47	0	0	120
Conflicting Peds, #/hr	5	0	8	8	0	5	3	0	2	2	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	0	0	0	1	0	0	0	0	1	0	2
Mvmt Flow	0	1722	35	0	1438	9	0	0	49	0	0	126

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	0	-
Stage 1	0	-	0	-
Stage 2	0	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	23.2	24.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	247	-	-	-	-	310
HCM Lane V/C Ratio	0.2	-	-	-	-	0.407
HCM Control Delay (s)	23.2	-	-	-	-	24.4
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q(veh)	0.7	-	-	-	-	1.9

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔		↔↔↔		↔↔↔		↔↔↔		↔↔↔		↔↔↔	
Traffic Volume (vph)	269	1219	60	223	1266	77	156	171	162	215	159	222
Future Volume (vph)	269	1219	60	223	1266	77	156	171	162	215	159	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00	0.99				
Fit	0.993		0.991		0.929		0.913					
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5092	0	1787	5134	0	1787	1721	0	1770	1701	0
Fit Permitted	0.092			0.117			0.298			0.369		
Satd. Flow (perm)	171	5092	0	220	5134	0	559	1721	0	687	1701	0
Right Turn on Red	Yes		Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)	8		10		50		76					
Link Speed (k/h)	60		60		50		50					
Link Distance (m)	186.0		273.0		289.9		218.2					
Travel Time (s)	11.2		16.4		20.9		15.7					
Confl. Peds. (#/hr)	9		9		7		8					
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	1%	0%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	292	1270	63	232	1319	84	163	186	169	234	173	241
Shared Lane Traffic (%)												
Lane Group Flow (vph)	292	1333	0	232	1403	0	163	355	0	234	414	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		6		8		4					
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	11.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	22.0	43.0		18.0	39.0		47.0	47.0		47.0	47.0	
Total Split (%)	20.4%	39.8%		16.7%	36.1%		43.5%	43.5%		43.5%	43.5%	
Maximum Green (s)	18.0	38.0		14.0	34.0		42.0	42.0		42.0	42.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.5	4.0		3.0	3.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0		7.0		7.0		7.0		7.0		7.0	
Flash Dont Walk (s)	16.0		16.0		22.0		22.0		22.0		22.0	
Pedestrian Calls (#/hr)	0		0		0		0		0		0	
Act Effect Green (s)	60.4	43.5		54.3	40.5		37.6	37.6		37.6	37.6	
Actuated g/C Ratio	0.56	0.40		0.50	0.38		0.35	0.35		0.35	0.35	
v/c Ratio	0.88	0.65		0.78	0.73		0.84	0.56		0.98	0.65	

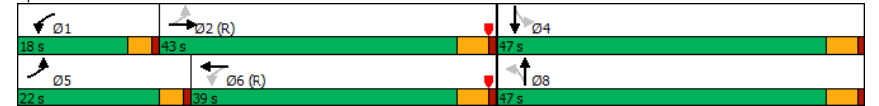
Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	61.9	15.9		36.3	40.4		66.1	27.1		84.4	24.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	61.9	15.9		36.3	40.4		66.1	27.1		84.4	24.7	
LOS	E	B		D	D		E	C		F	C	
Approach Delay	24.2		39.8		39.4		46.2					
Approach LOS	C		D		D		D					
Queue Length 50th (m)	55.4	56.5		42.6	121.0		30.7	50.5		43.3	48.0	
Queue Length 95th (m)	#95.0	63.5		#71.6	137.4		#68.1	78.9		m#90.1	m76.8	
Internal Link Dist (m)	162.0		249.0		265.9		194.2					
Turn Bay Length (m)	25.0		50.0		120.0		120.0					
Base Capacity (vph)	363	2056		315	1930		217	699		267	707	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.80	0.65		0.74	0.73		0.75	0.51		0.88	0.59	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 14 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 35.0
 Intersection Capacity Utilization 89.3%
 Analysis Period (min) 15
 # 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: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	269	1219	60	223	1266	77	156	171	162	215	159	222
Future Volume (veh/h)	269	1219	60	223	1266	77	156	171	162	215	159	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1885	1900	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	292	1270	62	232	1319	84	162	186	169	234	173	241
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	1	0	2	1	2	1	2	2	2
Cap, veh/h	327	1914	93	318	1777	113	254	350	318	302	275	383
Arrive On Green	0.12	0.38	0.38	0.03	0.12	0.12	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1781	5023	245	1795	4979	317	980	900	817	1024	707	986
Grip Volume(v), veh/h	292	867	465	232	916	487	162	0	355	234	0	414
Grip Sat Flow(s),veh/h/ln	1781	1716	1838	1795	1729	1838	980	0	1717	1024	0	1693
Q Serve(g_s), s	10.9	22.6	22.6	8.5	27.7	27.7	17.3	0.0	17.2	24.6	0.0	21.4
Cycle Q Clear(g_c), s	10.9	22.6	22.6	8.5	27.7	27.7	38.7	0.0	17.2	41.8	0.0	21.4
Prop In Lane	1.00		0.13	1.00		0.17	1.00		0.48	1.00		0.58
Lane Grp Cap(c), veh/h	327	1307	700	318	1234	656	254	0	668	302	0	658
V/C Ratio(X)	0.89	0.66	0.66	0.73	0.74	0.74	0.64	0.00	0.53	0.78	0.00	0.63
Avail Cap(c_a), veh/h	402	1307	700	370	1234	656	254	0	668	302	0	658
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.5	27.7	27.7	24.1	42.8	42.8	42.3	0.0	25.4	41.5	0.0	26.7
Incr Delay (d2), s/veh	18.7	2.7	4.9	5.2	3.3	6.0	5.2	0.0	0.8	12.6	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.1	13.1	14.4	6.5	18.3	19.9	7.6	0.0	10.5	11.0	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrip Delay(d),s/veh	42.2	30.4	32.6	29.4	46.1	48.9	47.6	0.0	26.2	54.1	0.0	28.9
LnGrip LOS	D	C	C	C	D	D	D	A	C	D	A	C
Approach Vol, veh/h	1624			1635			517			648		
Approach Delay, s/veh	33.1			44.6			32.9			38.0		
Approach LOS	C			D			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.9	46.1		47.0	17.5	43.5		47.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	38.0		42.0	18.0	34.0		42.0				
Max Q Clear Time (g_c+I1), s	10.5	24.6		43.8	12.9	29.7		40.7				
Green Ext Time (p_c), s	0.4	9.6		0.0	0.6	3.6		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		38.0
HCM 6th LOS		D

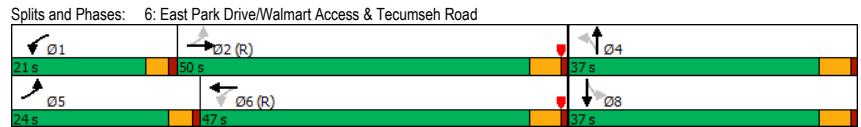
Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	240	1270	126	202	1167	225	143	78	124	143	84	130
Future Volume (vph)	240	1270	126	202	1167	225	143	78	124	143	84	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0		100.0				50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.97	0.99		1.00	0.97	
Frt		0.986			0.976			0.908			0.909	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5049		1805	4998		1787	1696		1805	1671	
Fit Permitted	0.122			0.130			0.432			0.459		
Satd. Flow (perm)	232	5049		246	4998		790	1696		869	1671	
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			43			76			73	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		273.0			268.3			231.1			151.2	
Travel Time (s)		16.4			16.1			16.6			10.9	
Confl. Peds. (#/hr)	4		12	12		4	39		5	5		39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%
Adj. Flow (vph)	247	1309	130	208	1203	232	147	80	128	147	87	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	1439	0	208	1435	0	147	208	0	147	221	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			8		8
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0		35.0
Total Split (s)	24.0	50.0		21.0	47.0		37.0	37.0		37.0		37.0
Total Split (%)	22.2%	46.3%		19.4%	43.5%		34.3%	34.3%		34.3%		34.3%
Maximum Green (s)	20.0	45.0		17.0	42.0		32.0	32.0		32.0		32.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0		23.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effct Green (s)	73.4	58.3		70.9	57.0		22.8	22.8		22.8		22.8
Actuated g/C Ratio	0.68	0.54		0.66	0.53		0.21	0.21		0.21		0.21
v/c Ratio	0.68	0.53		0.60	0.54		0.88	0.50		0.80		0.54

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	28.3	12.3		28.3	13.1		84.4	26.0		69.1	28.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.3	12.3		28.3	13.1		84.4	26.0		69.1	28.5	
LOS	C	B		C	B		F	C		E	C	
Approach Delay		14.7			15.0			50.2			44.7	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	22.9	92.3		26.7	36.5		31.7	25.3		31.0	28.8	
Queue Length 95th (m)	m23.1	120.9		m44.1	m61.9		#53.0	43.5		50.4	47.7	
Internal Link Dist (m)		249.0			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	454	2732		413	2658		234	556		257	546	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.54	0.53		0.50	0.54		0.63	0.37		0.57	0.40	

Intersection Summary	
Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	58 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.88
Intersection Signal Delay:	20.6
Intersection Capacity Utilization:	87.2%
Analysis Period (min):	15
# 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.	



HCM 6th Signalized Intersection Summary
 6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	240	1270	126	202	1167	225	143	78	124	143	84	130
Future Volume (veh/h)	240	1270	126	202	1167	225	143	78	124	143	84	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.97		0.96	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1885	1900	1885	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	247	1309	130	208	1203	232	147	80	128	147	87	134
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	0	0	1	0	1	0	1	0	0	0
Cap, veh/h	340	2469	245	396	2175	419	252	175	280	264	179	276
Arrive On Green	0.19	1.00	1.00	0.05	0.34	0.34	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1810	4753	472	1810	4321	833	1140	639	1023	1162	655	1010
Grp Volume(v), veh/h	247	945	494	208	955	480	147	0	208	147	0	221
Grp Sat Flow(s), veh/h/ln	1810	1716	1794	1810	1716	1723	1140	0	1662	1162	0	1665
Q Serve(g_s), s	7.3	0.0	0.0	5.8	24.5	24.5	13.4	0.0	11.2	13.0	0.0	12.0
Cycle Q Clear(g_c), s	7.3	0.0	0.0	5.8	24.5	24.5	25.4	0.0	11.2	24.2	0.0	12.0
Prop In Lane	1.00		0.26	1.00		0.48	1.00		0.62	1.00		0.61
Lane Grp Cap(c), veh/h	340	1783	932	396	1727	867	252	0	455	264	0	456
V/C Ratio(X)	0.73	0.53	0.53	0.53	0.55	0.55	0.58	0.00	0.46	0.56	0.00	0.48
Avail Cap(c_a), veh/h	506	1783	932	541	1727	867	278	0	492	290	0	493
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.65	0.54	0.54	0.54	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	0.0	11.0	25.9	25.9	43.5	0.0	32.6	42.6	0.0	32.8
Incr Delay (d2), s/veh	1.9	0.7	1.4	0.6	0.7	1.4	3.4	0.0	1.0	2.7	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	3.5	0.3	0.7	3.4	13.6	13.9	6.7	0.0	7.6	6.5	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.1	0.7	1.4	11.6	26.6	27.3	46.9	0.0	33.6	45.3	0.0	34.0
LnGrp LOS	B	A	A	B	C	C	D	A	C	D	A	C
Approach Vol, veh/h	1686			1643			355				368	
Approach Delay, s/veh	3.3			24.9			39.1				38.5	
Approach LOS	A			C			D				D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.3	61.1		34.6	14.1	59.4		34.6				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	45.0		32.0	20.0	42.0		32.0				
Max Q Clear Time (g_c+I1), s	7.8	2.0		27.4	9.3	26.5		26.2				
Green Ext Time (p_c), s	0.5	22.8		1.2	0.7	11.4		1.5				

Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Lanes, Volumes, Timings

2030 Total Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕ ↕ ↕		↕ ↕ ↕		↕ ↕ ↕		↕ ↕ ↕		↕ ↕ ↕		↕ ↕ ↕	
Traffic Volume (vph)	145	1303	165	250	1244	101	318	652	205	170	744	243
Future Volume (vph)	145	1303	165	250	1244	101	318	652	205	170	744	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	1.00		1.00	1.00		0.98
Frt		0.983			0.989			0.964				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5074	0	1805	5094	0	1770	4946	0	1719	5136	1583
Flt Permitted	0.104			0.098			0.181			0.168		
Satd. Flow (perm)	194	5074	0	186	5094	0	337	4946	0	304	5136	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			13			73				200
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	12		23	23		12	3		2	2		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	0%	1%	0%	0%	7%	2%	1%	0%	5%	1%	2%
Adj. Flow (vph)	156	1401	177	269	1338	109	342	701	220	183	800	261
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	1578	0	269	1447	0	342	921	0	183	800	261
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	35.0	35.0
Total Split (s)	13.0	40.0		15.0	42.0		18.0	36.0		17.0	35.0	35.0
Total Split (%)	12.0%	37.0%		13.9%	38.9%		16.7%	33.3%		15.7%	32.4%	32.4%
Maximum Green (s)	9.0	34.0		11.0	36.0		14.0	30.0		13.0	29.0	29.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			5.0	5.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	49.2	38.5		53.7	40.7		42.4	26.6		38.4	24.5	24.5
Actuated g/C Ratio	0.46	0.36		0.50	0.38		0.39	0.25		0.36	0.23	0.23
v/c Ratio	0.72	0.87		1.05	0.75		1.08	0.72		0.69	0.69	0.51

Lanes, Volumes, Timings

2030 Total Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	52.0	29.7		96.9	32.7		98.9	37.6		40.4	40.3	15.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	52.0	29.7		96.9	32.7		98.9	37.6		40.4	40.3	15.4
LOS	D	C		F	C		F	D		D	D	B
Approach Delay		31.7			42.7			54.2				35.1
Approach LOS		C			D			D				D
Queue Length 50th (m)	20.8	84.9		-47.8	100.8		-64.3	64.1		30.7	49.4	8.8
Queue Length 95th (m)	#51.6	#153.3		#104.9	127.3		#116.6	75.8		m51.1	63.9	33.8
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	220	1820		257	1928		318	1426		281	1379	564
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	0.71	0.87		1.05	0.75		1.08	0.65		0.65	0.58	0.46

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 52 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 40.4

Intersection LOS: D

Intersection Capacity Utilization 92.5%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

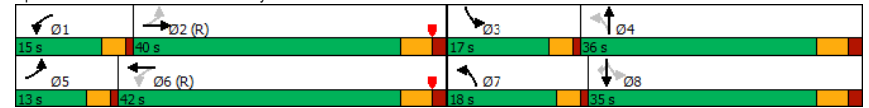
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2030 Total Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	1303	165	250	1244	101	318	652	205	170	744	243
Future Volume (veh/h)	145	1303	165	250	1244	101	318	652	205	170	744	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1900	1885	1900	1900	1796	1870	1885	1900	1826	1885	1870
Adj Flow Rate, veh/h	156	1401	177	269	1338	109	342	701	220	183	800	261
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	1	0	0	7	2	1	0	5	1	2
Cap, veh/h	251	1635	207	269	1857	151	343	1024	317	296	1193	366
Arrive On Green	0.02	0.12	0.12	0.10	0.38	0.38	0.13	0.26	0.26	0.07	0.16	0.16
Sat Flow, veh/h	1781	4651	587	1810	4880	398	1781	3891	1204	1739	5147	1579
Grp Volume(v), veh/h	156	1042	536	269	948	499	342	617	304	183	800	261
Grp Sat Flow(s),veh/h/ln	1781	1729	1780	1810	1729	1820	1781	1716	1664	1739	1716	1579
Q Serve(g_s), s	5.9	31.9	31.9	11.0	25.3	25.3	14.0	17.4	17.8	8.5	15.8	17.0
Cycle Q Clear(g_c), s	5.9	31.9	31.9	11.0	25.3	25.3	14.0	17.4	17.8	8.5	15.8	17.0
Prop In Lane	1.00		0.33	1.00		0.22	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	251	1216	626	269	1316	692	343	903	438	296	1193	366
V/C Ratio(X)	0.62	0.86	0.86	1.00	0.72	0.72	1.00	0.68	0.69	0.62	0.67	0.71
Avail Cap(c_a), veh/h	269	1216	626	269	1316	692	343	953	462	334	1382	424
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	0.67
Upstream Filter(I)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	0.65	0.65	0.65	0.65
Uniform Delay (d), s/veh	24.9	45.1	45.1	28.2	28.6	28.6	30.8	35.7	35.9	29.5	41.7	42.2
Incr Delay (d2), s/veh	3.2	6.5	11.8	54.4	3.4	6.4	47.9	2.0	4.5	1.8	0.8	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	21.3	22.9	12.6	14.5	15.9	15.6	10.9	11.2	5.8	9.8	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	51.6	56.9	82.6	32.0	34.9	78.7	37.8	40.4	31.4	42.5	45.6
LnGrp LOS	C	D	E	F	C	C	E	D	D	C	D	D
Approach Vol, veh/h	1734			1716			1263			1244		
Approach Delay, s/veh	51.1			40.8			49.5			41.5		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	44.0	14.6	34.4	11.9	47.1	18.0	31.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	11.0	34.0	13.0	30.0	9.0	36.0	14.0	29.0				
Max Q Clear Time (g_c+1), s	13.0	33.9	10.5	19.8	7.9	27.3	16.0	19.0				
Green Ext Time (p_c), s	0.0	0.1	0.2	5.4	0.1	7.0	0.0	5.7				

Intersection Summary	
HCM 6th Ctrl Delay	45.8
HCM 6th LOS	D

Lanes, Volumes, Timings

2030 Total Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	454	109	357	129	112	127	315	434	178	127	592	442
Future Volume (vph)	454	109	357	129	112	127	315	434	178	127	592	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00		0.98	1.00	0.99	
Frt	0.885				0.920				0.850		0.936	
Fit Protected	0.950				0.950				0.950			
Satd. Flow (prot)	1805		1663		0		1671		1697		0	
Fit Permitted	0.322				0.442				0.116		0.477	
Satd. Flow (perm)	610		1663		0		777		1697		0	
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)				197			52			198		
Link Speed (k/h)				50			50			60		
Link Distance (m)				644.8			106.2			230.9		
Travel Time (s)				46.4			7.6			13.9		
Confl. Peds. (#/hr)	4		2		2		4		5		1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	8%	0%	4%	0%	0%	6%	3%	1%	0%
Adj. Flow (vph)	504	121	397	143	124	141	350	482	198	141	658	491
Shared Lane Traffic (%)												
Lane Group Flow (vph)	504	518	0	143	265	0	350	482	198	141	1149	0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4				8		2			2	6	
Detector Phase	7	4			8		8		5	2	1	6
Switch Phase												
Minimum Initial (s)	7.0	11.0			11.0	11.0			7.0	11.0	7.0	11.0
Minimum Split (s)	11.0	35.0			35.0	35.0			11.0	36.0	36.0	11.0
Total Split (s)	19.0	54.0			35.0	35.0			18.0	43.0	43.0	11.0
Total Split (%)	17.6%	50.0%			32.4%	32.4%			16.7%	39.8%	39.8%	10.2%
Maximum Green (s)	15.0	48.0			29.0	29.0			14.0	37.0	37.0	7.0
Yellow Time (s)	3.0	4.0			4.0	4.0			3.0	4.0	4.0	3.0
All-Red Time (s)	1.0	2.0			2.0	2.0			1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0			0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0			6.0	6.0			4.0	6.0	6.0	4.0
Lead/Lag	Lead				Lag	Lag			Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes				Yes	Yes			Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0	4.0			3.0	4.0	4.0	3.0
Recall Mode	None	None			None	None			None	C-Max	C-Max	None
Walk Time (s)		7.0			7.0	7.0			7.0	7.0	7.0	7.0
Flash Dont Walk (s)		22.0			22.0	22.0			23.0	23.0	23.0	23.0
Pedestrian Calls (#/hr)		0			0	0			0	0	0	0
Act Effct Green (s)	44.4	42.4			23.4	23.4			55.6	42.6	42.6	44.6
Actuated g/C Ratio	0.41	0.39			0.22	0.22			0.51	0.39	0.39	0.41
v/c Ratio	1.21	0.67			0.85	0.65			1.10	0.34	0.28	0.34

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2030 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

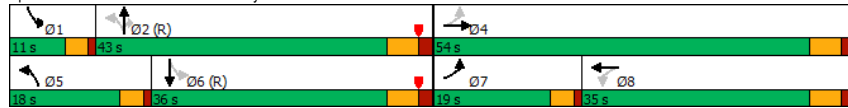


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	141.6	20.1		79.4	37.6		118.0	16.0	2.2	18.9	29.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	141.6	20.1		79.4	37.6		118.0	16.0	2.2	18.9	29.7	
LOS	F	C		E	D		F	B	A	B	C	
Approach Delay	80.0			52.2			48.0			28.5		
Approach LOS	E			D			D			C		
Queue Length 50th (m)	~110.9	56.4		30.1	42.4		~72.3	22.2	0.0	16.4	70.0	
Queue Length 95th (m)	#182.5	88.1		#58.6	67.2		m#135.3	35.7	m4.5	30.5	92.1	
Internal Link Dist (m)	620.8			82.2			206.9			268.9		
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	416	848		208	493		318	1424	707	419	1688	
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	1.21	0.61		0.69	0.54		1.10	0.34	0.28	0.34	0.68	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Red
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.21
 Intersection Signal Delay: 50.5
 Intersection LOS: D
 Intersection Capacity Utilization 99.5%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

2030 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	454	109	357	129	112	127	315	434	178	127	592	442
Future Volume (veh/h)	454	109	357	129	112	127	315	434	178	127	592	442
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1841	1900	1900	1811	1856	1885	1900
Adj Flow Rate, veh/h	504	121	397	143	124	141	350	482	198	141	658	491
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	8	0	4	0	0	6	3	1	0
Cap, veh/h	467	171	563	225	214	244	301	1251	528	387	966	446
Arrive On Green	0.14	0.44	0.44	0.26	0.26	0.26	0.22	0.58	0.58	0.06	0.28	0.28
Sat Flow, veh/h	1810	389	1277	840	809	920	1810	3610	1524	1767	3431	1583
Grp Volume(v), veh/h	504	0	518	143	0	265	350	482	198	141	658	491
Grp Sat Flow(s), veh/h/ln	1810	0	1666	840	0	1729	1810	1805	1524	1767	1716	1583
Q Serve(g_s), s	15.0	0.0	27.3	18.0	0.0	14.4	14.0	7.8	7.6	6.1	18.4	30.4
Cycle Q Clear(g_c), s	15.0	0.0	27.3	26.3	0.0	14.4	14.0	7.8	7.6	6.1	18.4	30.4
Prop In Lane	1.00		0.77	1.00		0.53	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	467	0	734	225	0	458	301	1251	528	387	966	446
V/C Ratio(X)	1.08	0.00	0.71	0.64	0.00	0.58	1.16	0.39	0.38	0.36	0.68	1.10
Avail Cap(c_a), veh/h	467	0	740	228	0	464	301	1251	528	387	966	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.62	0.62	0.62	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	24.5	42.9	0.0	34.5	27.1	16.5	16.5	25.1	34.5	38.8
Incr Delay (d2), s/veh	64.9	0.0	3.3	6.5	0.0	2.2	93.6	0.6	1.3	0.6	3.9	72.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	19.3	0.0	15.1	6.9	0.0	9.7	17.8	4.6	4.0	4.1	11.6	28.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	96.1	0.0	27.9	49.4	0.0	36.6	120.7	17.1	17.7	25.6	38.4	111.7
LnGrp LOS	F	A	C	D	A	D	F	B	B	C	D	F
Approach Vol, veh/h	1022			408			1030			1290		
Approach Delay, s/veh	61.5			41.1			52.4			64.9		
Approach LOS	E			D			D			E		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	43.4		53.6	18.0	36.4	19.0	34.6				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	7.0	37.0		48.0	14.0	30.0	15.0	29.0				
Max Q Clear Time (g_c+I1), s	8.1	9.8		29.3	16.0	32.4	17.0	28.3				
Green Ext Time (p_c), s	0.0	7.0		5.5	0.0	0.0	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay 58.0
 HCM 6th LOS E

Lanes, Volumes, Timings

2030 Total Saturday Peak Hour

9: Rose-Ville Gardens Drive & Rose-Ville Garden Access Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	141	163	174	343	433	5
Future Volume (vph)	141	163	174	343	433	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.928			0.999		
Fit Protected	0.977		0.950			
Satd. Flow (prot)	1689	0	1770	1863	1861	0
Fit Permitted	0.977		0.950			
Satd. Flow (perm)	1689	0	1770	1863	1861	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	144.2			218.2	147.0	
Travel Time (s)	10.4			15.7	10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	177	189	373	471	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	330	0	189	373	476	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.5%
ICU Level of Service	B
Analysis Period (min)	15

HCM 6th TWSC

2030 Total Saturday Peak Hour

9: Rose-Ville Gardens Drive & Rose-Ville Garden Access Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	11.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	141	163	174	343	433	5
Future Vol, veh/h	141	163	174	343	433	5
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	153	177	189	373	471	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1225	474	476
Stage 1	474	-	-
Stage 2	751	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	198	590	1086
Stage 1	626	-	-
Stage 2	466	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	164	590	1086
Mov Cap-2 Maneuver	298	-	-
Stage 1	517	-	-
Stage 2	466	-	-

Approach	EB	NB	SB
HCM Control Delay, s	42.7	3	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1086	-	406	-
HCM Lane V/C Ratio	0.174	-	0.814	-
HCM Control Delay (s)	9	-	42.7	-
HCM Lane LOS	A	-	E	-
HCM 95th %tile Q(veh)	0.6	-	7.4	-

Lanes, Volumes, Timings

2030 Total Saturday Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	555	283	155	524	334	150
Future Volume (vph)	555	283	155	524	334	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.954					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1777	0	1770	1863	1770	1583
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1777	0	1770	1863	1770	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	58.7			644.8	147.0	
Travel Time (s)	4.2			46.4	10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	603	308	168	570	363	163
Shared Lane Traffic (%)						
Lane Group Flow (vph)	911	0	168	570	363	163
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	83.6%
ICU Level of Service E	
Analysis Period (min)	15

HCM 6th TWSC

2030 Total Saturday Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	70.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	555	283	155	524	334	150
Future Vol, veh/h	555	283	155	524	334	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	603	308	168	570	363	163

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	911
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	748
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	748
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

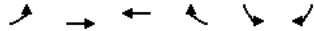
Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	289
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	204	408	-	-	748	-
HCM Lane V/C Ratio	1.78	0.4	-	-	0.225	-
HCM Control Delay (s)	\$ 410	19.6	-	-	11.2	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	25.3	1.9	-	-	0.9	-

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

Lanes, Volumes, Timings
11: Catherine Street & Access A

2030 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Volume (vph)	160	107	144	343	461	146
Future Volume (vph)	160	107	144	343	461	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.905			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1686	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1686	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		126.5	122.0		164.6	
Travel Time (s)		9.1	8.8		11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	116	157	373	501	159
Shared Lane Traffic (%)						
Lane Group Flow (vph)	174	116	530	0	501	159
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	73.1%
ICU Level of Service	D
Analysis Period (min)	15

HCM 6th TWSC
11: Catherine Street & Access A

2030 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	51.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Vol, veh/h	160	107	144	343	461	146
Future Vol, veh/h	160	107	144	343	461	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	174	116	157	373	501	159

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	530	0	0
Stage 1	-	-	344
Stage 2	-	-	464
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	1037	-	350
Stage 1	-	-	718
Stage 2	-	-	633
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1037	-	291
Mov Cap-2 Maneuver	-	-	413
Stage 1	-	-	597
Stage 2	-	-	633

Approach	EB	WB	SB
HCM Control Delay, s	5.5	0	113.5
HCM LOS			F

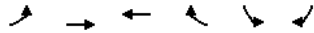
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1037	-	-	-	413	699
HCM Lane V/C Ratio	0.168	-	-	-	1.213	0.227
HCM Control Delay (s)	9.2	-	-	-	145.7	11.7
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.6	-	-	-	20.3	0.9

Notes

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

Lanes, Volumes, Timings
12: Catherine Street & Access B

2030 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔		↔	↔
Traffic Volume (vph)	107	461	343	515	377	144
Future Volume (vph)	107	461	343	515	377	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.919			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1712	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1712	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		122.0	58.7		134.0	
Travel Time (s)		8.8	4.2		9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	501	373	560	410	157
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	501	933	0	410	157
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	86.4%
ICU Level of Service	E
Analysis Period (min)	15

HCM 6th TWSC
12: Catherine Street & Access B

2030 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	58.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔		↔	↔
Traffic Vol, veh/h	107	461	343	515	377	144
Future Vol, veh/h	107	461	343	515	377	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	501	373	560	410	157

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	933	0	0
Stage 1	-	-	653
Stage 2	-	-	733
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	734	-	~ 158
Stage 1	-	-	518
Stage 2	-	-	475
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	734	-	~ 133
Mov Cap-2 Maneuver	-	-	~ 268
Stage 1	-	-	436
Stage 2	-	-	475

Approach	EB	WB	SB
HCM Control Delay, s	2	0	214.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	734	-	-	-	268	467
HCM Lane V/C Ratio	0.158	-	-	-	1.529	0.335
HCM Control Delay (s)	10.8	-	-	-	290.5	16.5
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	0.6	-	-	-	24.1	1.5

Notes

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

Appendix J

2035 Background Traffic Operations Reports



Lanes, Volumes, Timings

2035 Background AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↖	↖	↖	↖↖	↖	↖	↖↖	↖	↖	↖↖	↖
Traffic Volume (vph)	55	760	73	96	820	201	93	189	113	232	274	81
Future Volume (vph)	55	760	73	96	820	201	93	189	113	232	274	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00					0.99	1.00		
Frt		0.987				0.850			0.850		0.966	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4935	0	1671	3505	1599	1671	3471	1553	1787	3411	0
Flt Permitted	0.226			0.235			0.375			0.467		
Satd. Flow (perm)	421	4935	0	413	3505	1599	660	3471	1533	878	3411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				234			131			40
Link Speed (k/h)		60			60			50				50
Link Distance (m)		230.2			261.9			222.3				200.9
Travel Time (s)		13.8			15.7			16.0				14.5
Confl. Peds. (#/hr)			1	1					1	1		
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 (%)	2%	3%	10%	8%	3%	1%	8%	4%	4%	1%	2%	3%
Adj. Flow (vph)	64	884	85	112	953	234	108	220	131	270	319	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	969	0	112	953	234	108	220	131	270	413	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	16.0	38.0	
Total Split (%)	10.8%	39.2%		10.8%	39.2%	39.2%	12.7%	34.3%	34.3%	15.7%	37.3%	
Maximum Green (s)	7.0	35.0		7.0	35.0	35.0	9.0	30.0	30.0	12.0	33.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	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	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	59.1	51.1		59.9	53.3	53.3	23.9	13.9	13.9	29.9	16.9	
Actuated g/C Ratio	0.58	0.50		0.59	0.52	0.52	0.23	0.14	0.14	0.29	0.17	
v/c Ratio	0.19	0.39		0.34	0.52	0.25	0.44	0.47	0.41	0.74	0.69	

Lanes, Volumes, Timings

2035 Background AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	10.0	16.5		9.8	23.3	11.6	31.9	43.3	10.7	42.6	42.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.0	16.5		9.8	23.3	11.6	31.9	43.3	10.7	42.6	42.2	
LOS	A	B		A	C	B	C	D	B	D	D	
Approach Delay		16.1			20.0			31.3			42.3	
Approach LOS		B			B			C			D	
Queue Length 50th (m)	4.8	42.9		10.0	111.4	32.4	16.8	22.6	0.0	46.2	39.1	
Queue Length 95th (m)	10.9	55.6		m21.5	127.0	38.3	27.3	31.3	14.2	63.0	49.7	
Internal Link Dist (m)		206.2			237.9			198.3			176.9	
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	336	2481		328	1832	947	243	1020	543	364	1130	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.39		0.34	0.52	0.25	0.44	0.22	0.24	0.74	0.37	

Intersection Summary

Area Type: Other

Cycle Length: 102

Actuated Cycle Length: 102

Offset: 36 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 24.7

Intersection LOS: C

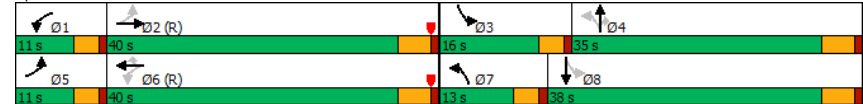
Intersection Capacity Utilization 71.7%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

1: Jefferson Boulevard & Tecumseh Road

2035 Background AM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔	↔		↔↔↔	↔	↔	↔↔	↔
Traffic Volume (veh/h)	55	760	73	96	820	201	93	189	113	232	274	81
Future Volume (veh/h)	55	760	73	96	820	201	93	189	113	232	274	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1752	1781	1856	1885	1781	1841	1885	1870	1856	1856
Adj Flow Rate, veh/h	64	884	85	112	953	234	108	220	131	270	319	94
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
Percent Heavy Veh, %	2	3	10	8	3	1	8	4	4	1	2	3
Cap, veh/h	355	2393	229	400	1824	826	261	458	204	357	447	130
Arrive On Green	0.06	0.51	0.51	0.09	0.69	0.69	0.08	0.13	0.13	0.12	0.16	0.16
Sat Flow, veh/h	1781	4701	450	1697	3526	1597	1697	3497	1556	1795	2717	787
Grp Volume(v), veh/h	64	634	335	112	953	234	108	220	131	270	207	206
Grp Sat Flow(s),veh/h/ln	1781	1689	1774	1697	1763	1597	1697	1749	1556	1795	1777	1727
Q Serve(g_s), s	1.6	11.6	11.6	3.1	13.4	5.8	5.4	5.9	8.1	12.0	11.2	11.6
Cycle Q Clear(g_c), s	1.6	11.6	11.6	3.1	13.4	5.8	5.4	5.9	8.1	12.0	11.2	11.6
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	355	1719	903	400	1824	826	261	458	204	357	292	284
V/C Ratio(X)	0.18	0.37	0.37	0.28	0.52	0.28	0.41	0.48	0.64	0.76	0.71	0.73
Avail Cap(c_a), veh/h	375	1719	903	405	1824	826	268	1029	458	357	575	559
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.55	0.55	0.55	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.8	15.1	15.1	10.4	9.8	8.6	33.9	41.1	42.1	33.8	40.3	40.4
Incr Delay (d2), s/veh	0.2	0.6	1.2	0.2	0.6	0.5	1.1	0.8	3.4	8.9	3.1	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	2.1	2.5	0.2	1.9	1.1	2.6	3.1	4.0	7.5	6.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.1	15.7	16.3	10.7	10.4	9.0	35.0	41.9	45.4	42.7	43.4	43.9
LnGrp LOS	B	B	B	B	B	A	C	D	D	D	D	D
Approach Vol, veh/h	1033			1299			459			683		
Approach Delay, s/veh	15.6			10.1			41.3			43.3		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	56.9	16.0	18.4	9.9	57.8	12.6	21.8				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	7.0	35.0	12.0	30.0	7.0	35.0	9.0	33.0				
Max Q Clear Time (g_c+I1), s	5.1	13.6	14.0	10.1	3.6	15.4	7.4	13.6				
Green Ext Time (p_c), s	0.1	7.7	0.0	2.2	0.0	8.9	0.0	2.8				
Intersection Summary												
HCM 6th Ctrl Delay	22.4											
HCM 6th LOS	C											

