BA Group

MAYFIELD WEST PHASE 1 - STAGE 2
LOCAL OFFICIAL PLAN AMENDMENT

Urban Transportation Considerations

Town of Caledon

Prepared For: Argo Kennedy Limited

September 2021

45 St. Clair Avenue West, Suite 300
Toronto, ON M4V 1K9
www.bagroup.com

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1.0 INTRODUCTION

BA Group is retained by Argo Kennedy Limited to provide transportation consulting services in support of the proposed development of Mayfield West Phase 1 Stage 2 Expansion (herein referred to as the “the site” or “subject lands”) in the Town of Caledon (herein referred to as “Town”).The subject lands consists of approximately 111 hectares (274 acres) of land and are bounded by Hurontario Street to the west, Old School Road to the north, Greenbelt to the east, and Mayfield West Secondary Plan boundary to the south.

Figure 1 and **Figure 2** illustrates the site location and site context.

1.1 STUDY APPROACH

The proposed application being made to the Town of Caledon is for a Local Official Plan Amendment (LOPA) to extend the boundary of the Mayfield West planning area, facilitate the proposed uses on the site and define key structural elements such as open spaces and transportation principles that will guide the plan.

1.2 THIS STUDY

This Transportation Background Study Report (herein referred to as the “Report”) is prepared in support of a Local Official Plan Amendment (LOPA) to permit the proposed development. This report has been prepared in support of the LOPA process to permit the development on the subject lands.

The LOPA Transportation Study will focus on the impacts of the proposed community on the existing adjacent road network.

A Terms of Reference was circulated to the Town of Caledon on April 15, 2021 identifying the scope of this study. A copy of the Terms of Reference and comments received from the Town are provided in **Appendix A**.

Key aspects reviewed as part of this study include the following:

- A review of the proposed application and the corresponding transportation components;
- A recommended road network structure to accommodate the planned redevelopment and an assessment of its appropriateness;
- A review of the existing transportation elements in the vicinity of the Site area and policies applicable to the Site;
- An assessment of existing traffic volumes on the area road system surrounding the proposed development;
- A comprehensive review of traffic changes that may occur due to corridor traffic growth along Old School Road;
- An assessment of the trip generation characteristics of the proposed development;
- A review of weekday peak hour traffic operations under existing and future conditions under the following analysis horizon years:
    - Existing traffic conditions (2021);
    - Traffic projections have been prepared for a 5-year buildout (2028) and five years after the full buildout (2033) with the GTA West Highway and without the GTA West Highway; and

- In accordance with MTO requirements, traffic volumes have forecast for future background and future total conditions for 5-year beyond build-out (2028) and 10-year beyond build-out (2033).

Upon receipt of comments on the Terms of Reference from the Town, study area intersections have been expanded to include intersections within the Town's jurisdiction along Kennedy Road (approximately 1.5 km south of the site boundary limits) and along Old School Road (approximately 1.5 km east of the site boundary limits).

This report provides a transportation perspective on the work that has been undertaken to develop this community, as well as a preliminary assessment of the impact of this development on the surrounding road network and the need for transportation network improvements to support the development.

1.3 PRELIMINARY DEVELOPMENT CONCEPT

The preliminary development comprises approximately 1282 dwelling units in a range of dwelling types. From the total of 1282 dwelling units, the dwelling units comprise 800 detached homes, 232 rear lane townhouses, 30 back-to-back townhouses, 42 3-storey townhouses and 168 condo apartments. From the total unit count, a medium density block is proposed at the northwest corner of the site. In the medium density block, a condo apartment is proposed that will house 168 dwelling units, 18 back-to-back townhouses and eight (8) 3-storey townhouses. The 194 dwelling units located in the northwest corner is part of the total unit count.

A breakdown of units of the proposed development is attached in **Appendix B**. This unit breakdown also defines four traffic area (or parcel) zones.

The residential community will include four (4) Storm Water Management (SWM) ponds on-site and one (1) park within each parcel resulting in a total of four (4) parks to serve the development. Access to the dwelling units will be provided through new public roads connecting to Old School Road and Kennedy Road.

The preliminary development concept is provided in **Appendix C**.

2.0 EXISTING SITE

The site is currently primarily agricultural with a few houses on-site that take access from Old School Road and Kennedy Road. Dixon's Union Cemetery is located adjacent to the Russell lands. Dixon's Union Cemetery will remain in place as part of the proposed development plans. South of the Kennedy lands, there is a school (Tony Pontes Public School) and residential uses within the existing Mayfield West Phase 1 boundary area.

There is a Natural Heritage System (NHS) corridor that runs through the site and the Greenbelt is located east of the site limits.

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FIGURE 1 SITE LOCATION

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FIGURE 2 SITE CONTEXT

FIGURE 3 DEVELOPMENT CONCEPT PLAN

3.0 PLANNING & POLICY CONTEXT

Transportation elements in the vicinity of the site area are guided by the policies and plans set out in the following sections.

Within this section, the provincial, regional, and municipal policy framework of the site is outlined; the scope of the policy review is limited to policy with transportation-related implications.

3.1 PROVINCIAL & REGIONAL POLICY DIRECTIVES

There are a number of provincial, regional and local policy documents applicable to the Site, including:

- Town of Caledon Official Plan (2018)
- 2020 Provincial Policy Statement (PPS);
- The Greenbelt Plan (2017);
- A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019);
- Town of Caledon Transportation Master Plan (2017); and
- Let's Move Peel: Long Range Transportation Plan (2019).

Town of Caledon Official Plan (2018)
The Town of Caledon Official Plan is a statement of principles, goals, objectives and policies intended to guide future land use, physical development and change, and the effects on the social, economic, and natural environment. The Official Plan was amended in 2018 to keep the plan current and to address the changing community dynamics and needs. In the Town of Caledon Official Plan desired ROWs were discussed for the road network including the roads within the site's study area. Section 5.9.5.2.9 discusses the functional classification system with the recommended ROW for the road network. The Town will seek to achieve the recommended ROW set out within the Official Plan. Section 4.1 states the recommended ROW for the site's road network.

Mayfield West Secondary Plan
The Official Plan also includes the Mayfield West Secondary Plan. The Mayfield West Secondary Plan (Phases 1 and 2) envisions a compact, pedestrian oriented, mixed-use community that provide residential, employment and commercial opportunities. The study area for Mayfield West Phase 1 runs north of Mayfield Road and between Hurontario Street / Highway 10 and Dixie Road. Mayfield West Phase 1 is currently accommodating a population of approximately 12,500 people. The overall Mayfield West Phase 2 lands are bordered by Mayfield Road to the south, Hurontario Street / Highway 10 to the east and the Etobicoke Creek to the north. The Mayfield West Phase 2 lands are divided in two stages. The Mayfield West Phase 2-Stage 1 lands are planned to accommodate approximately 10,348 people and 3,799 jobs. The Mayfield West Phase 2- Stage 2 lands are comprised of approximately 105 hectares of developable land and are being planned to accommodate up to 7,500 people.

The subject lands are currently located within the Region's "Rural" system and designated Prime Agricultural in the Town of Caledon's Official Plan. The lands are also located within the Mayfield West Study Area which is long-recognized as a priority area for growth. The site is located adjacent to the Mayfield West Phase 1 Secondary Plan, and is within the Mayfield West Study Area outlined in both the Town of Caledon and Region

of Peel's Official Plans shown in **Figure 4**. Schedule B2 of the Official Plan illustrates the Mayfield West Phase 2 Land Use Plan as shown in **Figure 5**.

2020 Provincial Policy Statement (PPS)
The 2020 Ontario Provincial Policy Statement (PPS) provides direction regarding the use of existing and planned transportation infrastructure as it relates to land use. Policy 1.6.7.2 states that efficient use should be made of existing and planned infrastructure, including through the use of transportation demand management strategies, where feasible. Policy 1.6.7.4 states that a land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support current and future use of transit and active transportation.

The Greenbelt Plan (2017)
The Greenbelt Plan identifies where urbanization should not occur in order to provide permanent protection to agricultural lands, settlement areas and ecological features occurring on these lands. The Greenbelt Plan coincides with Ontario's Climate Change Strategy (2015) to reduce greenhouse gas emissions. Protecting agricultural lands, supporting the achievement of complete communities that are compact, walkable and transit-supportive will help reduce greenhouse gas emissions. A portion of the subject lands are located adjacent to the Greenbelt. The Greenbelt will remain protected as part of the site. No vehicle connections are proposed within the Natural Heritage System or Greenbelt as part of the site's development plans.

A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019)
A Place to Grow, 2019, document provides the Province with a policy framework for settlement area boundary expansions, in which the site is currently in the Mayfield West Study Area. This policy sets a framework to plan around expected population growth and highlights the importance of planning for the integration of active transportation within the existing and planned street network (i.e. complete streets) and within development projects.

Town of Caledon Transportation Master Plan (2017)
The Town of Caledon's Transportation Master Plan (TMP) is a strategic planning document designed to identify and address the transportation needs of the Town to the year 2031 and beyond. The goals of the TMP are the following:

- Define a transportation vision that encompasses community values and identifies a direction to address the Town's mobility needs in an effective, responsible and sustainable manner;
- Provide a transportation framework that will support an economically sustainable and environmentally respectful growth management strategy consistent with local, regional and provincial policies;
- Identify opportunities for a multimodal approach to transportation service delivery that will maximize transportation capacity and foster the use of sustainable modes of transportation such as transit, cycling and walking, while also considering the needs of automobiles and safe and efficient goods movement; and
- Reflect the rural and urban character of Caledon, the rich heritage of the community and its high quality of life.

This document guides the Town's future transportation decisions and actions. The site is within the Town of Caledon TMP study area and is shown in **Figure 6**.

Let's Move Peel: Long Range Transportation Plan (2019)

The Long Range Transportation Plan (LRTP) is a five-year plan based on a 2041 horizon year that guides the transportation planning needs in the Region of Peel (including the Town of Caledon). The plan recognizes the rapid growth the Region of Peel is experiencing and the need to accommodate growth. One of the goals is to achieve a sustainable mode share target, the mode share target for the town of Caledon in 2041 is 32% and can be achieved by building on carpooling, active transportation and transit use in the Region.