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

2035 Background AM Peak Hour

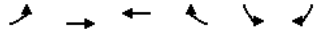
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (vph)	0	1105	1117	0	0	0
Future Volume (vph)	0	1105	1117	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1863	5085	5085	0	1863	1863
Fit Permitted						
Satd. Flow (perm)	1863	5085	5085	0	1863	1863
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
Link Speed (k/h)		50	50		50	
Link Distance (m)		261.9	175.4		228.1	
Travel Time (s)		18.9	12.6		16.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1201	1214	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1201	1214	0	0	0
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	20.0	60.0	40.0		42.0	42.0
Total Split (%)	19.6%	58.8%	39.2%		41.2%	41.2%
Maximum Green (s)	16.0	55.0	35.0		37.0	37.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		31.7	31.7			
Actuated g/C Ratio		0.31	0.31			
v/c Ratio		0.76	0.77			
Control Delay		33.8	26.7			
Queue Delay		0.0	0.0			
Total Delay		33.8	26.7			

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

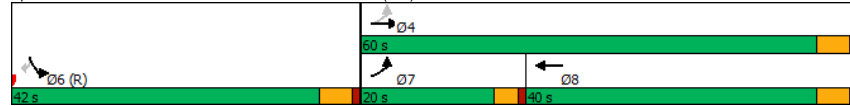


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		C	C			
Approach Delay		33.8	26.7			
Approach LOS		C	C			
Queue Length 50th (m)		79.6	54.9			
Queue Length 95th (m)		94.5	72.0			
Internal Link Dist (m)		237.9	151.4		204.1	
Turn Bay Length (m)						
Base Capacity (vph)		2741	1767			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.44	0.69			

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	30.2
Intersection LOS:	C
Intersection Capacity Utilization:	25.7%
ICU Level of Service:	A
Analysis Period (min):	15

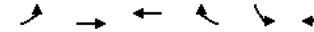
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	0	1105	1117	0	0	0
Future Volume (veh/h)	0	1105	1117	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1201	1214	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	150	1869	1869	0	955	850
Arrive On Green	0.00	0.12	0.37	0.00	0.00	0.00
Sat Flow, veh/h	1781	5274	5443	0	1781	1585
Grp Volume(v), veh/h	0	1201	1214	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	22.9	20.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	22.9	20.2	0.0	0.0	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	150	1869	1869	0	955	850
V/C Ratio(X)	0.00	0.64	0.65	0.00	0.00	0.00
Avail Cap(c_a), veh/h	427	2753	1869	0	955	850
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.89	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	38.5	26.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	10.0	7.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	38.8	27.7	0.0	0.0	0.0
LnGrp LOS	A	D	C	A	A	A
Approach Vol, veh/h	1201	1214	0			
Approach Delay, s/veh	38.8	27.7	0.0			
Approach LOS	D	C				

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	42.3	59.7	0.0	42.3
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	55.0	37.0	16.0	35.0
Max Q Clear Time (g_c+I1), s	24.9	0.0	0.0	22.2
Green Ext Time (p_c), s	12.5	0.0	0.0	7.6

Intersection Summary

HCM 6th Ctrl Delay	33.2
HCM 6th LOS	C

Lanes, Volumes, Timings

2035 Background AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Mall Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1111	33	0	985	7	0	0	20	0	0	62
Future Volume (vph)	0	1111	33	0	985	7	0	0	20	0	0	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.996			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5068	0	0	5032	0	0	0	1644	0	0	1627
Flt Permitted												
Satd. Flow (perm)	0	5068	0	0	5032	0	0	0	1644	0	0	1627
Link Speed (k/h)		60			60				50			50
Link Distance (m)		175.4			186.0				136.6			186.3
Travel Time (s)		10.5			11.2				9.8			13.4
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	2%	0%	3%	3%	0%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	0	1277	38	0	1132	8	0	0	23	0	0	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1315	0	0	1140	0	0	0	23	0	0	71
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.2%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2035 Background AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Mall Development, Tecumseh Road, Windsor TIS

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Vol, veh/h	0	1111	33	0	985	7	0	0	20	0	0	62
Future Vol, veh/h	0	1111	33	0	985	7	0	0	20	0	0	62
Conflicting Peds, #/hr	2	0	1	1	0	2	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	2	0	3	3	0	0	0	0	2	0	1
Mvmt Flow	0	1277	38	0	1132	8	0	0	23	0	0	71

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	0	-
Stage 1	0	-	0	-
Stage 2	0	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	16	16
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	349	-	-	-	-	397
HCM Lane V/C Ratio	0.066	-	-	-	-	0.18
HCM Control Delay (s)	16	-	-	-	-	16
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.6

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	155	987	54	145	828	3	108	7	135	42	5	215
Future Volume (vph)	155	987	54	145	828	3	108	7	135	42	5	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00	0.98				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4942	0	1626	5031	0	1736	1541	0	1770	1589	0
Flt Permitted	0.315			0.211			0.375			0.573		
Satd. Flow (perm)	587	4942	0	360	5031	0	684	1541	0	1067	1589	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			1			141				174
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				214.6
Travel Time (s)		11.2			16.4			20.9				15.5
Confl. Peds. (#/hr)			10	10			3			5		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	11%	3%	2%	4%	2%	4%	2%	2%	2%
Adj. Flow (vph)	161	1028	56	151	863	3	113	7	141	44	5	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	1084	0	151	866	0	113	148	0	44	229	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	28.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	55.0	55.0		13.0	68.0		34.0	34.0		34.0	34.0	
Total Split (%)	53.9%	53.9%		12.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	50.0	50.0		9.0	63.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
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	
Recall Mode	C-Max	C-Max		None	C-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)	16.0	16.0		16.0	22.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	61.5	61.5		74.6	73.6		18.4	18.4		18.4	18.4	
Actuated g/C Ratio	0.60	0.60		0.73	0.72		0.18	0.18		0.18	0.18	
v/c Ratio	0.46	0.36		0.42	0.24		0.92	0.38		0.23	0.53	

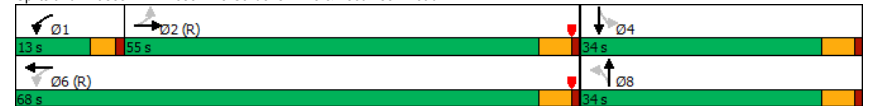
Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	7.4	1.1		6.9	2.9		102.2	9.1		29.9	10.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.4	1.1		6.9	2.9		102.2	9.1		29.9	10.2	
LOS	A	A		A	A		F	A		C	B	
Approach Delay		2.0			3.5			49.4			13.4	
Approach LOS		A			A			D			B	
Queue Length 50th (m)	1.7	2.8		2.6	7.1		23.5	1.2		8.1	12.8	
Queue Length 95th (m)	19.0	4.3		6.1	10.4		#45.7	16.2		13.0	12.4	
Internal Link Dist (m)		162.0			249.0			265.9			190.6	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	353	2984		375	3629		194	539		303	576	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.46	0.36		0.40	0.24		0.58	0.27		0.15	0.40	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 13 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 8.1 Intersection LOS: A
 Intersection Capacity Utilization 66.9% 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: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	155	987	54	145	828	3	108	7	135	42	5	215
Future Volume (veh/h)	155	987	54	145	828	3	108	7	135	42	5	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1841	1870	1737	1856	1870	1841	1870	1841	1870	1870	1870
Adj Flow Rate, veh/h	161	1028	56	151	862	3	112	7	141	44	5	224
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	4	2	11	3	2	4	2	4	2	2	2
Cap, veh/h	418	2656	144	387	3396	12	211	19	378	284	9	389
Arrive On Green	0.54	0.54	0.54	0.14	1.00	1.00	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	638	4875	265	1654	5211	18	1133	75	1512	1235	35	1556
Grp Volume(v), veh/h	161	706	378	151	559	306	112	0	148	44	0	229
Grp Sat Flow(s), veh/h/ln	638	1675	1790	1654	1689	1852	1133	0	1587	1235	0	1590
Q Serve(g_s), s	15.7	12.4	12.4	3.9	0.0	0.0	9.8	0.0	7.9	3.1	0.0	12.9
Cycle Q Clear(g_c), s	15.7	12.4	12.4	3.9	0.0	0.0	22.7	0.0	7.9	11.0	0.0	12.9
Prop In Lane	1.00		0.15	1.00		0.01	1.00		0.95	1.00		0.98
Lane Grp Cap(c), veh/h	418	1825	975	387	2201	1207	211	0	397	284	0	398
V/C Ratio(X)	0.39	0.39	0.39	0.39	0.25	0.25	0.53	0.00	0.37	0.15	0.00	0.58
Avail Cap(c_a), veh/h	418	1825	975	421	2201	1207	250	0	451	326	0	452
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	13.4	13.4	8.4	0.0	0.0	43.4	0.0	31.6	36.2	0.0	33.5
Incr Delay (d2), s/veh	2.7	0.6	1.2	0.6	0.3	0.5	2.1	0.0	0.6	0.3	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	1.6	2.0	0.1	0.1	0.3	3.4	0.0	3.2	1.1	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.8	14.0	14.6	9.0	0.3	0.5	45.5	0.0	32.2	36.4	0.0	34.9
LnGrp LOS	B	B	B	A	A	A	D	A	C	D	A	C
Approach Vol, veh/h	1245			1016			260			273		
Approach Delay, s/veh	14.5			1.6			37.9			35.1		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2	4	6	8							
Phs Duration (G+Y+Rc), s	10.9	60.6	30.5	71.5	30.5							
Change Period (Y+Rc), s	4.0	5.0	5.0	5.0	5.0							
Max Green Setting (Gmax), s	9.0	50.0	29.0	63.0	29.0							
Max Q Clear Time (g_c+1), s	5.9	17.7	14.9	2.0	24.7							
Green Ext Time (p_c), s	0.2	12.9	1.6	8.3	0.6							

Intersection Summary		
HCM 6th Ctrl Delay	14.0	
HCM 6th LOS	B	

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	152	840	114	106	850	141	72	46	39	77	32	62
Future Volume (vph)	152	840	114	106	850	141	72	46	39	77	32	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00			1.00		0.99
Frt	0.982				0.979		0.931				0.901	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	4880	0	1805	4944	0	1671	1769	0	1787	1693	0
Fit Permitted	0.223			0.238			0.658			0.694		
Satd. Flow (perm)	420	4880	0	451	4944	0	1152	1769	0	1306	1693	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			37		44			70		
Link Speed (k/h)		60			60		50			50		
Link Distance (m)	273.0				268.3		231.1				151.2	
Travel Time (s)	16.4				16.1		16.6				10.9	
Confl. Peds. (#/hr)			6		6		5				5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	4%	0%	3%	1%	8%	0%	0%	1%	0%	0%
Adj. Flow (vph)	171	944	128	119	955	158	81	52	44	87	36	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	1072	0	119	1113	0	81	96	0	87	106	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			8		8
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0		35.0
Total Split (s)	20.0	50.0		15.0	45.0		37.0	37.0		37.0		37.0
Total Split (%)	19.6%	49.0%		14.7%	44.1%		36.3%	36.3%		36.3%		36.3%
Maximum Green (s)	16.0	45.0		11.0	40.0		32.0	32.0		32.0		32.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
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
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	23.0				23.0		23.0		23.0		23.0	
Pedestrian Calls (#/hr)	0				0		0		0		0	
Act Effct Green (s)	76.4	66.8		75.6	66.4		13.0	13.0		13.0		13.0
Actuated g/C Ratio	0.75	0.65		0.74	0.65		0.13	0.13		0.13		0.13
v/c Ratio	0.40	0.33		0.27	0.34		0.55	0.37		0.52		0.38

Lanes, Volumes, Timings

2035 Background AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

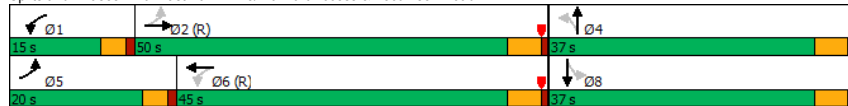


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	14.7	19.0		4.1	4.4		55.6	26.8		52.4	20.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.7	19.0		4.1	4.4		55.6	26.8		52.4	20.0	
LOS	B	B		A	A		E	C		D	C	
Approach Delay		18.4			4.4			40.0			34.6	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	22.8	51.2		2.5	11.6		16.2	10.0		17.4	6.9	
Queue Length 95th (m)	40.5	70.2		m5.6	m16.5		29.9	23.7		31.1	21.2	
Internal Link Dist (m)		249.0			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	544	3208		492	3232		361	585		409	579	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.31	0.33		0.24	0.34		0.22	0.16		0.21	0.18	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 93 (91%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 14.8
 Intersection LOS: B
 Intersection Capacity Utilization 56.4%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Background AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	152	840	114	106	850	141	72	46	39	77	32	62
Future Volume (veh/h)	152	840	114	106	850	141	72	46	39	77	32	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1885	1841	1841	1900	1856	1885	1781	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	171	944	128	119	955	158	81	52	44	87	36	70
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	0	3	1	8	0	0	1	0	0
Cap, veh/h	525	2773	375	484	2703	446	206	158	134	225	96	186
Arrive On Green	0.08	0.62	0.62	0.15	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1795	4474	605	1810	4377	722	1219	946	801	1301	573	1114
Grp Volume(v), veh/h	171	706	366	119	736	377	81	0	96	87	0	106
Grp Sat Flow(s), veh/h/ln	1795	1675	1728	1810	1689	1721	1219	0	1747	1301	0	1688
Q Serve(g_s), s	3.3	10.4	10.4	2.2	0.0	0.0	6.5	0.0	4.9	6.4	0.0	5.7
Cycle Q Clear(g_c), s	3.3	10.4	10.4	2.2	0.0	0.0	12.1	0.0	4.9	11.4	0.0	5.7
Prop In Lane	1.00		0.35	1.00		0.42	1.00		0.46	1.00		0.66
Lane Grp Cap(c), veh/h	525	2076	1071	484	2086	1063	206	0	292	225	0	282
V/C Ratio(X)	0.33	0.34	0.34	0.25	0.35	0.35	0.39	0.00	0.33	0.39	0.00	0.38
Avail Cap(c_a), veh/h	667	2076	1071	542	2086	1063	385	0	548	416	0	529
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	0.86	0.86	0.86	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.2	9.3	9.4	5.3	0.0	0.0	43.1	0.0	37.4	42.4	0.0	37.7
Incr Delay (d2), s/veh	0.3	0.4	0.8	0.2	0.4	0.8	1.2	0.0	0.6	1.1	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.2	0.4	0.1	0.2	0.4	2.4	0.0	2.5	2.5	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.6	9.8	10.2	5.5	0.4	0.8	44.3	0.0	38.1	43.5	0.0	38.6
LnGrp LOS	A	A	B	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h		1243			1232			177				193
Approach Delay, s/veh		9.3			1.0			40.9				40.8
Approach LOS		A			A			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	68.2		22.1	11.9	68.0		22.1				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	45.0		32.0	16.0	40.0		32.0				
Max Q Clear Time (g_c+I1), s	4.2	12.4		14.1	5.3	2.0		13.4				
Green Ext Time (p_c), s	0.2	10.2		0.9	0.5	11.3		1.0				

Intersection Summary

HCM 6th Ctrl Delay 9.8
 HCM 6th LOS A

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

2035 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	109	727	148	135	786	53	264	339	100	98	409	61
Future Volume (vph)	109	727	148	135	786	53	264	339	100	98	409	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	1.00		1.00		1.00	
Fit		0.975			0.991			0.966				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	4934	0	1736	5015	0	1752	4742	0	1517	4940	1495
Fit Permitted	0.269			0.254			0.340			0.471		
Satd. Flow (perm)	468	4934	0	463	5015	0	626	4742	0	750	4940	1473
Right Turn on Red			Yes		Yes		Yes			Yes		Yes
Satd. Flow (RTOR)		45			11			78				118
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Confl. Peds. (#/hr)	5		7	7		5	3		6	6		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	1%	8%	4%	1%	23%	3%	5%	6%	19%	5%	8%
Adj. Flow (vph)	117	782	159	145	845	57	284	365	108	105	440	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	941	0	145	902	0	284	473	0	105	440	66
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	37.0	37.0
Total Split (s)	11.0	40.0		11.0	40.0		14.0	40.0		11.0	37.0	37.0
Total Split (%)	10.8%	39.2%		10.8%	39.2%		13.7%	39.2%		10.8%	36.3%	36.3%
Maximum Green (s)	7.0	34.0		7.0	34.0		10.0	34.0		7.0	31.0	31.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			7.0	7.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	58.7	49.7		58.7	49.7		30.3	18.3		24.3	15.3	15.3
Actuated g/C Ratio	0.58	0.49		0.58	0.49		0.30	0.18		0.24	0.15	0.15
v/c Ratio	0.33	0.39		0.41	0.37		0.96	0.52		0.45	0.59	0.21

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

2035 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	9.0	8.6		12.5	17.0		75.7	33.2		27.9	38.9	7.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	9.0	8.6		12.5	17.0		75.7	33.2		27.9	38.9	7.2
LOS	A	A		B	B		E	C		C	D	A
Approach Delay		8.7			16.4			49.1				33.6
Approach LOS		A			B			D				C
Queue Length 50th (m)	2.2	23.2		11.6	40.5		49.1	27.4		17.2	32.4	1.0
Queue Length 95th (m)	0.0	38.5		22.6	55.1		#73.5	36.8		30.1	42.0	7.7
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	350	2426		353	2448		296	1632		231	1501	529
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	0.33	0.39		0.41	0.37		0.96	0.29		0.45	0.29	0.12

Intersection Summary

Area Type: Other

Cycle Length: 102

Actuated Cycle Length: 102

Offset: 63 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 24.2

Intersection LOS: C

Intersection Capacity Utilization 78.5%

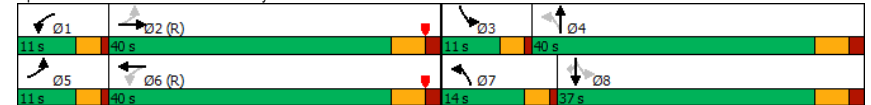
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Background AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	109	727	148	135	786	53	264	339	100	98	409	61
Future Volume (veh/h)	109	727	148	135	786	53	264	339	100	98	409	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1885	1781	1841	1885	1559	1856	1826	1811	1618	1826	1781
Adj Flow Rate, veh/h	117	782	159	145	845	57	284	365	108	105	440	66
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	8	4	1	23	3	5	6	19	5	8
Cap, veh/h	397	2045	412	372	2354	158	323	736	208	257	806	241
Arrive On Green	0.02	0.16	0.16	0.07	0.48	0.48	0.10	0.19	0.19	0.14	0.32	0.32
Sat Flow, veh/h	1682	4291	865	1753	4924	331	1767	3852	1089	1541	4985	1493
Grp Volume(v), veh/h	117	624	317	145	588	314	284	313	160	105	440	66
Grp Sat Flow(s), veh/h/ln	1682	1716	1725	1753	1716	1824	1767	1662	1618	1541	1662	1493
Q Serve(g_s), s	3.5	16.6	16.8	4.2	11.0	11.1	10.0	8.6	9.1	5.7	7.4	3.3
Cycle Q Clear(g_c), s	3.5	16.6	16.8	4.2	11.0	11.1	10.0	8.6	9.1	5.7	7.4	3.3
Prop In Lane	1.00		0.50	1.00		0.18	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	397	1635	822	372	1640	872	323	635	309	257	806	241
V/C Ratio(X)	0.29	0.38	0.39	0.39	0.36	0.36	0.88	0.49	0.52	0.41	0.55	0.27
Avail Cap(c_a), veh/h	401	1635	822	373	1640	872	323	1108	539	257	1515	454
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97	0.97
Uniform Delay (d), s/veh	12.8	29.5	29.6	13.4	16.8	16.8	36.0	36.8	37.0	30.2	31.4	30.1
Incr Delay (d2), s/veh	0.4	0.6	1.3	0.7	0.6	1.2	23.3	0.7	1.6	1.0	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	4.8	5.2	0.6	2.5	2.9	9.0	3.7	4.0	2.1	2.9	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.2	30.1	30.9	14.1	17.4	17.9	59.3	37.5	38.7	31.2	32.1	30.8
LnGrp LOS	B	C	C	B	B	B	E	D	D	C	C	C
Approach Vol, veh/h	1058			1047			757			611		
Approach Delay, s/veh	28.5			17.1			46.0			31.8		
Approach LOS	C			B			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	54.6	11.0	25.5	10.7	54.8	14.0	22.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	7.0	34.0	7.0	34.0	7.0	34.0	10.0	31.0				
Max Q Clear Time (g_c+1), s	6.2	18.8	7.7	11.1	5.5	13.1	12.0	9.4				
Green Ext Time (p_c), s	0.0	7.9	0.0	4.2	0.1	9.1	0.0	4.4				

Intersection Summary												
HCM 6th Ctrl Delay	29.4											
HCM 6th LOS	C											

Lanes, Volumes, Timings

2035 Background AM Peak Hour

8: Lauzon Parkway & Catherine Street

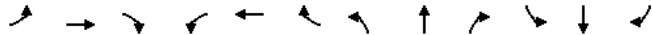
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔			↔↔			↔↔			↔↔		
Traffic Volume (vph)	145	22	13	54	10	27	25	326	88	56	552	261
Future Volume (vph)	145	22	13	54	10	27	25	326	88	56	552	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0		80.0		0.0		20.0		115.0	
Storage Lanes	1		0		1		0		1		1	
Taper Length (m)	65.0				7.5		65.0				75.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99		1.00		1.00		1.00		0.98		1.00	
Frt	0.945				0.890				0.850		0.952	
Fit Protected	0.950				0.950				0.950		0.950	
Satd. Flow (prot)	1805	1645	0		1245	1457	0	1612	3471	1583	1626	4769
Fit Permitted	0.730				0.732				0.300		0.522	
Satd. Flow (perm)	1387	1645	0		955	1457	0	508	3471	1549	893	4769
Right Turn on Red			Yes				Yes				Yes	
Satd. Flow (RTOR)	14				30				98		140	
Link Speed (k/h)	50				50				60		60	
Link Distance (m)	646.8				106.2				230.9		292.9	
Travel Time (s)	46.6				7.6				13.9		17.6	
Confl. Peds. (#/hr)			4		4				3		1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	23%	45%	0%	22%	12%	4%	2%	11%	4%	0%
Adj. Flow (vph)	161	24	14	60	11	30	28	362	98	62	613	290
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	38	0	60	41	0	28	362	98	62	903	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4				8		8		5		2	
Permitted Phases	4				8				2		6	
Detector Phase	4		4		8		8		5		2	
Switch Phase												
Minimum Initial (s)	11.0	11.0			11.0	11.0			7.0	11.0	11.0	7.0
Minimum Split (s)	35.0	35.0			35.0	35.0			11.0	36.0	36.0	11.0
Total Split (s)	43.0	43.0			43.0	43.0			12.0	46.0	46.0	13.0
Total Split (%)	42.2%	42.2%			42.2%	42.2%			11.8%	45.1%	45.1%	12.7%
Maximum Green (s)	37.0	37.0			37.0	37.0			8.0	40.0	40.0	9.0
Yellow Time (s)	4.0	4.0			4.0	4.0			3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0			2.0	2.0			1.0	2.0	2.0	1.0
Lost Time Adjust (s)	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			4.0	6.0	6.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0			Yes	Yes	Yes	Yes
Recall Mode	None	None			None	None			None	C-Max	C-Max	None
Walk Time (s)	7.0	7.0			7.0	7.0			7.0	7.0	7.0	7.0
Flash Dont Walk (s)	22.0	22.0			22.0	22.0			23.0	23.0	23.0	23.0
Pedestrian Calls (#/hr)	0	0			0	0			0	0	0	0
Act Effct Green (s)	17.5	17.5			17.5	17.5			71.0	63.4	63.4	72.4
Actuated g/C Ratio	0.17	0.17			0.17	0.17			0.70	0.62	0.62	0.71
v/c Ratio	0.68	0.13			0.37	0.15			0.07	0.17	0.10	0.09

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2035 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

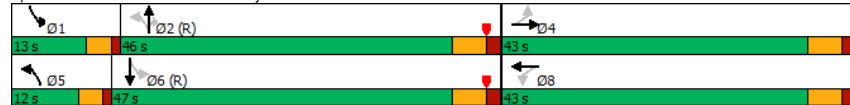


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	53.1	24.4		41.9	16.5		10.2	18.9	11.6	5.3	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	53.1	24.4		41.9	16.5		10.2	18.9	11.6	5.3	8.0	
LOS	D	C		D	B		B	B	B	A	A	
Approach Delay	47.6			31.6			16.9			7.8		
Approach LOS	D			C			B			A		
Queue Length 50th (m)	31.9	4.3		11.2	1.9		1.9	23.5	0.0	3.1	25.4	
Queue Length 95th (m)	50.1	12.3		22.2	10.6		8.0	41.1	16.5	8.6	40.1	
Internal Link Dist (m)	622.8		82.2		206.9		115.0		268.9			
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	503	605		346	547		444	2157	999	706	3130	
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	0.06		0.17	0.07		0.06	0.17	0.10	0.09	0.29	

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	97 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Red
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	16.3
Intersection Capacity Utilization:	60.0%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	B

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

2035 Background AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

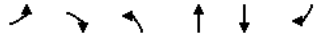


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	145	22	13	54	10	27	25	326	88	56	552	261
Future Volume (veh/h)	145	22	13	54	10	27	25	326	88	56	552	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1559	1233	1900	1574	1722	1841	1870	1737	1841	1900
Adj Flow Rate, veh/h	161	24	14	60	11	30	28	362	98	62	613	290
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	23	45	0	22	12	4	2	11	4	0
Cap, veh/h	282	196	114	211	78	213	443	2141	968	674	2118	980
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.05	0.81	0.81	0.06	0.63	0.63
Sat Flow, veh/h	1379	1122	655	897	448	1222	1640	3497	1581	1654	3355	1552
Grip Volume(v), veh/h	161	0	38	60	0	41	28	362	98	62	612	291
Grip Sat Flow(s), veh/h/ln	1379	0	1777	897	0	1670	1640	1749	1581	1654	1675	1557
Q Serve(g_s), s	11.4	0.0	1.8	6.2	0.0	2.1	0.6	2.3	1.3	1.3	8.4	8.6
Cycle Q Clear(g_c), s	13.5	0.0	1.8	8.0	0.0	2.1	0.6	2.3	1.3	1.3	8.4	8.6
Prop In Lane	1.00		0.37	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	0	310	211	0	291	443	2141	968	674	2115	983
V/C Ratio(X)	0.57	0.00	0.12	0.28	0.00	0.14	0.06	0.17	0.10	0.09	0.29	0.30
Avail Cap(c_a), veh/h	542	0	645	380	0	606	510	2141	968	726	2115	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	0.0	35.5	38.9	0.0	35.6	6.5	3.9	3.8	5.8	8.5	8.5
Incr Delay (d2), s/veh	1.8	0.0	0.2	0.7	0.0	0.2	0.1	0.1	0.2	0.1	0.3	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	4.7	0.0	0.9	1.6	0.0	1.0	0.0	0.1	0.1	0.0	0.2	0.4
Unsig. Movement Delay, s/veh												
LnGrip Delay(d), s/veh	43.2	0.0	35.7	39.6	0.0	35.9	6.6	4.0	4.0	5.9	8.8	9.3
LnGrip LOS	D	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h	199			101			488			965		
Approach Delay, s/veh	41.8			38.1			4.2			8.8		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	68.4		23.8	7.8	70.4		23.8				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	40.0		37.0	8.0	41.0		37.0				
Max Q Clear Time (g_c+I1), s	3.3	4.3		15.5	2.6	10.6		10.0				
Green Ext Time (p_c), s	0.1	3.5		0.9	0.0	8.3		0.7				

Intersection Summary

HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Lanes, Volumes, Timings
 9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	41	62	105	60	200	3
Future Volume (vph)	41	62	105	60	200	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919				0.998	
Fit Protected	0.980		0.950			
Satd. Flow (prot)	1678	0	1770	1863	1859	0
Fit Permitted	0.980		0.950			
Satd. Flow (perm)	1678	0	1770	1863	1859	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	122.2			214.6	142.6	
Travel Time (s)	8.8			15.5	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	67	114	65	217	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	0	114	65	220	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.6% ICU Level of Service A
Analysis Period (min)	15

HCM 6th TWSC
 9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	41	62	105	60	200	3
Future Vol, veh/h	41	62	105	60	200	3
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	67	114	65	217	3

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	512	219	220
Stage 1	219	-	-
Stage 2	293	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	522	821	1349
Stage 1	817	-	-
Stage 2	757	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	478	821	1349
Mov Cap-2 Maneuver	562	-	-
Stage 1	748	-	-
Stage 2	757	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1349	-	694	-
HCM Lane V/C Ratio	0.085	-	0.161	-
HCM Control Delay (s)	7.9	-	11.2	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.3	-	0.6	-

Lanes, Volumes, Timings

2035 Background AM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	203	0	0	101
Future Volume (vph)	0	0	203	0	0	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected			0.950			
Satd. Flow (prot)	1863	0	1770	1863	1863	1583
Fit Permitted			0.950			
Satd. Flow (perm)	1863	0	1770	1863	1863	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	52.8			646.8	142.6	
Travel Time (s)	3.8			46.6	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	221	0	0	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	221	0	0	110
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2035 Background AM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	7.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	203	0	0	101
Future Vol, veh/h	0	0	203	0	0	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	221	0	0	110

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	1
Stage 2	-	-	-
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	1622	572
Stage 1	-	-	1022
Stage 2	-	-	648
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	494
Mov Cap-2 Maneuver	-	-	504
Stage 1	-	-	1022
Stage 2	-	-	560

Approach	EB	WB	NB
HCM Control Delay, s	0	7.6	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	1084	-	-	1622	-
HCM Lane V/C Ratio	-	0.101	-	-	0.136	-
HCM Control Delay (s)	0	8.7	-	-	7.6	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0.3	-	-	0.5	-

Lanes, Volumes, Timings

1: Jefferson Boulevard & Tecumseh Road

2035 Background PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	1447	140	158	1299	389	177	358	179	338	338	106
Future Volume (vph)	122	1447	140	158	1299	389	177	358	179	338	338	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00				0.98	1.00		0.99	1.00		1.00
Frt		0.987				0.850			0.850		0.964	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5007	0	1752	3574	1615	1752	3574	1509	1770	3372	0
Flt Permitted	0.079			0.074			0.274			0.298		
Satd. Flow (perm)	147	5007	0	137	3574	1588	504	3574	1488	554	3372	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				335			150			38
Link Speed (k/h)		60			60			50				50
Link Distance (m)		230.2			269.3			222.3				200.9
Travel Time (s)		13.8			16.2			16.0				14.5
Conf. Peds. (#/hr)	5		5	5		5	5		2	2		5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	3%	3%	1%	0%	3%	1%	7%	2%	3%	2%
Adj. Flow (vph)	139	1644	159	180	1476	442	201	407	203	384	384	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	1803	0	180	1476	442	201	407	203	384	504	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	45.0		15.0	49.0	49.0	13.0	35.0	35.0	15.0	37.0	
Total Split (%)	10.0%	40.9%		13.6%	44.5%	44.5%	11.8%	31.8%	31.8%	13.6%	33.6%	
Maximum Green (s)	7.0	40.0		11.0	44.0	44.0	9.0	30.0	30.0	11.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	58.9	50.9		65.4	54.1	54.1	29.9	19.9	19.9	33.9	21.9	
Actuated g/C Ratio	0.54	0.46		0.59	0.49	0.49	0.27	0.18	0.18	0.31	0.20	
v/c Ratio	0.76	0.78		0.78	0.84	0.46	0.84	0.63	0.52	1.32	0.72	

Lanes, Volumes, Timings

1: Jefferson Boulevard & Tecumseh Road

2035 Background PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	47.5	28.4		47.2	38.8	14.1	59.5	45.7	16.5	194.2	43.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.5	28.4		47.2	38.8	14.1	59.5	45.7	16.5	194.2	43.8	
LOS	D	C		D	D	B	E	D	B	F	D	
Approach Delay		29.7			34.3			41.8				108.8
Approach LOS		C			C			D				F
Queue Length 50th (m)	14.1	121.7		38.5	143.5	43.2	34.6	45.3	10.3	-84.7	52.5	
Queue Length 95th (m)	#48.4	152.1		#68.9	#170.2	62.6	#56.8	56.4	29.5	#124.3	64.5	
Internal Link Dist (m)		206.2			245.3			198.3				176.9
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	182	2326		243	1758	951	238	974	514	292	1007	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.76	0.78		0.74	0.84	0.46	0.84	0.42	0.39	1.32	0.50	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 56 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 45.4

Intersection LOS: D

Intersection Capacity Utilization 87.3%

ICU Level of Service E

Analysis Period (min) 15

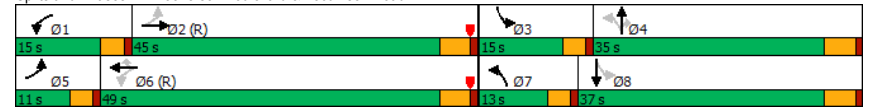
~ Volume exceeds capacity, queue is theoretically infinite.

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: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

1: Jefferson Boulevard & Tecumseh Road

2035 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔
Traffic Volume (veh/h)	122	1447	140	158	1299	389	177	358	179	338	338	106
Future Volume (veh/h)	122	1447	140	158	1299	389	177	358	179	338	338	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1885	1900	1856	1885	1796	1870	1856	1870
Adj Flow Rate, veh/h	139	1644	159	180	1476	442	201	407	203	384	384	120
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	3	3	1	0	3	1	7	2	3	2
Cap, veh/h	194	2212	214	238	1703	763	282	710	299	321	573	177
Arrive On Green	0.06	0.47	0.47	0.02	0.16	0.16	0.08	0.20	0.20	0.10	0.22	0.22
Sat Flow, veh/h	1781	4733	457	1767	3582	1605	1767	3582	1511	1781	2648	817
Grp Volume(v), veh/h	139	1181	622	180	1476	442	201	407	203	384	254	250
Grp Sat Flow(s),veh/h/ln	1781	1702	1786	1767	1791	1605	1767	1791	1511	1781	1763	1702
Q Serve(g_s), s	4.4	31.1	31.3	5.6	44.2	28.1	9.0	11.3	13.7	11.0	14.5	14.8
Cycle Q Clear(g_c), s	4.4	31.1	31.3	5.6	44.2	28.1	9.0	11.3	13.7	11.0	14.5	14.8
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	194	1591	835	238	1703	763	282	710	299	321	381	368
V/C Ratio(X)	0.72	0.74	0.74	0.76	0.87	0.58	0.71	0.57	0.68	1.20	0.67	0.68
Avail Cap(c_a), veh/h	196	1591	835	290	1703	763	282	977	412	321	513	495
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	23.9	23.9	23.7	43.0	36.2	34.6	39.9	40.9	38.6	39.5	39.6
Incr Delay (d2), s/veh	11.6	3.2	6.0	6.4	4.5	2.3	8.2	1.0	3.8	115.0	2.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	8.9	10.2	1.8	23.6	11.2	5.8	6.0	6.4	22.3	7.7	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	27.1	29.9	30.0	47.5	38.4	42.8	40.9	44.7	153.6	42.3	42.8
LnGrp LOS	D	C	C	C	D	D	D	D	D	F	D	D
Approach Vol, veh/h	1942			2098			811			888		
Approach Delay, s/veh	28.6			44.1			42.3			90.6		
Approach LOS	C			D			D			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.8	56.4	15.0	26.8	10.9	57.3	13.0	28.8				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	11.0	40.0	11.0	30.0	7.0	44.0	9.0	32.0				
Max Q Clear Time (g_c+I1), s	7.6	33.3	13.0	15.7	6.4	46.2	11.0	16.8				
Green Ext Time (p_c), s	0.2	6.1	0.0	4.7	0.0	0.0	0.0	4.2				
Intersection Summary												
HCM 6th Ctrl Delay	45.8											
HCM 6th LOS	D											

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

2035 Background PM Peak Hour

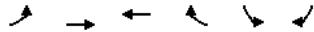
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	0	1964	1845	0	0	0
Future Volume (vph)	0	1964	1845	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1863	5085	5085	0	1863	1863
Fit Permitted						
Satd. Flow (perm)	1863	5085	5085	0	1863	1863
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
Link Speed (k/h)		50	50		50	
Link Distance (m)		269.3	167.9		212.2	
Travel Time (s)		19.4	12.1		15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2135	2005	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2135	2005	0	0	0
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4				6	6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	11.0	86.0	75.0		24.0	24.0
Total Split (%)	10.0%	78.2%	68.2%		21.8%	21.8%
Maximum Green (s)	7.0	81.0	70.0		19.0	19.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		66.6	66.6			
Actuated g/C Ratio		0.61	0.61			
v/c Ratio		0.69	0.65			
Control Delay		8.6	13.1			
Queue Delay		0.0	0.0			
Total Delay		8.6	13.1			

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

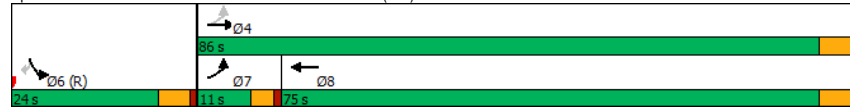


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		A	B			
Approach Delay		8.6	13.1			
Approach LOS		A	B			
Queue Length 50th (m)		112.5	87.1			
Queue Length 95th (m)		m14.8	68.7			
Internal Link Dist (m)		245.3	143.9	188.2		
Turn Bay Length (m)						
Base Capacity (vph)		3744	3297			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.57	0.61			

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 10.8
 Intersection LOS: B
 Intersection Capacity Utilization 42.1%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

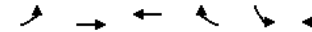
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	0	1964	1845	0	0	0
Future Volume (veh/h)	0	1964	1845	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	2135	2005	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	151	3220	3220	0	496	441
Arrive On Green	0.00	0.42	0.63	0.00	0.00	0.00
Sat Flow, veh/h	1781	5274	5443	0	1781	1585
Grp Volume(v), veh/h	0	2135	2005	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	36.9	26.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	36.9	26.3	0.0	0.0	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	151	3220	3220	0	496	441
V/C Ratio(X)	0.00	0.66	0.62	0.00	0.00	0.00
Avail Cap(c_a), veh/h	263	3760	3249	0	496	441
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.43	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	22.4	12.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	4.1	1.6	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	22.5	12.7	0.0	0.0	0.0
LnGrp LOS	A	C	B	A	A	A
Approach Vol, veh/h		2135	2005		0	
Approach Delay, s/veh		22.5	12.7		0.0	
Approach LOS		C	B			

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	74.4	35.6	0.0	74.4
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	81.0	19.0	7.0	70.0
Max Q Clear Time (g_c+I1), s	38.9	0.0	0.0	28.3
Green Ext Time (p_c), s	30.5	0.0	0.0	28.2

Intersection Summary

HCM 6th Ctrl Delay 17.8
 HCM 6th LOS B

Lanes, Volumes, Timings

2035 Background PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1876	52	0	1724	8	0	0	46	0	0	90
Future Volume (vph)	0	1876	52	0	1724	8	0	0	46	0	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5068	0	0	5131	0	0	0	1644	0	0	1644
Flt Permitted												
Satd. Flow (perm)	0	5068	0	0	5131	0	0	0	1644	0	0	1644
Link Speed (k/h)		60			60				50			50
Link Distance (m)		167.9			186.0				136.6			134.8
Travel Time (s)		10.1			11.2				9.8			9.7
Confl. Peds. (#/hr)	8		9	9		8	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	0	2084	58	0	1916	9	0	0	51	0	0	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2142	0	0	1925	0	0	0	51	0	0	100
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC

2035 Background PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

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	0	1876	52	0	1724	8	0	0	46	0	0	90
Future Vol, veh/h	0	1876	52	0	1724	8	0	0	46	0	0	90
Conflicting Peds, #/hr	8	0	9	9	0	8	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	1	0	0
Mvmt Flow	0	2084	58	0	1916	9	0	0	51	0	0	100

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	0	-
Stage 1	0	-	0	-
Stage 2	0	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	184
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	31.9	34.8
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	184	-	-	-	-	218
HCM Lane V/C Ratio	0.278	-	-	-	-	0.459
HCM Control Delay (s)	31.9	-	-	-	-	34.8
HCM Lane LOS	D	-	-	-	-	D
HCM 95th %tile Q(veh)	1.1	-	-	-	-	2.2

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	156	1618	75	259	1130	4	169	3	225	83	2	223
Future Volume (vph)	156	1618	75	259	1130	4	169	3	225	83	2	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					1.00	0.98				
Fit		0.993					0.852			0.851		
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5091	0	1752	5085	0	1787	1578	0	1770	1585	0
Fit Permitted	0.179			0.072			0.431			0.405		
Satd. Flow (perm)	333	5091	0	133	5085	0	809	1578	0	754	1585	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			1			256				242
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				213.5
Travel Time (s)		11.2			16.4			20.9				15.4
Confl. Peds. (#/hr)			13	13			3	3				
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	3%	2%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	170	1839	85	294	1284	4	192	3	256	90	2	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	1924	0	294	1288	0	192	259	0	90	244	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	9.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	17.0	51.0		23.0	57.0		36.0	36.0		36.0	36.0	
Total Split (%)	15.5%	46.4%		20.9%	51.8%		32.7%	32.7%		32.7%	32.7%	
Maximum Green (s)	13.0	46.0		19.0	52.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.5	4.0		3.5	4.0		3.0	3.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	62.3	51.3		73.6	58.5		27.4	27.4		27.4	27.4	
Actuated g/C Ratio	0.57	0.47		0.67	0.53		0.25	0.25		0.25	0.25	
v/c Ratio	0.53	0.81		0.86	0.48		0.96	0.44		0.48	0.42	

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	23.7	15.9		47.9	26.0		94.0	6.6		34.3	3.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.7	15.9		47.9	26.0		94.0	6.6		34.3	3.9	
LOS	C	B		D	C		F	A		C	A	
Approach Delay		16.6			30.1			43.8			12.1	
Approach LOS		B			C			D			B	
Queue Length 50th (m)	9.0	160.1		60.6	70.7		41.0	0.5		16.1	8.4	
Queue Length 95th (m)	29.6	151.4		m#87.8	95.2		#79.7	19.8		32.3	0.7	
Internal Link Dist (m)		162.0			249.0			265.9			189.5	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	367	2377		368	2706		227	628		212	620	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.46	0.81		0.80	0.48		0.85	0.41		0.42	0.39	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 102 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 23.8
 Intersection LOS: C
 Intersection Capacity Utilization 87.7%
 ICU Level of Service E
 Analysis Period (min) 15
 # 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: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	156	1618	75	259	1130	4	169	3	225	83	2	223
Future Volume (veh/h)	156	1618	75	259	1130	4	169	3	225	83	2	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1856	1870	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	170	1839	85	294	1284	4	192	3	256	90	2	242
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	3	2	2	1	2	1	2	2	2
Cap, veh/h	320	2305	106	335	2734	9	239	5	441	224	4	444
Arrive On Green	0.07	0.46	0.46	0.04	0.17	0.17	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	5038	232	1767	5255	16	1145	18	1565	1119	13	1574
Grp Volume(v), veh/h	170	1251	673	294	832	456	192	0	259	90	0	244
Grp Sat Flow(s),veh/h/ln	1781	1716	1839	1767	1702	1867	1145	0	1583	1119	0	1587
Q Serve(g_s), s	5.5	34.3	34.4	12.0	24.2	24.2	16.6	0.0	15.5	8.3	0.0	14.4
Cycle Q Clear(g_c), s	5.5	34.3	34.4	12.0	24.2	24.2	31.0	0.0	15.5	23.7	0.0	14.4
Prop In Lane	1.00		0.13	1.00		0.01	1.00		0.99	1.00		0.99
Lane Grp Cap(c), veh/h	320	1570	841	335	1771	971	239	0	446	224	0	447
V/C Ratio(X)	0.53	0.80	0.80	0.88	0.47	0.47	0.80	0.00	0.58	0.40	0.00	0.55
Avail Cap(c_a), veh/h	405	1570	841	404	1771	971	239	0	446	224	0	447
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.60	0.60	0.60	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.8	25.5	25.5	33.9	31.9	31.9	47.5	0.0	33.9	44.1	0.0	33.5
Incr Delay (d2), s/veh	1.7	4.3	7.8	11.5	0.5	1.0	17.9	0.0	1.9	1.7	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	10.2	11.9	5.8	7.0	7.7	8.3	0.0	6.8	2.9	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	29.8	33.4	45.5	32.4	32.9	65.3	0.0	35.8	45.8	0.0	35.3
LnGrp LOS	B	C	C	D	C	C	E	A	D	D	A	D
Approach Vol, veh/h	2094			1582			451			334		
Approach Delay, s/veh	29.9			35.0			48.4			38.1		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.7	55.3		36.0	11.8	62.2		36.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	19.0	46.0		31.0	13.0	52.0		31.0				
Max Q Clear Time (g_c+1), s	14.0	36.4		25.7	7.5	26.2		33.0				
Green Ext Time (p_c), s	0.7	8.7		1.3	0.3	14.9		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	34.2	
HCM 6th LOS	C	

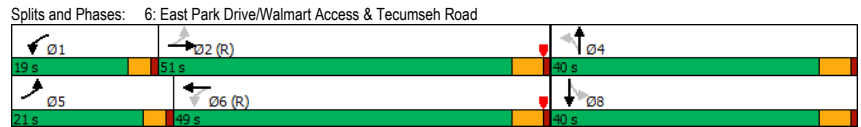
Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	214	1602	166	208	1307	208	217	90	137	171	75	108
Future Volume (vph)	214	1602	166	208	1307	208	217	90	137	171	75	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.98					0.98
Frt	0.986				0.979		0.910				0.911	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	5004	0	1805	4992	0	1787	1722	0	1805	1681	0
Fit Permitted	0.076			0.077			0.524			0.445		
Satd. Flow (perm)	143	5004	0	146	4992	0	967	1722	0	846	1681	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	19			33			73			69		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	273.0			268.3			231.1			151.2		
Travel Time (s)	16.4			16.1			16.6			10.9		
Confl. Peds. (#/hr)	6			6			25			25		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	1%	0%	2%	0%	1%	0%	0%	0%	0%	1%
Adj. Flow (vph)	238	1780	184	231	1452	231	241	100	152	190	83	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	1964	0	231	1683	0	241	252	0	190	203	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			8		8
Permitted Phases	2		6		4		8		8		8	
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	21.0	51.0		19.0	49.0		40.0	40.0		40.0	40.0	
Total Split (%)	19.1%	46.4%		17.3%	44.5%		36.4%	36.4%		36.4%	36.4%	
Maximum Green (s)	17.0	46.0		15.0	44.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0		7.0		7.0		7.0		7.0		7.0	
Flash Dont Walk (s)	23.0			23.0			23.0		23.0		23.0	
Pedestrian Calls (#/hr)	0			0			0		0		0	
Act Effect Green (s)	67.2	52.4		66.1	51.8		30.4	30.4		30.4	30.4	
Actuated g/C Ratio	0.61	0.48		0.60	0.47		0.28	0.28		0.28	0.28	
v/c Ratio	0.81	0.82		0.80	0.71		0.91	0.48		0.82	0.40	

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	62.9	9.3		50.5	20.5		73.6	25.3		63.0	22.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	62.9	9.3		50.5	20.5		73.6	25.3		63.0	22.2	
LOS	E	A		D	C		E	C		E	C	
Approach Delay	15.1			24.2			48.9			41.9		
Approach LOS	B			C			D			D		
Queue Length 50th (m)	42.7	19.4		40.4	67.9		50.8	32.1		38.8	23.1	
Queue Length 95th (m)	m59.1	#58.1		m#64.9	m90.6		#91.5	54.6		#72.3	42.7	
Internal Link Dist (m)	249.0			244.3			207.1			127.2		
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	344	2393		315	2369		307	597		269	581	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.69	0.82		0.73	0.71		0.79	0.42		0.71	0.35	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 24.0	Intersection LOS: C
Intersection Capacity Utilization 93.4%	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.	
m Volume for 95th percentile queue is metered by upstream signal.	



HCM 6th Signalized Intersection Summary
 6: East Park Drive/Walmart Access & Tecumseh Road (R4958) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑ ↑ ↑			↑ ↑ ↑			↑ ↑ ↑			↑ ↑ ↑		
Traffic Volume (veh/h)	214	1602	166	208	1307	208	217	90	137	171	75	108
Future Volume (veh/h)	214	1602	166	208	1307	208	217	90	137	171	75	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1885	1900	1870	1900	1885	1885	1900	1900	1900	1885
Adj Flow Rate, veh/h	238	1780	184	231	1452	231	241	100	152	190	83	120
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	1	0	2	0	1	1	0	0	0	1
Cap, veh/h	283	2200	226	268	2065	328	325	209	318	285	218	315
Arrive On Green	0.12	0.62	0.62	0.06	0.31	0.31	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1795	4700	484	1810	4437	705	1172	664	1010	1132	692	1000
Grp Volume(v), veh/h	238	1287	677	231	1114	569	241	0	252	190	0	203
Grp Sat Flow(s), veh/h/ln	1795	1702	1780	1810	1702	1738	1172	0	1674	1132	0	1691
Q Serve(g_s), s	7.6	31.6	32.0	7.4	31.7	31.8	22.2	0.0	13.3	17.9	0.0	10.3
Cycle Q Clear(g_c), s	7.6	31.6	32.0	7.4	31.7	31.8	32.4	0.0	13.3	31.2	0.0	10.3
Prop In Lane	1.00		0.27	1.00		0.41	1.00		0.60	1.00		0.59
Lane Grp Cap(c), veh/h	283	1593	833	268	1585	809	325	0	528	285	0	533
V/C Ratio(X)	0.84	0.81	0.81	0.86	0.70	0.70	0.74	0.00	0.48	0.67	0.00	0.38
Avail Cap(c_a), veh/h	395	1593	833	352	1585	809	329	0	533	288	0	538
HCM Platoon Ratio	1.33	1.33	1.33	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	0.51	0.63	0.63	0.63	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	17.0	17.1	24.8	31.1	31.2	41.9	0.0	30.4	43.0	0.0	29.3
Incr Delay (d2), s/veh	6.0	2.4	4.5	10.5	1.7	3.3	9.2	0.0	1.0	6.4	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	1.9	5.9	6.8	2.9	10.0	10.6	8.5	0.0	5.8	6.7	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.4	19.4	21.6	35.3	32.8	34.4	51.2	0.0	31.3	49.4	0.0	29.9
LnGrp LOS	C	B	C	D	C	C	D	A	C	D	A	C
Approach Vol, veh/h	2202			1914			493			393		
Approach Delay, s/veh	20.9			33.6			41.0			39.3		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.8	56.5		39.7	14.1	56.2		39.7				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	46.0		35.0	17.0	44.0		35.0				
Max Q Clear Time (g_c+I1), s	9.4	34.0		34.4	9.6	33.8		33.2				
Green Ext Time (p_c), s	0.4	10.9		0.2	0.6	8.8		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

2035 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖	↖ ↖ ↖
Traffic Volume (vph)	213	1494	238	201	1039	94	286	846	261	166	508	84
Future Volume (vph)	213	1494	238	201	1039	94	286	846	261	166	508	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	0.99		1.00		0.98	
Frt		0.979			0.988			0.965				0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	5043	0	1805	5061	0	1787	4894	0	1656	5136	1553
Fit Permitted	0.103			0.103			0.370			0.135		
Satd. Flow (perm)	188	5043	0	196	5061	0	693	4894	0	235	5136	1521
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			14			69				149
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	21		19	19		21	8		9	9		8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	2%	0%	0%	12%	1%	2%	1%	9%	1%	4%
Adj. Flow (vph)	234	1642	262	221	1142	103	314	930	287	182	558	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	234	1904	0	221	1245	0	314	1217	0	182	558	92
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	36.0		11.0	36.0	36.0
Total Split (s)	19.0	48.0		14.0	43.0		12.0	36.0		12.0	36.0	36.0
Total Split (%)	17.3%	43.6%		12.7%	39.1%		10.9%	32.7%		10.9%	32.7%	32.7%
Maximum Green (s)	15.0	42.0		10.0	37.0		8.0	30.0		8.0	30.0	30.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			6.0			6.0	6.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	57.4	42.4		50.8	38.8		39.6	29.6		39.6	29.6	29.6
Actuated g/C Ratio	0.52	0.39		0.46	0.35		0.36	0.27		0.36	0.27	0.27
v/c Ratio	0.81	0.97		0.94	0.69		0.96	0.89		0.97	0.40	0.18

Lanes, Volumes, Timings

7: Lauzon Parkway & Tecumseh Road

2035 Background PM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	56.4	34.0		71.6	33.0		70.5	45.8		97.3	32.4	4.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	56.4	34.0		71.6	33.0		70.5	45.8		97.3	32.4	4.7
LOS	E	C		E	C		E	D		F	C	A
Approach Delay		36.4			38.8			50.8				43.5
Approach LOS		D			D			D				D
Queue Length 50th (m)	42.7	77.4		33.3	89.0		50.8	91.5		32.9	27.4	0.0
Queue Length 95th (m)	m58.0	#184.1		#82.0	106.4		#105.9	#111.6		#71.9	46.5	6.0
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	311	1964		236	1794		328	1384		187	1400	523
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	0.75	0.97		0.94	0.69		0.96	0.88		0.97	0.40	0.18

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 7 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 41.7

Intersection LOS: D

Intersection Capacity Utilization 94.5%

ICU Level of Service F

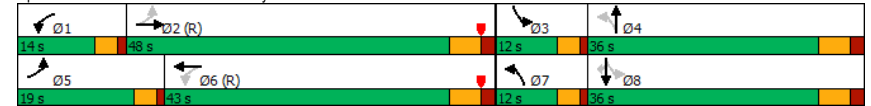
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Background PM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔
Traffic Volume (veh/h)	213	1494	238	201	1039	94	286	846	261	166	508	84
Future Volume (veh/h)	213	1494	238	201	1039	94	286	846	261	166	508	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1900	1870	1900	1900	1722	1885	1870	1885	1767	1885	1841
Adj Flow Rate, veh/h	234	1642	262	221	1142	103	314	930	287	182	558	92
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	0	2	0	0	12	1	2	1	9	1	4
Cap, veh/h	321	1735	275	235	1819	164	327	1039	320	203	1385	416
Arrive On Green	0.03	0.13	0.13	0.09	0.38	0.38	0.07	0.27	0.27	0.02	0.09	0.09
Sat Flow, veh/h	1753	4501	714	1810	4835	436	1795	3859	1187	1682	5147	1544
Grp Volume(v), veh/h	234	1259	645	221	817	428	314	820	397	182	558	92
Grp Sat Flow(s),veh/h/ln	1753	1729	1757	1810	1729	1813	1795	1702	1642	1682	1716	1544
Q Serve(g_s), s	8.6	39.7	40.1	9.0	21.2	21.2	8.0	25.5	25.6	8.0	11.3	6.1
Cycle Q Clear(g_c), s	8.6	39.7	40.1	9.0	21.2	21.2	8.0	25.5	25.6	8.0	11.3	6.1
Prop In Lane	1.00		0.41	1.00		0.24	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	321	1333	677	235	1301	682	327	916	442	203	1385	416
V/C Ratio(X)	0.73	0.95	0.95	0.94	0.63	0.63	0.96	0.89	0.90	0.89	0.40	0.22
Avail Cap(c_a), veh/h	385	1333	677	235	1301	682	327	928	448	203	1404	421
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.46	0.46	0.46	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	23.5	46.9	47.0	29.4	28.0	28.0	37.2	38.7	38.7	33.4	41.8	39.4
Incr Delay (d2), s/veh	2.6	8.1	14.5	42.4	2.3	4.3	39.2	11.2	20.6	34.2	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	19.8	21.7	7.9	8.1	8.9	11.2	11.8	13.0	6.9	5.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	54.9	61.5	71.8	30.3	32.4	76.4	49.9	59.3	67.5	42.0	39.7
LnGrp LOS	C	D	E	E	C	C	E	D	E	E	D	D
Approach Vol, veh/h	2138			1466			1531			832		
Approach Delay, s/veh	53.7			37.2			57.8			47.3		
Approach LOS	D			D			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	48.4	12.0	35.6	15.0	47.4	12.0	35.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	42.0	8.0	30.0	15.0	37.0	8.0	30.0				
Max Q Clear Time (g_c+I1), s	11.0	42.1	10.0	27.6	10.6	23.2	10.0	13.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.9	0.4	9.3	0.0	5.0				

Intersection Summary												
HCM 6th Ctrl Delay	49.8											
HCM 6th LOS	D											

Lanes, Volumes, Timings

2035 Background PM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔
Traffic Volume (vph)	242	49	24	138	42	144	38	873	190	124	551	273
Future Volume (vph)	242	49	24	138	42	144	38	873	190	124	551	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99	0.99		0.99	0.98		1.00		0.98	1.00	0.99	0.99
Frt	0.951				0.884				0.850		0.950	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1772	0	1570	1592	0	1671	3610	1455	1703	4860	0
Fit Permitted	0.552			0.705			0.299			0.191		
Satd. Flow (perm)	1043	1772	0	1155	1592	0	526	3610	1423	342	4860	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	25			158			209			139		
Link Speed (k/h)	50			50			60			60		
Link Distance (m)	621.8			106.2			230.9			292.9		
Travel Time (s)	44.8			7.6			13.9			17.6		
Confl. Peds. (#/hr)	7		8	8		7	1		1	1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	4%	15%	0%	5%	8%	0%	11%	6%	1%	0%
Adj. Flow (vph)	266	54	26	152	46	158	42	959	209	136	605	300
Shared Lane Traffic (%)												
Lane Group Flow (vph)	266	80	0	152	204	0	42	959	209	136	905	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4				8				5		6	
Permitted Phases	4				8				2		6	
Detector Phase	4		4		8		8		5		2	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		36.0	36.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	47.0	47.0		47.0	47.0		11.0	47.0	47.0	16.0	52.0	
Total Split (%)	42.7%	42.7%		42.7%	42.7%		10.0%	42.7%	42.7%	14.5%	47.3%	
Maximum Green (s)	41.0	41.0		41.0	41.0		7.0	41.0	41.0	12.0	46.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	32.0	32.0		32.0	32.0		61.7	52.7	52.7	67.6	59.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.56	0.48	0.48	0.61	0.54	
v/c Ratio	0.88	0.15		0.45	0.35		0.11	0.55	0.26	0.42	0.34	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2035 Background PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	64.5	18.8		34.7	8.9		6.3	11.5	0.6	14.4	14.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	64.5	18.8		34.7	8.9		6.3	11.5	0.6	14.4	14.1	
LOS	E	B		C	A		A	B	A	B	B	
Approach Delay	53.9			19.9			9.4			14.1		
Approach LOS	D			B			A			B		
Queue Length 50th (m)	56.5	9.0		27.7	7.5		1.8	29.2	0.2	12.1	37.3	
Queue Length 95th (m)	82.7	18.5		42.6	22.7		m2.7	m60.0	m0.7	25.4	55.4	
Internal Link Dist (m)	597.8		82.2		206.9		268.9		268.9			
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	388	676		430	692		367	1728	790	359	2688	
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	0.69	0.12		0.35	0.29		0.11	0.55	0.26	0.38	0.34	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 79 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 17.6
 Intersection Capacity Utilization 77.9%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

2035 Background PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	242	49	24	138	42	144	38	873	190	124	551	273
Future Volume (veh/h)	242	49	24	138	42	144	38	873	190	124	551	273
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1841	1678	1900	1826	1781	1900	1737	1811	1885	1900
Adj Flow Rate, veh/h	266	54	26	152	46	158	42	959	209	136	605	300
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	4	15	0	5	8	0	11	6	1	0
Cap, veh/h	358	408	197	426	126	434	348	1639	667	360	1615	751
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.09	0.91	0.91	0.06	0.47	0.47
Sat Flow, veh/h	1192	1208	582	1176	374	1284	1697	3610	1470	1725	3431	1596
Grp Volume(v), veh/h	266	0	80	152	0	204	42	959	209	136	605	300
Grp Sat Flow(s), veh/h/ln	1192	0	1790	1176	0	1658	1697	1805	1470	1725	1716	1596
Q Serve(g_s), s	23.9	0.0	3.4	11.3	0.0	10.2	1.4	5.7	2.0	4.6	12.5	13.5
Cycle Q Clear(g_c), s	34.1	0.0	3.4	14.7	0.0	10.2	1.4	5.7	2.0	4.6	12.5	13.5
Prop In Lane	1.00		0.32	1.00		0.77	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	605	426	0	560	348	1639	667	360	1615	751
V/C Ratio(X)	0.74	0.00	0.13	0.36	0.00	0.36	0.12	0.59	0.31	0.38	0.37	0.40
Avail Cap(c_a), veh/h	399	0	667	467	0	618	378	1639	667	441	1615	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.36	0.36	0.36	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	0.0	25.2	30.3	0.0	27.5	14.0	3.0	2.9	14.2	18.7	19.0
Incr Delay (d2), s/veh	7.4	0.0	0.1	0.7	0.0	0.6	0.1	0.6	0.4	0.7	0.7	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	8.7	0.0	1.5	3.5	0.0	4.2	0.3	1.0	0.5	1.0	3.5	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.7	0.0	25.4	31.1	0.0	28.1	14.1	3.6	3.3	14.8	19.4	20.6
LnGrp LOS	D	A	C	C	A	C	B	A	A	B	B	C
Approach Vol, veh/h	346			356			1210			1041		
Approach Delay, s/veh	42.6			29.3			3.9			19.1		
Approach LOS	D			C			A			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	55.9		43.2	9.1	57.8		43.2				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	12.0	41.0		41.0	7.0	46.0		41.0				
Max Q Clear Time (g_c+I1), s	6.6	7.7		36.1	3.4	15.5		16.7				
Green Ext Time (p_c), s	0.2	15.1		1.1	0.0	11.2		3.4				

Intersection Summary

HCM 6th Ctrl Delay: 16.9
 HCM 6th LOS: B

Lanes, Volumes, Timings
 9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	83	108	133	30	200	4
Future Volume (vph)	83	108	133	30	200	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.924				0.998	
Fit Protected	0.979		0.950			
Satd. Flow (prot)	1685	0	1770	1863	1859	0
Fit Permitted	0.979		0.950			
Satd. Flow (perm)	1685	0	1770	1863	1859	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	140.9			213.5	134.3	
Travel Time (s)	10.1			15.4	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	117	145	33	217	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	207	0	145	33	221	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.4%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
 9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	6.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	83	108	133	30	200	4
Future Vol, veh/h	83	108	133	30	200	4
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	117	145	33	217	4

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	542	219	221
Stage 1	219	-	-
Stage 2	323	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	501	821	1348
Stage 1	817	-	-
Stage 2	734	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	447	821	1348
Mov Cap-2 Maneuver	538	-	-
Stage 1	729	-	-
Stage 2	734	-	-

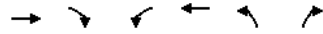
Approach	EB	NB	SB
HCM Control Delay, s	12.8	6.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1348	-	668	-
HCM Lane V/C Ratio	0.107	-	0.311	-
HCM Control Delay (s)	8	-	12.8	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.4	-	1.3	-

Lanes, Volumes, Timings

2035 Background PM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	204	0	0	113
Future Volume (vph)	0	0	204	0	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected			0.950			
Satd. Flow (prot)	1863	0	1770	1863	1863	1583
Fit Permitted			0.950			
Satd. Flow (perm)	1863	0	1770	1863	1863	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	76.5			621.8	134.3	
Travel Time (s)	5.5			44.8	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	222	0	0	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	222	0	0	123
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2035 Background PM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	204	0	0	113
Future Vol, veh/h	0	0	204	0	0	113
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	222	0	0	123

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	1
Stage 2	-	-	444
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	1622	571
Stage 1	-	-	1022
Stage 2	-	-	646
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	493
Mov Cap-2 Maneuver	-	-	502
Stage 1	-	-	1022
Stage 2	-	-	557

Approach	EB	WB	NB
HCM Control Delay, s	0	7.6	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	1084	-	-	1622	-
HCM Lane V/C Ratio	-	0.113	-	-	0.137	-
HCM Control Delay (s)	0	8.7	-	-	7.6	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0.4	-	-	0.5	-

Lanes, Volumes, Timings

2035 Background Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	1217	128	202	1335	213	167	88	178	191	129	25
Future Volume (vph)	34	1217	128	202	1335	213	167	88	178	191	129	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00		0.98	0.99		1.00
Frt		0.986				0.850			0.850		0.975	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5041	0	1770	3574	1599	1770	3574	1615	1805	3453	0
Fit Permitted	0.141			0.129			0.651			0.695		
Satd. Flow (perm)	268	5041	0	240	3574	1564	1208	3574	1585	1313	3453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				188			184		21	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		230.2			268.2			222.3			200.9	
Travel Time (s)		13.8			16.1			16.0			14.5	
Conf. Peds. (#/hr)	11		18	18		11	4		6	6		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	3%	2%	1%	1%	2%	1%	0%	0%	1%	5%
Adj. Flow (vph)	35	1255	132	208	1376	220	172	91	184	197	133	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	1387	0	208	1376	220	172	91	184	197	159	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	5	2		1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	44.0		16.0	49.0	49.0	13.0	35.0	35.0	13.0	35.0	
Total Split (%)	10.2%	40.7%		14.8%	45.4%	45.4%	12.0%	32.4%	32.4%	12.0%	32.4%	
Maximum Green (s)	7.0	39.0		12.0	44.0	44.0	9.0	30.0	30.0	9.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effect Green (s)	66.6	58.6		74.7	67.1	67.1	21.3	11.3	11.3	21.3	11.3	
Actuated g/C Ratio	0.62	0.54		0.69	0.62	0.62	0.20	0.10	0.10	0.20	0.10	
v/c Ratio	0.13	0.51		0.64	0.62	0.21	0.60	0.24	0.56	0.66	0.42	

Lanes, Volumes, Timings

2035 Background Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	7.2	16.5		37.5	3.7	0.5	45.2	45.6	13.4	47.6	42.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.2	16.5		37.5	3.7	0.5	45.2	45.6	13.4	47.6	42.3	
LOS	A	B		D	A	A	D	D	B	D	D	
Approach Delay		16.3			7.2			32.2			45.3	
Approach LOS		B			A			C			D	
Queue Length 50th (m)	2.1	67.0		25.4	0.0	0.0	32.7	10.0	0.0	38.0	15.3	
Queue Length 95th (m)	5.7	85.8		42.0	0.0	0.0	51.8	17.6	20.5	58.5	25.3	
Internal Link Dist (m)		206.2			244.2			198.3			176.9	
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	264	2741		335	2220	1042	285	992	573	300	974	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.51		0.62	0.62	0.21	0.60	0.09	0.32	0.66	0.16	

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 16.5

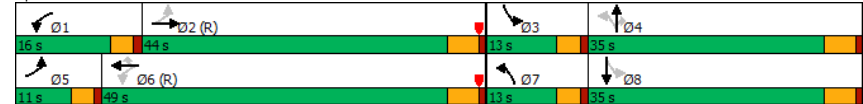
Intersection LOS: B

Intersection Capacity Utilization 79.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary
1: Jefferson Boulevard & Tecumseh Road

2035 Background Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔
Traffic Volume (veh/h)	34	1217	128	202	1335	213	167	88	178	191	129	25
Future Volume (veh/h)	34	1217	128	202	1335	213	167	88	178	191	129	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1856	1870	1885	1885	1870	1885	1900	1900	1885	1826
Adj Flow Rate, veh/h	35	1255	132	208	1376	220	172	91	184	197	133	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	3	2	1	1	2	1	0	0	1	5
Cap, veh/h	307	2390	251	331	1937	855	370	598	266	379	500	95
Arrive On Green	0.04	0.51	0.51	0.15	1.00	1.00	0.08	0.17	0.17	0.08	0.17	0.17
Sat Flow, veh/h	1810	4724	497	1781	3582	1582	1781	3582	1593	1810	2995	571
Grp Volume(v), veh/h	35	912	475	208	1376	220	172	91	184	197	78	81
Grp Sat Flow(s),veh/h/ln	1810	1716	1789	1781	1791	1582	1781	1791	1593	1810	1791	1775
Q Serve(g_s), s	1.0	19.3	19.3	6.0	0.0	0.0	8.7	2.3	11.7	9.0	4.1	4.3
Cycle Q Clear(g_c), s	1.0	19.3	19.3	6.0	0.0	0.0	8.7	2.3	11.7	9.0	4.1	4.3
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	307	1736	905	331	1937	855	370	598	266	379	299	296
V/C Ratio(X)	0.11	0.53	0.53	0.63	0.71	0.26	0.46	0.15	0.69	0.52	0.26	0.27
Avail Cap(c_a), veh/h	348	1736	905	392	1937	855	370	995	442	379	497	493
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	17.9	17.9	12.7	0.0	0.0	33.7	38.4	42.4	34.3	39.2	39.3
Incr Delay (d2), s/veh	0.2	1.1	2.2	1.5	1.4	0.5	0.9	0.2	4.5	1.3	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	10.5	11.2	2.9	0.7	0.2	6.3	1.8	8.1	7.4	3.1	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	19.1	20.1	14.3	1.4	0.5	34.6	38.6	46.9	35.6	39.8	40.0
LnGrp LOS	B	B	C	B	A	A	C	D	D	D	D	D
Approach Vol, veh/h	1422			1804			447			356		
Approach Delay, s/veh	19.2			2.8			40.5			37.5		
Approach LOS	B			A			D			D		