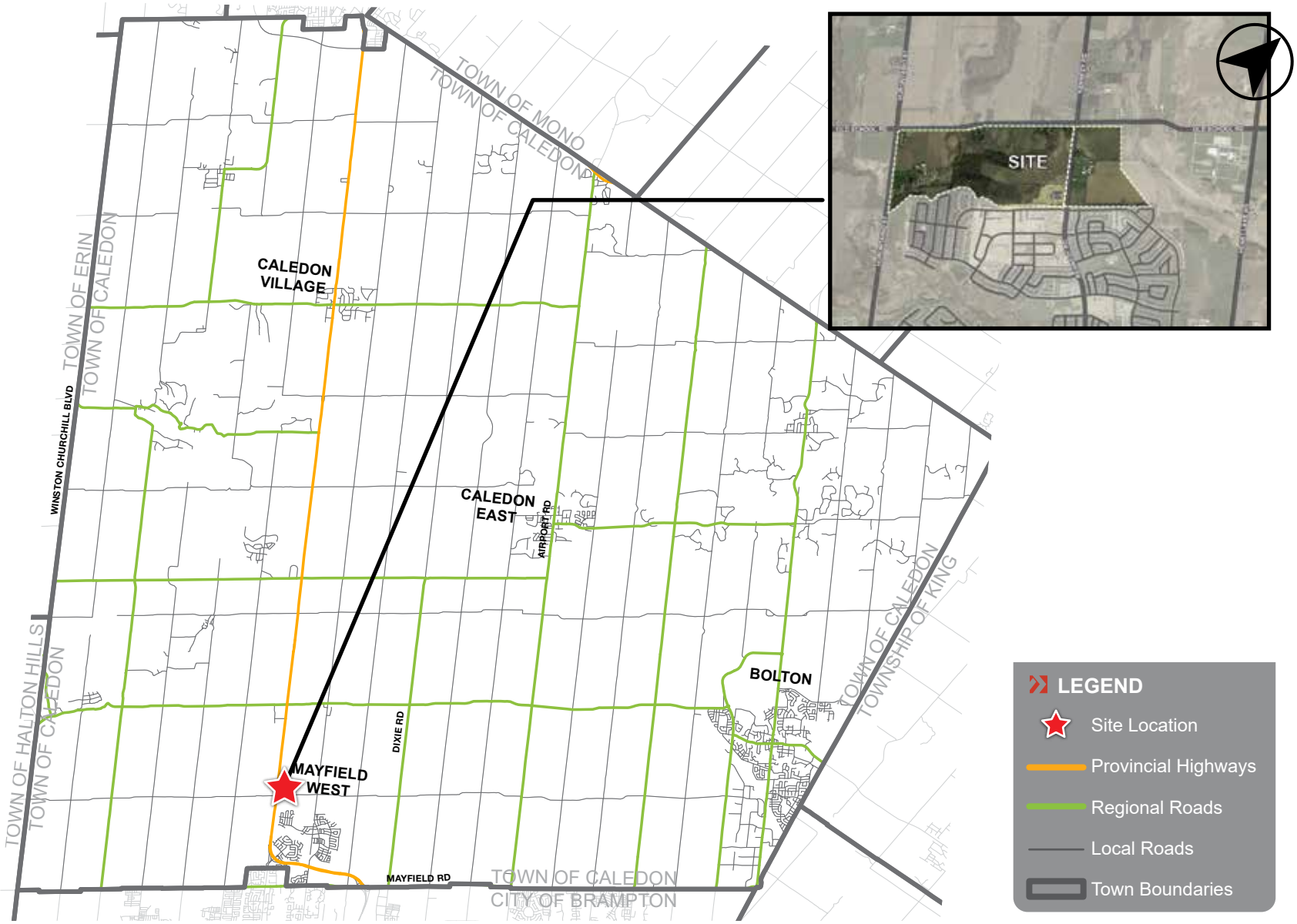

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FIGURE 4 CALEDON TRANSPORTATION MASTER PLAN STUDY AREA

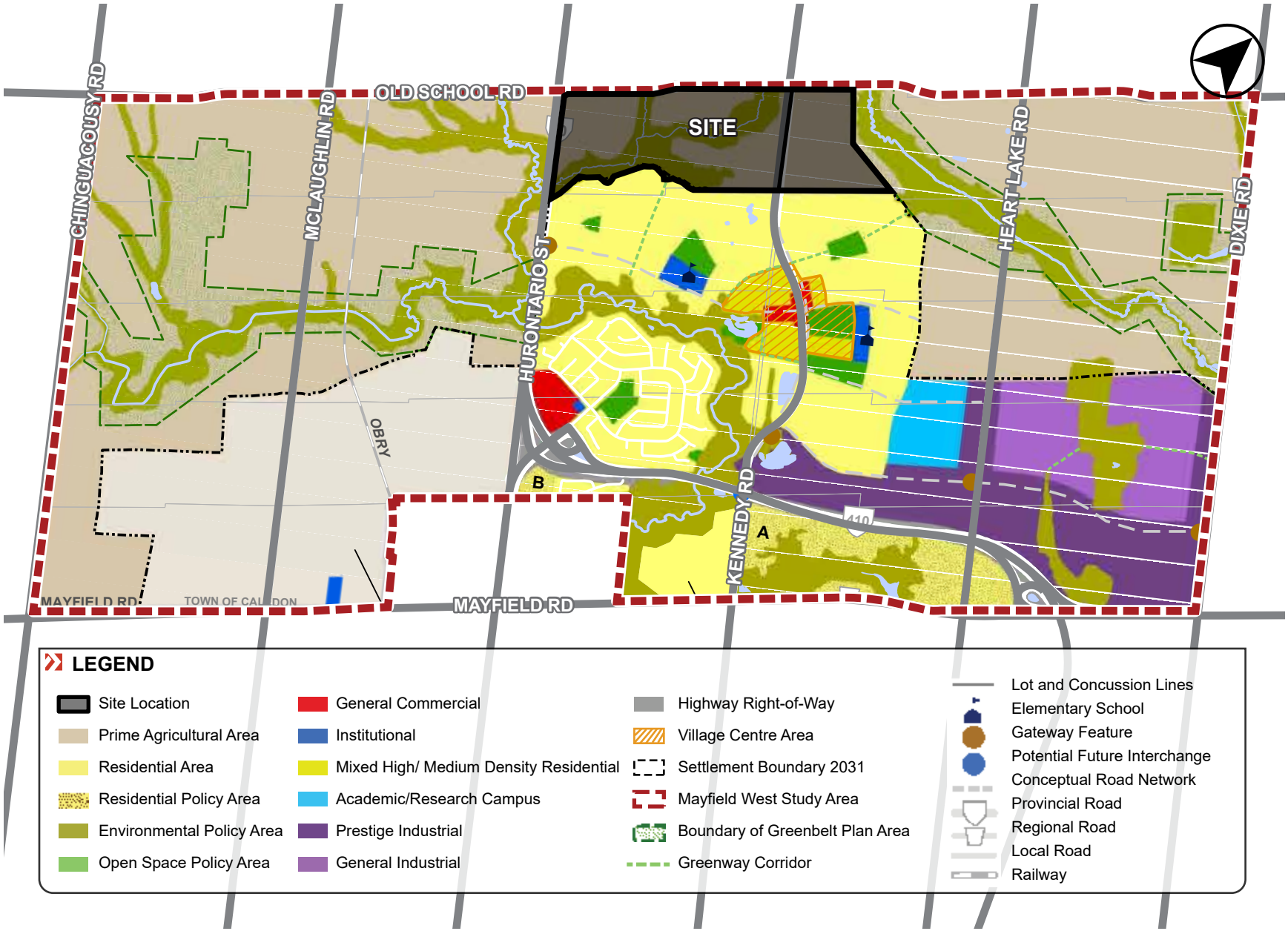

FIGURE 5 MAYFIELD WEST LAND USE PLAN (SCHEDULE B)

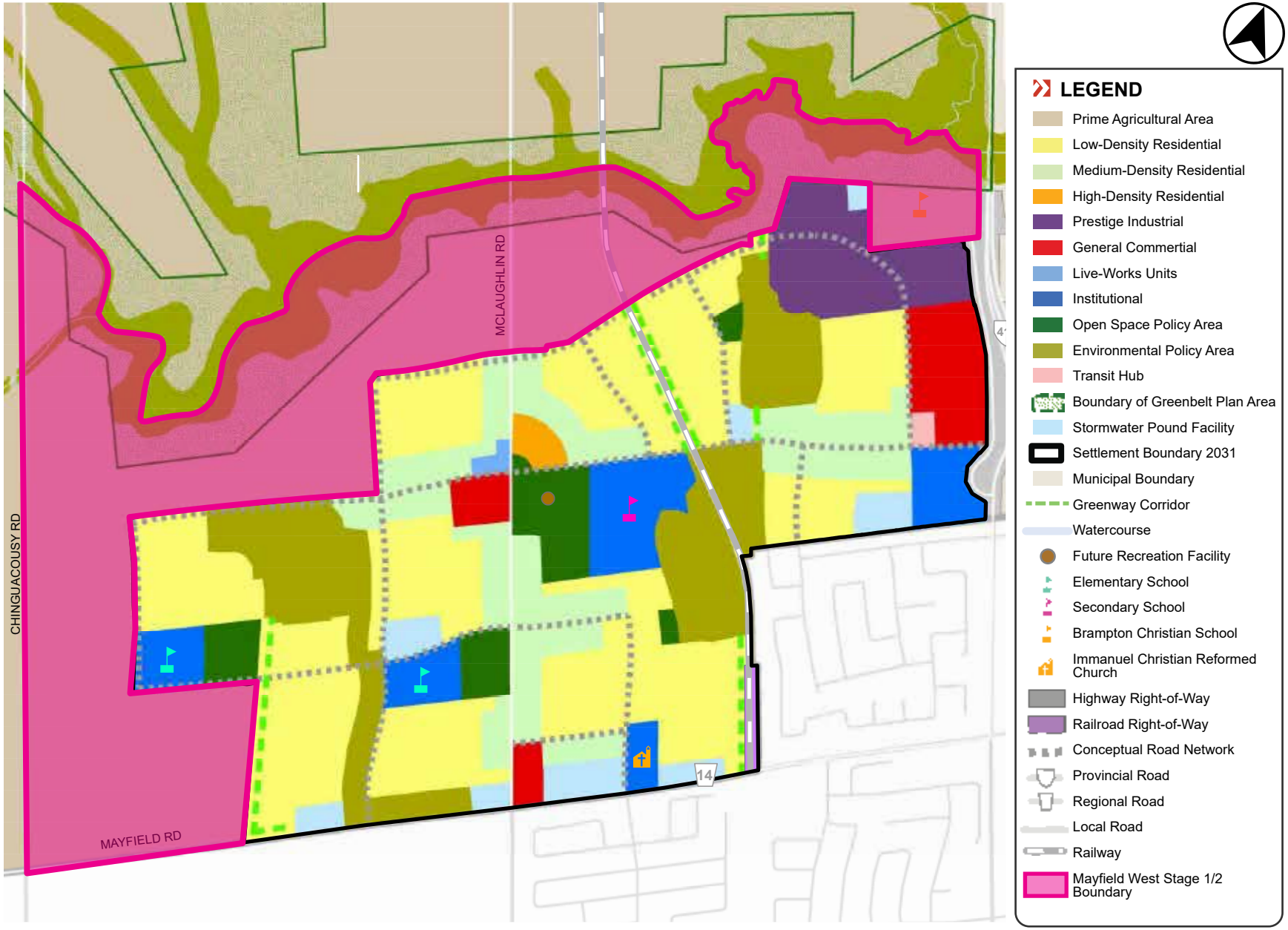

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FIGURE 6 MAYFIELD WEST PHASE 2 SECONDARY PLAN: LAND USE PLAN (SCHEDULE B2)

3.2 AREA ENVIRONMENTAL ASSESSMENTS

Greater Toronto Area (GTA) West Corridor Environmental Assessment (November 2012)
The Ministry of Transportation initiated the GTA West Transportation Corridor Planning and Environmental Assessment Study to address long term transportation needs in the GTA West Area. The GTA West corridor (highway) is one of the Ontario government's efforts to deliver a long-term sustainable plan for transportation and improve transit in the GTA-Hamilton area. The highway is expected to include a 4 to 6 lane, 59 kilometre 400-series highway with connections to Highways 400, 427, 410, 401 and 407 ETR. It will represent a strategic link between the Urban Growth Centres in the west of the GTA including Downtown Brampton, Downtown Milton, Vaughan Metropolitan Centre and Downtown Guelph.

The GTA West corridor is expected to provide connections to Highway 410 east of the Mayfield West site area and an interchange with Hurontario Street northwest of the Stage 2 area. On August 2020, there was a preferred route announcement for the GTA West . The site is located in the route planning study area and outside of the preferred route and interchange locations. The green area illustrated below is the area in which applicationsare not anticipated to be impacted by the GTA West multimodal transportation corridor. The environmental assessment for the GTA West Corridor is expected to be complete by end of 2022. **Figure 7** demonstrates the preferred route from the August 2020 bulletin[1].

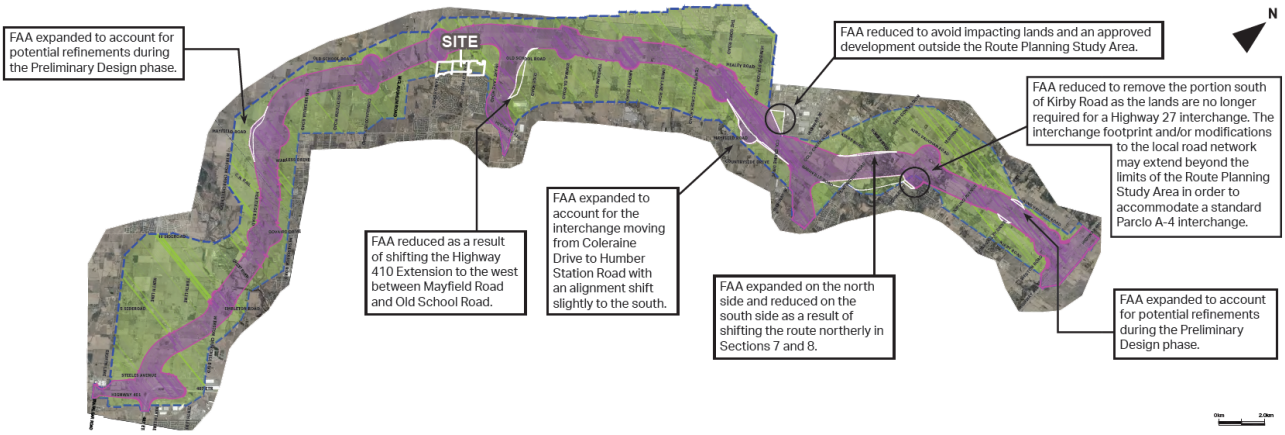

FIGURE 7: GTA WEST CORRIDOR PREFERRED ROUTE

Kennedy Environment Assessment (April 2019)
A traffic study was undertaken for the section of Kennedy Road in the Environmental Assessment (EA) study to analyze the existing transportation and projected traffic growth by 2021 and 2031. The site is within the study area and is reflected in **Figure 8**.The study concluded that Kennedy Road will continue to operate as a two-lane road. However, a pedestrian facility is required on the west side of Kennedy Road and an on-road cycling facility. In addition, it was recommended that the section of Kennedy Road from Bonnieglen Farm Boulevard to Old School Road is to be improved to support the projected population and development growth. A notice of completion was filed on November 5, 2020 where the pavement width of Kennedy Road was reduced to exclude the paved shoulders and provide two wider 3.3 metres traffic lanes with curb and gutter.

[1] Source of base plan: Preferred Route Announcement – GTA West Study, August 2020. https://www.gta-west.com/reports-2/

FIGURE 8 MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STUDY AREA FOR KENNEDY ROAD

4.0 TRANSPORTATION CONTEXT

4.1 AREA ROAD NETWORK

The area road network in the immediate site vicinity is illustrated in **Figure 9**. The existing lane configuration of the roads are also demonstrated in **Figure 10**. A brief description of roads in the vicinity of the site is provided as follows.

4.1.1 Provincial Roads

HURONTARIO STREET (HIGHWAY 10)

Hurontario Street (Highway 10) is a north-south provincially owned highway classified as a 2B-Arterial by the Ontario Ministry of Transportation (MTO). Highway 10 is also identified as a high capacity arterial road accordingly to the Town of Caledon Transportation Master Plan (TMP).

Hurontario Street is located along the western border of the site. Hurontario Street has a five (5) lane cross-section (including two lanes in each direction and a centre turning lane) and a posted speed limit of 80 km/h. The intersection with Old School Road is signalized.

Hurontario Street is a continuation of the provincial freeway Highway 410 (approximately 1.6 kilometres south of Old School Road). In the Town of Caledon's Official Plan, high capacity arterial roads are listed to have a 30 to 50 metre road allowance width with two (2) to six (6) lane capability.

As noted in **Section 3.2**, the planned GTA West Corridor will provide a future connection to Highway 10 and the ongoing environmental assessment (that is expected to be complete by end of 2022), is expected to identify the ultimate needs for Highway 10 and its interchange with the future highway.

4.1.2 Collector Roads

KENNEDY ROAD

Kennedy Road is a two-lane residential collector road with a posted speed limit of 60 km/h. Kennedy Road bisects the site in the north-south direction. Kennedy Road is a residential collector under the jurisdiction of the Town of Caledon within the study area (and identified as a Major Collector for the purpose of Local Service Policy[2]). South of Bovaird Drive (in the City of Brampton), Kennedy Road becomes a Regional Road under the jurisdiction of the Region of Peel.

In the Town of Caledon's Official Plan, collector roads are listed to have a 20 to 26 metres road allowance with two (2) to four (4) lane capability. Kennedy Road is identified in the Official Plan to have a right of way (ROW) of 26 metres.

Several local intersections are planned to be (or have recently been signalized) along Kennedy Road, consistent with the Town's Development Charges Background Study, including:

- Kennedy Road / Larson Peak;

[2] Caledon Development Charges Background Study, 2019

- Kennedy Road / Dougall Avenue; and
- Kennedy Road / Learmont Avenue.

OLD SCHOOL ROAD

Old School Road is a two-lane east-west industrial collector road bordering the north side of the site. The posted speed limit on Old School Road is 70 km/h. Old School Road is a road recognized by the Town's TMP for needing improvements such as higher standard roadway geometry and road widening to provide additional capacity for the expected growth by Mayfield West. Old School Road is under the jurisdiction of the Town of Caledon. Old School Road is identified as a Major Collector for the purpose of Local Service Policy[3].

In the Town of Caledon's Official Plan, collector roads are listed to have a 20 to 26 metres road allowance with two (2) to four (4) lane capability. Old School Road is identified in the Official Plan to have a right of way (ROW) of 26 metres.

Old School Road is about to undergo (Fall 2021) reconstruction to resurface and replace culverts, maintaining the existing lane configurations and traffic control.

HEART LAKE ROAD

Heart Lake Road is a two-lane north-south industrial collector road located approximately 2.7 kilometres east of the site. The posted speed limit of Heart Lake Road is 80 km/h. The intersection with Old School Road is signalized. Heart Lake Road is under the jurisdiction of the Town of Caledon. Heart Lake Road is identified in the Official Plan to have a right of way (ROW) of 26 metres.

Heart Lake Road is an identified road that will require improvements in the Town of Caledon's Study Report. A widening of Heart Lake Road to four –lanes from Mayfield Road to the north limit of the Mayfield West urban area is planned in the Town of Caledon's capital program for arterial roadway improvements.

4.1.3 Proposed Road Network

As part of the proposed development concept, a new internal road network is proposed within the site's lands. Access to the new roads are proposed along Old School Road and Kennedy Road. Five access points are located along Old School Road and three access points are located along Kennedy Road.

In addition, one of the new internal connections from the proposed development will be extended to Arcadia Road. The extension of Arcadia Road was planned and protected for as part of Mayfield West – Stage 1 and will provide further interconnectivity to the area local road network.