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	59.6	13.0	23.0	8.6	63.4	13.0	23.0
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	12.0	39.0	9.0	30.0	7.0	44.0	9.0	30.0
Max Q Clear Time (g_c+I1), s	8.0	21.3	11.0	13.7	3.0	2.0	10.7	6.3
Green Ext Time (p_c), s	0.3	12.3	0.0	1.9	0.0	25.8	0.0	1.4

Intersection Summary		
HCM 6th Ctrl Delay	15.8	
HCM 6th LOS	B	

Lanes, Volumes, Timings
2: Tecumseh Road & Catherine Street (N/S)

2035 Background Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

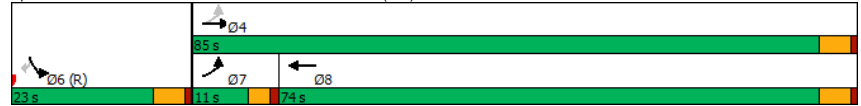
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	0	1587	1750	0	0	0
Future Volume (vph)	0	1587	1750	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1863	5085	5085	0	1863	1863
Fit Permitted						
Satd. Flow (perm)	1863	5085	5085	0	1863	1863
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
Link Speed (k/h)		50	50		50	
Link Distance (m)		268.2	169.1		273.8	
Travel Time (s)		19.3	12.2		19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1725	1902	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1725	1902	0	0	0
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	11.0	85.0	74.0		23.0	23.0
Total Split (%)	10.2%	78.7%	68.5%		21.3%	21.3%
Maximum Green (s)	7.0	80.0	69.0		18.0	18.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		56.4	56.4			
Actuated g/C Ratio		0.52	0.52			
v/c Ratio		0.65	0.72			
Control Delay		20.4	36.0			
Queue Delay		0.0	0.0			
Total Delay		20.4	36.0			

Lanes, Volumes, Timings
 2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		C	D			
Approach Delay		20.4	36.0			
Approach LOS		C	D			
Queue Length 50th (m)		86.3	151.7			
Queue Length 95th (m)		79.8	161.7			
Internal Link Dist (m)		244.2	145.1		249.8	
Turn Bay Length (m)						
Base Capacity (vph)		3766	3248			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.46	0.59			

Intersection Summary	
Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	28.6
Intersection LOS:	C
Intersection Capacity Utilization:	38.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary
 2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↓	↓
Traffic Volume (veh/h)	0	1587	1750	0	0	0
Future Volume (veh/h)	0	1587	1750	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1725	1902	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	126	2681	2681	0	681	606
Arrive On Green	0.00	1.00	0.53	0.00	0.00	0.00
Sat Flow, veh/h	1781	5274	5443	0	1781	1585
Grp Volume(v), veh/h	0	1725	1902	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	0.0	30.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	30.5	0.0	0.0	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	126	2681	2681	0	681	606
V/C Ratio(X)	0.00	0.64	0.71	0.00	0.00	0.00
Avail Cap(c_a), veh/h	240	3782	3262	0	681	606
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.84	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	19.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.1	15.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	0.2	20.0	0.0	0.0	0.0
LnGrp LOS	A	A	B	A	A	A
Approach Vol, veh/h		1725	1902		0	
Approach Delay, s/veh		0.2	20.0		0.0	
Approach LOS		A	B			
Timer - Assigned Phs			4		6	7
Phs Duration (G+Y+Rc), s			61.7		46.3	0.0
Change Period (Y+Rc), s			5.0		5.0	4.0
Max Green Setting (Gmax), s			80.0		18.0	7.0
Max Q Clear Time (g_c+I1), s			2.0		0.0	0.0
Green Ext Time (p_c), s			30.4		0.0	0.0
24.2						

Intersection Summary	
HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

Lanes, Volumes, Timings

2035 Background Saturday Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1740	33	0	1468	9	0	0	47	0	0	128
Future Volume (vph)	0	1740	33	0	1468	9	0	0	47	0	0	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.997			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5171	0	0	5131	0	0	0	1644	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	5171	0	0	5131	0	0	0	1644	0	0	1611
Link Speed (k/h)		60			60				50			50
Link Distance (m)		169.1			186.0				136.6			148.8
Travel Time (s)		10.1			11.2				9.8			10.7
Confl. Peds. (#/hr)	5		8	8		5	3		2	2		3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	0	1832	35	0	1545	9	0	0	49	0	0	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1867	0	0	1554	0	0	0	49	0	0	135
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC

2035 Background Saturday Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Retail Development, Tecumseh Road, Windsor TIS

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Vol, veh/h	0	1740	33	0	1468	9	0	0	47	0	0	128
Future Vol, veh/h	0	1740	33	0	1468	9	0	0	47	0	0	128
Conflicting Peds, #/hr	5	0	8	8	0	5	3	0	2	2	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	0	0	0	1	0	0	0	0	1	0	2
Mvmt Flow	0	1832	35	0	1545	9	0	0	49	0	0	135

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	0	-
Stage 1	0	-	0	-
Stage 2	0	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	25.2	28.3
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	227	-	-	-	-	286
HCM Lane V/C Ratio	0.218	-	-	-	-	0.471
HCM Control Delay (s)	25.2	-	-	-	-	28.3
HCM Lane LOS	D	-	-	-	-	D
HCM 95th %tile Q(veh)	0.8	-	-	-	-	2.4

Lanes, Volumes, Timings
 2035 Background Saturday Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔		↔	↔	
Traffic Volume (vph)	189	1423	65	238	1409	5	171	10	185	121	10	182
Future Volume (vph)	189	1423	65	238	1409	5	171	10	185	121	10	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.99	0.98				
Fit		0.993			0.999			0.858				0.858
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5093	0	1787	5181	0	1787	1582	0	1770	1598	0
Fit Permitted	0.127			0.092			0.469			0.479		
Satd. Flow (perm)	237	5093	0	173	5181	0	878	1582	0	892	1598	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1			193				198
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				218.2
Travel Time (s)		11.2			16.4			20.9				15.7
Confl. Peds. (#/hr)			9	9			7	8				
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	1%	0%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	205	1482	68	248	1468	5	178	11	193	132	11	198
Shared Lane Traffic (%)												
Lane Group Flow (vph)	205	1550	0	248	1473	0	178	204	0	132	209	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		1	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	11.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	22.0	46.0		25.0	49.0		37.0	37.0		37.0	37.0	
Total Split (%)	20.4%	42.6%		23.1%	45.4%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)	18.0	41.0		21.0	44.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.5	4.0		3.0	3.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	67.3	54.2		74.4	57.8		24.0	24.0		24.0	24.0	
Actuated g/C Ratio	0.62	0.50		0.69	0.54		0.22	0.22		0.22	0.22	
v/c Ratio	0.64	0.61		0.70	0.53		0.92	0.41		0.67	0.41	

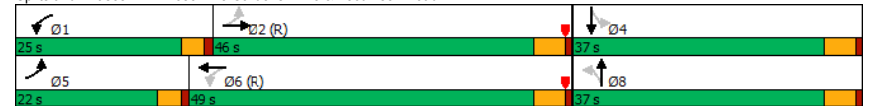
Lanes, Volumes, Timings
 2035 Background Saturday Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	22.7	13.8		20.2	26.1		85.9	7.7		50.8	7.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.7	13.8		20.2	26.1		85.9	7.7		50.8	7.8	
LOS	C	B		C	C		F	A		D	A	
Approach Delay		14.8			25.2			44.1			24.4	
Approach LOS		B			C			D			C	
Queue Length 50th (m)	10.2	82.5		29.0	110.3		38.4	1.9		21.8	1.4	
Queue Length 95th (m)	31.2	117.1		55.7	138.5		#67.0	19.0		38.0	12.0	
Internal Link Dist (m)		162.0			249.0			265.9			194.2	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	413	2557		433	2775		260	604		264	612	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.50	0.61		0.57	0.53		0.68	0.34		0.50	0.34	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 14 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 22.5
 Intersection LOS: C
 Intersection Capacity Utilization 82.6%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary 2035 Background Saturday Peak Hour
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↖ ↗			↖ ↗		
Traffic Volume (veh/h)	189	1423	65	238	1409	5	171	10	185	121	10	182
Future Volume (veh/h)	189	1423	65	238	1409	5	171	10	185	121	10	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1885	1900	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	205	1482	68	248	1468	5	178	11	193	132	11	198
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	1	0	2	1	2	1	2	2	2
Cap, veh/h	324	2511	115	331	2735	9	269	24	419	269	23	423
Arrive On Green	0.08	0.50	0.50	0.09	0.51	0.51	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	5041	231	1795	5336	18	1182	85	1500	1172	84	1514
Grp Volume(v), veh/h	205	1009	541	248	951	522	178	0	204	132	0	209
Grp Sat Flow(s),veh/h/ln	1781	1716	1841	1795	1729	1897	1182	0	1585	1172	0	1598
Q Serve(g_s), s	5.9	22.6	22.6	7.1	20.0	20.0	15.9	0.0	11.5	11.3	0.0	11.7
Cycle Q Clear(g_c), s	5.9	22.6	22.6	7.1	20.0	20.0	27.6	0.0	11.5	22.8	0.0	11.7
Prop In Lane	1.00		0.13	1.00		0.01	1.00		0.95	1.00		0.95
Lane Grp Cap(c), veh/h	324	1709	917	331	1772	972	269	0	443	269	0	446
V/C Ratio(X)	0.63	0.59	0.59	0.75	0.54	0.54	0.66	0.00	0.46	0.49	0.00	0.47
Avail Cap(c_a), veh/h	481	1709	917	513	1772	972	289	0	470	289	0	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.77	0.77	0.77	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	19.3	19.3	17.8	17.7	17.7	43.7	0.0	32.2	41.6	0.0	32.3
Incr Delay (d2), s/veh	2.0	1.5	2.8	3.2	0.9	1.6	5.1	0.0	0.7	2.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.5	12.0	13.1	4.2	10.2	11.2	8.2	0.0	7.4	5.7	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	20.8	22.1	20.9	18.6	19.3	48.8	0.0	32.9	43.6	0.0	33.4
LnGrp LOS	B	C	C	C	B	B	D	A	C	D	A	C
Approach Vol, veh/h	1755			1721			382			341		
Approach Delay, s/veh	20.7			19.2			40.3			37.3		
Approach LOS	C			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	58.8		35.2	12.5	60.3		35.2				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	21.0	41.0		32.0	18.0	44.0		32.0				
Max Q Clear Time (g_c+I1), s	9.1	24.6		24.8	7.9	22.0		29.6				
Green Ext Time (p_c), s	1.0	12.6		1.6	0.6	15.1		0.6				

Intersection Summary		
HCM 6th Ctrl Delay	23.2	
HCM 6th LOS	C	

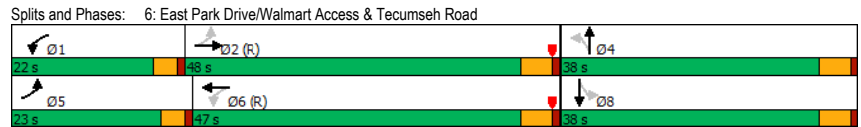
Lanes, Volumes, Timings 2035 Background Saturday Peak Hour
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↖ ↗			↖ ↗		
Traffic Volume (vph)	240	1374	137	220	1206	225	155	78	135	171	84	142
Future Volume (vph)	240	1374	137	220	1206	225	155	78	135	171	84	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.97	0.99		1.00	0.97	
Frt	0.986				0.976		0.905				0.906	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5049	0	1805	4999	0	1787	1690	0	1805	1664	0
Fit Permitted	0.113			0.099			0.431			0.458		
Satd. Flow (perm)	215	5049	0	188	4999	0	789	1690	0	867	1664	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	18			41			83			81		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	273.0			268.3			231.1			151.2		
Travel Time (s)	16.4			16.1			16.6			10.9		
Confl. Peds. (#/hr)	4		12	12		4	39		5	5		39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%
Adj. Flow (vph)	247	1416	141	227	1243	232	160	80	139	176	87	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	1557	0	227	1475	0	160	219	0	176	233	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			8		8
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	23.0	48.0		22.0	47.0		38.0	38.0		38.0	38.0	
Total Split (%)	21.3%	44.4%		20.4%	43.5%		35.2%	35.2%		35.2%	35.2%	
Maximum Green (s)	19.0	43.0		18.0	42.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0				7.0		7.0				7.0	
Flash Dont Walk (s)	23.0				23.0		23.0				23.0	
Pedestrian Calls (#/hr)	0				0		0				0	
Act Effct Green (s)	70.3	55.4		70.1	55.2		24.8	24.8		24.8	24.8	
Actuated g/C Ratio	0.65	0.51		0.65	0.51		0.23	0.23		0.23	0.23	
v/c Ratio	0.72	0.60		0.69	0.57		0.88	0.49		0.89	0.52	

Lanes, Volumes, Timings
 2035 Background Saturday Peak Hour
 6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	23.2	22.0		36.6	13.0		81.7	24.2		79.6	26.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.2	22.0		36.6	13.0		81.7	24.2		79.6	26.4	
LOS	C	C		D	B		F	C		E	C	
Approach Delay		22.1			16.1			48.5			49.3	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	10.6	121.4		32.0	42.9		34.2	25.3		37.6	28.8	
Queue Length 95th (m)	33.8	144.2		m55.1	m55.6		#60.8	44.4		#64.5	48.6	
Internal Link Dist (m)		249.0			244.3			207.1			127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	425	2596		395	2576		241	574		264	564	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.58	0.60		0.57	0.57		0.66	0.38		0.67	0.41	

Intersection Summary	
Area Type:	Other
Cycle Length:	108
Actuated Cycle Length:	108
Offset:	58 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.89
Intersection Signal Delay:	24.7
Intersection Capacity Utilization:	88.7%
Analysis Period (min):	15
# 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.	



HCM 6th Signalized Intersection Summary
 2035 Background Saturday Peak Hour
 6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	240	1374	137	220	1206	225	155	78	135	171	84	142
Future Volume (veh/h)	240	1374	137	220	1206	225	155	78	135	171	84	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1885	1900	1885	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	247	1416	141	227	1243	232	160	80	139	176	87	146
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	0	0	1	0	1	0	1	0	0	0
Cap, veh/h	330	2381	237	384	2133	398	257	173	300	270	177	297
Arrive On Green	0.19	1.00	1.00	0.06	0.33	0.33	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1810	4751	473	1810	4347	811	1130	605	1052	1152	620	1040
Grp Volume(v), veh/h	247	1022	535	227	981	494	160	0	219	176	0	232
Grp Sat Flow(s), veh/h/ln	1810	1716	1793	1810	1716	1727	1130	0	1658	1152	0	1660
Q Serve(g_s), s	7.5	0.0	0.0	6.5	25.6	25.6	14.8	0.0	11.8	16.0	0.0	12.6
Cycle Q Clear(g_c), s	7.5	0.0	0.0	6.5	25.6	25.6	27.4	0.0	11.8	27.8	0.0	12.6
Prop In Lane	1.00		0.26	1.00		0.47	1.00		0.63	1.00		0.63
Lane Grp Cap(c), veh/h	330	1719	898	384	1683	847	257	0	473	270	0	473
V/C Ratio(X)	0.75	0.59	0.59	0.59	0.58	0.58	0.62	0.00	0.46	0.65	0.00	0.49
Avail Cap(c_a), veh/h	477	1719	898	533	1683	847	280	0	506	293	0	507
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	0.54	0.54	0.54	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	0.0	11.5	27.1	27.1	43.5	0.0	31.8	43.2	0.0	32.1
Incr Delay (d2), s/veh	2.9	1.2	2.2	0.8	0.8	1.6	4.6	0.0	1.0	5.4	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	3.8	0.5	1.0	3.9	14.2	14.5	7.5	0.0	7.9	8.1	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.2	1.2	2.2	12.3	27.9	28.7	48.1	0.0	32.8	48.6	0.0	33.2
LnGrp LOS	B	A	A	B	C	C	D	A	C	D	A	C
Approach Vol, veh/h		1804			1702			379				409
Approach Delay, s/veh		3.9			26.0			39.2				39.9
Approach LOS		A			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.1	59.1		35.8	14.2	58.0		35.8				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	18.0	43.0		33.0	19.0	42.0		33.0				
Max Q Clear Time (g_c+I1), s	8.5	2.0		29.4	9.5	27.6		29.8				
Green Ext Time (p_c), s	0.6	24.6		1.0	0.7	10.9		1.0				

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Lanes, Volumes, Timings

2035 Background Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	206	1392	179	272	1289	110	345	468	223	147	567	265
Future Volume (vph)	206	1392	179	272	1289	110	345	468	223	147	567	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	1.00		1.00		1.00	0.98
Frt		0.983			0.988			0.952				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5073	0	1805	5087	0	1770	4882	0	1719	5136	1583
Flt Permitted	0.089			0.087			0.251			0.235		
Satd. Flow (perm)	166	5073	0	165	5087	0	467	4882	0	425	5136	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			14			112				212
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	12		23	23		12	3		2	2		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	0%	1%	0%	0%	7%	2%	1%	0%	5%	1%	2%
Adj. Flow (vph)	222	1497	192	292	1386	118	371	503	240	158	610	285
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	1689	0	292	1504	0	371	743	0	158	610	285
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	35.0	35.0
Total Split (s)	14.0	42.0		15.0	43.0		16.0	37.0		14.0	35.0	35.0
Total Split (%)	13.0%	38.9%		13.9%	39.8%		14.8%	34.3%		13.0%	32.4%	32.4%
Maximum Green (s)	10.0	36.0		11.0	37.0		12.0	31.0		10.0	29.0	29.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			5.0	5.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effect Green (s)	56.8	44.8		58.8	45.8		36.5	22.5		31.9	20.2	20.2
Actuated g/C Ratio	0.53	0.41		0.54	0.42		0.34	0.21		0.30	0.19	0.19
v/c Ratio	0.94	0.80		1.14	0.70		1.23	0.67		0.66	0.63	0.61

Lanes, Volumes, Timings

2035 Background Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	81.4	22.8		126.7	27.9		156.6	36.0		41.0	35.9	14.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	81.4	22.8		126.7	27.9		156.6	36.0		41.0	35.9	14.7
LOS	F	C		F	C		F	D		D	D	B
Approach Delay		29.6			44.0			76.2				30.9
Approach LOS		C			D			E				C
Queue Length 50th (m)	39.4	41.9		~58.5	96.9		~76.6	47.6		20.4	27.6	3.6
Queue Length 95th (m)	#86.8	#98.7		#117.5	125.3		#126.5	58.0		43.4	44.2	27.3
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	235	2115		256	2163		302	1481		246	1379	573
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	0.94	0.80		1.14	0.70		1.23	0.50		0.64	0.44	0.50

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 52 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.23

Intersection Signal Delay: 43.1

Intersection LOS: D

Intersection Capacity Utilization 94.2%

ICU Level of Service F

Analysis Period (min) 15

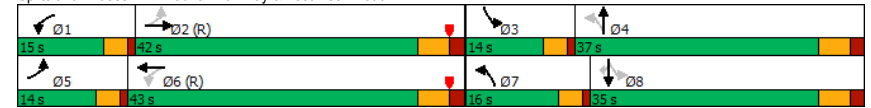
~ Volume exceeds capacity, queue is theoretically infinite.

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: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Background Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔
Traffic Volume (veh/h)	206	1392	179	272	1289	110	345	468	223	147	567	265
Future Volume (veh/h)	206	1392	179	272	1289	110	345	468	223	147	567	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1900	1885	1900	1900	1796	1870	1885	1900	1826	1885	1870
Adj Flow Rate, veh/h	222	1497	192	292	1386	118	371	503	240	158	610	285
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	1	0	0	7	2	1	0	5	1	2
Cap, veh/h	275	1699	218	265	1823	155	341	900	414	306	1215	373
Arrive On Green	0.03	0.12	0.12	0.10	0.38	0.38	0.11	0.26	0.26	0.03	0.08	0.08
Sat Flow, veh/h	1781	4643	595	1810	4861	414	1781	3443	1582	1739	5147	1579
Grp Volume(v), veh/h	222	1115	574	292	986	518	371	501	242	158	610	285
Grp Sat Flow(s),veh/h/ln	1781	1729	1779	1810	1729	1816	1781	1716	1594	1739	1716	1579
Q Serve(g_s), s	8.1	34.3	34.3	11.0	26.9	26.9	12.0	13.6	14.3	7.3	12.3	19.1
Cycle Q Clear(g_c), s	8.1	34.3	34.3	11.0	26.9	26.9	12.0	13.6	14.3	7.3	12.3	19.1
Prop In Lane	1.00		0.33	1.00		0.23	1.00		0.99	1.00		1.00
Lane Grp Cap(c), veh/h	275	1265	651	265	1297	681	341	897	417	306	1215	373
V/C Ratio(X)	0.81	0.88	0.88	1.10	0.76	0.76	1.09	0.56	0.58	0.52	0.50	0.76
Avail Cap(c_a), veh/h	275	1265	651	265	1297	681	341	985	458	318	1382	424
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	0.83	0.83	0.83	0.83
Uniform Delay (d), s/veh	25.7	45.2	45.2	29.1	29.5	29.5	33.8	34.5	34.7	29.9	43.7	46.9
Incr Delay (d2), s/veh	12.3	6.9	12.4	85.0	4.2	7.8	74.9	0.7	1.8	1.1	0.3	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.8	22.4	24.1	16.0	15.4	16.9	15.3	8.8	8.8	5.3	8.5	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	52.1	57.6	114.1	33.7	37.3	108.6	35.2	36.5	31.0	44.0	53.2
LnGrp LOS	D	D	E	F	C	D	F	D	D	C	D	D
Approach Vol, veh/h	1911			1796			1114			1053		
Approach Delay, s/veh	52.1			47.8			59.9			44.6		
Approach LOS	D			D			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	45.5	13.3	34.2	14.0	46.5	16.0	31.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	11.0	36.0	10.0	31.0	10.0	37.0	12.0	29.0				
Max Q Clear Time (g_c+I1), s	13.0	36.3	9.3	16.3	10.1	28.9	14.0	21.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	5.6	0.0	6.7	0.0	4.0				

Intersection Summary												
HCM 6th Ctrl Delay	50.9											
HCM 6th LOS	D											

Lanes, Volumes, Timings

2035 Background Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔
Traffic Volume (vph)	281	53	31	157	57	154	60	520	211	150	688	268
Future Volume (vph)	281	53	31	157	57	154	60	520	211	150	688	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5		65.0				75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00		0.98	1.00	0.99	
Frt		0.945			0.890				0.850		0.958	
Fit Protected	0.950			0.950		0.950				0.950		
Satd. Flow (prot)	1805	1786	0	1671	1623	0	1805	3610	1524	1752	4894	0
Fit Permitted	0.346			0.697		0.207				0.322		
Satd. Flow (perm)	656	1786	0	1224	1623	0	393	3610	1490	594	4894	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			124				234		97	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		644.8			106.2			230.9			292.9	
Travel Time (s)		46.4			7.6			13.9			17.6	
Conf. Peds. (#/hr)	4		2	2		4	5		1	1		5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	8%	0%	4%	0%	0%	6%	3%	1%	0%
Adj. Flow (vph)	312	59	34	174	63	171	67	578	234	167	764	298
Shared Lane Traffic (%)												
Lane Group Flow (vph)	312	93	0	174	234	0	67	578	234	167	1062	0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4				8		2		2	6		
Detector Phase	7	4			8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	21.0	56.0		35.0	35.0		11.0	38.0	38.0	14.0	41.0	
Total Split (%)	19.4%	51.9%		32.4%	32.4%		10.2%	35.2%	35.2%	13.0%	38.0%	
Maximum Green (s)	17.0	50.0		29.0	29.0		7.0	32.0	32.0	10.0	35.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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)	4.0	6.0		6.0	6.0		4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0		7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		22.0		22.0	22.0			23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0		0	0			0	0		0	
Act Effct Green (s)	44.1	42.1		21.2	21.2		49.5	40.5	40.5	54.9	45.1	
Actuated g/C Ratio	0.41	0.39		0.20	0.20		0.46	0.38	0.38	0.51	0.42	
v/c Ratio	0.70	0.13		0.72	0.56		0.25	0.43	0.33	0.42	0.51	

Lanes, Volumes, Timings

2035 Background Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

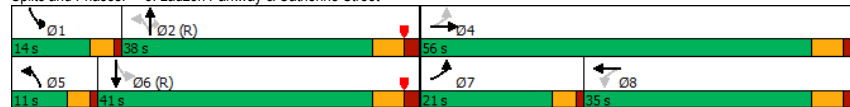


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	30.8	12.7		56.8	22.2		15.6	21.8	4.1	18.8	23.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	30.8	12.7		56.8	22.2		15.6	21.8	4.1	18.8	23.6	
LOS	C	B		E	C		B	C	A	B	C	
Approach Delay	26.6			37.0			16.6			22.9		
Approach LOS	C			D			B			C		
Queue Length 50th (m)	48.3	8.1		36.3	21.1		6.3	34.4	2.9	19.1	59.0	
Queue Length 95th (m)	63.2	16.6		55.9	42.5		m11.5	m43.5	m5.4	36.9	82.4	
Internal Link Dist (m)	620.8			82.2			206.9			268.9		
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	448	845		328	526		271	1355	705	409	2098	
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	0.70	0.11		0.53	0.44		0.25	0.43	0.33	0.41	0.51	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Red
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 23.5 Intersection LOS: C
 Intersection Capacity Utilization 79.8% ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

2035 Background Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	281	53	31	157	57	154	60	520	211	150	688	268
Future Volume (veh/h)	281	53	31	157	57	154	60	520	211	150	688	268
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	0.99		0.99	1.00		0.99	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1841	1900	1900	1811	1856	1885	1900
Adj Flow Rate, veh/h	312	59	34	174	63	171	67	578	234	167	764	298
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	8	0	4	0	0	6	3	1	0
Cap, veh/h	408	427	246	299	85	230	309	1443	610	432	1522	588
Arrive On Green	0.15	0.38	0.38	0.19	0.19	0.19	0.11	0.80	0.80	0.07	0.42	0.42
Sat Flow, veh/h	1810	1129	651	1234	450	1221	1810	3610	1525	1767	3645	1408
Grp Volume(v), veh/h	312	0	93	174	0	234	67	578	234	167	719	343
Grp Sat Flow(s), veh/h/ln	1810	0	1780	1234	0	1671	1810	1805	1525	1767	1716	1622
Q Serve(g_s), s	14.4	0.0	3.7	14.4	0.0	14.3	2.2	5.1	4.8	5.9	16.7	16.9
Cycle Q Clear(g_c), s	14.4	0.0	3.7	14.4	0.0	14.3	2.2	5.1	4.8	5.9	16.7	16.9
Prop In Lane	1.00		0.37	1.00		0.73	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	408	0	673	299	0	315	309	1443	610	432	1433	677
V/C Ratio(X)	0.76	0.00	0.14	0.58	0.00	0.74	0.22	0.40	0.38	0.39	0.50	0.51
Avail Cap(c_a), veh/h	417	0	824	398	0	449	325	1443	610	465	1433	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.60	0.60	0.60	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	22.0	41.4	0.0	41.4	16.7	7.0	7.0	16.7	23.2	23.2
Incr Delay (d2), s/veh	8.1	0.0	0.1	2.5	0.0	5.4	0.2	0.5	1.1	0.6	1.3	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	10.6	0.0	2.6	7.6	0.0	9.9	1.4	2.6	2.3	3.7	9.9	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.5	0.0	22.2	44.0	0.0	46.7	16.9	7.5	8.1	17.2	24.4	25.9
LnGrp LOS	D	A	C	D	A	D	B	A	A	B	C	C
Approach Vol, veh/h	405			408			879			1229		
Approach Delay, s/veh	33.2			45.6			8.4			23.9		
Approach LOS	C			D			A			C		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	49.2		46.8	10.1	51.1	20.5	26.3				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	32.0		50.0	7.0	35.0	17.0	29.0				
Max Q Clear Time (g_c+I1), s	7.9	7.1		5.7	4.2	18.9	16.4	16.4				
Green Ext Time (p_c), s	0.1	8.3		0.9	0.0	9.3	0.1	2.8				

Intersection Summary

HCM 6th Ctrl Delay: 23.5
 HCM 6th LOS: C

Lanes, Volumes, Timings
 9: Rose-Ville Gardens Drive & Rose-Ville Gardens Drive
 2035 Background Saturday Peak Hour
 Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	120	163	174	30	150	5
Future Volume (vph)	120	163	174	30	150	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.922				0.996	
Fit Protected	0.979		0.950			
Satd. Flow (prot)	1681	0	1770	1863	1855	0
Fit Permitted	0.979		0.950			
Satd. Flow (perm)	1681	0	1770	1863	1855	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	144.2			218.2	147.0	
Travel Time (s)	10.4			15.7	10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	177	189	33	163	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	307	0	189	33	168	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.5% ICU Level of Service A
Analysis Period (min)	15

HCM 6th TWSC
 9: Rose-Ville Gardens Drive & Rose-Ville Gardens Drive
 2035 Background Saturday Peak Hour
 Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	8.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	120	163	174	30	150	5
Future Vol, veh/h	120	163	174	30	150	5
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	130	177	189	33	163	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	577	166	168
Stage 1	166	-	-
Stage 2	411	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	478	878	1410
Stage 1	863	-	-
Stage 2	669	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	414	878	1410
Mov Cap-2 Maneuver	510	-	-
Stage 1	747	-	-
Stage 2	669	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	6.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1410	-	672	-
HCM Lane V/C Ratio	0.134	-	0.458	-
HCM Control Delay (s)	7.9	-	14.8	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.5	-	2.4	-

Lanes, Volumes, Timings 2035 Background Saturday Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↘		↙	↘	↙	↘
Traffic Volume (vph)	0	0	155	0	0	150
Future Volume (vph)	0	0	155	0	0	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected			0.950			
Satd. Flow (prot)	1863	0	1770	1863	1863	1583
Fit Permitted			0.950			
Satd. Flow (perm)	1863	0	1770	1863	1863	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	58.7			644.8	147.0	
Travel Time (s)	4.2			46.4	10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	168	0	0	163
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	168	0	0	163
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	12.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC 2035 Background Saturday Peak Hour
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	8.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↘		↙	↘	↙	↘
Traffic Vol, veh/h	0	0	155	0	0	150
Future Vol, veh/h	0	0	155	0	0	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	168	0	0	163

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	1
Stage 2	-	-	336
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	1622	658
Stage 1	-	-	1022
Stage 2	-	-	724
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	590
Mov Cap-2 Maneuver	-	-	586
Stage 1	-	-	1022
Stage 2	-	-	649

Approach	EB	WB	NB
HCM Control Delay, s	0	7.5	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	1084	-	-	1622	-
HCM Lane V/C Ratio	-	0.15	-	-	0.104	-
HCM Control Delay (s)	0	8.9	-	-	7.5	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0.5	-	-	0.3	-

Appendix K

2035 Total Traffic Operations Reports



Lanes, Volumes, Timings

2035 Total AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	55	799	73	96	843	209	93	189	113	246	274	81
Future Volume (vph)	55	799	73	96	843	209	93	189	113	246	274	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00					0.99	1.00		
Fit		0.987				0.850			0.850		0.966	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4937	0	1671	3505	1599	1671	3471	1553	1787	3411	0
Fit Permitted	0.219			0.217			0.324			0.543		
Satd. Flow (perm)	408	4937	0	382	3505	1599	570	3471	1533	1021	3411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	16					243			131			39
Link Speed (k/h)	60			60			50					50
Link Distance (m)	230.2			261.9			222.3					200.9
Travel Time (s)	13.8			15.7			16.0					14.5
Confl. Peds. (#/hr)			1	1					1	1		
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 (%)	2%	3%	10%	8%	3%	1%	8%	4%	4%	1%	2%	3%
Adj. Flow (vph)	64	929	85	112	980	243	108	220	131	286	319	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	1014	0	112	980	243	108	220	131	286	413	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3		8
Permitted Phases	2			6			6	4		4		8
Detector Phase	5	2		1	6		6	7		4		3
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	41.0		12.0	42.0	42.0	13.0	35.0	35.0	14.0	36.0	
Total Split (%)	10.8%	40.2%		11.8%	41.2%	41.2%	12.7%	34.3%	34.3%	13.7%	35.3%	
Maximum Green (s)	7.0	36.0		8.0	37.0	37.0	9.0	30.0	30.0	10.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	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	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	58.7	50.7		60.8	53.5	53.5	25.7	15.7	15.7	27.7	16.7	
Actuated g/C Ratio	0.58	0.50		0.60	0.52	0.52	0.25	0.15	0.15	0.27	0.16	
v/c Ratio	0.20	0.41		0.35	0.53	0.25	0.45	0.41	0.38	0.81	0.70	

Lanes, Volumes, Timings

2035 Total AM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	10.1	17.1		8.8	22.8	9.8	32.1	40.7	9.7	49.8	42.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.1	17.1		8.8	22.8	9.8	32.1	40.7	9.7	49.8	42.7	
LOS	B	B		A	C	A	C	D	A	D	D	
Approach Delay		16.7			19.3			29.8				45.6
Approach LOS		B			B			C				D
Queue Length 50th (m)	4.8	46.6		8.3	113.1	29.3	16.8	22.0	0.0	49.5	39.1	
Queue Length 95th (m)	10.9	59.7		17.2	128.8	30.9	27.4	30.5	13.9	66.9	50.0	
Internal Link Dist (m)		206.2			237.9			198.3				176.9
Turn Bay Length (m)	55.0			95.0			65.0		60.0	45.0		
Base Capacity (vph)	328	2461		329	1839	954	240	1020	543	352	1063	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.20	0.41		0.34	0.53	0.25	0.45	0.22	0.24	0.81	0.39	

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	102
Offset:	36 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.81
Intersection Signal Delay:	25.0
Intersection LOS:	C
Intersection Capacity Utilization:	72.5%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