[3] Caledon Development Charges Background Study, 2019

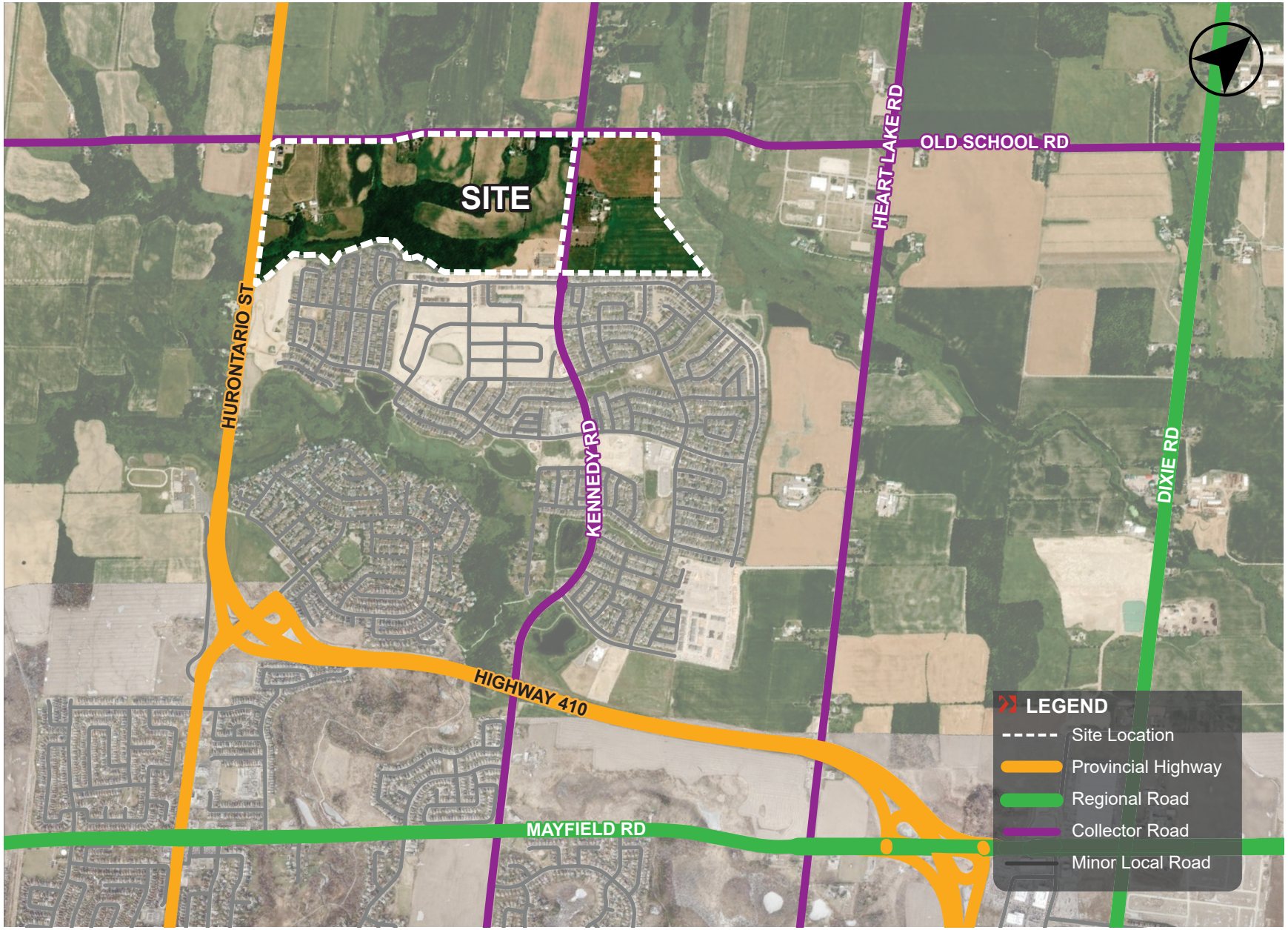

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FIGURE 9 AREA ROAD NETWORK

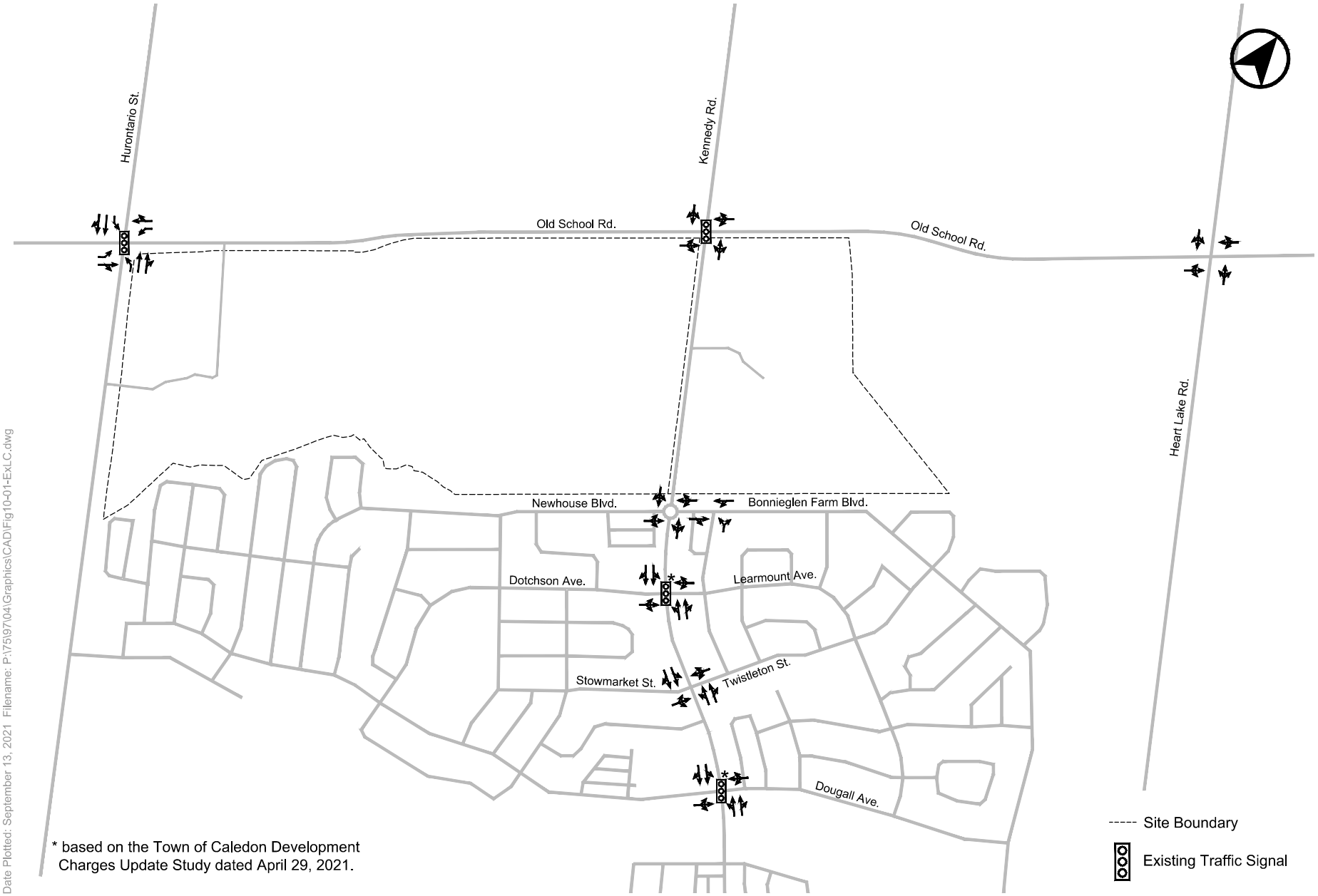

FIGURE 10 EXISTING LANE CONFIGURATION

4.2 TRANSIT NETWORK

4.2.1 Existing Transit Network

Brampton Transit route 81 is the only existing local transit route in the vicinity of the site and connects the Mayfield West community to Sandalwood Loop in Brampton. The northernmost stop on route 81 is at Kennedy Road / Learmont Avenue.

GO Transit bus route 37 runs north-south in the vicinity of the site and is accessible through stops along Hurontario Street, including a stop at Old School Road. GO bus route 37 provides access to Brampton Station on the Kitchener GO Train Line. The transit routes within the site vicinity are summarized in **Table 1**.

Figure 11 illustrates the existing transit network surrounding the site.

TABLE 1 SUMMARY OF TRANSIT ROUTES IN THE SITE VICINITY

Route	Direction	Headway	
		Weekday Morning Peak Period	Weekday Afternoon Peak Period
Brampton Transit Route 81[1]	North / South	45 minutes	45 minutes
GO Transit Bus Route 37[2]	North	1 hour	1 hour
	South	1 hour	1.5 hours

Notes:
1. Based off the Brampton transit 81 bus route PDF obtained from brampton.ca.
2. Based off the GO Transit 37 route number PDF obtained from gotransit.com.

4.2.2 Future Transit Network

At this time, there are no planned or proposed improvements to the transit network near the site. Old School Road and Kennedy Road would form logical extensions of the existing local transit network. Future transit stops would be reasonably located at intersections with new all-moves public road connections along Kennedy Road and Old School Road in order to provide a higher level of service (shorter walking distance) for future residents to existing or future transit routes.

Important to note that a policy in the Town of Caledon TMP, states to provide a local transit stop within a 400 metres walking distance of all urban land uses.

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FIGURE 11 EXISTING TRANSIT NETWORK

4.3 ACTIVE TRANSPORTATION NETWORK

4.3.1 Existing Active Transportation Network

There is currently no provision of active transportation infrastructure in the vicinity of the site other than pedestrian crosswalks on all four legs at Hurontario Street / Old School Road. A sidewalk on the west side of Kennedy Road ends approximately 500 metres south of the intersection with Old School Road.

4.3.2 Future Active Transportation Network

The Town's 2017 Bike Route Pilot was identified as a proposed improvement in the Town of Caledon's TMP, and includes Kennedy Road (runs between Etobicoke Creek Trail to the south and Olde Base Line Road to the north), Old School Road (runs between Creditview Road to the west and Kennedy Road to the east), and Heart Lake Road (runs from the Grange Side Road to the north and Olde Base Line Road to the south).

Separated on-road cycling routes were also proposed in the TMP in the vicinity of the site along Kennedy Road, Old School Road and Heart Lake Road.

The site will incorporate a new trail network that will serve as a recreational facility within the Natural Heritage System (NHS) and provide pedestrian and cycling connections between the proposed development and existing residential areas to the south. Three pedestrian bridges are proposed along the open space trail.

Sidewalks will be provided as part of the proposed development along the south side of Old School Road, both sides of Kennedy Road and the proposed road network within the site's lands as part of urbanizing the local road sections. In addition, the Town is adding sidewalks to the west side of Kennedy Road this year.

The existing and planned cycling context is illustrated in **Figure 12**.

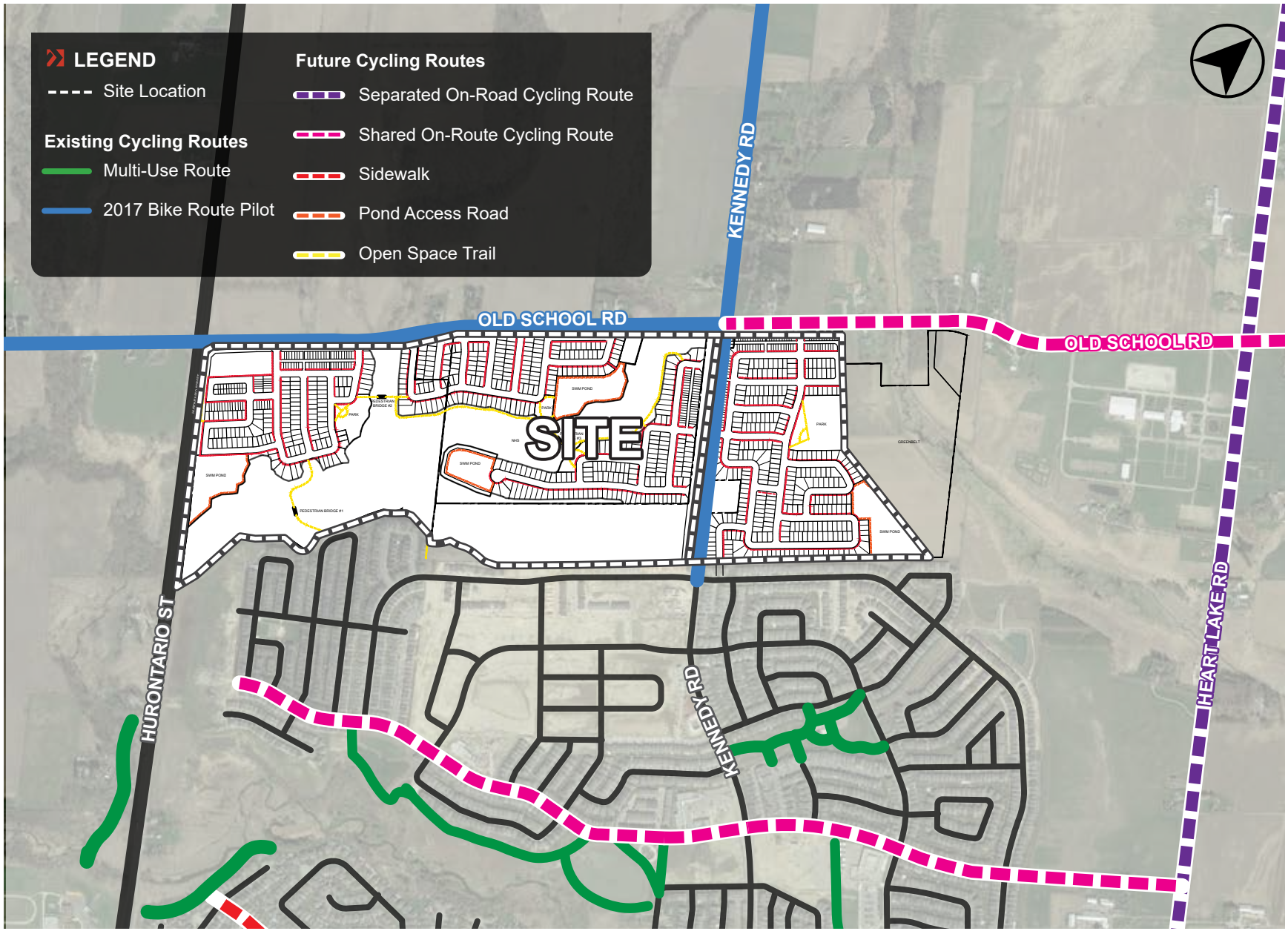

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FIGURE 12 EXISTING AND PROPOSED CYCLING CONNECTIONS / CONTEXT ROAD

5.0 TRAFFIC VOLUME FORECAST

5.1 EXISTING TRAFFIC VOLUMES

Existing baseline traffic volumes were established at intersections within the study area for the weekday morning and afternoon peak periods using traffic count information obtained from the Town of Caledon and LEA Consulting. Traffic count surveys were also undertaken by Spectrum Traffic Data Inc. on behalf of BA Group in 2018. A listing of the count data is provided in **Table 2**.

TABLE 2 EXISTING TRAFFIC DATA SOURCES

Intersection	TMC Count Date	Count Times	Source
Hurontario Street & Old School Road	Wednesday, March 7, 2018	7:15 - 8:15 AM 1:00 - 2:00 PM 4:00 – 5:00 PM	Spectrum
Kennedy Road & Old School Road	Thursday, June 28, 2018	7:30 – 8:30 AM 12:00 – 1:00 PM 3:45 – 4:45 PM	Horizon Data Services Ltd.
Kennedy Road & Dougall Avenue	Tuesday, April 18, 2017	7:30 – 8:30 AM 12:00 – 1:00 PM 4:45 – 5:45 PM	Spectrum
Kennedy Road & Stowmarket Street	Tuesday, April 18, 2017	7:15 – 8:15 AM 12:00 – 1:00 PM 4:45 – 5:45 PM	Spectrum
Heart Lake Road & Old School Road	December 15, 2020	7:15 -8:15 AM 4:45 -5:45 PM	LEA Consulting Ltd.[1]

Notes
1. Turning movement count for Heart Lake Road / Old School Road was conducted by LEA Consulting Ltd. and obtained through the Town of Caledon via development application materials prepared for 12892 Dixie Road in February 2021. Volumes at this intersection were balanced from existing counts along Old School Road to represent pre-covid conditions.

Signal timing plans were also obtained for the following signalized intersections:

- Highway 10 (Hurontario Street) & Old School Road (June 29th, 2017) – MTO
- Kennedy Road & Old School Road (January 19, 2021) – Region of Peel
- Kennedy Road & Dougall Avenue (June 10, 2021) – Region of Peel

The existing turning movement counts and signal timing plans are provided in **Appendix D**.

Existing, balanced baseline area traffic volumes for the weekday morning and afternoon peak traffic hours are summarized in **Figure 13**.

5.2 FUTURE BACKGROUND TRAFFIC VOLUMES

5.2.1 Corridor Growth

Based on a review of growth information provided in the Caledon Transportation Master Plan, as well as outputs from the Region's EMME model, growth rates were adopted for the primary corridors in the study area. Growth rates of 2% per year are applied in both directions on Hurontario Street, Kennedy Road, and Old School Road for the full buildout year (2028) and +5 years after full buildout (2033).

5.2.2 Area Background Developments

Traffic allowances were made for other specific proposed developments in the area, based on a review of developments listed on the Town of Caledon's website, as well as information provided directly by the Town. Area background developments that were reviewed and did not add traffic to the study area was not considered. A map identifying the background developments that were reviewed is attached in **Appendix E**. Out of the number of background developments reviewed, four (4) of these developments added traffic to the study area. These sites represent a total development in the order of 6,617 residential units and 559,324 m^2 GFA of non-residential area.

Area background developments are summarized in **Table 3** together with a description of key development statistics for each. Traffic allowances have been made for a total of four (4) area background developments.

TABLE 3 AREA BACKGROUND DEVELOPMENTS

Development Name / Location	Development Statistics	Trip Generation Notes / Sources
12892 Dixie Road	247,243m^2 warehouse/distribution centre	LEA Consulting Ltd., February 2020
Heart Lake Portfolio	232,258m^2 warehouse or light industrial uses	IBI Group, September 2012
Mayfield West Phase 1 (unbuilt portion)[2]	397 detached homes, 452 townhomes, 123-unit seniors residence	Units provided by GSAI.
Mayfield West Phase 2	5,768 residential units, 64,850m^2 commercial uses, business uses (1814 employees), educational uses (4,225 students), other institutional uses (14,973m^2 GFA)	Paradigm Transportation Solutions Ltd., January 2018

Notes:

1. Site traffic for 12892 Dixie Road, Heart Lake Portfolio, and Mayfield West Ph.2 do not specifically differentiate between with or without the GTA West along Old School Road, Kennedy Road, or Heart Lake Road.
2. BA Group adopted the following site traffic estimates for unbuilt portions of Mayfield Phase 1, which is situated further south of the site: Adoption of the proposed ITE trip rates for the site (Table 4) and adoption of the site trip distribution (without GTA West, Table 6). We expect a more detailed redistribution of Mayfield West Phase 1 – Stage 1 lands on the local road network (i.e. Old School Road and Kennedy Road) is subject to further review in the Town's travel models as detailed design of the GTA West, 410, and future Spine Road connecting to Mayfield West Phase 2 progresses. Section 5.3.2 outlines a site distribution for Mayfield West Phase 1 – Stage 2 with and without the GTA West, recognizing there could be a future interchange access in close proximity to the site just north of Hurontario Street / Old School Road.

5.2.3 Future Background Traffic Volumes

Future background traffic volumes for the 2028 and 2033 horizons are determined by adding the corridor growth and background development volumes for each horizon to existing volumes. The future background volumes for the 2028 and 2033 horizons are illustrated in **Figure 14** and **Figure 15**, respectively.

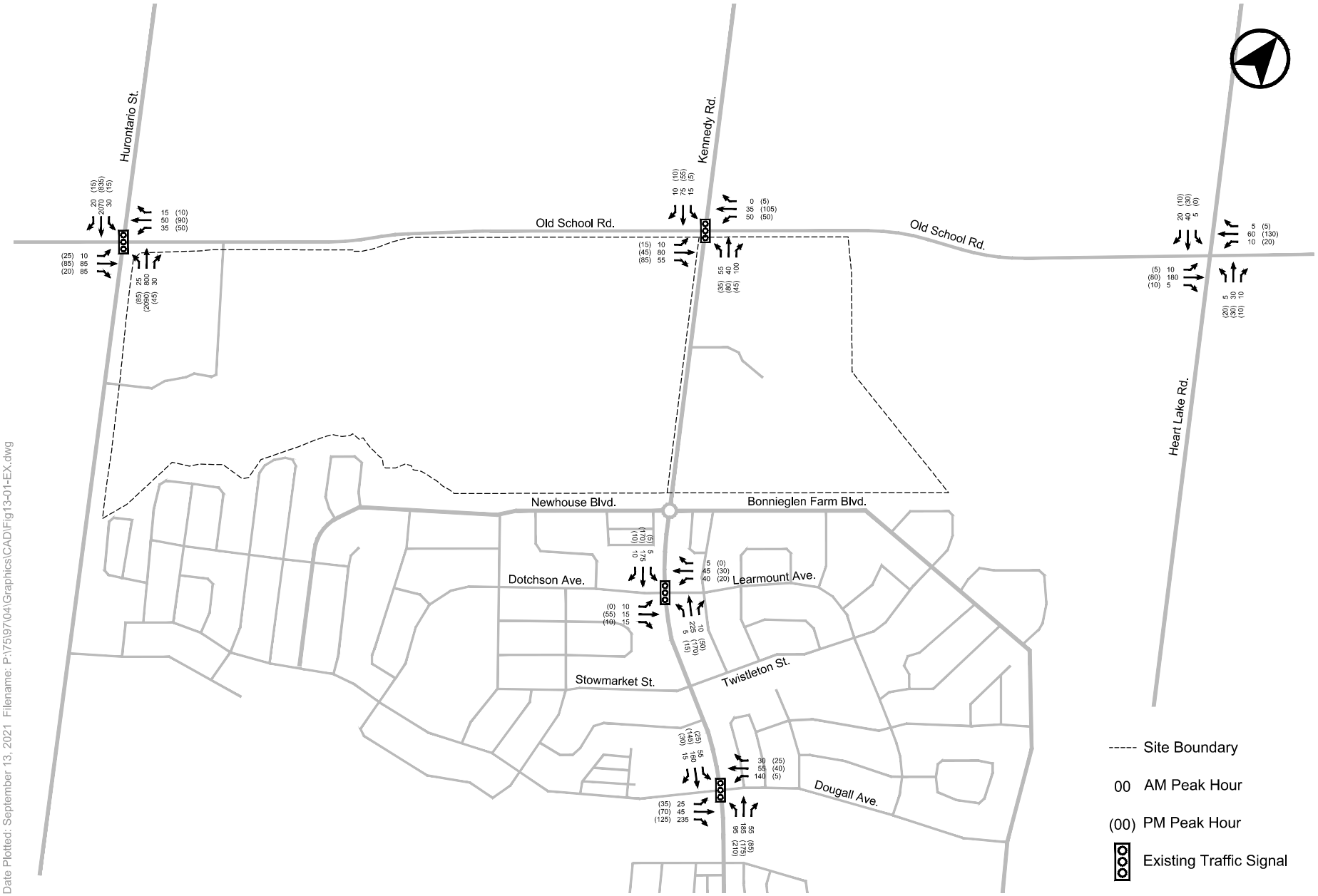

FIGURE 13 EXISTING TRAFFIC VOLUMES

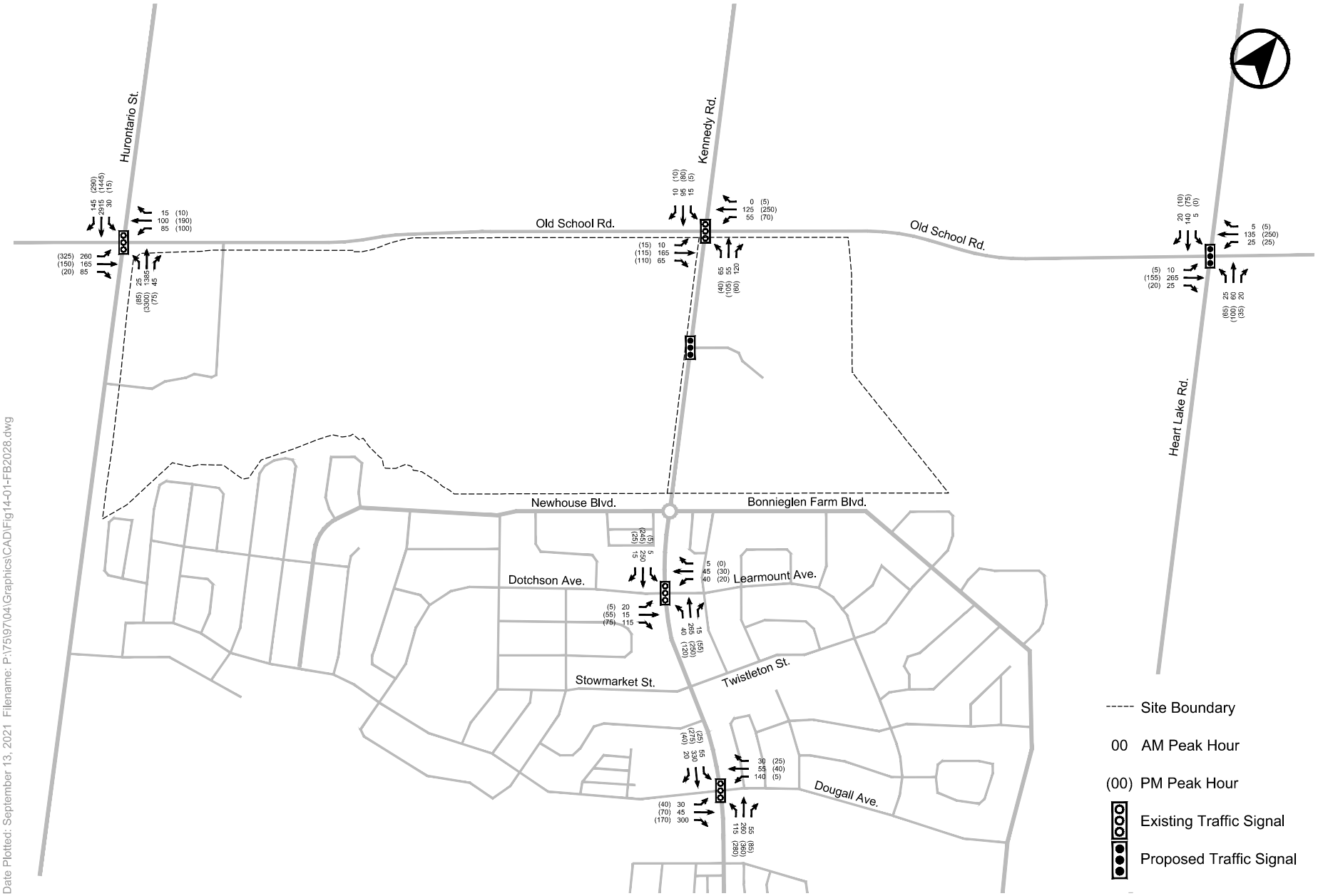

FIGURE 14 FUTURE BACKGROUND 2028 TRAFFIC VOLUMES

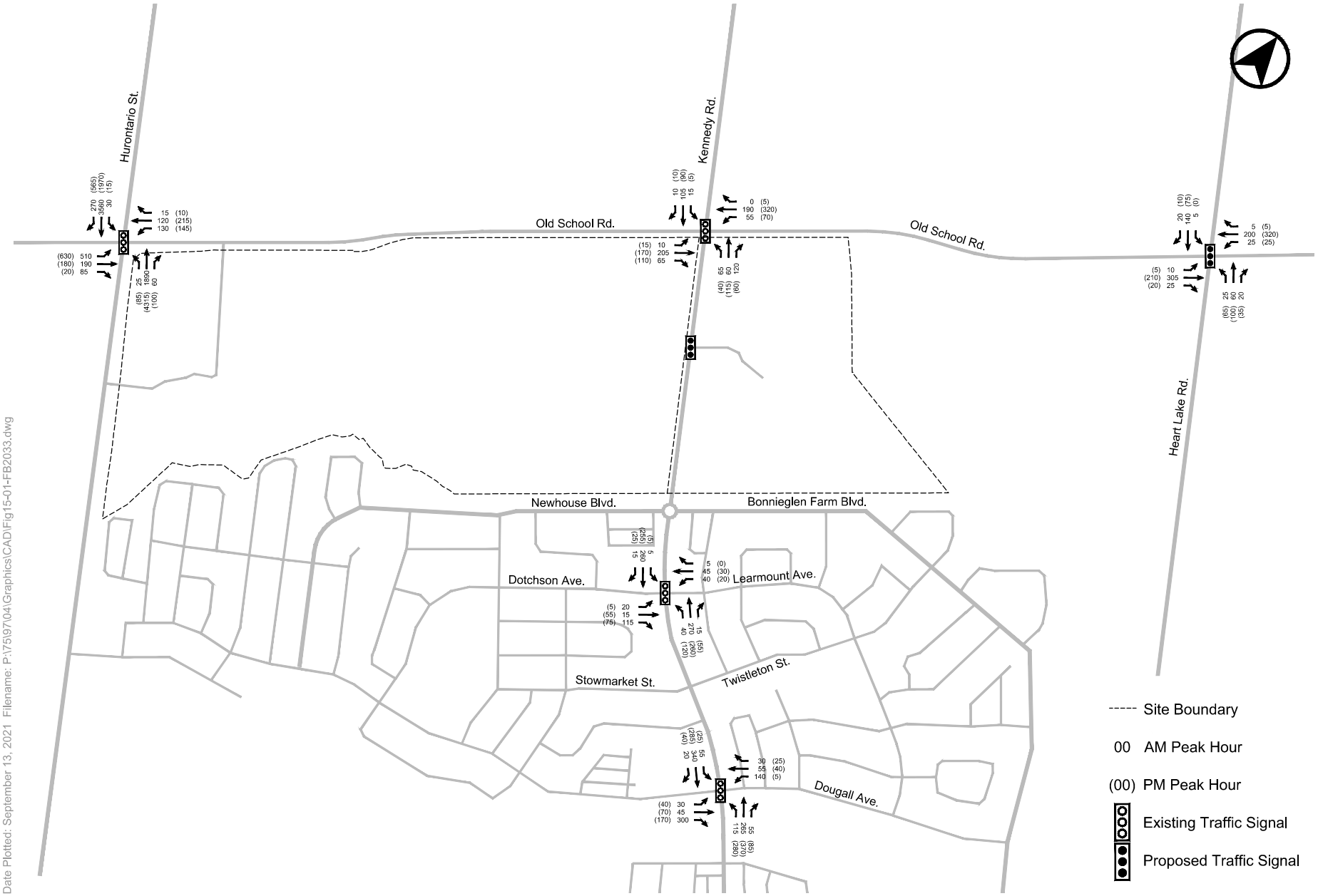

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FIGURE 15 FUTURE BACKGROUND 2033 TRAFFIC VOLUMES

5.3 SITE TRAFFIC FORECASTS

5.3.1 Residential Trip Generation

Residential vehicle trip generation rates were adopted based on the Institute for Transportation Engineers (ITE) 10th Edition Trip Generation Manual, as outlined in **Table 4**.