1: Jefferson Boulevard & Tecumseh Road

2035 Total AM Peak Hour

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔↔	↔
Traffic Volume (veh/h)	55	799	73	96	843	209	93	189	113	246	274	81
Future Volume (veh/h)	55	799	73	96	843	209	93	189	113	246	274	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1752	1781	1856	1885	1781	1841	1885	1870	1856	1856
Adj Flow Rate, veh/h	64	929	85	112	980	243	108	220	131	286	319	94
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
Percent Heavy Veh, %	2	3	10	8	3	1	8	4	4	1	2	3
Cap, veh/h	308	2410	220	389	1828	828	260	523	233	343	444	129
Arrive On Green	0.06	0.51	0.51	0.04	0.35	0.35	0.08	0.15	0.15	0.10	0.16	0.16
Sat Flow, veh/h	1781	4724	431	1697	3526	1597	1697	3497	1557	1795	2717	787
Grp Volume(v), veh/h	64	663	351	112	980	243	108	220	131	286	207	206
Grp Sat Flow(s),veh/h/ln	1781	1689	1778	1697	1763	1597	1697	1749	1557	1795	1777	1727
Q Serve(g_s), s	1.6	12.2	12.3	3.1	22.7	11.3	5.3	5.8	8.0	10.0	11.2	11.6
Cycle Q Clear(g_c), s	1.6	12.2	12.3	3.1	22.7	11.3	5.3	5.8	8.0	10.0	11.2	11.6
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	308	1723	907	389	1828	828	260	523	233	343	291	282
V/C Ratio(X)	0.21	0.39	0.39	0.29	0.54	0.29	0.42	0.42	0.56	0.83	0.71	0.73
Avail Cap(c_a), veh/h	328	1723	907	410	1828	828	267	1029	458	343	540	525
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.64	0.64	0.64	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	15.2	15.2	11.0	23.4	19.7	32.6	39.4	40.3	36.9	40.4	40.6
Incr Delay (d2), s/veh	0.3	0.7	1.2	0.3	0.7	0.6	1.1	0.5	2.1	16.2	3.2	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	2.2	2.6	0.2	4.9	2.5	2.4	2.9	3.7	8.9	6.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	15.9	16.5	11.3	24.2	20.3	33.6	39.9	42.4	53.1	43.6	44.1
LnGrp LOS	B	B	B	B	C	C	C	D	D	D	D	D
Approach Vol, veh/h	1078			1335			459			699		
Approach Delay, s/veh	15.9			22.4			39.1			47.7		
Approach LOS	B			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	57.0	14.0	20.3	9.9	57.9	12.6	21.7				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	8.0	36.0	10.0	30.0	7.0	37.0	9.0	31.0				
Max Q Clear Time (g_c+I1), s	5.1	14.3	12.0	10.0	3.6	24.7	7.3	13.6				
Green Ext Time (p_c), s	0.1	8.1	0.0	2.2	0.0	6.9	0.1	2.7				

Intersection Summary

HCM 6th Ctrl Delay	27.5
HCM 6th LOS	C

Lanes, Volumes, Timings

2: Tecumseh Road & Catherine Street (N/S)

2035 Total AM Peak Hour

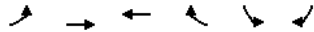
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔	↔	↔	↔
Traffic Volume (vph)	64	1094	1090	14	10	58
Future Volume (vph)	64	1094	1090	14	10	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.998			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	5085	5075	0	1770	1583
Fit Permitted	0.109				0.950	
Satd. Flow (perm)	203	5085	5075	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			2			63
Link Speed (k/h)		50	50		50	
Link Distance (m)		261.9	175.4		228.1	
Travel Time (s)		18.9	12.6		16.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	1189	1185	15	11	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	1189	1200	0	11	63
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	16.0	71.0	55.0		31.0	31.0
Total Split (%)	15.7%	69.6%	53.9%		30.4%	30.4%
Maximum Green (s)	12.0	66.0	50.0		26.0	26.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)	44.2	43.2	32.7		48.8	48.8
Actuated g/C Ratio	0.43	0.42	0.32		0.48	0.48
v/c Ratio	0.32	0.55	0.74		0.01	0.08
Control Delay	17.6	23.1	25.5		18.5	5.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	17.6	23.1	25.5		18.5	5.5

Lanes, Volumes, Timings

2035 Total AM Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

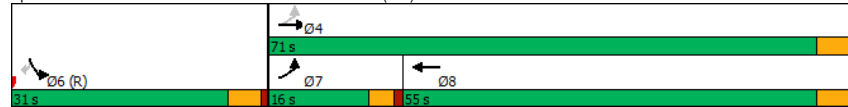


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	B	C	C		B	A
Approach Delay		22.8	25.5		7.5	
Approach LOS		C	C		A	
Queue Length 50th (m)	9.6	71.1	51.6		1.2	0.0
Queue Length 95th (m)	m17.0	81.8	58.3		5.2	8.6
Internal Link Dist (m)		237.9	151.4		204.1	
Turn Bay Length (m)	45.0					
Base Capacity (vph)	272	3290	2488		847	790
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.26	0.36	0.48		0.01	0.08

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 23.6 Intersection LOS: C
 Intersection Capacity Utilization 47.2% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

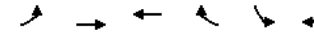
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2035 Total AM Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔	
Traffic Volume (veh/h)	64	1094	1090	14	10	58	
Future Volume (veh/h)	64	1094	1090	14	10	58	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	70	1189	1185	15	11	63	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	237	2185	1712	22	845	751	
Arrive On Green	0.02	0.14	0.33	0.33	0.47	0.47	
Sat Flow, veh/h	1781	5274	5365	66	1781	1585	
Grp Volume(v), veh/h	70	1189	776	424	11	63	
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1859	1781	1585	
Q Serve(g_s), s	2.5	22.1	20.2	20.2	0.3	2.2	
Cycle Q Clear(g_c), s	2.5	22.1	20.2	20.2	0.3	2.2	
Prop In Lane	1.00			0.04	1.00	1.00	
Lane Grp Cap(c), veh/h	237	2185	1121	612	845	751	
V/C Ratio(X)	0.30	0.54	0.69	0.69	0.01	0.08	
Avail Cap(c_a), veh/h	341	3304	1669	911	845	751	
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	
Upstream Filter(l)	0.87	0.87	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	22.4	34.5	29.7	29.7	14.2	14.7	
Incr Delay (d2), s/veh	0.6	0.2	0.8	1.4	0.0	0.2	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	0.9	8.7	7.8	8.5	0.1	5.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	23.0	34.7	30.5	31.1	14.2	14.9	
LnGrp LOS	C	C	C	C	B	B	
Approach Vol, veh/h		1259	1200		74		
Approach Delay, s/veh		34.1	30.7		14.8		
Approach LOS		C	C		B		
Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			48.6		53.4	10.0	38.6
Change Period (Y+Rc), s			5.0		5.0	4.0	5.0
Max Green Setting (Gmax), s			66.0		26.0	12.0	50.0
Max Q Clear Time (g_c+I1), s			24.1		4.2	4.5	22.2
Green Ext Time (p_c), s			13.8		0.3	0.1	11.4

Intersection Summary

HCM 6th Ctrl Delay 31.9
 HCM 6th LOS C

Lanes, Volumes, Timings

2035 Total AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1110	33	0	976	7	0	0	20	0	0	58
Future Volume (vph)	0	1110	33	0	976	7	0	0	20	0	0	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.996			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5068	0	0	5032	0	0	0	1644	0	0	1627
Flt Permitted												
Satd. Flow (perm)	0	5068	0	0	5032	0	0	0	1644	0	0	1627
Link Speed (k/h)		60			60				50			50
Link Distance (m)		175.4			186.0				136.6			186.3
Travel Time (s)		10.5			11.2				9.8			13.4
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	2%	0%	3%	3%	0%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	0	1276	38	0	1122	8	0	0	23	0	0	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1314	0	0	1130	0	0	0	23	0	0	67
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.1%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC

2035 Total AM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Vol, veh/h	0	1110	33	0	976	7	0	0	20	0	0	58
Future Vol, veh/h	0	1110	33	0	976	7	0	0	20	0	0	58
Conflicting Peds, #/hr	2	0	1	1	0	2	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	2	0	3	3	0	0	0	0	2	0	1
Mvmt Flow	0	1276	38	0	1122	8	0	0	23	0	0	67

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	0	-
Stage 1	0	-	0	-
Stage 2	0	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	16	15.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	350	-	-	-	-	400
HCM Lane V/C Ratio	0.066	-	-	-	-	0.167
HCM Control Delay (s)	16	-	-	-	-	15.8
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.6

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	176	961	54	145	819	24	102	63	124	66	28	221
Future Volume (vph)	176	961	54	145	819	24	102	63	124	66	28	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00	0.99				
Frt		0.992			0.996			0.901				0.867
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4942	0	1626	5017	0	1736	1638	0	1770	1615	0
Flt Permitted	0.311			0.220			0.313			0.463		
Satd. Flow (perm)	579	4942	0	375	5017	0	571	1638	0	862	1615	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			8			96				178
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				214.6
Travel Time (s)		11.2			16.4			20.9				15.5
Conf. Peds. (#/hr)			10	10			3		5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	11%	3%	2%	4%	2%	4%	2%	2%	2%
Adj. Flow (vph)	183	1001	56	151	853	25	106	66	129	69	29	230
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	1057	0	151	878	0	106	195	0	69	259	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	28.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	57.0	57.0		11.0	68.0		34.0	34.0		34.0	34.0	
Total Split (%)	55.9%	55.9%		10.8%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	52.0	52.0		7.0	63.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
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	
Recall Mode	C-Max	C-Max		None	C-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)	16.0	16.0		16.0	22.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	62.2	62.2		74.2	73.2		18.8	18.8		18.8	18.8	
Actuated g/C Ratio	0.61	0.61		0.73	0.72		0.18	0.18		0.18	0.18	
v/c Ratio	0.52	0.35		0.42	0.24		1.01	0.51		0.43	0.58	

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	11.1	1.8		7.2	2.9		131.7	22.3		37.5	12.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.1	1.8		7.2	2.9		131.7	22.3		37.5	12.4	
LOS	B	A		A	A		F	C		D	B	
Approach Delay		3.2			3.6			60.8			17.6	
Approach LOS		A			A			E			B	
Queue Length 50th (m)	5.0	2.9		2.6	6.9		~23.1	18.2		13.3	13.8	
Queue Length 95th (m)	37.3	4.5		7.0	10.0		#47.2	35.9		19.1	17.4	
Internal Link Dist (m)		162.0			249.0			265.9			190.6	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	352	3016		358	3600		162	534		245	586	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.52	0.35		0.42	0.24		0.65	0.37		0.28	0.44	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 13 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 10.9 Intersection LOS: B
 Intersection Capacity Utilization 68.0% ICU Level of Service C
 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: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Total AM Peak Hour

4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	176	961	54	145	819	24	102	63	124	66	28	221
Future Volume (veh/h)	176	961	54	145	819	24	102	63	124	66	28	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1841	1870	1737	1856	1870	1841	1870	1841	1870	1870	1870
Adj Flow Rate, veh/h	183	1001	56	151	853	25	106	66	129	69	29	230
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	4	2	11	3	2	4	2	4	2	2	2
Cap, veh/h	407	2597	145	387	3238	95	203	147	288	264	47	375
Arrive On Green	0.53	0.53	0.53	0.14	1.00	1.00	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	630	4867	272	1654	5057	148	1103	563	1101	1184	181	1432
Grp Volume(v), veh/h	183	689	368	151	569	309	106	0	195	69	0	259
Grp Sat Flow(s),veh/h/ln	630	1675	1789	1654	1689	1828	1103	0	1665	1184	0	1613
Q Serve(g_s), s	19.5	12.3	12.3	4.0	0.0	0.0	9.5	0.0	10.0	5.3	0.0	14.4
Cycle Q Clear(g_c), s	19.5	12.3	12.3	4.0	0.0	0.0	24.0	0.0	10.0	15.3	0.0	14.4
Prop In Lane	1.00		0.15	1.00		0.08	1.00		0.66	1.00		0.89
Lane Grp Cap(c), veh/h	407	1787	954	387	2163	1170	203	0	435	264	0	422
V/C Ratio(X)	0.45	0.39	0.39	0.39	0.26	0.26	0.52	0.00	0.45	0.26	0.00	0.61
Avail Cap(c_a), veh/h	407	1787	954	388	2163	1170	228	0	473	291	0	458
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	14.0	14.0	8.8	0.0	0.0	43.7	0.0	31.5	37.9	0.0	33.1
Incr Delay (d2), s/veh	3.6	0.6	1.2	0.6	0.3	0.5	2.1	0.0	0.7	0.5	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	1.8	2.2	0.1	0.2	0.3	3.2	0.0	4.3	1.8	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	14.6	15.2	9.4	0.3	0.5	45.7	0.0	32.2	38.4	0.0	35.3
LnGrp LOS	B	B	B	A	A	A	D	A	C	D	A	D
Approach Vol, veh/h	1240			1029			301			328		
Approach Delay, s/veh	15.4			1.7			37.0			35.9		
Approach LOS	B			A			D			D		
Timer - Assigned Phs	1	2	4		6		8					
Phs Duration (G+Y+Rc), s	10.9	59.4	31.7		70.3		31.7					
Change Period (Y+Rc), s	4.0	5.0	5.0		5.0		5.0					
Max Green Setting (Gmax), s	7.0	52.0	29.0		63.0		29.0					
Max Q Clear Time (g_c+I1), s	6.0	21.5	17.3		2.0		26.0					
Green Ext Time (p_c), s	0.1	12.7	1.7		8.5		0.5					

Intersection Summary		
HCM 6th Ctrl Delay	15.1	
HCM 6th LOS	B	

Lanes, Volumes, Timings

2035 Total AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	152	827	114	106	866	141	72	46	39	64	32	58
Future Volume (vph)	152	827	114	106	866	141	72	46	39	64	32	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00		1.00			1.00			0.99
Frt	0.982				0.979		0.931				0.903	
Fit Protected	0.950				0.950		0.950				0.950	
Satd. Flow (prot)	1787		4880		0		1805		4944		0	
Fit Permitted	0.217				0.242		0.676				0.694	
Satd. Flow (perm)	408		4880		0		459		4944		0	
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	31			36			44			65		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	273.0			268.3			231.1			151.2		
Travel Time (s)	16.4			16.1			16.6			10.9		
Confl. Peds. (#/hr)			6		6		5				5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	4%	0%	3%	1%	8%	0%	0%	1%	0%	0%
Adj. Flow (vph)	171	929	128	119	973	158	81	52	44	72	36	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	1057	0	119	1131	0	81	96	0	72	101	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			4		8
Permitted Phases	2		6		4		8		8		8	
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	20.0	50.0		15.0	45.0		37.0	37.0		37.0	37.0	
Total Split (%)	19.6%	49.0%		14.7%	44.1%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	16.0	45.0		11.0	40.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)	7.0		7.0		7.0		7.0		7.0		7.0	
Flash Dont Walk (s)	23.0		23.0		23.0		23.0		23.0		23.0	
Pedestrian Calls (#/hr)	0		0		0		0		0		0	
Act Effct Green (s)	76.5	66.9		75.6	66.4		12.9	12.9		12.9	12.9	
Actuated g/C Ratio	0.75	0.66		0.74	0.65		0.13	0.13		0.13	0.13	
v/c Ratio	0.40	0.33		0.27	0.35		0.54	0.37		0.44	0.37	

Lanes, Volumes, Timings

2035 Total AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	12.5	6.9		3.8	4.5		54.5	26.8		48.5	20.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.5	6.9		3.8	4.5		54.5	26.8		48.5	20.7	
LOS	B	A		A	A		D	C		D	C	
Approach Delay	7.7			4.5			39.5			32.3		
Approach LOS	A			A			D			C		
Queue Length 50th (m)	10.8	17.9		2.3	11.6		16.2	10.0		14.2	6.9	
Queue Length 95th (m)	34.5	40.0		m5.3	m16.3		29.8	23.7		26.8	20.8	
Internal Link Dist (m)	249.0		244.3		207.1		127.2					
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	536	3210		498	3231		371	585		409	577	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.32	0.33		0.24	0.35		0.22	0.16		0.18	0.18	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 93 (91%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 9.8
 Intersection LOS: A
 Intersection Capacity Utilization 55.8%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Total AM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑			↑↑		
Traffic Volume (veh/h)	152	827	114	106	866	141	72	46	39	64	32	58
Future Volume (veh/h)	152	827	114	106	866	141	72	46	39	64	32	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		0.99		0.99		0.99	
Parking Bus, Adj	1.00		1.00		1.00		1.00		1.00		1.00	
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1841	1841	1900	1856	1885	1781	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	171	929	128	119	973	158	81	52	44	72	36	65
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	0	3	1	8	0	0	1	0	0
Cap, veh/h	521	2778	381	491	2723	441	207	156	132	222	99	179
Arrive On Green	0.08	0.62	0.62	0.15	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1795	4464	613	1810	4390	711	1224	946	801	1301	603	1089
Grp Volume(v), veh/h	171	696	361	119	748	383	81	0	96	72	0	101
Grp Sat Flow(s), veh/h/ln	1795	1675	1727	1810	1689	1724	1224	0	1747	1301	0	1692
Q Serve(g_s), s	3.2	10.1	10.2	2.2	0.0	0.0	6.4	0.0	5.0	5.3	0.0	5.4
Cycle Q Clear(g_c), s	3.2	10.1	10.2	2.2	0.0	0.0	11.8	0.0	5.0	10.2	0.0	5.4
Prop In Lane	1.00	0.35	1.00	0.41	1.00	0.46	1.00	0.00	0.88	1.00	0.00	0.64
Lane Grp Cap(c), veh/h	521	2085	1075	491	2095	1069	207	0	288	222	0	279
V/C Ratio(X)	0.33	0.33	0.34	0.24	0.36	0.36	0.39	0.00	0.33	0.32	0.00	0.36
Avail Cap(c_a), veh/h	663	2085	1075	549	2095	1069	390	0	548	416	0	531
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	0.86	0.86	0.86	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.1	9.2	9.2	5.2	0.0	0.0	43.1	0.0	37.7	42.2	0.0	37.9
Incr Delay (d2), s/veh	0.3	0.4	0.8	0.2	0.4	0.8	1.2	0.0	0.7	0.8	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.2	0.4	0.1	0.2	0.4	2.4	0.0	2.5	2.1	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	9.6	10.0	5.4	0.4	0.8	44.3	0.0	38.3	43.0	0.0	38.6
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h	1228			1250			177			173		
Approach Delay, s/veh	9.1			1.0			41.1			40.5		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	68.5		21.8	11.9	68.3		21.8				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	45.0		32.0	16.0	40.0		32.0				
Max Q Clear Time (g_c+I1), s	4.2	12.2		13.8	5.2	2.0		12.2				
Green Ext Time (p_c), s	0.2	10.1		0.9	0.5	11.5		0.9				

Intersection Summary

HCM 6th Ctrl Delay: 9.5
 HCM 6th LOS: A

Lanes, Volumes, Timings

2035 Total AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	94	716	148	135	802	53	264	398	100	118	443	61
Future Volume (vph)	94	716	148	135	802	53	264	398	100	118	443	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00		1.00	1.00		1.00		1.00	0.99
Frt		0.974			0.991			0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	4928	0	1736	5016	0	1752	4765	0	1517	4940	1495
Flt Permitted	0.271			0.250			0.317			0.411		
Satd. Flow (perm)	472	4928	0	456	5016	0	584	4765	0	654	4940	1473
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	47				11				65			118
Link Speed (k/h)	60				60				60			60
Link Distance (m)	268.3				288.0				208.8			230.9
Travel Time (s)	16.1				17.3				12.5			13.9
Conf. Peds. (#/hr)	5		7	7		5	3		6	6		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	1%	8%	4%	1%	23%	3%	5%	6%	19%	5%	8%
Adj. Flow (vph)	101	770	159	145	862	57	284	428	108	127	476	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	929	0	145	919	0	284	536	0	127	476	66
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	37.0	37.0
Total Split (s)	11.0	40.0		11.0	40.0		14.0	40.0		11.0	37.0	37.0
Total Split (%)	10.8%	39.2%		10.8%	39.2%		13.7%	39.2%		10.8%	36.3%	36.3%
Maximum Green (s)	7.0	34.0		7.0	34.0		10.0	34.0		7.0	31.0	31.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			5.0			7.0	7.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	57.9	48.9		58.7	51.1		31.1	19.1		25.1	16.1	16.1
Actuated g/C Ratio	0.57	0.48		0.58	0.50		0.30	0.19		0.25	0.16	0.16
v/c Ratio	0.29	0.39		0.41	0.37		0.97	0.57		0.58	0.61	0.20

Lanes, Volumes, Timings

2035 Total AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

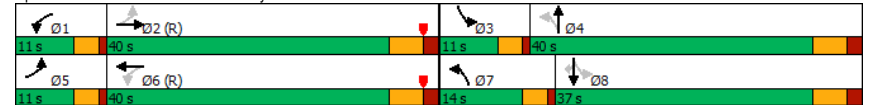
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	7.8	13.8		13.0	16.8		78.4	35.1		31.9	37.7	5.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	7.8	13.8		13.0	16.8		78.4	35.1		31.9	37.7	5.6
LOS	A	B		B	B		E	D		C	D	A
Approach Delay		13.2			16.3			50.1				33.4
Approach LOS		B			B			D				C
Queue Length 50th (m)	7.6	44.6		11.9	42.1		48.6	33.0		20.9	35.0	1.1
Queue Length 95th (m)	16.0	39.8		23.2	57.3		#75.5	42.8		24.2	45.0	8.4
Internal Link Dist (m)		244.3			264.0			184.8				206.9
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	348	2385		350	2517		292	1631		220	1501	529
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	0.29	0.39		0.41	0.37		0.97	0.33		0.58	0.32	0.12

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 63 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 26.3
 Intersection LOS: C
 Intersection Capacity Utilization 78.5%
 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: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Total AM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	94	716	148	135	802	53	264	398	100	118	443	61
Future Volume (veh/h)	94	716	148	135	802	53	264	398	100	118	443	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1885	1781	1841	1885	1559	1856	1826	1811	1618	1826	1781
Adj Flow Rate, veh/h	101	770	159	145	862	57	284	428	108	127	476	66
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	9	1	8	4	1	23	3	5	6	19	5	8
Cap, veh/h	386	2008	411	370	2328	154	321	792	193	250	842	252
Arrive On Green	0.02	0.15	0.15	0.07	0.47	0.47	0.10	0.20	0.20	0.14	0.34	0.34
Sat Flow, veh/h	1682	4279	875	1753	4931	325	1767	3991	973	1541	4985	1494
Grp Volume(v), veh/h	101	616	313	145	599	320	284	354	182	127	476	66
Grp Sat Flow(s),veh/h/ln	1682	1716	1723	1753	1716	1825	1767	1662	1640	1541	1662	1494
Q Serve(g_s), s	3.0	16.5	16.7	4.3	11.4	11.4	10.0	9.7	10.2	7.0	8.0	3.3
Cycle Q Clear(g_c), s	3.0	16.5	16.7	4.3	11.4	11.4	10.0	9.7	10.2	7.0	8.0	3.3
Prop In Lane	1.00		0.51	1.00		0.18	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	386	1611	809	370	1620	862	321	659	325	250	842	252
V/C Ratio(X)	0.26	0.38	0.39	0.39	0.37	0.37	0.88	0.54	0.56	0.51	0.57	0.26
Avail Cap(c_a), veh/h	393	1611	809	372	1620	862	321	1108	547	250	1515	454
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95
Uniform Delay (d), s/veh	13.1	29.8	29.9	13.7	17.2	17.2	35.6	36.7	36.9	30.3	30.7	29.1
Incr Delay (d2), s/veh	0.3	0.7	1.3	0.7	0.7	1.2	23.9	0.8	1.8	1.6	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	4.9	5.3	0.6	2.7	3.1	9.0	4.2	4.5	2.6	3.1	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	30.5	31.2	14.4	17.9	18.5	59.4	37.5	38.7	31.9	31.4	29.8
LnGrp LOS	B	C	C	B	B	B	E	D	D	C	C	C
Approach Vol, veh/h	1030			1064			820			669		
Approach Delay, s/veh	29.0			17.6			45.4			31.3		
Approach LOS	C			B			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	53.9	11.0	26.2	10.6	54.2	14.0	23.2				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	7.0	34.0	7.0	34.0	7.0	34.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	6.3	18.7	9.0	12.2	5.0	13.4	12.0	10.0				
Green Ext Time (p_c), s	0.0	7.8	0.0	4.7	0.1	9.2	0.0	4.7				

Intersection Summary

HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Lanes, Volumes, Timings

2035 Total AM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔			↔↔			↔↔			↔↔		
Traffic Volume (vph)	181	36	89	45	24	22	93	311	79	51	539	308
Future Volume (vph)	181	36	89	45	24	22	93	311	79	51	539	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99		1.00				1.00		0.98	1.00	0.99	
Frt	0.893				0.929				0.850		0.945	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1441	0	1245	1600	0	1612	3471	1583	1626	4737	0
Fit Permitted	0.724			0.641			0.266			0.544		
Satd. Flow (perm)	1376	1441	0	837	1600	0	451	3471	1549	930	4737	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	99				24				88		164	
Link Speed (k/h)	50				50				60		60	
Link Distance (m)	646.8				106.2				230.9		292.9	
Travel Time (s)	46.6				7.6				13.9		17.6	
Confl. Peds. (#/hr)			4		4		3		1		1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	23%	45%	0%	22%	12%	4%	2%	11%	4%	0%
Adj. Flow (vph)	201	40	99	50	27	24	103	346	88	57	599	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	139	0	50	51	0	103	346	88	57	941	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4				8		5		2		1	
Permitted Phases	4				8		2		2		6	
Detector Phase	4		4		8		8		5		2	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	41.0	41.0		41.0	41.0		16.0	50.0	50.0	11.0	45.0	
Total Split (%)	40.2%	40.2%		40.2%	40.2%		15.7%	49.0%	49.0%	10.8%	44.1%	
Maximum Green (s)	35.0	35.0		35.0	35.0		12.0	44.0	44.0	7.0	39.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	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	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	20.3	20.3		20.3	20.3		69.5	60.9	60.9	67.4	59.8	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.68	0.60	0.60	0.66	0.59	
v/c Ratio	0.73	0.38		0.30	0.15		0.26	0.17	0.09	0.09	0.33	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

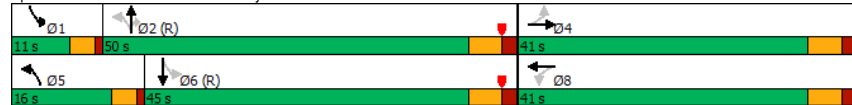
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	53.3	14.1		37.2	19.8		18.9	23.7	15.0	6.6	10.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	53.3	14.1		37.2	19.8		18.9	23.7	15.0	6.6	10.5	
LOS	D	B		D	B		B	C	B	A	B	
Approach Delay		37.3			28.4			21.4			10.3	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	39.6	6.9		8.9	4.6		12.9	27.3	0.3	3.2	28.9	
Queue Length 95th (m)	59.2	21.7		18.5	13.5		28.5	41.1	16.2	9.2	48.3	
Internal Link Dist (m)		622.8			82.2			206.9			268.9	
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	472	559		287	564		453	2071	960	662	2846	
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	0.43	0.25		0.17	0.09		0.23	0.17	0.09	0.09	0.33	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 97 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 18.9
 Intersection Capacity Utilization 69.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	181	36	89	45	24	22	93	311	79	51	539	308
Future Volume (veh/h)	181	36	89	45	24	22	93	311	79	51	539	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1900	1900	1559	1233	1900	1574	1722	1841	1870	1737	1841	1900
Adj Flow Rate, veh/h	201	40	99	50	27	24	103	346	88	57	599	342
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	23	45	0	22	12	4	2	11	4	0
Cap, veh/h	324	101	250	184	194	172	422	2024	915	601	1906	885
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.02	0.19	0.19	0.05	0.57	0.57
Sat Flow, veh/h	1368	483	1194	821	925	822	1640	3497	1581	1654	3350	1556
Grp Volume(v), veh/h	201	0	139	50	0	51	103	346	88	57	599	342
Grp Sat Flow(s), veh/h/ln	1368	0	1677	821	0	1746	1640	1749	1581	1654	1675	1556
Q Serve(g_s), s	14.3	0.0	7.3	5.7	0.0	2.4	2.5	8.4	4.7	1.4	9.6	12.4
Cycle Q Clear(g_c), s	16.7	0.0	7.3	13.0	0.0	2.4	2.5	8.4	4.7	1.4	9.6	12.4
Prop In Lane	1.00		0.71	1.00		0.47	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	0	351	184	0	366	422	2024	915	601	1906	885
V/C Ratio(X)	0.62	0.00	0.40	0.27	0.00	0.14	0.24	0.17	0.10	0.09	0.31	0.39
Avail Cap(c_a), veh/h	508	0	575	294	0	599	509	2024	915	623	1906	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	0.0	34.8	40.4	0.0	32.8	8.6	20.8	19.3	7.8	11.5	12.2
Incr Delay (d2), s/veh	1.9	0.0	0.7	0.8	0.0	0.2	0.2	0.2	0.2	0.1	0.4	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	5.6	0.0	3.4	1.4	0.0	1.2	0.1	0.6	0.3	0.0	0.8	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.6	0.0	35.5	41.2	0.0	33.0	8.9	20.9	19.4	7.8	12.0	13.4
LnGrp LOS	D	A	D	D	A	C	A	C	B	A	B	B
Approach Vol, veh/h		340			101			537			998	
Approach Delay, s/veh		39.1			37.0			18.4			12.2	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	65.0		27.4	10.6	64.0		27.4				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	44.0		35.0	12.0	39.0		35.0				
Max Q Clear Time (g_c+I1), s	3.4	10.4		18.7	4.5	14.4		15.0				
Green Ext Time (p_c), s	0.0	3.3		1.7	0.2	8.1		0.6				

Intersection Summary

HCM 6th Ctrl Delay: 19.8
 HCM 6th LOS: B

Lanes, Volumes, Timings

2035 Total AM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	49	62	105	158	253	3
Future Volume (vph)	49	62	105	158	253	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.925			0.999		
Fit Protected	0.978		0.950			
Satd. Flow (prot)	1685	0	1770	1863	1861	0
Fit Permitted	0.978		0.950			
Satd. Flow (perm)	1685	0	1770	1863	1861	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	122.2			214.6	142.6	
Travel Time (s)	8.8			15.5	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	67	114	172	275	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	114	172	278	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.8%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC

2035 Total AM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	49	62	105	158	253	3
Future Vol, veh/h	49	62	105	158	253	3
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	67	114	172	275	3

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	677	277	278
Stage 1	277	-	-
Stage 2	400	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	418	762	1285
Stage 1	770	-	-
Stage 2	677	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	381	762	1285
Mov Cap-2 Maneuver	488	-	-
Stage 1	701	-	-
Stage 2	677	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	3.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1285	-	611	-
HCM Lane V/C Ratio	0.089	-	0.197	-
HCM Control Delay (s)	8.1	-	12.3	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.3	-	0.7	-

Lanes, Volumes, Timings

2035 Total AM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	126	53	203	146	106	101
Future Volume (vph)	126	53	203	146	106	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.960					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1788	0	1770	1863	1770	1583
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1788	0	1770	1863	1770	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	52.8			646.8	142.6	
Travel Time (s)	3.8			46.6	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	58	221	159	115	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	195	0	221	159	115	110
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.0%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

2035 Total AM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	6.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	126	53	203	146	106	101
Future Vol, veh/h	126	53	203	146	106	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	137	58	221	159	115	110

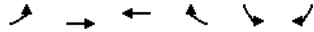
Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	195
Stage 1	-	-	166
Stage 2	-	-	601
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	1378	370
Stage 1	-	-	863
Stage 2	-	-	547
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1378	311
Mov Cap-2 Maneuver	-	-	390
Stage 1	-	-	863
Stage 2	-	-	459

Approach	EB	WB	NB
HCM Control Delay, s	0	4.7	14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	878	-	-	1378	-
HCM Lane V/C Ratio	0.295	0.125	-	-	0.16	-
HCM Control Delay (s)	18.1	9.7	-	-	8.1	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1.2	0.4	-	-	0.6	-

Lanes, Volumes, Timings
11: Catherine Street & Access A

2035 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Volume (vph)	47	31	33	100	98	35
Future Volume (vph)	47	31	33	100	98	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.899			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1675	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1675	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		128.7	118.7		179.7	
Travel Time (s)		9.3	8.5		12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	34	36	109	107	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	34	145	0	107	38
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.7%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
11: Catherine Street & Access A

2035 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Vol, veh/h	47	31	33	100	98	35
Future Vol, veh/h	47	31	33	100	98	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	34	36	109	107	38

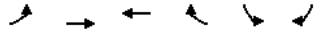
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	145	0	0
Stage 1	-	-	91
Stage 2	-	-	136
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1437	-	761
Stage 1	-	-	933
Stage 2	-	-	890
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1437	-	734
Mov Cap-2 Maneuver	-	-	743
Stage 1	-	-	900
Stage 2	-	-	890

Approach	EB	WB	SB
HCM Control Delay, s	4.6	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1437	-	-	-	743	967
HCM Lane V/C Ratio	0.036	-	-	-	0.143	0.039
HCM Control Delay (s)	7.6	-	-	-	10.7	8.9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1

Lanes, Volumes, Timings
12: Catherine Street & Access B

2035 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Volume (vph)	31	98	100	152	82	33
Future Volume (vph)	31	98	100	152	82	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.919			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1712	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1712	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		118.7	52.8		152.1	
Travel Time (s)		8.5	3.8		11.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	107	109	165	89	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	107	274	0	89	36
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.5%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
12: Catherine Street & Access B

2035 Total AM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Vol, veh/h	31	98	100	152	82	33
Future Vol, veh/h	31	98	100	152	82	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	107	109	165	89	36

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	274	0	0
Stage 1	-	-	192
Stage 2	-	-	175
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1289	-	633
Stage 1	-	-	841
Stage 2	-	-	855
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1289	-	617
Mov Cap-2 Maneuver	-	-	663
Stage 1	-	-	819
Stage 2	-	-	855

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1289	-	-	-	663	850
HCM Lane V/C Ratio	0.026	-	-	-	0.134	0.042
HCM Control Delay (s)	7.9	-	-	-	11.3	9.4
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1