TABLE 4 BASE RESIDENTIAL VEHICLE TRIP GENERATION RATES (ITE 10TH EDITION)

Land Use	Land Use Code (ITE 10th Edition)	Vehicle Trip Generation Rate *(vehicle trips per dwelling)*					
		AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Single Detached Dwelling	210 – Single-Family Detached Housing	0.19	0.55	0.74	0.62	0.37	0.99
Townhouse	220 – Multifamily Housing (Low-Rise)	0.11	0.35	0.46	0.35	0.21	0.56
Mid-Rise Residential	221 – Multifamily Housing (Mid-Rise)	0.09	0.27	0.36	0.27	0.17	0.44

The ITE rates summarized above, trip generation was carried out for each of the four traffic zones (referred to as parcels and identified in Appendix B) according to the uses present within each. Trips generated for each parcel are summarized in **Table 5**.

TABLE 5 SITE RESIDENTIAL VEHICLE TRIP GENERATION

Land Use	Dwelling Count	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Parcel 1							
Single Detached Dwelling	135	*0.19*	*0.55*	*0.74*	*0.62*	*0.37*	*0.99*
		25	75	100	85	50	135
Townhouse	108	*0.11*	*0.35*	*0.46*	*0.35*	*0.21*	*0.56*
		10	40	50	40	20	60
Mid-Rise Residential	194	*0.09*	*0.27*	*0.36*	*0.27*	*0.17*	*0.44*
		20	50	70	50	35	85
Total		**55**	**165**	**220**	**175**	**105**	**280**
Parcel 2							
Single Detached Dwelling	181	*0.19*	*0.55*	*0.74*	*0.62*	*0.37*	*0.99*
		35	100	135	115	65	180
Total		**35**	**100**	**135**	**115**	**65**	**180**
Parcel 3							
Single Detached Dwelling	196	*0.19*	*0.55*	*0.74*	*0.62*	*0.37*	*0.99*
		35	110	145	125	70	195
Townhouse	45	*0.11*	*0.35*	*0.46*	*0.35*	*0.21*	*0.56*
		5	15	20	15	10	25
Total		**40**	**125**	**165**	**140**	**80**	**220**
Parcel 4							
Single Detached Dwelling	335	*0.19*	*0.55*	*0.74*	*0.62*	*0.37*	*0.99*
		60	185	245	210	120	330
Townhouse	135	*0.11*	*0.35*	*0.46*	*0.35*	*0.21*	*0.56*
		15	50	65	45	30	75
Total		**75**	**235**	**310**	**255**	**150**	**405**
Total Site Vehicle Trips							
Total		**205**	**625**	**830**	**685**	**400**	**1085**

5.3.2 Trip Distribution and Assignment

The residential trip distribution for the site is developed based on a review of 2016 Transportation Tomorrow Survey (TTS). Site traffic is assigned to the area network according to the distribution provided in **Table 6**, site driveway locations, and local road characteristics (i.e. turning movement restrictions).

In the +5 year post-buildout scenario (2033), site traffic is shown distributed differently depending on whether the GTA West Highway is constructed. The assignment of site traffic to the network with and without the GTA West Highway is illustrated in **Figure 16** and **Figure 17**, respectively.

Detailed TTS queries for travel characteristics are attached in **Appendix F**.

TABLE 6 TRIP DISTRIBUTION PATTERN

Direction	Inbound	Outbound
Without GTA West Highway		
North	2%	3%
South	71%	68%
East	19%	22%
West	8%	7%
Total	**100%**	**100%**
With GTA West Highway		
North	21%	20%
South	57%	55%
East	17%	21%
West	5%	4%
Total	**100%**	**100%**

Notes:
1. Based on 2016 TTS data for home-based trips to / from 2006 TTS Zones 169 and 173 during the weekday morning and afternoon peak periods.

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FIGURE 16 SITE TRAFFIC VOLUMES WITH THE GTA WEST HIGHWAY

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FIGURE 17 SITE TRAFFIC VOLUMES WITHOUT THE GTA WEST HIGHWAY

5.4 FUTURE TOTAL TRAFFIC

Three (3) distinct future total scenarios results were considered:

1. 2028 Future Total, resulting from the combination of the 2028 future background volumes and site traffic volumes are illustrated in **Figure 18**.

2. 2033 Future Total horizon, resulting from the combination of the 2033 future background volumes and site traffic volumes are illustrated in **Figure 19**.

3. 2033 Future Total (with GTA West), resulting from the combination of the 2033 future background volumes and site traffic volumes (with the GTA West) are illustrated in **Figure 20**.

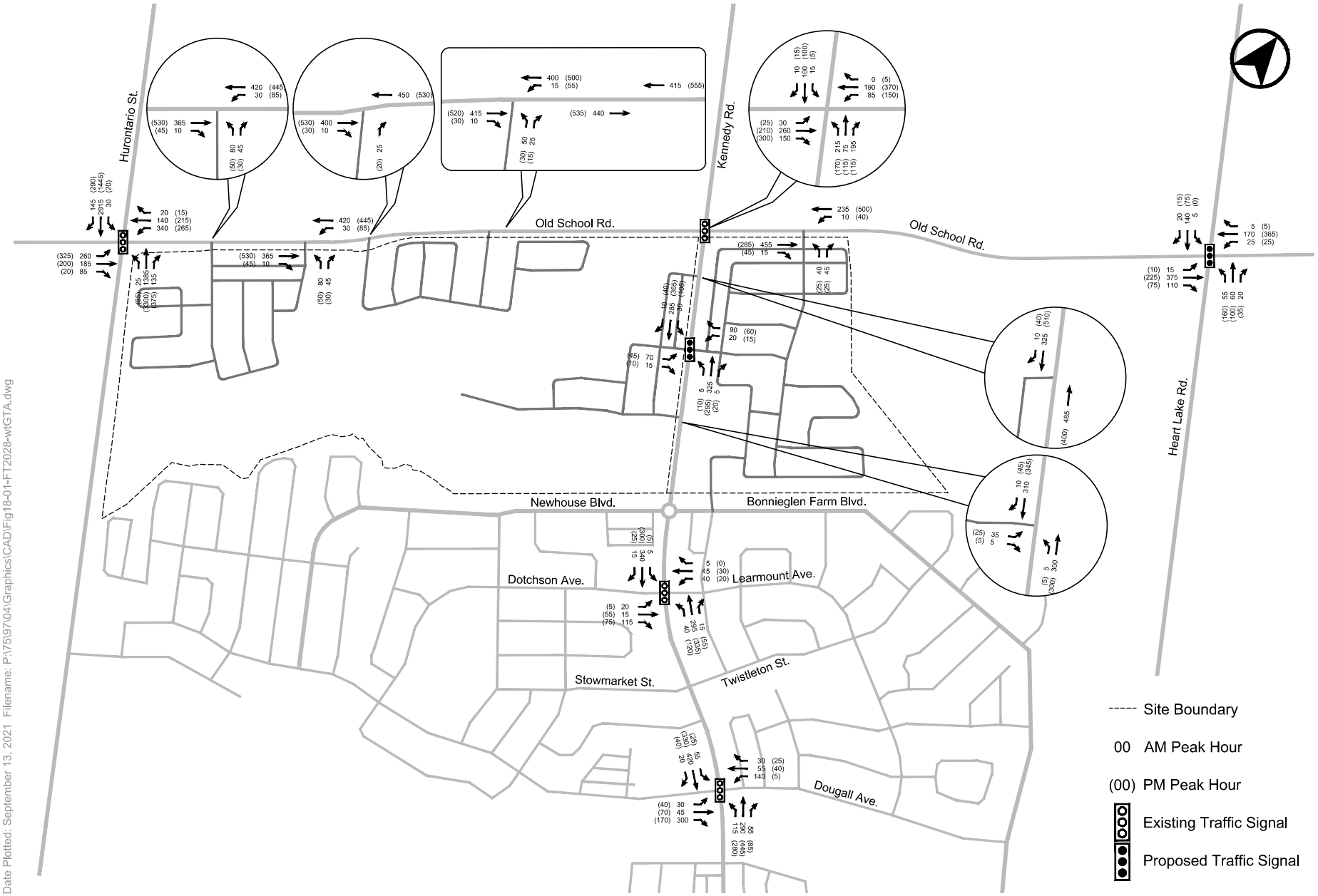


FIGURE 18 FUTURE TOTAL 2028 VOLUMES WITHOUT THE GTA WEST HIGHWAY

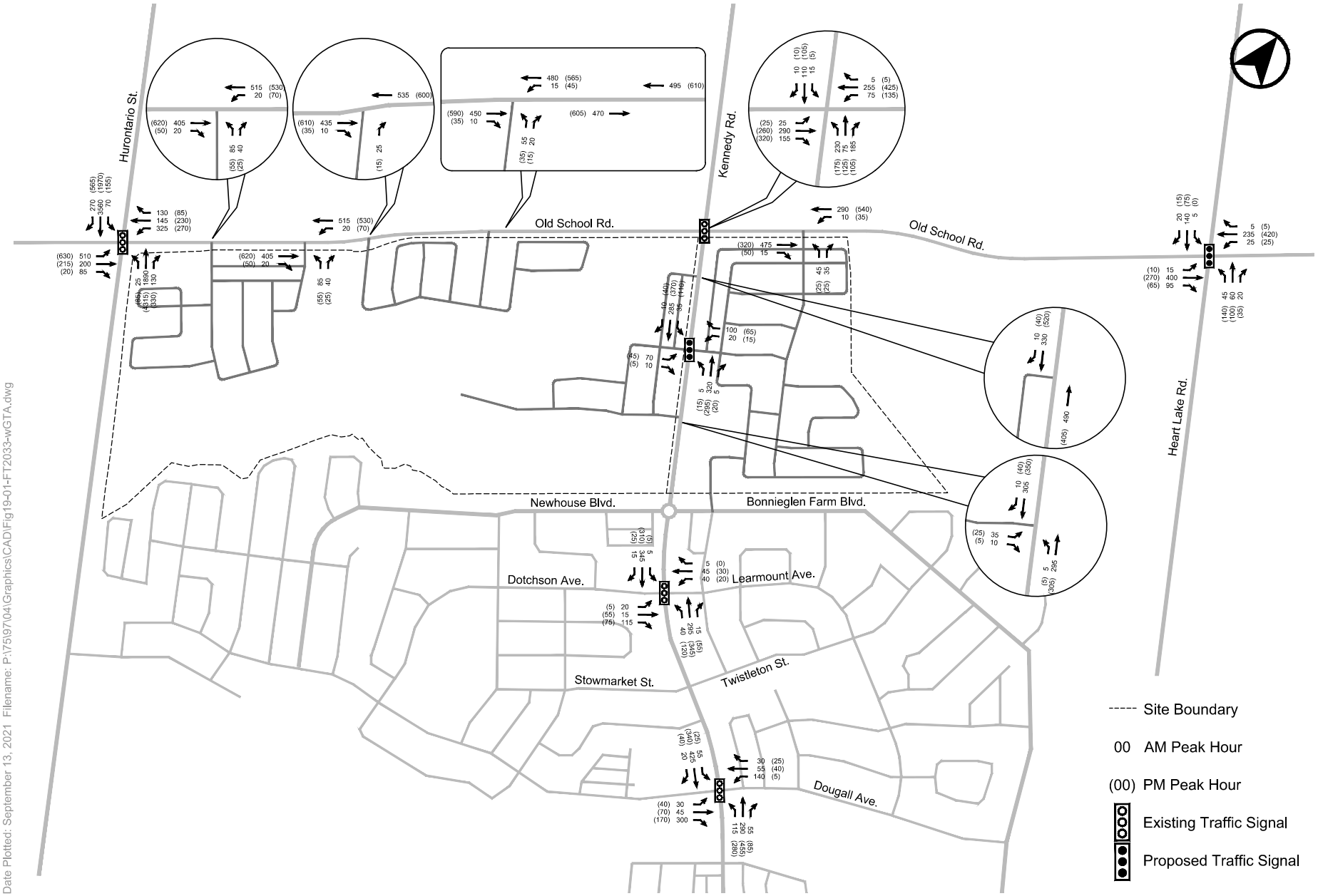
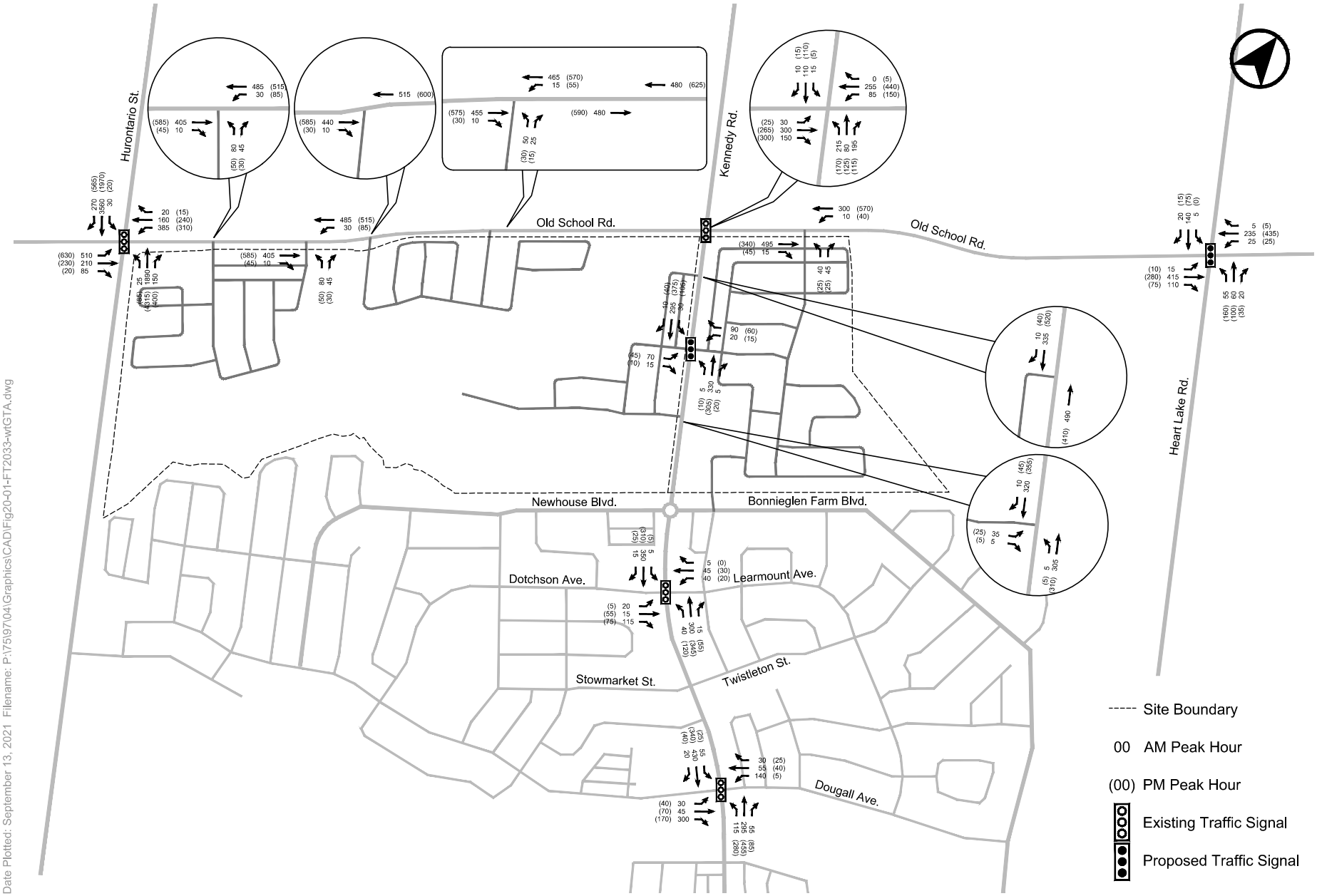


FIGURE 19 FUTURE TOTAL 2033 VOLUMES WITH THE GTA WEST HIGHWAY



Date Plotted: September 13, 2021 Filename: P:\75\97\04\Graphics\CAD\Fig20-01-FT2033-wtGTA.dwg

FIGURE 20 FUTURE TOTAL 2033 VOLUMES WITHOUT THE GTA WEST HIGHWAY

6.0 OPERATIONS ANALYSIS

6.1 ANALYSIS METHODOLOGY

Synchro Version 11 and the Highway Capacity Manual (HCM) methodology were used to analyze the study area signalized and unsignalized stop-controlled intersections and site access points. In order to assess the unsignalized roundabout intersections, Arcady was used.

For signalized intersections, the volume-to-capacity ratio (v/c) is an indicator of the capacity utilization for the key movements in the intersection. A v/c of 1.00 indicates that a traffic movement through an intersection is operating at or near maximum capacity.

For unsignalized intersections, level of service (LOS) characterizes operational conditions for key movements in terms of average delay experienced by vehicles attempting to complete a manoeuvre through the intersection. LOS 'A' represents a good level of service with short delays, while LOS 'F' represents a poor level of service with extended delays.

6.2 ANALYSIS ASSUMPTIONS AND PARAMETERS

Synchro analyses performed conform to the requirements of the Region of Peel's Guidelines for Using Synchro, December 2010. A base saturation flow of 1,900 vehicles per hour per lane was assumed as per the Region's Synchro guidelines. Peak hour factors and heavy vehicle percentages were calculated based on existing traffic volume data extracted from the traffic counts utilized in this study.

Existing traffic signal timing plans for the signalized intersections within the study area were obtained from the Town of Caledon and are attached in **Appendix D**. Analyses for existing conditions were undertaken using these signal timing plans, and in some cases adjustments to signal timings were made under future conditions.

6.3 TRAFFIC ANALYSIS SUMMARY

Intersection capacity analysis results are shown for six scenarios, including the following:

- Existing Conditions
- Future Background Conditions, 2028
- Future Total Conditions (full buildout), 2028
- Future Background Conditions, 2033
- Future Total Conditions (five years post-buildout), 2033, without GTA West Highway
- Future Total Conditions (five years post-buildout), 2033, with GTA West Highway

Analyses are provided for signalized and unsignalized intersections. Detailed Synchro analysis sheets are provided in **Appendix G**.

6.3.1 Signalized Intersection Analysis

6.3.1.1 Hurontario Street / Old School Road

The intersection of **Hurontario Street / Old School Road** has a cycle length of 75 seconds under existing conditions. In the future scenarios (both 2028 and 2033), it is assumed for the purposes of analysis that Hurontario Street is widened from its current 4-lane cross-section to a 6-lane cross-section. The future background results also assume an increased cycle length of 120 seconds and auxiliary turning lanes to accommodate future growth.

Capacity analysis results for the intersection of **Hurontario Street / Old School Road** are provided in **Table 7**.

TABLE 7 HURONTARIO STREET / OLD SCHOOL ROAD CAPACITY ANALYSIS RESULTS

Movement	Existing Traffic	Future Background Traffic		Future Total Traffic		
		2028	2033	Without GTA West Highway		With GTA West Highway
				2028	2033	2033
EBL	0.04 (0.18)	0.81 (1.01)	1.12 (2.10)	0.96 (1.32)	1.92 (2.63)	2.11 (4.09)
EBTR	0.58 (0.47)	0.58 (0.30)	0.44 (0.36)	0.68 (0.55)	0.75 (0.63)	0.72 (0.72)
WBL	0.19 (0.36)	0.46 (0.29)	0.43 (0.46)	1.09 (0.94)	1.30 (1.20)	1.08 (1.40)
WBTR	0.18 (0.47)	0.24 (0.35)	0.20 (0.40)	0.24 (0.41)	0.27 (0.45)	0.45 (0.68)
NBL	0.27 (0.23)	0.43 (1.25)	0.43 (1.45)	0.43 (0.75)	0.43 (1.45)	0.43 (1.45)
NBT	0.46 (0.95)	0.56 (1.29)	0.95 (1.69)	0.67 (1.26)	0.92 (1.64)	0.92 (1.69)
NBR	-- (--)	-- (--)	-- (--)	0.10 (0.36)	0.12 (0.41)	0.11 (0.35)
SBL	0.11 (0.19)	0.26 (0.31)	0.65 (0.31)	0.36 (0.40)	0.65 (0.40)	1.52 (1.45)
SBT	1.01 (0.39)	1.04 (0.70)	1.62 (1.04)	1.23 (0.57)	1.50 (0.78)	1.50 (0.70)
SBR	-- (--)	-- (--)	-- (--)	0.14 (0.22)	0.27 (0.56)	0.27 (0.56)
Overall	**0.91 (0.88)**	**0.97 (1.18)**	**1.40 (1.84)**	**1.20 (1.26)**	**1.59 (1.89)**	**1.61 (2.23)**

Notes:
1. XX (XX) – AM (PM)

The intersection operates over capacity under 2028 future background during the weekday afternoon peak hour, and is well over capacity during both peak hours under 2033 future background conditions. This is primarily due to a large amount of growth on the north/south through movements and traffic associated with the Mayfield West Phase 2 development (ranging from 22% and 43% of northbound and southbound through volumes during the peak hours). It is not clear how much of the traffic from this development was included in the regional modelling material that was reviewed in order to establish corridor growth estimates. The Mayfield West Phase 2 TIS also notes that some site traffic will reasonably adjust/re-assign given the capacity at the McLaughlin Road and Old School Road intersection. The intersection operations were also performed without full buildout of Mayfield West Phase 2 traffic, recognizing a lower rate of growth along Hurontario Street.

Capacity analysis results without the addition of traffic from Mayfield West Phase 2 are provided in **Table 8**.

TABLE 8 HURONTARIO STREET / OLD SCHOOL ROAD CAPACITY ANALYSIS RESULTS (MAYFIELD WEST PHASE II VOLUMES REMOVED)

Movement	Existing Traffic	Future Background Traffic		Future Total Traffic		
		2028	2033	Without GTA West Highway		With GTA West Highway
				2028	2033	2033
EBL	0.04 (0.18)	0.04 (0.21)	0.04 (0.21)	0.04 (0.14)	0.04 (0.13)	0.05 (0.17)
EBT	0.58 (0.47)	0.76 (0.63)	0.77 (0.67)	0.80 (0.74)	0.82 (0.77)	0.81 (0.79)
WBL	0.19 (0.36)	0.29 (0.37)	0.29 (0.39)	0.98 (0.96)	0.99 (0.98)	0.86 (0.94)
WBT	0.18 (0.47)	0.31 (0.70)	0.34 (0.72)	0.25 (0.46)	0.26 (0.47)	0.44 (0.67)
NBL	0.27 (0.23)	0.43 (0.28)	0.43 (0.32)	0.43 (0.34)	0.43 (0.41)	0.43 (0.41)
NBT	0.46 (0.95)	0.35 (0.75)	0.39 (0.84)	0.59 (0.88)	0.50 (0.99)	0.48 (1.12)
NBR	-- (--)	-- (--)	-- (--)	0.09 (0.29)	0.09 (0.30)	0.07 (0.26)
SBL	0.11 (0.19)	0.12 (0.31)	0.14 (0.31)	0.27 (0.41)	0.20 (0.40)	0.45 (1.06)
SBT	1.01 (0.39)	0.78 (0.31)	0.87 (0.35)	1.01 (0.37)	1.12 (0.41)	1.08 (0.39)
SBR	-- (--)	-- (--)	-- (--)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Overall	**0.91 (0.88)**	**0.77 (0.74)**	**0.84 (0.82)**	**1.02 (0.93)**	**1.10 (1.02)**	**1.02 (1.10)**

Notes:
1. XX (XX) – AM (PM)

6.3.1.2 Kennedy Road / Old School Road

The intersection of **Kennedy Road / Old School Road** has 90-second and 80-second cycle lengths during the weekday morning and afternoon peak hours, respectively. It is recommended that dedicated left turn lanes be added to this intersection in order to support traffic associated with the development.

Capacity analysis results for the intersection of **Kennedy Road / Old School Road** are provided **Table 9**.

TABLE 9 KENNEDY ROAD / OLD SCHOOL ROAD CAPACITY ANALYSIS RESULTS

Movement	Existing Traffic	Future Background Traffic		Future Total Traffic[2]		
		2028	2033	Without GTA West Highway		With GTA West Highway
				2028	2033	2033
EBL	-- (--)	-- (--)	-- (--)	0.06 (0.04)	0.07 (0.05)	0.06 (0.05)
EBTR	0.45 (0.12)	0.35 (0.30)	0.41 (0.39)	0.45 (0.46)	0.50 (0.52)	0.52 (0.54)
WBL	-- (--)	-- (--)	-- (--)	0.23 (0.30)	0.26 (0.33)	0.24 (0.31)
WBTR	0.44 (0.16)	0.32 (0.47)	0.42 (0.56)	0.21 (0.32)	0.28 (0.38)	0.30 (0.37)
NBL	-- (--)	-- (--)	-- (--)	0.77 (0.66)	0.77 (0.67)	0.77 (0.68)
NBTR	0.19 (0.38)	0.37 (0.28)	0.38 (0.29)	0.38 (0.50)	0.41 (0.54)	0.32 (0.52)
SBL	-- (--)	-- (--)	-- (--)	0.08 (0.03)	0.08 (0.03)	0.06 (0.03)
SBTR	0.10 (0.16)	0.18 (0.13)	0.20 (0.14)	0.24 (0.30)	0.26 (0.33)	0.24 (0.30)
Overall	**0.24 (0.22)**	**0.36 (0.37)**	**0.40 (0.43)**	**0.56 (0.51)**	**0.59 (0.56)**	**0.61 (0.57)**

Notes:
1. XX (XX) – AM (PM)

6.3.1.3 Kennedy Road / Dougall Avenue

The intersection of **Kennedy Road / Dougall Avenue** has a 90-second cycle length during the weekday peak hours. Capacity analysis results for the intersection of **Kennedy Road / Dougall Avenue** are provided in **Table 10**.

TABLE 10 KENNEDY ROAD / DOUGALL AVENUE CAPACITY ANALYSIS RESULTS

Movement	Existing Traffic	Future Background Traffic		Future Total Traffic		
		2028	2033	Without GTA West Highway		With GTA West Highway
				2028	2033	2033
EBLTR	0.32 (0.32)	0.31 (0.26)	0.31 (0.26)	0.36 (0.26)	0.36 (0.26)	0.36 (0.26)
WBLTR	0.59 (0.09)	0.46 (0.06)	0.46 (0.06)	0.46 (0.06)	0.46 (0.06)	0.46 (0.06)
NBLTR	0.25 (0.34)	0.48 (0.85)	0.49 (0.87)	0.54 (0.97)	0.55 (0.99)	0.55 (0.99)
SBLTR	0.17 (0.12)	0.38 (0.32)	0.39 (0.33)	0.46 (0.38)	0.47 (0.39)	0.47 (0.39)
Overall	**0.40 (0.34)**	**0.47 (0.49)**	**0.47 (0.50)**	**0.49 (0.54)**	**0.50 (0.55)**	**0.50 (0.55)**

Notes:
1. XX (XX) – AM (PM)

6.3.1.4 Kennedy Road / Parcel 3 & 4 Access

A signal warrant analysis was conducted for this intersection based on the methodologies outlined in Book 12 of the Ontario Traffic Manual (March 2012). 8-hour volumes at the intersection were projected using ITE temporal variation data for land use code 210 – Single-Family Detached Housing.

A traffic signal is warranted according to Justification 3 under future total conditions in 2028. It is therefore recommended that a traffic signal be implemented in order to accommodate traffic from the proposed development. Detailed signal warrant analyses are provided in **Appendix H**.

Capacity analysis for this future intersection was completed assuming a cycle length of 90 seconds and 80 seconds during the weekday morning and afternoon peak hours, respectively, to match the signal at **Kennedy Road / Old School Road**.

Capacity analysis under future total conditions for the intersection of **Kennedy Road / Parcel 3 & 4 Access** is provided in **Table 11**.

TABLE 11 KENNEDY ROAD / PARCEL 3 & 4 ACCESS CAPACITY ANALYSIS RESULTS

Movement	Existing Traffic	Future Background Traffic		Future Total Traffic		
		2028	2033	Without GTA West Highway		With GTA West Highway
				2028	2033	2033
EBLTR	-- (--)	-- (--)	-- (--)	0.25 (0.09)	0.25 (0.09)	0.24 (0.08)
WBLTR	-- (--)	-- (--)	-- (--)	0.13 (0.09)	0.13 (0.09)	0.14 (0.09)
NBLTR	-- (--)	-- (--)	-- (--)	0.29 (0.31)	0.30 (0.32)	0.29 (0.31)
SBLTR	-- (--)	-- (--)	-- (--)	0.30 (0.56)	0.31 (0.58)	0.30 (0.58)
Overall	**-- (--)**	**-- (--)**	**-- (--)**	**0.29 (0.44)**	**0.29 (0.45)**	**0.29 (0.45)**

Notes:

1. XX (XX) – AM (PM)
2. Traffic parcels 3 and 4 are identified in **Appendix B.**

6.3.2 Unsignalized Intersection Analysis

Unsignalized intersection LOS and delays are provided in **Table 12** and **Table 13**, respectively. The east access points for Parcel 1 and Parcel 2 are expected to include dedicated westbound left turn lanes, as these are warranted according to the methodologies outlined in the MTO Geometric Design Guidelines. Left turn warrant figures are provided in **Appendix I**.