Lanes, Volumes, Timings

2035 Total PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	122	1547	140	158	1406	426	177	358	179	373	338	106
Future Volume (vph)	122	1547	140	158	1406	426	177	358	179	373	338	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00				0.98	1.00		0.99	1.00		1.00
Frt		0.988				0.850			0.850		0.964	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5013	0	1752	3574	1615	1752	3574	1509	1770	3372	0
Flt Permitted	0.078			0.076			0.250			0.345		
Satd. Flow (perm)	145	5013	0	140	3574	1588	460	3574	1488	642	3372	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				345			138			37
Link Speed (k/h)		60			60			50				50
Link Distance (m)		230.2			269.3			222.3				200.9
Travel Time (s)		13.8			16.2			16.0				14.5
Conf. Peds. (#/hr)	5		5	5		5	5		2	2		5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	3%	3%	1%	0%	3%	1%	7%	2%	3%	2%
Adj. Flow (vph)	139	1758	159	180	1598	484	201	407	203	424	384	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	1917	0	180	1598	484	201	407	203	424	504	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			6	4		4	8	
Detector Phase	5	2		1	6		6	7		4	3	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	48.0		12.0	49.0	49.0	15.0	35.0	35.0	15.0	35.0	
Total Split (%)	10.0%	43.6%		10.9%	44.5%	44.5%	13.6%	31.8%	31.8%	13.6%	31.8%	
Maximum Green (s)	7.0	43.0		8.0	44.0	44.0	11.0	30.0	30.0	11.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effect Green (s)	59.4	51.4		61.4	52.4	52.4	33.5	21.6	21.6	33.8	21.8	
Actuated g/C Ratio	0.54	0.47		0.56	0.48	0.48	0.30	0.20	0.20	0.31	0.20	
v/c Ratio	0.77	0.82		0.92	0.94	0.52	0.75	0.58	0.50	1.37	0.72	

Lanes, Volumes, Timings

2035 Total PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	47.0	29.4		63.4	53.2	22.7	45.2	42.9	17.4	213.9	44.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.0	29.4		63.4	53.2	22.7	45.2	42.9	17.4	213.9	44.0	
LOS	D	C		E	D	C	D	D	B	F	D	
Approach Delay		30.6			47.5			37.1			121.6	
Approach LOS		C			D			D			F	
Queue Length 50th (m)	14.1	131.5		31.2	203.0	51.1	33.5	44.3	12.5	-95.1	52.6	
Queue Length 95th (m)	#48.1	163.7		#52.2	#252.0	103.1	47.5	55.1	31.5	#134.2	64.7	
Internal Link Dist (m)		206.2			245.3			198.3			176.9	
Turn Bay Length (m)	55.0			95.0		65.0		60.0	45.0			
Base Capacity (vph)	181	2349		195	1701	936	269	974	506	310	946	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.77	0.82		0.92	0.94	0.52	0.75	0.42	0.40	1.37	0.53	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 56 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.37

Intersection Signal Delay: 51.7

Intersection LOS: D

Intersection Capacity Utilization 92.2%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

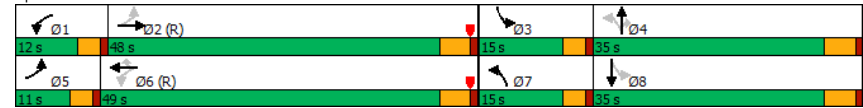
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Total PM Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (veh/h)	122	1547	140	158	1406	426	177	358	179	373	338	106
Future Volume (veh/h)	122	1547	140	158	1406	426	177	358	179	373	338	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1885	1900	1856	1885	1796	1870	1856	1870
Adj Flow Rate, veh/h	139	1758	159	180	1598	484	201	407	203	424	384	120
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	3	3	1	0	3	1	7	2	3	2
Cap, veh/h	183	2213	200	223	1688	756	300	725	306	325	536	165
Arrive On Green	0.06	0.46	0.46	0.02	0.16	0.16	0.10	0.20	0.20	0.10	0.20	0.20
Sat Flow, veh/h	1781	4766	430	1767	3582	1605	1767	3582	1511	1781	2647	817
Grp Volume(v), veh/h	139	1254	663	180	1598	484	201	407	203	424	254	250
Grp Sat Flow(s),veh/h/ln	1781	1702	1791	1767	1791	1605	1767	1791	1511	1781	1763	1701
Q Serve(g_s), s	4.4	34.4	34.6	5.7	48.6	31.1	9.8	11.2	13.6	11.0	14.8	15.1
Cycle Q Clear(g_c), s	4.4	34.4	34.6	5.7	48.6	31.1	9.8	11.2	13.6	11.0	14.8	15.1
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	183	1580	832	223	1688	756	300	725	306	325	357	344
V/C Ratio(X)	0.76	0.79	0.80	0.81	0.95	0.64	0.67	0.56	0.66	1.31	0.71	0.73
Avail Cap(c_a), veh/h	185	1580	832	229	1688	756	300	977	412	325	481	464
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.55	0.55	0.55	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	25.0	25.1	24.8	45.1	37.7	31.5	39.5	40.4	38.4	40.9	41.0
Incr Delay (d2), s/veh	16.5	4.2	7.8	10.9	7.8	2.3	5.7	1.0	3.5	158.3	4.2	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.4	10.0	11.6	2.3	28.3	12.4	5.2	5.9	6.4	28.3	8.0	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	29.2	32.9	35.7	52.9	40.0	37.2	40.5	43.9	196.7	45.1	45.8
LnGrp LOS	D	C	C	D	D	D	D	D	D	F	D	D
Approach Vol, veh/h	2056			2262			811			928		
Approach Delay, s/veh	31.2			48.8			40.5			114.6		
Approach LOS	C			D			D			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	56.1	15.0	27.3	10.9	56.8	15.0	27.3				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	8.0	43.0	11.0	30.0	7.0	44.0	11.0	30.0				
Max Q Clear Time (g_c+I1), s	7.7	36.6	13.0	15.6	6.4	50.6	11.8	17.1				
Green Ext Time (p_c), s	0.0	5.9	0.0	4.7	0.0	0.0	0.0	3.8				

Intersection Summary

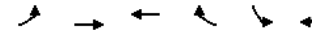
HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

Lanes, Volumes, Timings

2035 Total PM Peak Hour

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

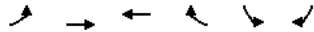


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔	↔	↔	↔
Traffic Volume (vph)	174	1925	1795	38	35	194
Future Volume (vph)	174	1925	1795	38	35	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.997			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	5085	5070	0	1770	1583
Fit Permitted	0.070				0.950	
Satd. Flow (perm)	130	5085	5070	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			4			211
Link Speed (k/h)		50	50		50	
Link Distance (m)		269.3	167.9		212.2	
Travel Time (s)		19.4	12.1		15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	2092	1951	41	38	211
Shared Lane Traffic (%)						
Lane Group Flow (vph)	189	2092	1992	0	38	211
Turn Type	pm+pt	NA	NA	Prot	Perm	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	11.0	11.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	22.0	83.0	61.0		27.0	27.0
Total Split (%)	20.0%	75.5%	55.5%		24.5%	24.5%
Maximum Green (s)	18.0	78.0	56.0		22.0	22.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)	72.1	71.1	53.1		28.9	28.9
Actuated g/C Ratio	0.66	0.65	0.48		0.26	0.26
v/c Ratio	0.65	0.64	0.81		0.08	0.37
Control Delay	26.0	7.4	23.4		35.1	7.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	26.0	7.4	23.4		35.1	7.2

Lanes, Volumes, Timings

2035 Total PM Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

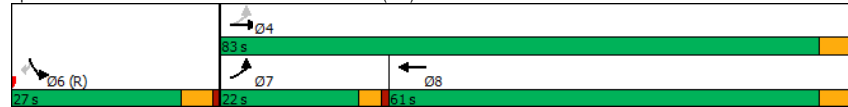


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	C	A	C		D	A
Approach Delay		9.0	23.4		11.5	
Approach LOS		A	C		B	
Queue Length 50th (m)	15.2	106.0	98.9		6.6	0.0
Queue Length 95th (m)	m19.1	m11.2	m94.2		16.5	19.9
Internal Link Dist (m)		245.3	143.9		188.2	
Turn Bay Length (m)	45.0					
Base Capacity (vph)	353	3605	2586		464	571
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.54	0.58	0.77		0.08	0.37

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 15.5 Intersection LOS: B
 Intersection Capacity Utilization 65.2% ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

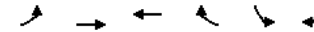
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2035 Total PM Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔	
Traffic Volume (veh/h)	174	1925	1795	38	35	194	
Future Volume (veh/h)	174	1925	1795	38	35	194	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No	No	No	No	No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	189	2092	1951	41	38	211	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	231	2995	2450	51	575	511	
Arrive On Green	0.07	0.59	0.48	0.48	0.32	0.32	
Sat Flow, veh/h	1781	5274	5315	108	1781	1585	
Grp Volume(v), veh/h	189	2092	1290	702	38	211	
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1851	1781	1585	
Q Serve(g_s), s	5.6	31.6	35.2	35.2	1.6	11.4	
Cycle Q Clear(g_c), s	5.6	31.6	35.2	35.2	1.6	11.4	
Prop In Lane	1.00			0.06	1.00	1.00	
Lane Grp Cap(c), veh/h	231	2995	1621	881	575	511	
V/C Ratio(X)	0.82	0.70	0.80	0.80	0.07	0.41	
Avail Cap(c_a), veh/h	391	3621	1733	942	575	511	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.35	0.35	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	23.4	15.9	24.3	24.3	25.8	29.1	
Incr Delay (d2), s/veh	2.6	0.2	2.5	4.6	0.2	2.4	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	1.3	4.0	10.3	11.7	0.8	16.6	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	25.9	16.1	26.8	28.9	26.0	31.6	
LnGrp LOS	C	B	C	C	C	C	
Approach Vol, veh/h	2281	1992		249			
Approach Delay, s/veh	16.9	27.6		30.7			
Approach LOS	B	C		C			
Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			69.5		40.5	12.1	57.4
Change Period (Y+Rc), s			5.0		5.0	4.0	5.0
Max Green Setting (Gmax), s			78.0		22.0	18.0	56.0
Max Q Clear Time (g_c+I1), s			33.6		13.4	7.6	37.2
Green Ext Time (p_c), s			30.9		0.7	0.5	14.9
Intersection Summary							
HCM 6th Ctrl Delay			22.4				
HCM 6th LOS			C				

Lanes, Volumes, Timings

2035 Total PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1872	52	0	1718	8	0	0	46	0	0	84
Future Volume (vph)	0	1872	52	0	1718	8	0	0	46	0	0	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.996			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5068	0	0	5131	0	0	0	1644	0	0	1644
Flt Permitted												
Satd. Flow (perm)	0	5068	0	0	5131	0	0	0	1644	0	0	1644
Link Speed (k/h)		60			60				50			50
Link Distance (m)		167.9			186.0				136.6			134.8
Travel Time (s)		10.1			11.2				9.8			9.7
Confl. Peds. (#/hr)	8		9	9		8	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	0	2080	58	0	1909	9	0	0	51	0	0	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2138	0	0	1918	0	0	0	51	0	0	93
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC

2035 Total PM Peak Hour

3: Commercial Access/Home Depot Access & Tecumseh Road Development, Tecumseh Road, Windsor TIS

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	0	1872	52	0	1718	8	0	0	46	0	0	84
Future Vol, veh/h	0	1872	52	0	1718	8	0	0	46	0	0	84
Conflicting Peds, #/hr	8	0	9	9	0	8	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	1	0	0
Mvmt Flow	0	2080	58	0	1909	9	0	0	51	0	0	93

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	0	186
Stage 1	0	-	0	0
Stage 2	0	-	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	184
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	31.9	33.1
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	184	-	-	-	-	219
HCM Lane V/C Ratio	0.278	-	-	-	-	0.426
HCM Control Delay (s)	31.9	-	-	-	-	33.1
HCM Lane LOS	D	-	-	-	-	D
HCM 95th %tile Q(veh)	1.1	-	-	-	-	2

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	210	1552	75	259	1105	61	159	132	206	166	109	252
Future Volume (vph)	210	1552	75	259	1105	61	159	132	206	166	109	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					1.00	0.99				
Frt		0.993			0.993			0.907				0.895
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5090	0	1752	5050	0	1787	1684	0	1770	1667	0
Flt Permitted	0.125			0.085			0.295			0.314		
Satd. Flow (perm)	233	5090	0	157	5050	0	554	1684	0	585	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			8			81				115
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				213.5
Travel Time (s)		11.2			16.4			20.9				15.4
Conf. Peds. (#/hr)			13	13			3		3			
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	3%	2%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	228	1764	85	294	1256	66	181	143	234	180	118	274
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	1849	0	294	1322	0	181	377	0	180	392	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		1	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	20.0	49.0		19.0	48.0		42.0	42.0		42.0	42.0	
Total Split (%)	18.2%	44.5%		17.3%	43.6%		38.2%	38.2%		38.2%	38.2%	
Maximum Green (s)	16.0	44.0		15.0	43.0		37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.5	4.0		3.0	3.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	59.8	45.5		62.7	47.2		35.5	35.5		35.5	35.5	
Actuated g/C Ratio	0.54	0.41		0.57	0.43		0.32	0.32		0.32	0.32	
v/c Ratio	0.73	0.88		0.96	0.61		1.02	0.63		0.96	0.64	

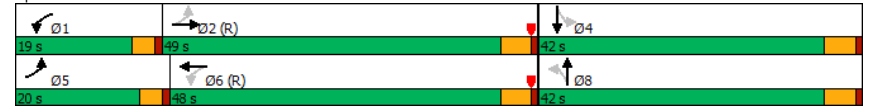
Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	51.6	21.8		71.0	31.3		109.6	29.5		86.6	20.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.6	21.8		71.0	31.3		109.6	29.5		86.6	20.1	
LOS	D	C		E	C		F	C		F	C	
Approach Delay		25.1			38.5			55.5			41.1	
Approach LOS		C			D			E			D	
Queue Length 50th (m)	32.1	155.6		62.5	72.1		40.0	55.4		35.7	37.2	
Queue Length 95th (m)	55.4	157.0		m#102.3	88.3		#83.8	88.4		m#81.3	63.0	
Internal Link Dist (m)		162.0			249.0			265.9			189.5	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	355	2109		306	2173		186	620		196	637	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.64	0.88		0.96	0.61		0.97	0.61		0.92	0.62	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 102 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 35.0
 Intersection LOS: C
 Intersection Capacity Utilization 92.3%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	210	1552	75	259	1105	61	159	132	206	166	109	252
Future Volume (veh/h)	210	1552	75	259	1105	61	159	132	206	166	109	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1856	1870	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	228	1764	85	294	1256	66	181	143	234	180	118	274
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	3	2	2	1	2	1	2	2	2
Cap, veh/h	321	2012	97	324	2185	115	197	214	351	210	168	391
Arrive On Green	0.10	0.40	0.40	0.04	0.15	0.15	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1781	5026	242	1767	4962	261	1000	637	1042	1005	500	1161
Grp Volume(v), veh/h	228	1203	646	294	862	460	181	0	377	180	0	392
Grp Sat Flow(s),veh/h/ln	1781	1716	1837	1767	1702	1819	1000	0	1679	1005	0	1661
Q Serve(g_s), s	8.1	35.6	35.7	13.0	26.0	26.0	14.5	0.0	21.1	15.9	0.0	22.5
Cycle Q Clear(g_c), s	8.1	35.6	35.7	13.0	26.0	26.0	37.0	0.0	21.1	37.0	0.0	22.5
Prop In Lane	1.00		0.13	1.00		0.14	1.00		0.62	1.00		0.70
Lane Grp Cap(c), veh/h	321	1374	735	324	1499	801	197	0	565	210	0	559
V/C Ratio(X)	0.71	0.88	0.88	0.91	0.57	0.57	0.92	0.00	0.67	0.86	0.00	0.70
Avail Cap(c_a), veh/h	409	1374	735	325	1499	801	197	0	565	210	0	559
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.60	0.60	0.60	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.6	30.5	30.5	35.4	37.4	37.4	49.8	0.0	31.2	48.6	0.0	31.7
Incr Delay (d2), s/veh	4.1	8.1	14.0	19.0	1.0	1.8	42.2	0.0	3.0	28.2	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	12.7	15.0	7.3	9.7	10.5	9.8	0.0	8.9	8.8	0.0	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	38.5	44.5	54.5	38.4	39.2	91.9	0.0	34.2	76.8	0.0	36.0
LnGrp LOS	C	D	D	D	D	D	F	A	C	E	A	D
Approach Vol, veh/h	2077			1616			558			572		
Approach Delay, s/veh	38.9			41.5			52.9			48.8		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	49.0		42.0	14.6	53.4		42.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	44.0		37.0	16.0	43.0		37.0				
Max Q Clear Time (g_c+1), s	15.0	37.7		39.0	10.1	28.0		39.0				
Green Ext Time (p_c), s	0.0	5.7		0.0	0.4	10.4		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	42.6	
HCM 6th LOS	D	

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	214	1600	166	208	1347	208	217	90	137	144	75	100
Future Volume (vph)	214	1600	166	208	1347	208	217	90	137	144	75	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.98					0.98
Frt	0.986			0.980			0.910			0.914		
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	5004	0	1805	4997	0	1787	1722	0	1805	1688	0
Fit Permitted	0.074			0.075			0.534			0.438		
Satd. Flow (perm)	139	5004	0	142	4997	0	985	1722	0	832	1688	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			33			71				63
Link Speed (k/h)		60			60			50				50
Link Distance (m)		273.0			268.3			231.1				151.2
Travel Time (s)		16.4			16.1			16.6				10.9
Conf. Peds. (#/hr)			6		6			25				25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	1%	0%	2%	0%	1%	0%	0%	0%	0%	1%
Adj. Flow (vph)	238	1778	184	231	1497	231	241	100	152	160	83	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	1962	0	231	1728	0	241	252	0	160	194	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			8		8
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0		35.0
Total Split (s)	19.0	54.0		18.0	53.0		38.0	38.0		38.0		38.0
Total Split (%)	17.3%	49.1%		16.4%	48.2%		34.5%	34.5%		34.5%		34.5%
Maximum Green (s)	15.0	49.0		14.0	48.0		33.0	33.0		33.0		33.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0		23.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effect Green (s)	67.8	53.6		66.9	53.1		29.6	29.6		29.6		29.6
Actuated g/C Ratio	0.62	0.49		0.61	0.48		0.27	0.27		0.27		0.27
v/c Ratio	0.84	0.80		0.83	0.71		0.91	0.49		0.71		0.39

Lanes, Volumes, Timings

2035 Total PM Peak Hour

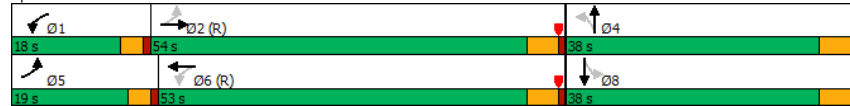
6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	59.3	10.3		52.4	21.5		75.4	26.5		54.1	23.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	59.3	10.3		52.4	21.5		75.4	26.5		54.1	23.2	
LOS	E	B		D	C		E	C		D	C	
Approach Delay	15.6			25.1			50.4			37.2		
Approach LOS	B			C			D			D		
Queue Length 50th (m)	44.5	32.4		42.4	74.0		50.5	32.5		31.4	22.5	
Queue Length 95th (m)	m54.9	43.5		m#60.4	m96.7		#94.4	56.7		#57.3	42.9	
Internal Link Dist (m)	249.0		244.3		207.1		127.2		127.2		127.2	
Turn Bay Length (m)	65.0			40.0			25.0			20.0		
Base Capacity (vph)	312	2449		299	2431		295	566		249	550	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.76	0.80		0.77	0.71		0.82	0.45		0.64	0.35	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 24.3
 Intersection Capacity Utilization 93.1%
 Analysis Period (min) 15
 # 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: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Total PM Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘			↔ ↗ ↘		
Traffic Volume (veh/h)	214	1600	166	208	1347	208	217	90	137	144	75	100
Future Volume (veh/h)	214	1600	166	208	1347	208	217	90	137	144	75	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1885	1900	1870	1900	1885	1885	1900	1900	1900	1885
Adj Flow Rate, veh/h	238	1778	184	231	1497	231	241	100	152	160	83	111
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	1	0	2	0	1	1	0	0	0	1
Cap, veh/h	273	2262	233	268	2155	332	313	199	303	264	218	291
Arrive On Green	0.09	0.48	0.48	0.03	0.16	0.16	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1795	4699	484	1810	4459	687	1180	664	1009	1131	726	970
Grp Volume(v), veh/h	238	1286	676	231	1142	586	241	0	252	160	0	194
Grp Sat Flow(s),veh/h/ln	1795	1702	1780	1810	1702	1742	1180	0	1673	1131	0	1696
Q Serve(g_s), s	7.4	34.6	35.0	7.7	34.9	35.0	22.3	0.0	13.7	14.9	0.0	9.9
Cycle Q Clear(g_c), s	7.4	34.6	35.0	7.7	34.9	35.0	32.3	0.0	13.7	28.6	0.0	9.9
Prop In Lane	1.00		0.27	1.00		0.39	1.00		0.60	1.00		0.57
Lane Grp Cap(c), veh/h	273	1638	857	268	1645	842	313	0	502	264	0	509
V/C Ratio(X)	0.87	0.78	0.79	0.86	0.69	0.70	0.77	0.00	0.50	0.61	0.00	0.38
Avail Cap(c_a), veh/h	357	1638	857	333	1645	842	313	0	502	264	0	509
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.35	0.35	0.35	0.56	0.56	0.56	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	23.8	23.9	28.2	38.5	38.6	43.2	0.0	31.7	43.5	0.0	30.4
Incr Delay (d2), s/veh	6.8	1.4	2.7	10.5	1.4	2.7	11.8	0.0	1.1	4.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	7.2	7.9	3.3	13.3	14.0	8.9	0.0	6.1	5.5	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	25.2	26.5	38.6	39.9	41.3	55.0	0.0	32.8	48.1	0.0	31.1
LnGrp LOS	C	C	C	D	D	D	E	A	C	D	A	C
Approach Vol, veh/h	2200			1959			493			354		
Approach Delay, s/veh	26.1			40.2			43.7			38.8		
Approach LOS	C			D			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	57.9		38.0	13.8	58.2		38.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	49.0		33.0	15.0	48.0		33.0				
Max Q Clear Time (g_c+I1), s	9.7	37.0		34.3	9.4	37.0		30.6				
Green Ext Time (p_c), s	0.4	10.9		0.0	0.5	9.5		0.7				

Intersection Summary

HCM 6th Ctrl Delay 34.2
 HCM 6th LOS C

Lanes, Volumes, Timings

2035 Total PM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	182	1496	238	201	1079	94	286	995	261	207	668	84
Future Volume (vph)	182	1496	238	201	1079	94	286	995	261	207	668	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00			1.00		1.00	1.00		1.00		0.98
Frt		0.979			0.988			0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	5043	0	1805	5063	0	1787	4915	0	1656	5136	1553
Flt Permitted	0.103			0.108			0.264			0.133		
Satd. Flow (perm)	188	5043	0	205	5063	0	495	4915	0	232	5136	1521
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			14			59				109
Link Speed (k/h)		60			60			60				60
Link Distance (m)		268.3			288.0			208.8				230.9
Travel Time (s)		16.1			17.3			12.5				13.9
Conf. Peds. (#/hr)	21		19	19		21	8		9	9		8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	2%	0%	0%	12%	1%	2%	1%	9%	1%	4%
Adj. Flow (vph)	200	1644	262	221	1186	103	314	1093	287	227	734	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	1906	0	221	1289	0	314	1380	0	227	734	92
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	36.0		11.0	36.0	36.0
Total Split (s)	17.0	45.0		14.0	42.0		15.0	36.0		15.0	36.0	36.0
Total Split (%)	15.5%	40.9%		12.7%	38.2%		13.6%	32.7%		13.6%	32.7%	32.7%
Maximum Green (s)	13.0	39.0		10.0	36.0		11.0	30.0		11.0	30.0	30.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			6.0			6.0	6.0
Flash Dont Walk (s)		26.0			26.0			24.0			24.0	24.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	52.9	39.0		49.1	37.1		43.0	30.0		43.0	30.0	30.0
Actuated g/C Ratio	0.48	0.35		0.45	0.34		0.39	0.27		0.39	0.27	0.27
v/c Ratio	0.78	1.05		0.94	0.75		0.98	1.00		0.97	0.52	0.19

Lanes, Volumes, Timings

2035 Total PM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	54.0	60.0		71.1	35.6		71.5	62.4		87.6	48.7	17.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	54.0	60.0		71.1	35.6		71.5	62.4		87.6	48.7	17.5
LOS	D	E		E	D		E	E		F	D	B
Approach Delay		59.4			40.8			64.1			54.3	
Approach LOS		E			D			E			D	
Queue Length 50th (m)	34.0	~166.0		32.9	94.6		48.3	110.2		47.6	62.3	4.0
Queue Length 95th (m)	m48.5	#197.2		#81.3	112.8		#92.4	#146.1		#86.5	77.0	m16.4
Internal Link Dist (m)		244.3			264.0			184.8			206.9	
Turn Bay Length (m)	90.0			120.0			90.0			70.0		70.0
Base Capacity (vph)	275	1807		236	1715		322	1383		233	1400	494
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	0.73	1.05		0.94	0.75		0.98	1.00		0.97	0.52	0.19

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 7 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 55.4

Intersection LOS: E

Intersection Capacity Utilization 99.0%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

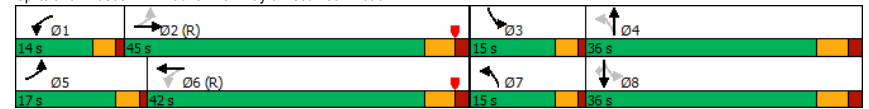
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Total PM Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔
Traffic Volume (veh/h)	182	1496	238	201	1079	94	286	995	261	207	668	84
Future Volume (veh/h)	182	1496	238	201	1079	94	286	995	261	207	668	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1900	1870	1900	1900	1722	1885	1870	1885	1767	1885	1841
Adj Flow Rate, veh/h	200	1644	262	221	1186	103	314	1093	287	227	734	92
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	0	2	0	0	12	1	2	1	9	1	4
Cap, veh/h	285	1596	253	230	1723	150	336	1096	288	234	1404	421
Arrive On Green	0.03	0.12	0.12	0.09	0.36	0.36	0.10	0.27	0.27	0.03	0.09	0.09
Sat Flow, veh/h	1753	4501	713	1810	4852	421	1795	4018	1055	1682	5147	1544
Grp Volume(v), veh/h	200	1261	645	221	845	444	314	926	454	227	734	92
Grp Sat Flow(s),veh/h/ln	1753	1729	1756	1810	1729	1815	1795	1702	1668	1682	1716	1544
Q Serve(g_s), s	7.7	39.0	39.0	9.4	22.9	23.0	11.0	29.9	29.9	10.5	15.0	6.1
Cycle Q Clear(g_c), s	7.7	39.0	39.0	9.4	22.9	23.0	11.0	29.9	29.9	10.5	15.0	6.1
Prop In Lane	1.00		0.41	1.00		0.23	1.00		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	285	1226	623	230	1228	645	336	928	455	234	1404	421
V/C Ratio(X)	0.70	1.03	1.04	0.96	0.69	0.69	0.93	1.00	1.00	0.97	0.52	0.22
Avail Cap(c_a), veh/h	334	1226	623	230	1228	645	336	928	455	234	1404	421
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.51	0.51	0.51	1.00	1.00	1.00	1.00	1.00	0.76	0.76	0.76	0.76
Uniform Delay (d), s/veh	25.3	48.6	48.6	30.3	30.3	30.3	32.5	40.0	40.0	31.4	43.2	39.2
Incr Delay (d2), s/veh	2.7	26.1	35.5	48.3	3.2	5.9	32.5	28.9	41.6	43.0	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	23.6	26.0	8.0	9.0	10.0	10.0	16.0	17.8	8.3	7.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.0	74.7	84.1	78.6	33.4	36.2	65.1	68.9	81.6	74.5	43.5	39.4
LnGrp LOS	C	F	F	E	C	D	E	E	F	E	D	D
Approach Vol, veh/h	2106			1510			1694			1053		
Approach Delay, s/veh	73.1			40.8			71.6			49.8		
Approach LOS	E			D			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	45.0	15.0	36.0	13.9	45.1	15.0	36.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	39.0	11.0	30.0	13.0	36.0	11.0	30.0				
Max Q Clear Time (g_c+I1), s	11.4	41.0	12.5	31.9	9.7	25.0	13.0	17.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	8.0	0.0	5.6				

Intersection Summary	
HCM 6th Ctrl Delay	61.2
HCM 6th LOS	E

Lanes, Volumes, Timings

2035 Total PM Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔
Traffic Volume (vph)	377	98	286	114	91	119	217	842	160	105	514	403
Future Volume (vph)	377	98	286	114	91	119	217	842	160	105	514	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	0.99	0.98		1.00	0.99		1.00		0.98	1.00	0.99	
Frt	0.888				0.915				0.850		0.934	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1613	0	1570	1672	0	1671	3610	1455	1703	4772	0
Fit Permitted	0.568			0.361			0.149			0.186		
Satd. Flow (perm)	1073	1613	0	594	1672	0	262	3610	1423	333	4772	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	172			77			176			176		
Link Speed (k/h)	50			50			60			60		
Link Distance (m)	621.8			106.2			230.9			292.9		
Travel Time (s)	44.8			7.6			13.9			17.6		
Conf. Peds. (#/hr)	7		8	8		7	1		1	1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	4%	15%	0%	5%	8%	0%	11%	6%	1%	0%
Adj. Flow (vph)	414	108	314	125	100	131	238	925	176	115	565	443
Shared Lane Traffic (%)												
Lane Group Flow (vph)	414	422	0	125	231	0	238	925	176	115	1008	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4				8		5		2		1	
Permitted Phases	4				8		2		2		6	
Detector Phase	4		4		8		8		5		2	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	35.0	35.0		36.0	36.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	55.0	55.0		55.0	55.0		19.0	43.0	43.0	12.0	36.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		17.3%	39.1%	39.1%	10.9%	32.7%	
Maximum Green (s)	49.0	49.0		49.0	49.0		15.0	37.0	37.0	8.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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		4.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	45.7	45.7		45.7	45.7		54.1	40.5	40.5	44.3	34.5	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.49	0.37	0.37	0.40	0.31	
v/c Ratio	0.93	0.55		0.51	0.31		0.78	0.70	0.28	0.50	0.62	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

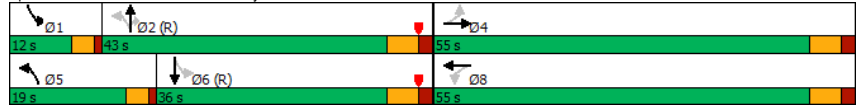
2035 Total PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	59.3	16.1		31.1	14.5		47.3	14.8	0.5	25.0	29.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	59.3	16.1		31.1	14.5		47.3	14.8	0.5	25.0	29.2	
LOS	E	B		C	B		D	B	A	C	C	
Approach Delay		37.5			20.3			18.7			28.8	
Approach LOS		D			C			B			C	
Queue Length 50th (m)	82.5	38.4		19.4	20.8		32.5	32.5	0.2	14.5	62.4	
Queue Length 95th (m)	#144.3	67.7		38.9	38.5		m36.8	m39.9	m0.1	25.8	78.8	
Internal Link Dist (m)		597.8			82.2			206.9			268.9	
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	477	813		264	787		321	1327	634	234	1617	
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	0.87	0.52		0.47	0.29		0.74	0.70	0.28	0.49	0.62	

Intersection Summary

Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 79 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Red	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 91.2%	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.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

2035 Total PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	377	98	286	114	91	119	217	842	160	105	514	403
Future Volume (veh/h)	377	98	286	114	91	119	217	842	160	105	514	403
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1841	1678	1900	1826	1781	1900	1737	1811	1885	1900
Adj Flow Rate, veh/h	414	108	314	125	100	131	238	925	176	115	565	443
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	4	15	0	5	8	0	11	6	1	0
Cap, veh/h	484	190	553	288	331	434	275	1251	509	265	1002	466
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45	0.23	0.69	0.69	0.06	0.29	0.29
Sat Flow, veh/h	1165	427	1242	865	744	974	1697	3610	1470	1725	3431	1595
Grip Volume(v), veh/h	414	0	422	125	0	231	238	925	176	115	565	443
Grip Sat Flow(s), veh/h/ln	1165	0	1669	865	0	1718	1697	1805	1470	1725	1716	1595
Q Serve(g_s), s	38.9	0.0	20.7	13.8	0.0	9.5	10.7	17.8	5.3	5.1	15.4	29.9
Cycle Q Clear(g_c), s	48.3	0.0	20.7	34.4	0.0	9.5	10.7	17.8	5.3	5.1	15.4	29.9
Prop In Lane	1.00		0.74	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	484	0	743	288	0	765	275	1251	509	265	1002	466
V/C Ratio(X)	0.86	0.00	0.57	0.43	0.00	0.30	0.87	0.74	0.35	0.43	0.56	0.95
Avail Cap(c_a), veh/h	484	0	743	288	0	765	307	1251	509	283	1002	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.16	0.16	0.16	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	0.0	22.6	35.4	0.0	19.5	22.8	13.8	11.9	25.4	33.0	38.2
Incr Delay (d2), s/veh	14.4	0.0	1.3	1.5	0.0	0.3	4.1	0.7	0.3	1.1	2.3	31.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	12.3	0.0	6.9	3.4	0.0	3.2	2.6	3.2	1.4	2.0	6.9	15.6
Unsig. Movement Delay, s/veh												
LnGrip Delay(d), s/veh	49.5	0.0	23.9	36.9	0.0	19.9	27.0	14.4	12.2	26.5	35.3	69.3
LnGrip LOS	D	A	C	D	A	B	C	B	B	C	D	E
Approach Vol, veh/h		836			356			1339				1123
Approach Delay, s/veh		36.6			25.8			16.4				47.8
Approach LOS		D			C			B				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	44.1		55.0	16.9	38.1		55.0				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	8.0	37.0		49.0	15.0	30.0		49.0				
Max Q Clear Time (g_c+I1), s	7.1	19.8		50.3	12.7	31.9		36.4				
Green Ext Time (p_c), s	0.0	9.8		0.0	0.2	0.0		2.7				

Intersection Summary

HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Lanes, Volumes, Timings

2035 Total PM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	97	108	133	270	419	4
Future Volume (vph)	97	108	133	270	419	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.929				0.999	
Fit Protected	0.977		0.950			
Satd. Flow (prot)	1691	0	1770	1863	1861	0
Fit Permitted	0.977		0.950			
Satd. Flow (perm)	1691	0	1770	1863	1861	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	140.9			213.5	134.3	
Travel Time (s)	10.1			15.4	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	117	145	293	455	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	222	0	145	293	459	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC

2035 Total PM Peak Hour

9: Rose-Ville Gardens Drive & Home Depot Access (930538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	97	108	133	270	419	4
Future Vol, veh/h	97	108	133	270	419	4
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	117	145	293	455	4

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1040	457	459
Stage 1	457	-	-
Stage 2	583	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	255	604	1102
Stage 1	638	-	-
Stage 2	558	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	221	604	1102
Mov Cap-2 Maneuver	355	-	-
Stage 1	554	-	-
Stage 2	558	-	-

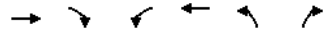
Approach	EB	NB	SB
HCM Control Delay, s	20.4	2.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1102	-	453	-
HCM Lane V/C Ratio	0.131	-	0.492	-
HCM Control Delay (s)	8.8	-	20.4	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.5	-	2.7	-

Lanes, Volumes, Timings

2035 Total PM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	446	219	204	393	254	113
Future Volume (vph)	446	219	204	393	254	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.956					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1781	0	1770	1863	1770	1583
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1781	0	1770	1863	1770	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	76.5			621.8	134.3	
Travel Time (s)	5.5			44.8	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	485	238	222	427	276	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	723	0	222	427	276	123
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

HCM 6th TWSC

2035 Total PM Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	31.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	446	219	204	393	254	113
Future Vol, veh/h	446	219	204	393	254	113
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	485	238	222	427	276	123

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	723
Stage 1	-	-	604
Stage 2	-	-	871
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.318
Pot Cap-1 Maneuver	-	879	139
Stage 1	-	-	546
Stage 2	-	-	410
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	879	104
Mov Cap-2 Maneuver	-	-	221
Stage 1	-	-	546
Stage 2	-	-	306

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	134.8
HCM LOS			F

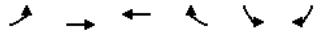
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	221	498	-	-	879	-
HCM Lane V/C Ratio	1.249	0.247	-	-	0.252	-
HCM Control Delay (s)	188.3	14.6	-	-	10.5	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	14.2	1	-	-	1	-

Notes

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

Lanes, Volumes, Timings
11: Catherine Street & Access A

2035 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↔		↔	↔
Traffic Volume (vph)	127	85	114	339	364	115
Future Volume (vph)	127	85	114	339	364	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.899			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1675	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1675	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		81.3	118.1		190.8	
Travel Time (s)		5.9	8.5		13.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	92	124	368	396	125
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	92	492	0	396	125
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	64.1%
ICU Level of Service	C
Analysis Period (min)	15

HCM 6th TWSC
11: Catherine Street & Access A

2035 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	15.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↔		↔	↔
Traffic Vol, veh/h	127	85	114	339	364	115
Future Vol, veh/h	127	85	114	339	364	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	92	124	368	396	125

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	492	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1071	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1071	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	5.3	0	33.6
HCM LOS			D

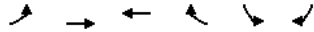
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1071	-	-	-	473	732
HCM Lane V/C Ratio	0.129	-	-	-	0.836	0.171
HCM Control Delay (s)	8.9	-	-	-	40.8	10.9
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.4	-	-	-	8.3	0.6

Notes

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

Lanes, Volumes, Timings
12: Catherine Street & Access B

2035 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Volume (vph)	85	364	339	308	301	114
Future Volume (vph)	85	364	339	308	301	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.936			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1744	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1744	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		118.1	76.5		157.4	
Travel Time (s)		8.5	5.5		11.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	396	368	335	327	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	396	703	0	327	124
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	68.1%
ICU Level of Service	C
Analysis Period (min)	15

HCM 6th TWSC
12: Catherine Street & Access B

2035 Total PM Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	16.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Traffic Vol, veh/h	85	364	339	308	301	114
Future Vol, veh/h	85	364	339	308	301	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	396	368	335	327	124

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	703	0	0
Stage 1	-	-	536
Stage 2	-	-	580
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	895	-	230
Stage 1	-	-	587
Stage 2	-	-	560
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	895	-	206
Mov Cap-2 Maneuver	-	-	342
Stage 1	-	-	527
Stage 2	-	-	560

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	57.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	895	-	-	-	342	545
HCM Lane V/C Ratio	0.103	-	-	-	0.957	0.227
HCM Control Delay (s)	9.5	-	-	-	73.8	13.5
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.3	-	-	-	10.2	0.9

Notes

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

Lanes, Volumes, Timings

2035 Total Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↖	↖	↖	↖↖	↖	↖	↖↖	↖	↖	↖↖	↖
Traffic Volume (vph)	34	1365	128	202	1484	265	167	88	178	243	129	25
Future Volume (vph)	34	1365	128	202	1484	265	167	88	178	243	129	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		50.0	95.0		0.0	65.0		60.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	60.0			70.0			55.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00		0.98	1.00		0.98	0.99		1.00
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5048	0	1770	3574	1599	1770	3574	1615	1805	3453	0
Fit Permitted	0.104			0.102			0.651			0.695		
Satd. Flow (perm)	198	5048	0	190	3574	1564	1208	3574	1585	1313	3453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				210			184			21
Link Speed (k/h)		60			60			50				50
Link Distance (m)		230.2			268.2			222.3				200.9
Travel Time (s)		13.8			16.1			16.0				14.5
Confl. Peds. (#/hr)	11		18	18		11	4		6	6		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	3%	2%	1%	1%	2%	1%	0%	0%	1%	5%
Adj. Flow (vph)	35	1407	132	208	1530	273	172	91	184	251	133	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	1539	0	208	1530	273	172	91	184	251	159	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	5	2		1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	9.0	10.0	10.0	9.0	10.0	
Minimum Split (s)	11.0	40.0		11.0	40.0	40.0	13.0	35.0	35.0	13.0	35.0	
Total Split (s)	11.0	44.0		16.0	49.0	49.0	13.0	35.0	35.0	13.0	35.0	
Total Split (%)	10.2%	40.7%		14.8%	45.4%	45.4%	12.0%	32.4%	32.4%	12.0%	32.4%	
Maximum Green (s)	7.0	39.0		12.0	44.0	44.0	9.0	30.0	30.0	9.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		28.0			28.0	28.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	66.6	58.6		74.7	67.1	67.1	21.3	11.3	11.3	21.3	11.3	
Actuated g/C Ratio	0.62	0.54		0.69	0.62	0.62	0.20	0.10	0.10	0.20	0.10	
v/c Ratio	0.16	0.56		0.71	0.69	0.26	0.60	0.24	0.56	0.84	0.42	

Lanes, Volumes, Timings

2035 Total Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	7.6	17.4		42.3	9.4	2.3	45.2	45.6	13.4	62.7	42.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.6	17.4		42.3	9.4	2.3	45.2	45.6	13.4	62.7	42.3	
LOS	A	B		D	A	A	D	D	B	E	D	
Approach Delay		17.2			11.8			32.2				54.8
Approach LOS		B			B			C				D
Queue Length 50th (m)	2.1	77.8		31.6	30.8	0.0	32.7	10.0	0.0	50.1	15.3	
Queue Length 95th (m)	5.7	98.8		m47.0	64.4	m7.7	51.8	17.6	20.5	#82.1	25.3	
Internal Link Dist (m)		206.2			244.2			198.3				176.9
Turn Bay Length (m)	55.0				95.0			65.0		60.0	45.0	
Base Capacity (vph)	225	2744		307	2220	1051	285	992	573	300	974	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.56		0.68	0.69	0.26	0.60	0.09	0.32	0.84	0.16	

Intersection Summary

Area Type: Other

Cycle Length: 108

Actuated Cycle Length: 108

Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 19.7

Intersection LOS: B

Intersection Capacity Utilization 86.7%

ICU Level of Service E

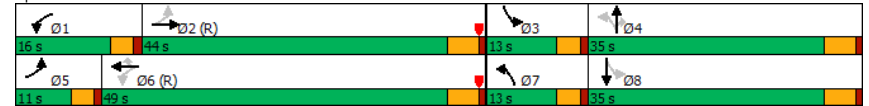
Analysis Period (min) 15

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: 1: Jefferson Boulevard & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Total Saturday Peak Hour

1: Jefferson Boulevard & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔	
Traffic Volume (veh/h)	34	1365	128	202	1484	265	167	88	178	243	129	25
Future Volume (veh/h)	34	1365	128	202	1484	265	167	88	178	243	129	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1856	1870	1885	1885	1870	1885	1900	1900	1885	1826
Adj Flow Rate, veh/h	35	1407	132	208	1530	273	172	91	184	251	133	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	3	2	1	1	2	1	0	0	1	5
Cap, veh/h	277	2419	227	305	1937	855	370	598	266	379	500	95
Arrive On Green	0.04	0.51	0.51	0.15	1.00	1.00	0.08	0.17	0.17	0.08	0.17	0.17
Sat Flow, veh/h	1810	4781	449	1781	3582	1582	1781	3582	1593	1810	2995	571
Grp Volume(v), veh/h	35	1010	529	208	1530	273	172	91	184	251	78	81
Grp Sat Flow(s),veh/h/ln	1810	1716	1799	1781	1791	1582	1781	1791	1593	1810	1791	1775
Q Serve(g_s), s	1.0	22.2	22.3	6.0	0.0	0.0	8.7	2.3	11.7	9.0	4.1	4.3
Cycle Q Clear(g_c), s	1.0	22.2	22.3	6.0	0.0	0.0	8.7	2.3	11.7	9.0	4.1	4.3
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	277	1736	910	305	1937	855	370	598	266	379	299	296
V/C Ratio(X)	0.13	0.58	0.58	0.68	0.79	0.32	0.46	0.15	0.69	0.66	0.26	0.27
Avail Cap(c_a), veh/h	318	1736	910	366	1937	855	370	995	442	379	497	493
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.52	0.52	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	18.7	18.7	14.7	0.0	0.0	33.7	38.4	42.4	36.3	39.2	39.3
Incr Delay (d2), s/veh	0.2	1.4	2.7	2.1	1.8	0.5	0.9	0.2	4.5	4.2	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	11.8	12.6	3.0	0.9	0.2	6.3	1.8	8.1	10.0	3.1	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	20.1	21.4	16.8	1.8	0.5	34.6	38.6	46.9	40.6	39.8	40.0
LnGrp LOS	B	C	C	B	A	A	C	D	D	D	D	D
Approach Vol, veh/h	1574			2011			447			410		
Approach Delay, s/veh	20.3			3.2			40.5			40.3		
Approach LOS	C			A			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.3	59.6	13.0	23.0	8.6	63.4	13.0	23.0				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	12.0	39.0	9.0	30.0	7.0	44.0	9.0	30.0				
Max Q Clear Time (g_c+I1), s	8.0	24.3	11.0	13.7	3.0	2.0	10.7	6.3				
Green Ext Time (p_c), s	0.3	11.5	0.0	1.9	0.0	29.5	0.0	1.4				

Intersection Summary

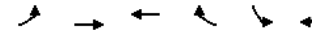
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Lanes, Volumes, Timings

2035 Total Saturday Peak Hour

2: Tecumseh Road & Catherine Street (N/S)

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

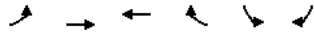


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (vph)	219	1568	1704	48	43	247
Future Volume (vph)	219	1568	1704	48	43	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	75.0				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.996			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	5085	5065	0	1770	1583
Fit Permitted	0.076				0.950	
Satd. Flow (perm)	142	5085	5065	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			5			268
Link Speed (k/h)		60	60		50	
Link Distance (m)		268.2	169.1		273.8	
Travel Time (s)		16.1	10.1		19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	238	1704	1852	52	47	268
Shared Lane Traffic (%)						
Lane Group Flow (vph)	238	1704	1904	0	47	268
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	10.0	10.0		10.0	10.0
Minimum Split (s)	11.0	23.0	23.0		23.0	23.0
Total Split (s)	24.0	80.0	56.0		28.0	28.0
Total Split (%)	22.2%	74.1%	51.9%		25.9%	25.9%
Maximum Green (s)	20.0	75.0	51.0		23.0	23.0
Yellow Time (s)	3.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)	70.6	69.6	48.7		28.4	28.4
Actuated g/C Ratio	0.65	0.64	0.45		0.26	0.26
v/c Ratio	0.68	0.52	0.83		0.10	0.44
Control Delay	43.8	7.7	48.9		34.2	6.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	43.8	7.7	48.9		34.2	6.9

Lanes, Volumes, Timings

2035 Total Saturday Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS

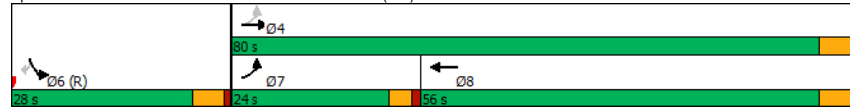


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	D	A	D		C	A
Approach Delay		12.1	48.9		11.0	
Approach LOS		B	D		B	
Queue Length 50th (m)	40.1	40.9	161.7		8.2	0.0
Queue Length 95th (m)	m63.9	36.1	176.0		18.8	21.4
Internal Link Dist (m)		244.2	145.1		249.8	
Turn Bay Length (m)	45.0					
Base Capacity (vph)	394	3531	2394		465	614
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.60	0.48	0.80		0.10	0.44

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 28.9 Intersection LOS: C
 Intersection Capacity Utilization 66.1% ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

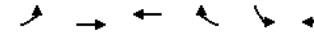
Splits and Phases: 2: Tecumseh Road & Catherine Street (N/S)



HCM 6th Signalized Intersection Summary

2035 Total Saturday Peak Hour

2: Tecumseh Road & Catherine Street (N/S) (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔↔	↔↔↔		↔	↔
Traffic Volume (veh/h)	219	1568	1704	48	43	247
Future Volume (veh/h)	219	1568	1704	48	43	247
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	238	1704	1852	52	47	268
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	280	2977	2262	63	578	514
Arrive On Green	0.03	0.19	0.44	0.44	0.32	0.32
Sat Flow, veh/h	1781	5274	5274	143	1781	1585
Grp Volume(v), veh/h	238	1704	1234	670	47	268
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1845	1781	1585
Q Serve(g_s), s	8.5	32.7	34.2	34.3	2.0	14.8
Cycle Q Clear(g_c), s	8.5	32.7	34.2	34.3	2.0	14.8
Prop In Lane	1.00			0.08	1.00	1.00
Lane Grp Cap(c), veh/h	280	2977	1508	817	578	514
V/C Ratio(X)	0.85	0.57	0.82	0.82	0.08	0.52
Avail Cap(c_a), veh/h	426	3546	1607	871	578	514
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	31.4	26.3	26.3	25.3	29.7
Incr Delay (d2), s/veh	7.8	0.1	3.3	5.9	0.3	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.5	19.9	17.6	19.7	1.5	20.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.0	31.5	29.6	32.2	25.6	33.4
LnGrp LOS	D	C	C	C	C	C
Approach Vol, veh/h		1942	1904		315	
Approach Delay, s/veh		32.2	30.5		32.3	
Approach LOS		C	C		C	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	68.0	40.0	15.1	52.8
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	75.0	23.0	20.0	51.0
Max Q Clear Time (g_c+I1), s	34.7	16.8	10.5	36.3
Green Ext Time (p_c), s	21.7	0.8	0.7	11.6

Intersection Summary

HCM 6th Ctrl Delay 31.4
 HCM 6th LOS C

Lanes, Volumes, Timings
 3: Commercial Access/Home Depot Access & Tecumseh Retail Development, Tecumseh Road, Windsor TIS

2035 Total Saturday Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Volume (vph)	0	1764	33	0	1478	9	0	0	47	0	0	120
Future Volume (vph)	0	1764	33	0	1478	9	0	0	47	0	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	30.0		0.0	0.0		0.0	45.0		0.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	30.0			25.0			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.997			0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	5171	0	0	5131	0	0	0	1644	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	5171	0	0	5131	0	0	0	1644	0	0	1611
Link Speed (k/h)		60			60				50			50
Link Distance (m)		169.1			186.0				136.6			148.8
Travel Time (s)		10.1			11.2				9.8			10.7
Confl. Peds. (#/hr)	5		8	8		5	3		2	2		3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	0	1857	35	0	1556	9	0	0	49	0	0	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1892	0	0	1565	0	0	0	49	0	0	126
Sign Control		Free			Free				Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.5%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC
 3: Commercial Access/Home Depot Access & Tecumseh Retail Development, Tecumseh Road, Windsor TIS

2035 Total Saturday Peak Hour

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑				↑			↑
Traffic Vol, veh/h	0	1764	33	0	1478	9	0	0	47	0	0	120
Future Vol, veh/h	0	1764	33	0	1478	9	0	0	47	0	0	120
Conflicting Peds, #/hr	5	0	8	8	0	5	3	0	2	2	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	0	0	0	1	0	0	0	0	1	0	2
Mvmt Flow	0	1857	35	0	1556	9	0	0	49	0	0	126

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	0	-
Stage 1	0	-	0	-
Stage 2	0	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	25.7	27.6
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	223	-	-	-	-	283
HCM Lane V/C Ratio	0.222	-	-	-	-	0.446
HCM Control Delay (s)	25.7	-	-	-	-	27.6
HCM Lane LOS	D	-	-	-	-	D
HCM 95th %tile Q(veh)	0.8	-	-	-	-	2.2

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	269	1354	65	238	1384	77	166	171	177	215	159	222
Future Volume (vph)	269	1354	65	238	1384	77	166	171	177	215	159	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	50.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					1.00	0.99				
Fit		0.993			0.992			0.925				0.913
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5092	0	1787	5140	0	1787	1714	0	1770	1701	0
Fit Permitted	0.095			0.099			0.307			0.359		
Satd. Flow (perm)	177	5092	0	186	5140	0	576	1714	0	669	1701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			9			54				76
Link Speed (k/h)		60			60			50				50
Link Distance (m)		186.0			273.0			289.9				218.2
Travel Time (s)		11.2			16.4			20.9				15.7
Confl. Peds. (#/hr)			9	9			7		8			
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	1%	0%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	292	1410	68	248	1442	84	173	186	184	234	173	241
Shared Lane Traffic (%)												
Lane Group Flow (vph)	292	1478	0	248	1526	0	173	370	0	234	414	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		1	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	11.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	11.0	28.0		11.0	28.0		34.0	34.0		34.0	34.0	
Total Split (s)	20.0	43.0		18.0	41.0		47.0	47.0		47.0	47.0	
Total Split (%)	18.5%	39.8%		16.7%	38.0%		43.5%	43.5%		43.5%	43.5%	
Maximum Green (s)	16.0	38.0		14.0	36.0		42.0	42.0		42.0	42.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.5	4.0		3.0	3.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	58.5	42.2		54.6	40.3		38.5	38.5		38.5	38.5	
Actuated g/C Ratio	0.54	0.39		0.51	0.37		0.36	0.36		0.36	0.36	
v/c Ratio	0.91	0.74		0.86	0.79		0.84	0.57		0.98	0.63	

Lanes, Volumes, Timings
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	66.3	18.6		44.7	42.6		65.3	26.9		85.9	24.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	66.3	18.6		44.7	42.6		65.3	26.9		85.9	24.5	
LOS	E	B		D	D		E	C		F	C	
Approach Delay		26.5			42.9			39.1			46.6	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	54.3	87.1		45.0	131.8		33.0	52.9		43.3	46.9	
Queue Length 95th (m)	#102.0	84.5		#85.5	148.4		#72.1	82.5		m#90.3	m76.6	
Internal Link Dist (m)		162.0			249.0			265.9			194.2	
Turn Bay Length (m)	25.0			50.0			50.0			120.0		
Base Capacity (vph)	335	1995		302	1922		224	699		260	707	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.87	0.74		0.82	0.79		0.77	0.53		0.90	0.59	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 14 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 36.8
 Intersection LOS: D
 Intersection Capacity Utilization 92.3%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Rose-Ville Gardens Drive & Tecumseh Road



HCM 6th Signalized Intersection Summary
 4: Rose-Ville Gardens Drive & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (veh/h)	269	1354	65	238	1384	77	166	171	177	215	159	222
Future Volume (veh/h)	269	1354	65	238	1384	77	166	171	177	215	159	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1885	1900	1870	1885	1870	1885	1870	1870	1870
Adj Flow Rate, veh/h	292	1410	68	248	1442	84	173	186	184	234	173	241
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Percent Heavy Veh, %	2	1	0	1	0	2	1	2	1	2	2	2
Cap, veh/h	324	1883	91	306	1766	103	254	334	331	289	275	383
Arrive On Green	0.13	0.37	0.37	0.07	0.24	0.24	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1781	5027	242	1795	5009	292	980	860	851	1011	707	986
Grp Volume(v), veh/h	292	962	516	248	995	531	173	0	370	234	0	414
Grp Sat Flow(s),veh/h/ln	1781	1716	1838	1795	1729	1843	980	0	1711	1011	0	1693
Q Serve(g_s), s	11.6	26.3	26.3	9.2	29.4	29.4	18.7	0.0	18.2	23.8	0.0	21.4
Cycle Q Clear(g_c), s	11.6	26.3	26.3	9.2	29.4	29.4	40.1	0.0	18.2	42.0	0.0	21.4
Prop In Lane	1.00		0.13	1.00		0.16	1.00		0.50	1.00		0.58
Lane Grp Cap(c), veh/h	324	1285	688	306	1219	650	254	0	665	289	0	658
V/C Ratio(X)	0.90	0.75	0.75	0.81	0.82	0.82	0.68	0.00	0.56	0.81	0.00	0.63
Avail Cap(c_a), veh/h	358	1285	688	346	1219	650	254	0	665	289	0	658
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.9	29.4	29.4	24.6	37.9	37.9	42.9	0.0	25.7	42.7	0.0	26.7
Incr Delay (d2), s/veh	23.7	4.0	7.3	9.8	4.7	8.4	7.2	0.0	1.0	16.3	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.2	15.0	16.7	7.1	17.9	19.8	8.2	0.0	11.0	11.4	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	33.4	36.7	34.5	42.6	46.3	50.1	0.0	26.8	59.0	0.0	28.9
LnGrp LOS	D	C	D	C	D	D	D	A	C	E	A	C
Approach Vol, veh/h	1770			1774			543			648		
Approach Delay, s/veh	37.0			42.6			34.2			39.8		
Approach LOS	D			D			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.6	45.4		47.0	17.9	43.1		47.0				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	38.0		42.0	16.0	36.0		42.0				
Max Q Clear Time (g_c+I1), s	11.2	28.3		44.0	13.6	31.4		42.1				
Green Ext Time (p_c), s	0.3	7.8		0.0	0.3	4.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		39.2
HCM 6th LOS	D	

Lanes, Volumes, Timings
 6: East Park Drive/Walmart Access & Tecumseh Road (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Traffic Volume (vph)	240	1391	137	220	1265	225	155	78	135	143	84	130
Future Volume (vph)	240	1391	137	220	1265	225	155	78	135	143	84	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	65.0		0.0	40.0		0.0	25.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			50.0			100.0			50.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.97	0.99		1.00	0.97	
Frt	0.987				0.977		0.905				0.909	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5055	0	1805	5005	0	1787	1690	0	1805	1671	0
Fit Permitted	0.104			0.098			0.445			0.448		
Satd. Flow (perm)	198	5055	0	186	5005	0	814	1690	0	848	1671	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	18			39			82			73		
Link Speed (k/h)	60			60			50			50		
Link Distance (m)	273.0			268.3			231.1			151.2		
Travel Time (s)	16.4			16.1			16.6			10.9		
Confl. Peds. (#/hr)	4		12	12		4	39		5	5		39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%
Adj. Flow (vph)	247	1434	141	227	1304	232	160	80	139	147	87	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	1575	0	227	1536	0	160	219	0	147	221	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6		4			8		8
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	10.0		8.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	35.0		12.0	35.0		35.0	35.0		35.0	35.0	
Total Split (s)	23.0	49.0		22.0	48.0		37.0	37.0		37.0	37.0	
Total Split (%)	21.3%	45.4%		20.4%	44.4%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)	19.0	44.0		18.0	43.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	71.2	56.2		70.9	56.0		23.9	23.9		23.9	23.9	
Actuated g/C Ratio	0.66	0.52		0.66	0.52		0.22	0.22		0.22	0.22	
v/c Ratio	0.73	0.60		0.69	0.59		0.89	0.50		0.78	0.52	

Lanes, Volumes, Timings

2035 Total Saturday Peak Hour

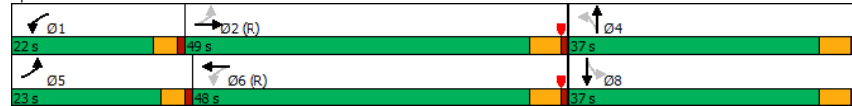
6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	36.7	13.8		35.2	14.2		83.0	25.2		65.7	27.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.7	13.8		35.2	14.2		83.0	25.2		65.7	27.4	
LOS	D	B		D	B		F	C		E	C	
Approach Delay	16.9			16.9			49.6			42.7		
Approach LOS	B			B			D			D		
Queue Length 50th (m)	25.0	111.3		36.2	42.0		34.3	25.8		30.6	28.2	
Queue Length 95th (m)	m30.6	m137.6		m49.1	m65.0		#60.8	45.2		50.9	47.7	
Internal Link Dist (m)	249.0		244.3		207.1		127.2					
Turn Bay Length (m)	65.0		40.0		25.0		20.0					
Base Capacity (vph)	418	2639		396	2615		241	558		251	546	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.59	0.60		0.57	0.59		0.66	0.39		0.59	0.40	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 58 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 22.0 Intersection LOS: C
 Intersection Capacity Utilization 89.4% ICU Level of Service E
 Analysis Period (min) 15
 # 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: East Park Drive/Walmart Access & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Total Saturday Peak Hour

6: East Park Drive/Walmart Access & Tecumseh Road Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑↑			↑↑↑		
Traffic Volume (veh/h)	240	1391	137	220	1265	225	155	78	135	143	84	130
Future Volume (veh/h)	240	1391	137	220	1265	225	155	78	135	143	84	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1885	1900	1885	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	247	1434	141	227	1304	232	160	80	139	147	87	134
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	0	0	1	0	1	0	1	0	0	0
Cap, veh/h	323	2430	239	382	2194	390	256	167	291	258	181	279
Arrive On Green	0.19	1.00	1.00	0.06	0.34	0.34	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1810	4758	468	1810	4385	780	1140	605	1051	1151	656	1010
Grp Volume(v), veh/h	247	1034	541	227	1020	516	160	0	219	147	0	221
Grp Sat Flow(s),veh/h/ln	1810	1716	1794	1810	1716	1734	1140	0	1656	1151	0	1666
Q Serve(g_s), s	7.4	0.0	0.0	6.3	26.7	26.7	14.7	0.0	11.9	13.2	0.0	12.0
Cycle Q Clear(g_c), s	7.4	0.0	0.0	6.3	26.7	26.7	14.7	0.0	11.9	25.1	0.0	12.0
Prop In Lane	1.00		0.26	1.00		0.45	1.00		0.63	1.00		0.61
Lane Grp Cap(c), veh/h	323	1752	916	382	1717	867	256	0	458	258	0	461
V/C Ratio(X)	0.77	0.59	0.59	0.59	0.59	0.59	0.63	0.00	0.48	0.57	0.00	0.48
Avail Cap(c_a), veh/h	472	1752	916	533	1717	867	278	0	491	281	0	494
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.54	0.54	0.54	0.42	0.42	0.42	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	11.0	26.8	26.8	43.7	0.0	32.6	43.0	0.0	32.6
Incr Delay (d2), s/veh	2.4	0.8	1.5	0.6	0.6	1.3	4.7	0.0	1.1	3.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	0.3	0.7	3.6	14.2	14.5	7.5	0.0	8.0	6.6	0.0	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	0.8	1.5	11.6	27.4	28.1	48.4	0.0	33.7	46.1	0.0	33.7
LnGrp LOS	B	A	A	B	C	C	D	A	C	D	A	C
Approach Vol, veh/h	1822			1763			379			368		
Approach Delay, s/veh	3.5			25.6			39.9			38.6		
Approach LOS	A			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	60.2		34.9	14.1	59.0		34.9				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	18.0	44.0		32.0	19.0	43.0		32.0				
Max Q Clear Time (g_c+I1), s	8.3	2.0		28.7	9.4	28.7		27.1				
Green Ext Time (p_c), s	0.6	25.3		1.0	0.7	11.2		1.3				

Intersection Summary

HCM 6th Ctrl Delay 18.7
 HCM 6th LOS B

Lanes, Volumes, Timings

2035 Total Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑↑↑			↑↑↑		↑
Traffic Volume (vph)	171	1416	179	272	1348	110	345	690	223	182	790	265
Future Volume (vph)	171	1416	179	272	1348	110	345	690	223	182	790	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	120.0		0.0	90.0		0.0	70.0		70.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	80.0			60.0			70.0			70.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00			1.00		1.00	1.00		1.00		0.98
Fit	0.983			0.989			0.963			0.850		
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5074	0	1805	5094	0	1770	4940	0	1719	5136	1583
Fit Permitted	0.106			0.098			0.162			0.158		
Satd. Flow (perm)	197	5074	0	186	5094	0	302	4940	0	286	5136	1559
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	21			13			76			179		
Link Speed (k/h)	60			60			60			60		
Link Distance (m)	268.3			288.0			208.8			230.9		
Travel Time (s)	16.1			17.3			12.5			13.9		
Conf. Peds. (#/hr)	12		23	23		12	3		2	2		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	0%	1%	0%	0%	7%	2%	1%	0%	5%	1%	2%
Adj. Flow (vph)	184	1523	192	292	1449	118	371	742	240	196	849	285
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	1715	0	292	1567	0	371	982	0	196	849	285
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		8
Detector Phase	5	2		1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	13.0		7.0	13.0	13.0
Minimum Split (s)	11.0	39.0		11.0	39.0		11.0	35.0		11.0	35.0	35.0
Total Split (s)	12.0	40.0		15.0	43.0		18.0	37.0		16.0	35.0	35.0
Total Split (%)	11.1%	37.0%		13.9%	39.8%		16.7%	34.3%		14.8%	32.4%	32.4%
Maximum Green (s)	8.0	34.0		11.0	37.0		14.0	31.0		12.0	29.0	29.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	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)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.5		3.0	3.5	3.5
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)	7.0			7.0			5.0			5.0		5.0
Flash Dont Walk (s)	26.0			26.0			24.0			24.0		24.0
Pedestrian Calls (#/hr)	0			0			0			0		0
Act Effect Green (s)	47.7	37.7		53.7	40.7		43.7	27.7		38.8	25.3	25.3
Actuated g/C Ratio	0.44	0.35		0.50	0.38		0.40	0.26		0.36	0.23	0.23
v/c Ratio	0.91	0.96		1.14	0.81		1.19	0.74		0.77	0.71	0.57

Lanes, Volumes, Timings

2035 Total Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

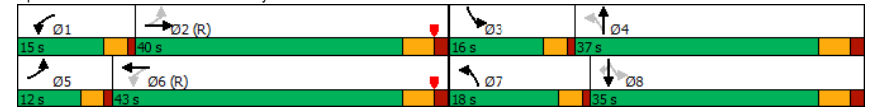
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	76.5	40.5		125.0	34.8		139.2	37.4		47.6	43.2	22.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	76.5	40.5		125.0	34.8		139.2	37.4		47.6	43.2	22.1
LOS	E	D		F	C		F	D		D	D	C
Approach Delay	44.0			48.9			65.3			39.3		
Approach LOS	D			D			E			D		
Queue Length 50th (m)	28.4	59.4		-58.7	113.1		-79.6	67.7		34.9	55.7	19.6
Queue Length 95th (m)	#72.7	#177.7		#116.4	139.8		#135.8	80.6		m#57.4	71.6	m45.9
Internal Link Dist (m)	244.3			264.0			184.8			206.9		
Turn Bay Length (m)	90.0			120.0			90.0			70.0		
Base Capacity (vph)	203	1785		257	1928		312	1472		263	1379	549
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	0.91	0.96		1.14	0.81		1.19	0.67		0.75	0.62	0.52

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 52 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 48.9
 Intersection LOS: D
 Intersection Capacity Utilization 98.6%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Lauzon Parkway & Tecumseh Road



HCM 6th Signalized Intersection Summary

2035 Total Saturday Peak Hour

7: Lauzon Parkway & Tecumseh Road

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔
Traffic Volume (veh/h)	171	1416	179	272	1348	110	345	690	223	182	790	265
Future Volume (veh/h)	171	1416	179	272	1348	110	345	690	223	182	790	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1900	1885	1900	1900	1796	1870	1885	1900	1826	1885	1870
Adj Flow Rate, veh/h	184	1523	192	292	1449	118	371	742	240	196	849	285
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	1	0	0	7	2	1	0	5	1	2
Cap, veh/h	231	1580	199	255	1793	146	339	1048	335	297	1254	385
Arrive On Green	0.02	0.11	0.11	0.10	0.37	0.37	0.13	0.27	0.27	0.03	0.08	0.08
Sat Flow, veh/h	1781	4653	586	1810	4880	397	1781	3856	1233	1739	5147	1579
Grp Volume(v), veh/h	184	1131	584	292	1027	540	371	659	323	196	849	285
Grp Sat Flow(s),veh/h/ln	1781	1729	1780	1810	1729	1820	1781	1716	1658	1739	1716	1579
Q Serve(g_s), s	7.1	35.2	35.2	11.0	28.8	28.9	14.0	18.7	19.0	8.9	17.3	19.1
Cycle Q Clear(g_c), s	7.1	35.2	35.2	11.0	28.8	28.9	14.0	18.7	19.0	8.9	17.3	19.1
Prop In Lane	1.00		0.33	1.00		0.22	1.00		0.74	1.00		1.00
Lane Grp Cap(c), veh/h	231	1175	605	255	1271	669	339	933	451	297	1254	385
V/C Ratio(X)	0.79	0.96	0.97	1.15	0.81	0.81	1.09	0.71	0.72	0.66	0.68	0.74
Avail Cap(c_a), veh/h	231	1175	605	255	1271	669	339	985	476	313	1382	424
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00	0.60	0.60	0.60
Uniform Delay (d), s/veh	27.4	47.3	47.3	30.6	30.7	30.7	30.0	35.4	35.6	30.1	45.5	46.3
Incr Delay (d2), s/veh	13.5	15.7	24.5	101.5	5.6	10.1	76.8	2.3	5.1	2.9	0.8	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3	24.5	26.9	17.6	16.6	18.4	19.5	11.5	11.8	6.2	11.2	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	62.9	71.8	132.1	36.3	40.9	106.8	37.8	40.6	33.0	46.3	50.3
LnGrp LOS	D	E	E	F	D	D	F	D	D	C	D	D
Approach Vol, veh/h	1899			1859			1353			1330		
Approach Delay, s/veh	63.5			52.7			57.4			45.2		
Approach LOS	E			D			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	42.7	15.0	35.4	12.0	45.7	18.0	32.3				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	11.0	34.0	12.0	31.0	8.0	37.0	14.0	29.0				
Max Q Clear Time (g_c+I1), s	13.0	37.2	10.9	21.0	9.1	30.9	16.0	21.1				
Green Ext Time (p_c), s	0.0	0.0	0.1	5.6	0.0	5.3	0.0	5.0				