TABLE 12 UNSIGNALIZED INTERSECTION LOS

Movement	Existing Traffic	Future Background Traffic		Future Total Traffic		
		2028	2033	Without GTA West Highway		With GTA West Highway
				2028	2033	2033
Heart Lake Road / Old School Road						
EBLTR	A (A)	B (B)	C (B)	E (C)	F (C)	F (C)
WBLTR	A (A)	B (B)	B (B)	B (C)	C (E)	C (D)
NBLTR	A (A)	B (B)	B (B)	B (C)	B (C)	B (C)
SBLTR	A (A)	B (A)	B (B)	B (B)	B (B)	B (B)
Kennedy Road / Stowmarket Street – Twistleton Street						
EBLTR	B (B)	B (C)	B (C)	B (C)	B (C)	B (C)
WBLTR	B (B)	C (D)	C (D)	C (E)	C (E)	C (E)
NBLT	A (A)	A (A)	A (A)	A (A)	A (A)	A (A)
SBLT	A (A)	A (A)	A (A)	A (A)	A (A)	A (A)
Parcel 1 East Access / Old School Road						
WBL	-- (--)	-- (--)	-- (--)	A (A)	A (A)	A (A)
NBLR	-- (--)	-- (--)	-- (--)	C (D)	C (E)	D (E)
Parcel 2 East Access / Old School Road						
WBL	-- (--)	-- (--)	-- (--)	A (A)	A (A)	A (A)
NBLR	-- (--)	-- (--)	-- (--)	C (C)	C (D)	C (D)
Kennedy Road / Parcel 3 South Access						
EBLR	-- (--)	-- (--)	-- (--)	B (B)	B (B)	B (B)
NBLT	-- (--)	-- (--)	-- (--)	A (A)	A (A)	A (A)
Parcel 4 North Access / Old School Road						
WBLT	-- (--)	-- (--)	-- (--)	A (A)	A (A)	A (A)
NBLR	-- (--)	-- (--)	-- (--)	B (C)	C (C)	C (C)
Parcel 4 South Access – Arcadia Road / Bonnieglen Farm Boulevard						
EBLTR	-- (--)	-- (--)	-- (--)	A (A)	A (A)	A (A)
WBLTR	-- (--)	-- (--)	-- (--)	A (A)	A (A)	A (A)
NBLTR	-- (--)	-- (--)	-- (--)	A (A)	A (A)	A (A)
SBLTR	-- (--)	-- (--)	-- (--)	A (A)	A (A)	A (A)

Notes:
1. XX (XX) – AM (PM)

TABLE 13 UNSIGNALIZED INTERSECTION DELAY

Movement	Existing Traffic	Future Background Traffic		Future Total Traffic		
		2028	2033	Without GTA West Highway		With GTA West Highway
				2028	2033	2033
Heart Lake Road / Old School Road						
EBLTR	9.10 (7.90)	13.40 (10.10)	16.10 (11.60)	39.80 (16.20)	67.80 (22.90)	51.40 (19.20)
WBLTR	8.20 (8.30)	10.90 (11.60)	13.00 (14.20)	13.90 (21.60)	17.60 (37.60)	17.40 (29.60)
NBLTR	8.30 (7.90)	10.40 (10.70)	11.10 (11.50)	13.20 (17.20)	13.90 (20.30)	13.60 (17.60)
SBLTR	8.10 (7.70)	11.00 (9.40)	11.90 (10.10)	13.60 (11.60)	14.50 (12.80)	14.40 (12.10)
Kennedy Road / Stowmarket Street – Twistleton Street						
EBLTR	11.20 (13.20)	12.00 (18.60)	12.20 (19.10)	13.20 (22.90)	13.40 (23.70)	13.30 (23.70)
WBLTR	13.40 (13.60)	19.60 (27.80)	20.00 (28.90)	23.20 (37.00)	23.70 (38.70)	23.30 (38.70)
NBL	0.30 (1.20)	2.10 (4.50)	2.10 (4.40)	2.00 (4.10)	2.00 (4.00)	2.00 (4.00)
NBTR	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
SBL	0.40 (0.40)	0.30 (0.30)	0.30 (0.30)	0.30 (0.30)	0.20 (0.30)	0.20 (0.30)
SBTR	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Parcel 1 East Access / Old School Road						
EBTR	-- (--)	-- (--)	-- (--)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
WBL	-- (--)	-- (--)	-- (--)	8.20 (9.20)	8.30 (9.40)	8.30 (9.50)
WBT	-- (--)	-- (--)	-- (--)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
NBLR	-- (--)	-- (--)	-- (--)	20.80 (30.80)	24.80 (39.60)	26.20 (45.30)
Parcel 2 East Access / Old School Road						
EBTR	-- (--)	-- (--)	-- (--)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
WBL	-- (--)	-- (--)	-- (--)	8.30 (8.90)	8.50 (9.10)	8.40 (9.20)
WBT	-- (--)	-- (--)	-- (--)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
NBLR	-- (--)	-- (--)	-- (--)	18.10 (25.00)	20.70 (30.20)	22.00 (31.30)
Kennedy Road / Parcel 3 South Access						
EBLR	-- (--)	-- (--)	-- (--)	14.00 (14.30)	14.30 (14.60)	13.50 (14.40)
NBLT	-- (--)	-- (--)	-- (--)	0.20 (0.20)	0.20 (0.20)	0.20 (0.20)
SBTR	-- (--)	-- (--)	-- (--)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Parcel 4 North Access / Old School Road						
EBTR	-- (--)	-- (--)	-- (--)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
WBLT	-- (--)	-- (--)	-- (--)	0.50 (1.00)	0.40 (1.00)	0.40 (0.90)
NBLR	-- (--)	-- (--)	-- (--)	14.90 (15.60)	16.60 (17.90)	16.60 (16.80)
Parcel 4 South Access – Arcadia Road / Bonnieglen Farm Boulevard						

Movement	Existing Traffic	Future Background Traffic		Future Total Traffic		
		2028	2033	Without GTA West Highway		With GTA West Highway
				2028	2033	2033
EBLTR	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	1.70 (4.50)	1.70 (4.50)	1.30 (4.30)
WBLTR	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
NBLTR	-- (--)	-- (--)	-- (--)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
SBLTR	-- (--)	-- (--)	-- (--)	8.70 (8.70)	8.70 (8.70)	8.60 (8.60)

Notes:
1. XX (XX) – AM (PM)

All unsignalized intersections operate acceptably under future conditions, with the exception of **Heart Lake Road / Old School Road**, where eastbound delays are substantial during the weekday morning peak hour. A signal warrant analysis was conducted for this intersection based on the methodologies outlined in Book 12 of the Ontario Traffic Manual (March 2012). 8-hour volumes at the intersection were projected using ITE temporal variation data for land use code 210 – Single-Family Detached Housing.

A traffic signal is warranted according to Justification 3 under future background conditions in 2028. Detailed signal warrant analyses are provided in **Appendix H**.

Capacity analysis results for a signalized intersection at **Heart Lake Road / Old School Road** are summarized in **Table 14**.

TABLE 14 HEART LAKE ROAD / OLD SCHOOL ROAD CAPACITY ANALYSIS RESULTS

Movement	Future Background Traffic		Future Total Traffic		
	2028	2033	Without GTA West Highway		With GTA West Highway
			2028	2033	2033
EBLTR	0.44 (0.24)	0.50 (0.31)	0.74 (0.42)	0.80 (0.50)	0.76 (0.47)
WBLTR	0.28 (0.38)	0.38 (0.48)	0.34 (0.54)	0.44 (0.63)	0.44 (0.61)
NBLTR	0.18 (0.29)	0.18 (0.29)	0.25 (0.49)	0.25 (0.49)	0.23 (0.45)
SBLTR	0.24 (0.11)	0.24 (0.11)	0.24 (0.11)	0.24 (0.11)	0.24 (0.11)
Overall	**0.34 (0.34)**	**0.37 (0.38)**	**0.50 (0.52)**	**0.53 (0.56)**	**0.50 (0.53)**

Notes:
1. XX (XX) – AM (PM)

As shown in the table above, the intersection operates acceptably under all future conditions with the addition of a traffic signal. **Figure 21** illustrates the proposed lane configuration.

FIGURE 21 PROPOSED LANE CONFIGURATION

7.0 SUMMARY AND CONCLUSIONS

BA Group is retained by Argo Kennedy Limited to provide transportation consulting services in relation to a Local Official Plan Amendment (LOPA) for a proposed development of Mayfield West Phase 1 Stage 2 Expansion in the Town of Caledon. The subject lands consists of approximately 111 hectares (274 acres) of land and are bounded by Hurontario Street to the west, Old School Road to the north, Greenbelt to the east, and Mayfield West Secondary Plan boundary to the south.

The preliminary development concept comprises approximately 1,282 dwelling units in a range of dwelling types. The total dwelling units range from 800 detached homes, 232 rear lane townhouses, 30 back-to-back townhouses, 42 3-storey townhouses and 168 condo apartments.

Key findings are summarized as follows:

Transportation Context

1. The site is serviced by two transit routes, including bus route 81 operated by Brampton transit and bus route 37 operated by GO Transit. The closest 81 and 37 bus stop is located approximately 150-200 metres (walking distance) from the site and new local road intersections with Old School Road and Kennedy Road provide reasonable opportunities for future transit stops with the extension of existing services.

2. Sidewalks are anticipated to be provided along the south side of Old School Road, both sides of Kennedy Road and the proposed road network within the site's lands. The site will incorporate a new trail network that will serve as a recreational facility within the Natural Heritage System (NHS) and provide pedestrian and cycling connections between the proposed development and existing residential areas to the south. Bordering the site, there is an existing bike route along Old School Road and Kennedy Road as part of the 2017 bike route pilot program. East of Kennedy Road / Old School Road, there is a planned shared on-route cycling route along Old School Road.

3. Old School Road, Kennedy Road and Heart Lake Road identified in the Official Plan to have a 26 metre right-of-way,

Traffic Volume Forecast

4. The proposed development is forecast to generate in the order of 830 and 1085 two-way net-new trips during the weekday morning and afternoon peak hour periods, respectively.

Traffic Operations

5. Local intersection traffic operations of the area network signalized and unsignalized intersections currently operate within the capacity and at acceptable levels of service under existing and future conditions, with the exception of:
    a. Hurontario Street / Old School Road, which operates over capacity under 2028 future background during the weekday afternoon peak hour, and is well over capacity during both peak hours under 2033 future background conditions; and
    b. Heart Lake Road / Old School Road, which has substantial eastbound delays during the weekday morning peak hour.
6. For the unsignalized intersection of Heart Lake Road / Old School Road, a signal warrant analysis was conducted and a signal is warranted by future background conditions.

7. Improvements within the network are required for the following:
    a. Traffic signal to be implemented at Heart Lake Road / Old School Road (by background conditions);
    b. Traffic signal to be implemented at Kennedy Road / Parcel 3 & 4 Access;
    c. Dedicated left turn lanes at Kennedy Road / Old School Road; and,
    d. Left turn lanes along Old School Road for traffic Parcels 1 and 2 east accesses of the proposed development.

8. Operations issues at Hurontario Street / Old School Road are directly related to a range of background traffic activity adding to the north-south corridor. Improvements at this intersection (including number of lanes within the corridor) are reasonably expected to be reviewed as part of the planned GTA West Corridor. The ongoing environmental assessment (that is expected to be complete by end of 2022), is expected to identify the ultimate needs for Highway 10 and its interchange with the future highway.

Overall

The site generated vehicular trips can be acceptably accommodated by the proposed road network improvements.

APPENDIX A:
Terms of Reference Letter

Memorandum

TO:

Arash Olia, Ph.D., P.Eng.
Manager, Transportation Engineering
Engineering Services Department
Town of Caledon
6311 Old Church Rd.
Caledon, ON L7C 1J6

Office: (905)-584-2272 ext. 4073Cell: (416)-452-7091
E-mail: arash.olia@caledon.ca

FROM:	**PROJECT:**	**DATE:**
Emily Ecker, P.Eng.	7597-04 Mayfield West Phase 1 Stage 2	April 5, 2021

SUBJECT: TRAFFIC IMPACT STUDY TERMS OF REFERENCE – MAYFIELD WEST PHASE 1 STAGE 2

1.0 INTRODUCTION

BA Group is retained by Argo Kennedy Limited to provide transportation consulting services in support of the proposed development of Mayfield West Phase 1 Stage 2 Expansion (herein referred to as the "the site" or "subject lands") in the Town of Caledon (herein referred to as "Town"). Redevelopment of these lands will be an extension of the existing Mayfield West Phase 1 Secondary Plan, requiring a Local Official Plan Amendment (LOPA) to the existing secondary plan area.

As requested by the Town of Caledon, this letter outlines the proposed Terms of Reference for a Traffic Impact Study (TIS) that is being prepared as part of the LOPA being submitted to the Town of Caledon.

This Terms of Reference sets out the tasks to be addressed and the expected deliverables of the TIS report. The results of the study will contribute to the review and approval of the LOPA.

1.1 PLANNING BACKGROUND

The site is located adjacent to the Mayfield West Phase 1 Secondary Plan, and is within the Mayfield West Study Area outlined in both the Town of Caledon and Region of Peel's Official Plans (see Schedule B in the Town of Caledon's Official Plan and Schedule D in the Region of Peel's Official Plan).

The subject lands are currently located within the Region's "Rural" system and designated Prime Agricultural in the Town of Caledon's Official Plan. The lands are also located within the Mayfield West Study Area which is long-recognized as a priority area for growth. In anticipation that the subject lands will be brought into the Region's "Urban" system as part of the Peel 2041+ Municipal Comprehensive Review, the applicant is pursuing the advancement of a LOPA to bring the above-noted lands and surrounding lands into the Town's Rural Service Centre boundary and to re-designate the lands for urban land uses.

The site is also located adjacent to the Greenbelt area which will remain protected as the proposed development will be built around the Greenbelt boundaries.

2.0 PROPOSED DEVELOPMENT

The preliminary development concept includes three residential lands (Newhouse North, Kennedy, and Russell) with a total of approximately 906 residential units. The development will include a mix of dwellings such as single detached homes, street townhouses and rear lane townhouses.

To support the proposed development, an internal road network of local roads are proposed to connect the dwelling units with the community. Access points will be provided from Old School Road and Kennedy Road.

2.1.1 Full Description

The study will provide a full description of the proposed development and will include the following:

- Municipal address;
- Review of the Planning and policy context;
- Proposed land uses;
- A table summarizing the proposed development including the number of dwelling units;
- Anticipated date of occupancy;
- Planned phasing of the development;
- Roles of the neighbourhood streets within the community;
- Bicycle routes and pedestrian trail network, and integration with the rest of the Town of Caledon;
- A combination of maps and other documentation, which will identify all relevant information;
- Future background traffic volumes;
- Site traffic and traffic distribution;
- Mode split assumptions for auto, transit, walk, and cycling;
- Traffic analysis; and
- Recommended road improvements (if required) related to the development of the community.

2.1.2 Traffic Volume Analysis

The traffic analysis will include the following intersections:

- Hurontario Street & Old School Road;
- Old School Road & Kennedy Road; and
- New public roads that intersect with Old School Road and Kennedy Road.

The Town of Caledon, the Region of Peel and Ontario Ministry of Transportation (MTO) were contacted regarding current traffic counts for intersections in the study area. The Region of Peel was able to provide BA Group with a traffic count for Kennedy Road and Old School Road, and the traffic count for Hurontario Street and Old School Road was obtained from Spectrum. The traffic counts that will be utilized for the analysis in the TIS are summarized in **Table 1**. All traffic data collection undertaken includes pedestrians, cyclists, buses and cars on a typical weekday during typical morning and afternoon peak periods, except for the Kennedy Road and Old School Road traffic count, which does not include buses.

TABLE 1 SUMMARY OF TRAFFIC COUNTS

Intersection	Control Type	Date of Count	Source Agency	Signal Timing Date
Hurontario Street & Old School Road	Signalized	Wednesday, March 7, 2018	Spectrum	June 29, 2017[1]
Kennedy Road & Old School Road	Signalized	Thursday, June 28, 2018	Horizon Data Services Ltd.	January 19, 2021[2]

Notes:
1. Signal Timing data issued by the MTO.
2. Signal Timing data issued by the Region of Peel.

As shown in **Table 1**, Signal Timing Plans (STP) for the required intersections were obtained from the MTO and the Region of Peel.

Moreover, the Town of Caledon will be contacted to provide details on the surrounding developments in the area that may affect traffic capacity in the planning horizon years.