Intersection Summary												
HCM 6th Ctrl Delay	55.3											
HCM 6th LOS	E											

Lanes, Volumes, Timings

2035 Total Saturday Peak Hour

8: Lauzon Parkway & Catherine Street

(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔		↔	↔↔↔		↔	↔↔↔		↔	↔↔↔		↔
Traffic Volume (vph)	454	109	357	129	112	127	315	485	178	127	648	442
Future Volume (vph)	454	109	357	129	112	127	315	485	178	127	648	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	80.0		0.0	20.0		0.0	115.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	65.0			7.5			65.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00		0.98	1.00	0.99	
Frt	0.885			0.920			0.850			0.939		
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1663	0	1671	1697	0	1805	3610	1524	1752	4785	0
Fit Permitted	0.322			0.442			0.101			0.438		
Satd. Flow (perm)	610	1663	0	777	1697	0	192	3610	1490	807	4785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		197			52				198		157	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)	644.8			106.2			230.9			292.9		
Travel Time (s)	46.4			7.6			13.9			17.6		
Confl. Peds. (#/hr)	4		2	2		4	5		1	1		5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	8%	0%	4%	0%	0%	6%	3%	1%	0%
Adj. Flow (vph)	504	121	397	143	124	141	350	539	198	141	720	491
Shared Lane Traffic (%)												
Lane Group Flow (vph)	504	518	0	143	265	0	350	539	198	141	1211	0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4				8		2		2	6		
Detector Phase	7	4			8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	11.0		11.0	11.0		7.0	11.0	11.0	7.0	11.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		11.0	36.0	36.0	11.0	36.0	
Total Split (s)	19.0	54.0		35.0	35.0		18.0	41.0	41.0	13.0	36.0	
Total Split (%)	17.6%	50.0%		32.4%	32.4%		16.7%	38.0%	38.0%	12.0%	33.3%	
Maximum Green (s)	15.0	48.0		29.0	29.0		14.0	35.0	35.0	9.0	30.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0		2.0	2.0		1.0	2.0	2.0	1.0	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)	4.0	6.0		6.0	6.0		4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0		7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		22.0		22.0	22.0			23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0		0	0			0	0		0	
Act Effect Green (s)	44.4	42.4		23.4	23.4		55.6	41.1	41.1	46.1	35.6	
Actuated g/C Ratio	0.41	0.39		0.22	0.22		0.51	0.38	0.38	0.43	0.33	
v/c Ratio	1.21	0.67		0.85	0.65		1.14	0.39	0.29	0.34	0.72	

Lanes, Volumes, Timings

8: Lauzon Parkway & Catherine Street

2035 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

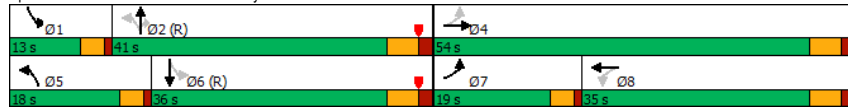


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	141.6	20.1		79.4	37.6		130.5	15.9	1.5	18.2	31.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	141.6	20.1		79.4	37.6		130.5	15.9	1.5	18.2	31.4	
LOS	F	C		E	D		F	B	A	B	C	
Approach Delay	80.0			52.2			50.2			30.0		
Approach LOS	E			D			D			C		
Queue Length 50th (m)	~110.9	56.4		30.1	42.4		~77.6	24.8	0.5	16.4	76.9	
Queue Length 95th (m)	#182.5	88.1		#58.6	67.2		m#132.1	m32.7	m1.4	30.5	100.5	
Internal Link Dist (m)	620.8		82.2		206.9		268.9					
Turn Bay Length (m)	50.0			80.0			20.0			115.0		
Base Capacity (vph)	416	848		208	493		307	1373	689	427	1683	
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	1.21	0.61		0.69	0.54		1.14	0.39	0.29	0.33	0.72	

Intersection Summary

Area Type: Other
 Cycle Length: 108
 Actuated Cycle Length: 108
 Offset: 3 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Red
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.21
 Intersection Signal Delay: 51.2 Intersection LOS: D
 Intersection Capacity Utilization 99.5% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Lauzon Parkway & Catherine Street



HCM 6th Signalized Intersection Summary

8: Lauzon Parkway & Catherine Street

2035 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	454	109	357	129	112	127	315	485	178	127	648	442
Future Volume (veh/h)	454	109	357	129	112	127	315	485	178	127	648	442
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1841	1900	1900	1811	1856	1885	1900
Adj Flow Rate, veh/h	504	121	397	143	124	141	350	539	198	141	720	491
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	8	0	4	0	0	6	3	1	0
Cap, veh/h	467	171	563	225	214	244	301	1218	514	376	966	446
Arrive On Green	0.14	0.44	0.44	0.26	0.26	0.26	0.22	0.56	0.56	0.07	0.28	0.28
Sat Flow, veh/h	1810	389	1277	840	809	920	1810	3610	1523	1767	3431	1583
Grp Volume(v), veh/h	504	0	518	143	0	265	350	539	198	141	720	491
Grp Sat Flow(s),veh/h/ln	1810	0	1666	840	0	1729	1810	1805	1523	1767	1716	1583
Q Serve(g_s), s	15.0	0.0	27.3	18.0	0.0	14.4	14.0	9.4	7.8	6.0	20.6	30.4
Cycle Q Clear(g_c), s	15.0	0.0	27.3	26.3	0.0	14.4	14.0	9.4	7.8	6.0	20.6	30.4
Prop In Lane	1.00		0.77	1.00		0.53	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	467	0	734	225	0	458	301	1218	514	376	966	446
V/C Ratio(X)	1.08	0.00	0.71	0.64	0.00	0.58	1.16	0.44	0.39	0.38	0.75	1.10
Avail Cap(c_a), veh/h	467	0	740	228	0	464	301	1218	514	393	966	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	0.55	0.55	0.55	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	24.5	42.9	0.0	34.5	27.1	17.7	17.3	24.5	35.3	38.8
Incr Delay (d2), s/veh	64.9	0.0	3.3	6.5	0.0	2.2	91.6	0.6	1.2	0.6	5.2	72.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	19.3	0.0	15.1	6.9	0.0	9.7	17.4	5.1	4.1	4.0	12.9	28.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.1	0.0	27.9	49.4	0.0	36.6	118.7	18.3	18.5	25.1	40.5	111.7
LnGrp LOS	F	A	C	D	A	D	F	B	B	C	D	F
Approach Vol, veh/h	1022			408			1087			1352		
Approach Delay, s/veh	61.5			41.1			50.7			64.7		
Approach LOS	E			D			D			E		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	42.5		53.6	18.0	36.4	19.0	34.6				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	9.0	35.0		48.0	14.0	30.0	15.0	29.0				
Max Q Clear Time (g_c+I1), s	8.0	11.4		29.3	16.0	32.4	17.0	28.3				
Green Ext Time (p_c), s	0.0	7.3		5.5	0.0	0.0	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay 57.4
 HCM 6th LOS E

Lanes, Volumes, Timings

2035 Total Saturday Peak Hour

9: Rose-Ville Gardens Drive & Rose-Ville Gardens Drive Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	141	163	174	343	433	5
Future Volume (vph)	141	163	174	343	433	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.928			0.999		
Fit Protected	0.977		0.950			
Satd. Flow (prot)	1689	0	1770	1863	1861	0
Fit Permitted	0.977		0.950			
Satd. Flow (perm)	1689	0	1770	1863	1861	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	144.2			218.2	147.0	
Travel Time (s)	10.4			15.7	10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	177	189	373	471	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	330	0	189	373	476	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.5%
ICU Level of Service	B
Analysis Period (min)	15

HCM 6th TWSC

2035 Total Saturday Peak Hour

9: Rose-Ville Gardens Drive & Rose-Ville Gardens Drive Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	11.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	141	163	174	343	433	5
Future Vol, veh/h	141	163	174	343	433	5
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	-	15	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	153	177	189	373	471	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1225	474	476
Stage 1	474	-	-
Stage 2	751	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	198	590	1086
Stage 1	626	-	-
Stage 2	466	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	164	590	1086
Mov Cap-2 Maneuver	298	-	-
Stage 1	517	-	-
Stage 2	466	-	-

Approach	EB	NB	SB
HCM Control Delay, s	42.7	3	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1086	-	406	-
HCM Lane V/C Ratio	0.174	-	0.814	-
HCM Control Delay (s)	9	-	42.7	-
HCM Lane LOS	A	-	E	-
HCM 95th %tile Q(veh)	0.6	-	7.4	-

Lanes, Volumes, Timings

2035 Total Saturday Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	555	283	155	524	334	150
Future Volume (vph)	555	283	155	524	334	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	15.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.954					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1777	0	1770	1863	1770	1583
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1777	0	1770	1863	1770	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	58.7			644.8	147.0	
Travel Time (s)	4.2			46.4	10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	603	308	168	570	363	163
Shared Lane Traffic (%)						
Lane Group Flow (vph)	911	0	168	570	363	163
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	83.6%
ICU Level of Service E	
Analysis Period (min)	15

HCM 6th TWSC

2035 Total Saturday Peak Hour

10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	70.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	555	283	155	524	334	150
Future Vol, veh/h	555	283	155	524	334	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	15	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	603	308	168	570	363	163

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	911
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	748
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	748
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

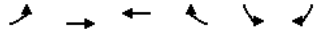
Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	289
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	204	408	-	-	748	-
HCM Lane V/C Ratio	1.78	0.4	-	-	0.225	-
HCM Control Delay (s)	\$ 410	19.6	-	-	11.2	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	25.3	1.9	-	-	0.9	-

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

Lanes, Volumes, Timings
11: Catherine Street & Access A

2035 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↔	↕
Traffic Volume (vph)	160	107	144	343	461	146
Future Volume (vph)	160	107	144	343	461	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.905			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1686	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1686	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		126.5	122.0		164.6	
Travel Time (s)		9.1	8.8		11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	116	157	373	501	159
Shared Lane Traffic (%)						
Lane Group Flow (vph)	174	116	530	0	501	159
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	73.1%
ICU Level of Service	D
Analysis Period (min)	15

HCM 6th TWSC
11: Catherine Street & Access A

2035 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	51.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↔	↕
Traffic Vol, veh/h	160	107	144	343	461	146
Future Vol, veh/h	160	107	144	343	461	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	174	116	157	373	501	159

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	530	0	0
Stage 1	-	-	344
Stage 2	-	-	464
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	1037	-	~ 350
Stage 1	-	-	718
Stage 2	-	-	633
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1037	-	~ 291
Mov Cap-2 Maneuver	-	-	~ 413
Stage 1	-	-	597
Stage 2	-	-	633

Approach	EB	WB	SB
HCM Control Delay, s	5.5	0	113.5
HCM LOS			F

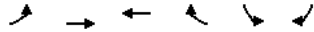
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1037	-	-	-	413	699
HCM Lane V/C Ratio	0.168	-	-	-	1.213	0.227
HCM Control Delay (s)	9.2	-	-	-	145.7	11.7
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.6	-	-	-	20.3	0.9

Notes

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

Lanes, Volumes, Timings
12: Catherine Street & Access B

2035 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	107	461	343	515	377	144
Future Volume (vph)	107	461	343	515	377	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.919			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1712	0	1770	1583
Fit Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1712	0	1770	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		122.0	58.7		134.0	
Travel Time (s)		8.8	4.2		9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	501	373	560	410	157
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	501	933	0	410	157
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	86.4%
ICU Level of Service E	
Analysis Period (min)	15

HCM 6th TWSC
12: Catherine Street & Access B

2035 Total Saturday Peak Hour
(230538) Major Retail Development, Tecumseh Road, Windsor TIS

Intersection						
Int Delay, s/veh	58.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	107	461	343	515	377	144
Future Vol, veh/h	107	461	343	515	377	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	501	373	560	410	157

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	933	0	0
Stage 1	-	-	653
Stage 2	-	-	733
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	734	-	~ 158
Stage 1	-	-	518
Stage 2	-	-	475
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	734	-	~ 133
Mov Cap-2 Maneuver	-	-	~ 268
Stage 1	-	-	436
Stage 2	-	-	475

Approach	EB	WB	SB
HCM Control Delay, s	2	0	214.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	734	-	-	-	268	467
HCM Lane V/C Ratio	0.158	-	-	-	1.529	0.335
HCM Control Delay (s)	10.8	-	-	-	290.5	16.5
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	0.6	-	-	-	24.1	1.5

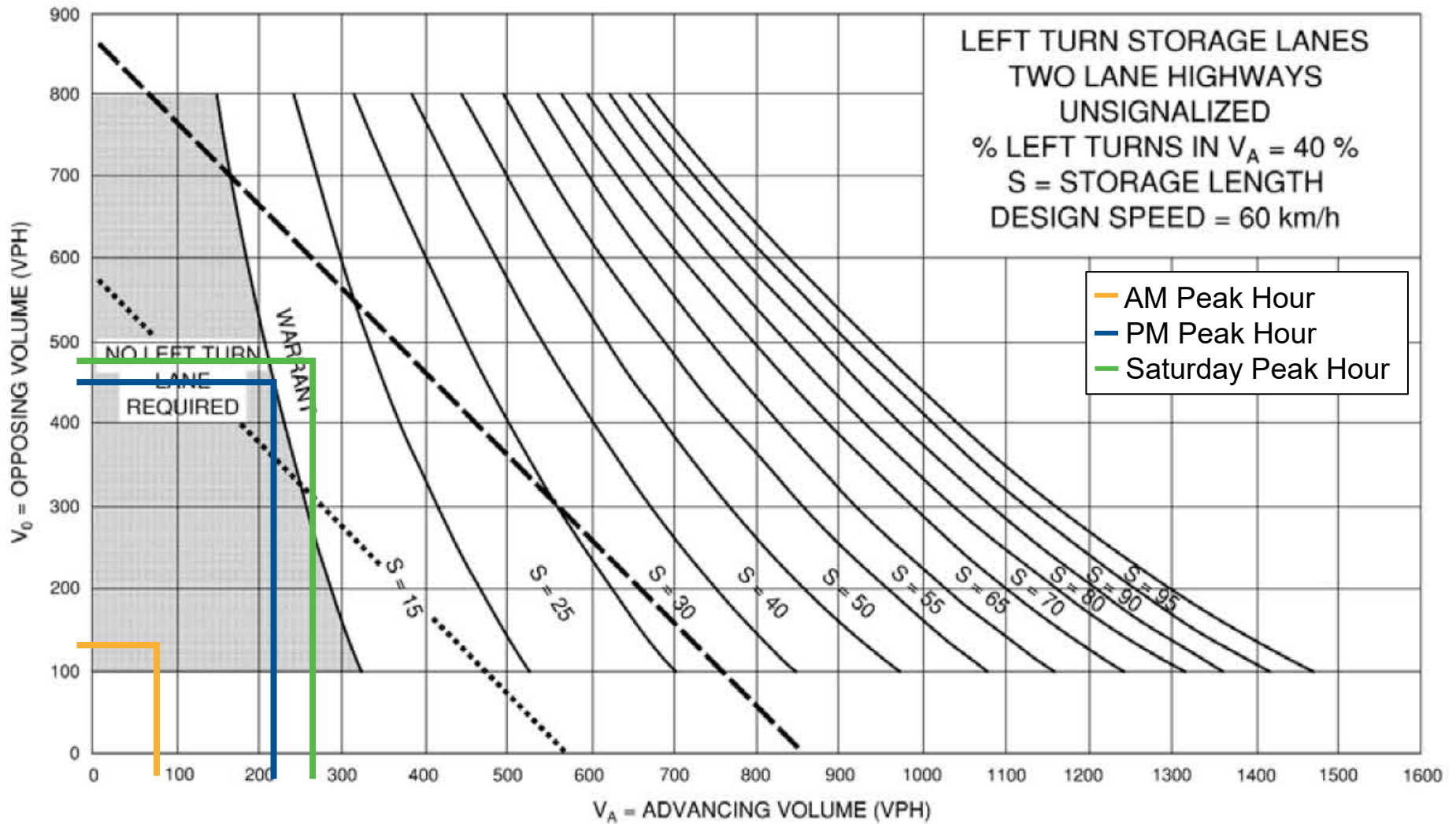
Notes

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

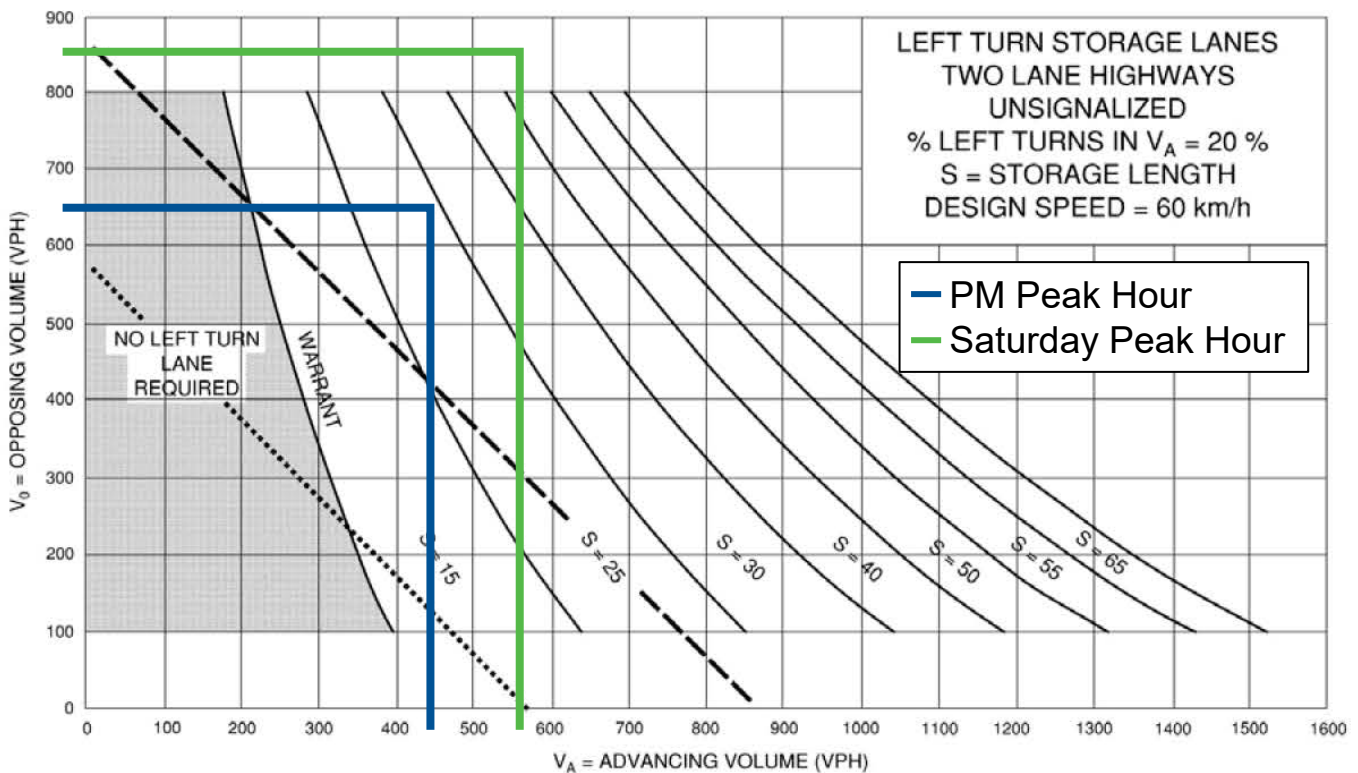
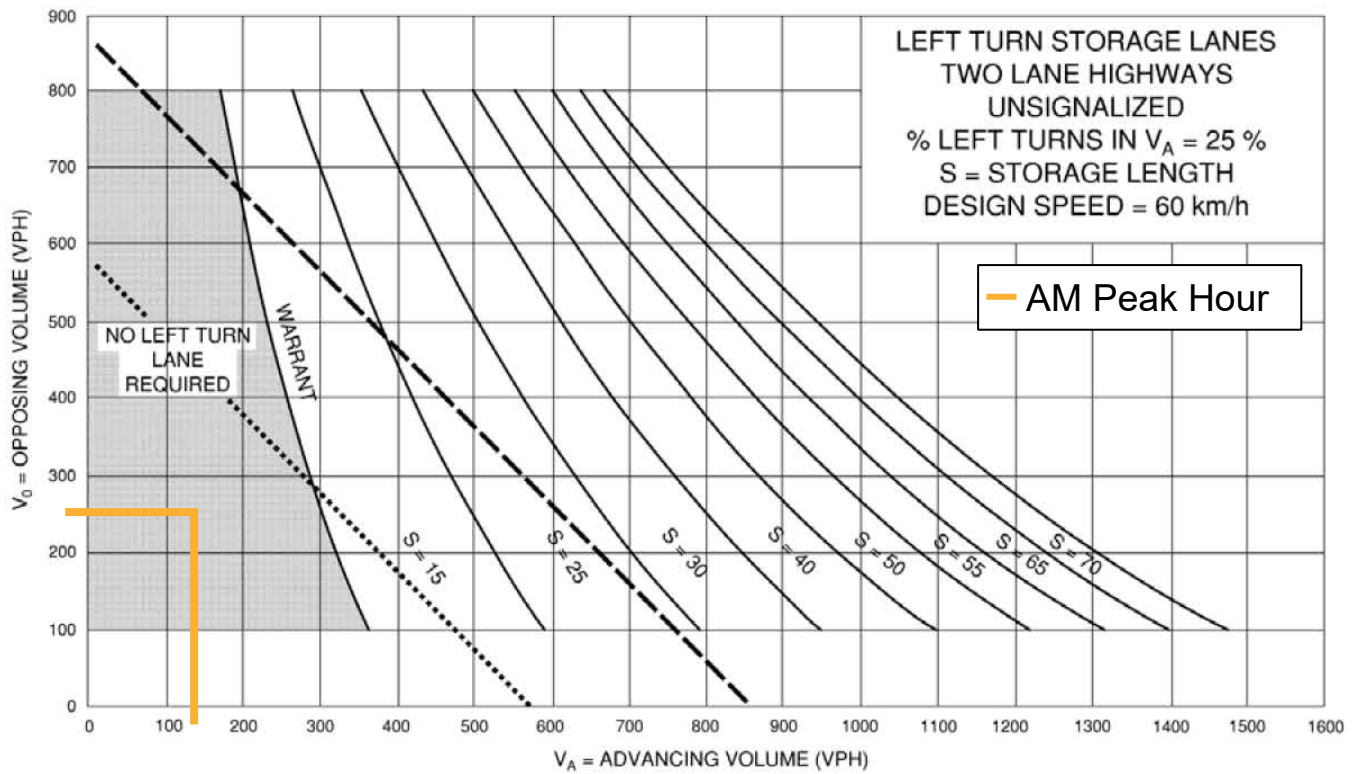
Appendix L

Left-Turn Lane Warrant Nomographs





Catherine Street and Access A Eastbound Left-Turn Lane Future Total Traffic Conditions



Catherine Street and Access B Eastbound Left-Turn Lane Future Total Traffic Conditions

Appendix M

2035 Total Traffic Operations Reports – Rose-Ville Garden Drive/Catherine Street Traffic Signal Control



Lanes, Volumes, Timings 2035 Total AM Peak Hour (Remedial)
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

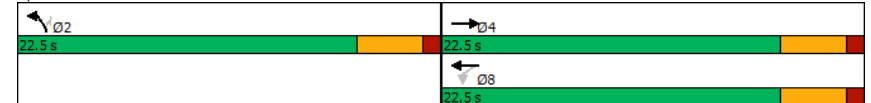
	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕		↕	↕	↕	↕
Traffic Volume (vph)	126	53	203	146	106	101
Future Volume (vph)	126	53	203	146	106	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	35.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.960					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1788	0	1770	1863	1770	1583
Fit Permitted			0.635		0.950	
Satd. Flow (perm)	1788	0	1183	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	56					110
Link Speed (k/h)	50			50	50	
Link Distance (m)	52.8			646.8	142.6	
Travel Time (s)	3.8			46.6	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	58	221	159	115	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	195	0	221	159	115	110
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (%)	50.0%		50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0		18.0	18.0	18.0	18.0
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	Max	Max
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	11.9		12.2	12.2	22.3	22.3
Actuated g/C Ratio	0.30		0.30	0.30	0.56	0.56
v/c Ratio	0.34		0.62	0.28	0.12	0.12
Control Delay	9.0		19.4	11.2	8.0	2.8
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	9.0		19.4	11.2	8.0	2.8

Lanes, Volumes, Timings 2035 Total AM Peak Hour (Remedial)
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS	A		B	B	A	A
Approach Delay	9.0			15.9	5.4	
Approach LOS	A			B	A	
Queue Length 50th (m)	7.0		12.7	8.2	4.2	0.0
Queue Length 95th (m)	17.1		27.8	17.5	13.4	6.5
Internal Link Dist (m)	28.8			622.8	118.6	
Turn Bay Length (m)			35.0		100.0	
Base Capacity (vph)	837		533	840	982	927
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.23		0.41	0.19	0.12	0.12

Intersection Summary	
Area Type:	Other
Cycle Length:	45
Actuated Cycle Length:	40.1
Natural Cycle:	45
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	11.3
Intersection Capacity Utilization:	38.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 10: Rose-Ville Gardens Drive & Catherine Street



HCM 6th Signalized Intersection Summary 2035 Total AM Peak Hour (Remedial)
 10: Rose-ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	126	53	203	146	106	101
Future Volume (veh/h)	126	53	203	146	106	101
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	58	221	159	115	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	412	175	473	618	795	707
Arrive On Green	0.33	0.33	0.33	0.33	0.45	0.45
Sat Flow, veh/h	1247	528	1188	1870	1781	1585
Grp Volume(v), veh/h	0	195	221	159	115	110
Grp Sat Flow(s),veh/h/ln	0	1775	1188	1870	1781	1585
Q Serve(g_s), s	0.0	3.3	6.9	2.5	1.5	1.7
Cycle Q Clear(g_c), s	0.0	3.3	10.3	2.5	1.5	1.7
Prop In Lane		0.30	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	587	473	618	795	707
V/C Ratio(X)	0.00	0.33	0.47	0.26	0.14	0.16
Avail Cap(c_a), veh/h	0	792	610	835	795	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	10.2	14.0	9.9	6.6	6.6
Incr Delay (d2), s/veh	0.0	0.3	0.7	0.2	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.2	0.1	0.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	10.5	14.7	10.1	7.0	7.1
LnGrp LOS		A	B	B	A	A
Approach Vol, veh/h	195			380	225	
Approach Delay, s/veh	10.5			12.8	7.1	
Approach LOS	B			B	A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		22.5		17.8		17.8
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		18.0		18.0		18.0
Max Q Clear Time (g_c+I1), s		3.7		5.3		12.3
Green Ext Time (p_c), s		0.8		1.0		1.1
Intersection Summary						
HCM 6th Ctrl Delay			10.6			
HCM 6th LOS			B			

Lanes, Volumes, Timings 2035 Total PM Peak Hour (Remedial)
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	446	219	204	393	254	113
Future Volume (vph)	446	219	204	393	254	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	35.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.956					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1781	0	1770	1863	1770	1583
Fit Permitted			0.211		0.950	
Satd. Flow (perm)	1781	0	393	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	68					123
Link Speed (k/h)	50			50	50	
Link Distance (m)	76.5			621.8	134.3	
Travel Time (s)	5.5			44.8	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	485	238	222	427	276	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	723	0	222	427	276	123
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	43.0		43.0	43.0	22.0	22.0
Total Split (%)	66.2%		66.2%	66.2%	33.8%	33.8%
Maximum Green (s)	39.0		39.0	39.0	18.0	18.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	Max	Max
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	30.2		30.2	30.2	18.6	18.6
Actuated g/C Ratio	0.53		0.53	0.53	0.33	0.33
v/c Ratio	0.74		1.07	0.43	0.48	0.21
Control Delay	14.0		101.1	9.0	21.7	5.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	14.0		101.1	9.0	21.7	5.3

Lanes, Volumes, Timings 2035 Total PM Peak Hour (Remedial)
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS	B		F	A	C	A
Approach Delay	14.0			40.5	16.7	
Approach LOS	B			D	B	
Queue Length 50th (m)	47.6		22.7	24.6	27.9	0.0
Queue Length 95th (m)	81.8		#66.8	40.6	52.0	10.8
Internal Link Dist (m)	52.5			597.8	110.3	
Turn Bay Length (m)			35.0		100.0	
Base Capacity (vph)	1278		277	1316	577	599
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.57		0.80	0.32	0.48	0.21

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 57

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 24.3 Intersection LOS: C

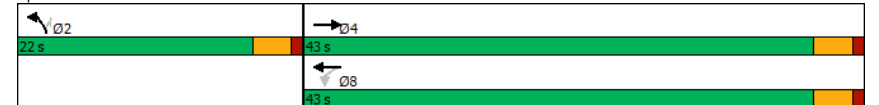
Intersection Capacity Utilization 72.2% ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 10: Rose-Ville Gardens Drive & Catherine Street



HCM 6th Signalized Intersection Summary 2035 Total PM Peak Hour (Remedial)
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	446	219	204	393	254	113
Future Volume (veh/h)	446	219	204	393	254	113
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	485	238	222	427	276	123
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	711	349	346	1122	493	439
Arrive On Green	0.60	0.60	0.60	0.60	0.28	0.28
Sat Flow, veh/h	1184	581	730	1870	1781	1585
Grp Volume(v), veh/h	0	723	222	427	276	123
Grp Sat Flow(s),veh/h/ln	0	1766	730	1870	1781	1585
Q Serve(g_s), s	0.0	18.0	19.2	7.7	8.6	4.0
Cycle Q Clear(g_c), s	0.0	18.0	37.3	7.7	8.6	4.0
Prop In Lane		0.33	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1059	346	1122	493	439
V/C Ratio(X)	0.00	0.68	0.64	0.38	0.56	0.28
Avail Cap(c_a), veh/h	0	1059	346	1122	493	439
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.8	21.4	6.7	20.1	18.4
Incr Delay (d2), s/veh	0.0	1.8	4.0	0.2	4.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	1.0	1.7	0.1	2.6	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	10.6	25.4	7.0	24.6	20.0
LnGrp LOS		A	B	C	A	C
Approach Vol, veh/h	723			649	399	
Approach Delay, s/veh	10.6			13.3	23.2	
Approach LOS	B			B	C	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		22.0		43.0		43.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		18.0		39.0		39.0
Max Q Clear Time (g_c+I1), s		10.6		20.0		39.3
Green Ext Time (p_c), s		1.1		6.2		0.0
Intersection Summary						
HCM 6th Ctrl Delay			14.4			
HCM 6th LOS			B			

Lanes, Volumes, Timings 2035 Total Saturday Peak Hour (Remedial)
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↖	↙	←	↘	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖		↖	↖	↖	↖
Traffic Volume (vph)	555	283	155	524	334	150
Future Volume (vph)	555	283	155	524	334	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	35.0		100.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.954					0.850
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1777	0	1770	1863	1770	1583
Fit Permitted			0.113		0.950	
Satd. Flow (perm)	1777	0	210	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	77					163
Link Speed (k/h)	50			50	50	
Link Distance (m)	58.7			644.8	147.0	
Travel Time (s)	4.2			46.4	10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	603	308	168	570	363	163
Shared Lane Traffic (%)						
Lane Group Flow (vph)	911	0	168	570	363	163
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.0		22.0	22.0	22.0	22.0
Total Split (s)	50.0		50.0	50.0	20.0	20.0
Total Split (%)	71.4%		71.4%	71.4%	28.6%	28.6%
Maximum Green (s)	46.0		46.0	46.0	16.0	16.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	Max	Max
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	35.5		35.5	35.5	18.6	18.6
Actuated g/C Ratio	0.57		0.57	0.57	0.30	0.30
v/c Ratio	0.87		1.41	0.54	0.69	0.28
Control Delay	20.4		247.0	9.8	31.6	5.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	20.4		247.0	9.8	31.6	5.7

Lanes, Volumes, Timings 2035 Total Saturday Peak Hour (Remedial)
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS

	→	↖	↙	←	↘	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS	C		F	A	C	A
Approach Delay	20.4			63.8	23.6	
Approach LOS	C			E	C	
Queue Length 50th (m)	74.2		~29.8	36.6	46.0	0.0
Queue Length 95th (m)	127.7		#48.2	57.6	#92.5	13.6
Internal Link Dist (m)	34.7			620.8	123.0	
Turn Bay Length (m)			35.0		100.0	
Base Capacity (vph)	1369		159	1415	528	587
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.67		1.06	0.40	0.69	0.28

Intersection Summary

Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 62.4	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay: 35.9	Intersection LOS: D
Intersection Capacity Utilization 83.6%	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: 10: Rose-Ville Gardens Drive & Catherine Street



HCM 6th Signalized Intersection Summary 2035 Total Saturday Peak Hour (Remedial)
 10: Rose-Ville Gardens Drive & Catherine Street (230538) Major Retail Development, Tecumseh Road, Windsor TIS



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	555	283	155	524	334	150
Future Volume (veh/h)	555	283	155	524	334	150
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	603	308	168	570	363	163
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	767	392	281	1229	407	362
Arrive On Green	0.66	0.66	0.66	0.66	0.23	0.23
Sat Flow, veh/h	1167	596	613	1870	1781	1585
Grp Volume(v), veh/h	0	911	168	570	363	163
Grp Sat Flow(s),veh/h/ln	0	1763	613	1870	1781	1585
Q Serve(g_s), s	0.0	25.7	18.8	10.5	13.8	6.2
Cycle Q Clear(g_c), s	0.0	25.7	44.4	10.5	13.8	6.2
Prop In Lane		0.34	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1159	281	1229	407	362
V/C Ratio(X)	0.00	0.79	0.60	0.46	0.89	0.45
Avail Cap(c_a), veh/h	0	1159	281	1229	407	362
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.5	24.3	5.9	26.2	23.2
Incr Delay (d2), s/veh	0.0	3.7	3.5	0.3	24.3	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	9.1	4.4	3.4	12.1	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	12.2	27.7	6.2	50.4	27.2
LnGrp LOS		A	B	C	A	D
Approach Vol, veh/h	911			738	526	
Approach Delay, s/veh	12.2			11.1	43.2	
Approach LOS	B			B	D	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		20.0		50.0		50.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		16.0		46.0		46.0
Max Q Clear Time (g_c+I1), s		15.8		27.7		46.4
Green Ext Time (p_c), s		0.1		8.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.