2.1.3 Trip Generation and Distribution

The trip distribution and trip generation analysis will include the following:

- The latest edition of the Institute of Transportation Engineers (ITE) trip generation rates will be utilized as a reference with the use of the greater of the average rate method or the fitted line equation; and
- Trip distribution assumptions will be supported by one or more of the following:
    - Transportation Tomorrow Survey
    - Origin-destination surveys
    - Comprehensive travel surveys
    - Existing / anticipated travel patterns
    - Output from the Region of Peel Travel Demand Forecasting Model
    - Market studies

2.1.4 Capacity Analysis

Intersection capacity analysis will be completed using Synchro Version 11.0 and a combination of Highway Capacity Manual (HCM) 2000 and HCM 6 methodologies.

The Synchro analysis will adhere to the Region of Peel's Guidelines for Using Synchro Version 7.73 Rev 8, dated December 2010, for individual parameters.

The analysis will also include the identification of signalized intersections, unsignalized intersections and unsignalized accesses where:

- Volume/capacity (v/c) ratios for overall intersection operations, through movements or shared through/turning movements increased to 0.90 or above;
- V/C ratios for exclusive movements that will exceed 1.00; and
- 95th percentile queue lengths for individual movements with confirmation of any queues that exceed available lane storage.

All intersections that are modelled as signalized intersections (other than existing signalized intersections) will be supported by an Ontario Traffic Manual (OTM) Book 12 traffic control signals warrant and each one will be included in the appendix of the TIS.

The horizon year in which a particular intersection is warranted for traffic control signals will be documented in the text of the TIS.

2.1.5 Final Report

The structure of the LOPA will include the following:

- Site / development description;
- Study area, including map;
- Planning and policy context;
- Transportation context;
- Background, existing, future background and future total traffic demand;
- Site generated traffic;
- New public street access considerations; and
- Conclusions.

2.1.6 Appendices

The appendices will include the following:

- A copy of the Terms of Reference letter;
- Preliminary Development Concept;
- Signal timing plan(s) for signalized intersections; and
- Synchro reports showing HCM results and queuing, as well as electronic Synchro files (CD copy or sent concurrently with the TIS via e-mail).

Emily J. Ecker

From: Jillian Britto <Jillian.Britto@caledon.ca>
Sent: May 26, 2021 3:18 PM
To: Andrea Camina-Medina
Cc: Aaron Wisson; Arash Olia; Drew Haines; Jason Afonso; Gursimran Saini; Emily J. Ecker
Subject: RE: Traffic Terms of Reference - Argo Kennedy, 3431 Old School Road

Hi Andrea,

Thank you for providing the traffic TOR for the proposed Argo Kennedy development. Please see below comments from Town Transportation and Engineering. Please note that these are preliminary comments that could change upon the completion of the Official Plan update.

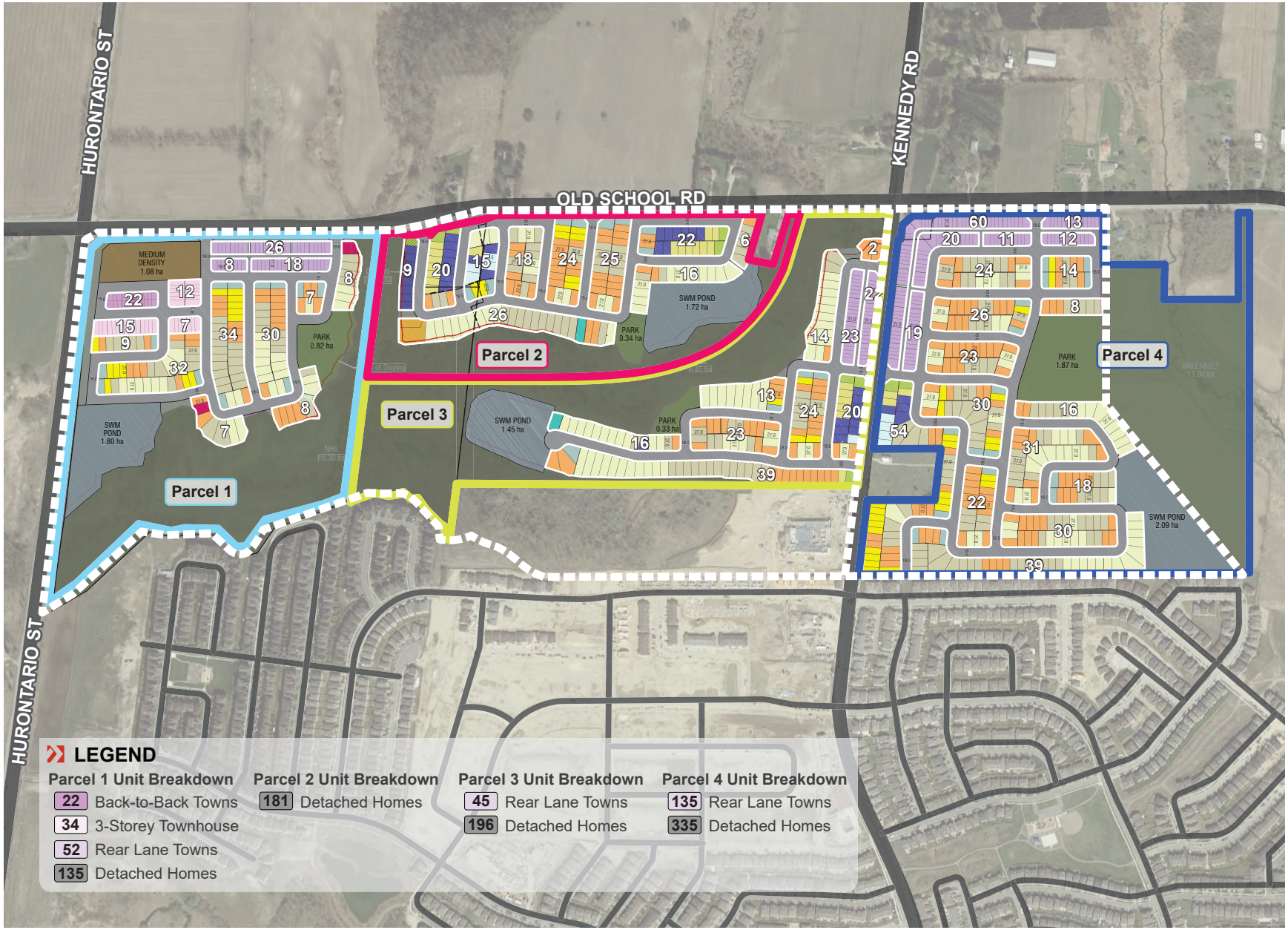
- Based on the magnitude of the proposed development, the study area should be expanded to include the following additional intersections:
    - Hurontario and Mayfield Road
    - Kennedy Rd and Mayfield Road
    - Dixie Road and Mayfield Road
    - Heart Lake Road and Old School Road
    - Dixie Road and Old School Road
    - Kennedy Road and Bonnieglen Farm Boulevard/Newhouse Boulevard
    - Kennedy Road and Stowmarket Street/Twistleton Street
    - Kennedy Road and Dougall Avenue
    - Kennedy Road and Larson Peak Road
    - Kennedy Road and Abbotside Way
- MTO should be consulted for their requirements of the traffic study considering the proximity to the future Highway 410/Spine Road interchange.
- Background developments should also include MW2 Stage 1 and 2 (the 2016 Transportation Study can be accessed via this link: https://icreate4.esolutionsgroup.ca/230833_Caledon/en/townhall/resources/DP-2016-12.pdf)
- Please use a 2% annual growth rate for Kennedy Road and Old School Road. Growth rates along the rest of the roadways within the study area should be confirmed with the Region and MTO.
- The TOR does not contain any phasing or horizon years for analysis. According to the Town's TIS Guidelines, please analyze the full build-out (FBO) horizon and 5 years post FBO. If the development is to be phased, traffic analyses should be provided for each phase in addition to FBO and FBO+5 years.
- Transportation analyses should be provided for with and without the GTA west corridor. Any intersection or roadway improvements required to accommodate the development should be noted in the study for both scenarios.
- Justification should be provided for the internal connection of the proposed development to the existing MW1 neighbourhood via Arcadia Rd. This should include a review of potential queues along Bonnieglen Farm Boulevard and alignment with Arcadia Road to the south. Alternatively, a cul-de-sac could be considered at this location.

Please feel free to reach out to us if you have any questions.

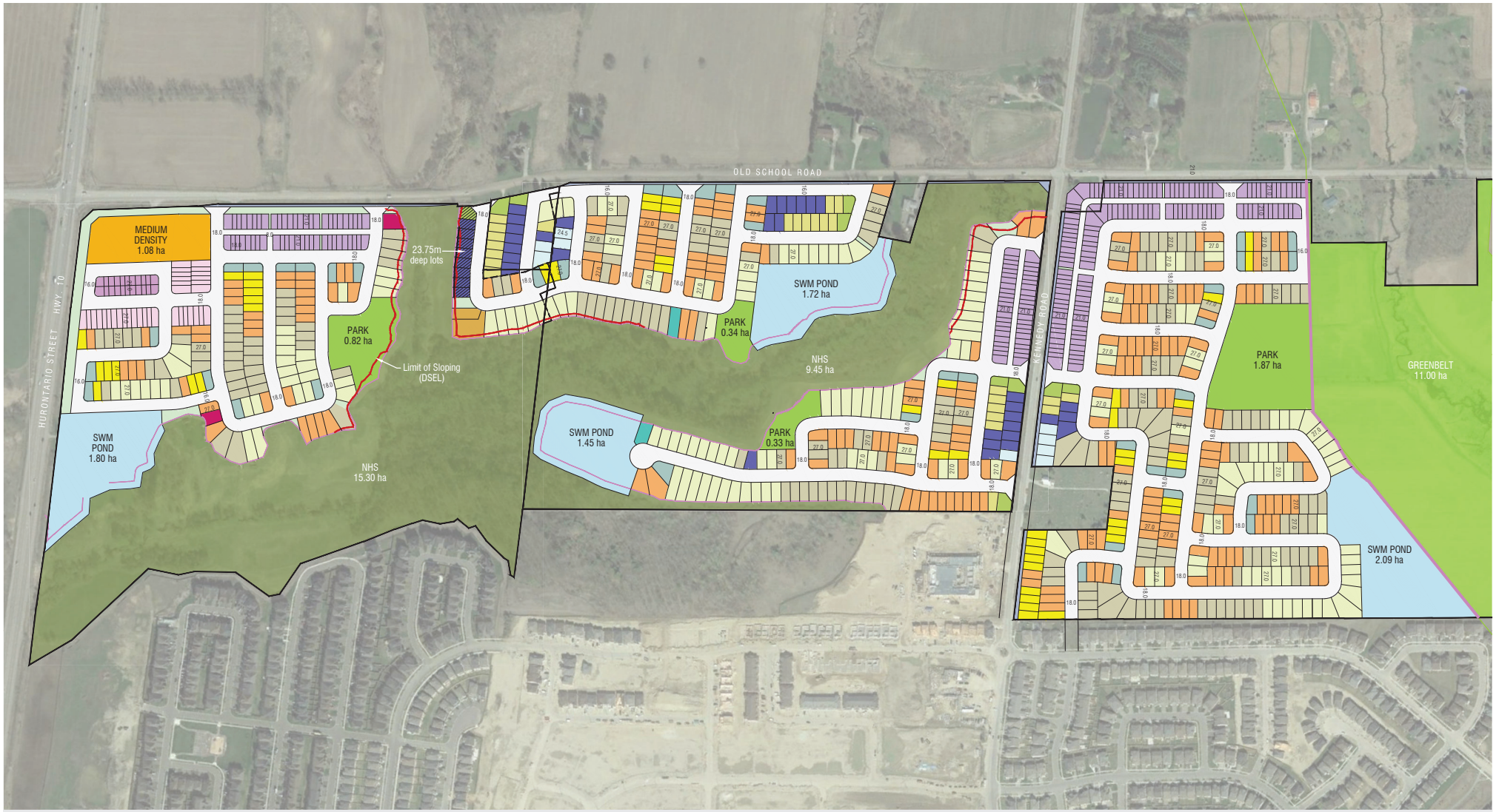
Regards,

Jillian Britto, P.Eng.
Coordinator, Transportation Development

APPENDIX B:
Unit Count Breakdown of the Proposed Development


HURONTARIO ST
KENNEDY RD
OLD SCHOOL RD
HURONTARIO ST
Parcel 1
Parcel 2
Parcel 3
Parcel 4
MEDIUM DENSITY 1.08 ha
SWM POND 1.80 ha
PARK 0.82 ha
SWM POND 1.72 ha
PARK 0.34 ha
SWM POND 1.45 ha
PARK 0.33 ha
PARK 1.87 ha
SWM POND 2.09 ha
GREENBELT 11.00 ha
LEGEND
Parcel 1 Unit Breakdown
22 Back-to-Back Towns
34 3-Storey Townhouse
52 Rear Lane Towns
135 Detached Homes
Parcel 2 Unit Breakdown
181 Detached Homes
Parcel 3 Unit Breakdown
45 Rear Lane Towns
196 Detached Homes
Parcel 4 Unit Breakdown
135 Rear Lane Towns
335 Detached Homes

APPENDIX C:
Preliminary Development Concept



DRAFT

- All Units In Metric Unless Otherwise Noted.
- Base Information Obtained From Various Sources And Is Approximate.
- Schedule / Plan Information Is Conceptual And Requires Verification by Appropriate Agency.
- Aerial Photo: Google Earth

GERRARD DESIGN

MAYFIELD WEST PHASE I SECONDARY PLAN AMENDMENT | Caledon, Ontario

PRELIMINARY LOTTED DEVELOPMENT CONCEPT

APR 29, 2021
PROJECT 2087
SCALE 1:5000

CP-15

NEWHOUSE NORTH LAND USE SUMMARY

Site Area	32.10 ha.	79.32 ac.	
Lands from Argo Kennedy	0.03 ha.	0.07 ac.	
Lands to Argo Kennedy	-0.01 ha.	-0.02 ac.	
Sub Total	0.02 ha.	0.05 ac.	
Lands from Holdout	0.01 ha.	0.02 ac.	
Lands to Holdout	-0.05 ha.	-0.12 ac.	
Sub Total	-0.04 ha.	-0.10 ac.	
Site Area (Post Land Exchange)	32.08 ha.	79.27 ac.	
NON-DEVELOPABLE			
NHS	15.30 ha.	37.81 ac.	
Road Widening	0.12 ha.	0.30 ac.	
Net Area	16.66 ha.	41.17 ac.	100.0%
DEVELOPABLE			
Residential (see 'UNIT SUMMARY')	7.79 ha.	19.25 ac.	46.8%
Medium Density Block	1.08 ha.	2.67 ac.	6.5%
Parks	0.82 ha.	2.03 ac.	4.9%
SWM Pond	1.80 ha.	4.45 ac.	10.8%
Walkway / Vista	0.92 ha.	2.27 ac.	5.5%
Right of Way	4.25 ha.	10.50 ac.	25.5%
TOTAL (Net Developable)	16.66 ha.	41.17 ac.	100.0%

UNIT SUMMARY

		Unit width		Unit Depth	Unit Count	Lot Mix	Frontage (m)	Area		% Net Res
Condo Block										
Back-to-Back Towns	(21')	6.40			18	9%	115.2	SEE ABOVE		
3 Storey Townhouse	(20')	6.10			8	4%	48.8			
Condo Apartments	approx. 800 sq.ft per uni				168	87%	0.0			
SUB-TOTAL					194	100%	164.0			
Residential										
Back-to-Back Towns	(21')	6.40	x	13.0	22	8%	140.8	0.23 ha.	0.57 ac.	3.0%
Rear Lane Towns	(20')	6.10	x	21.0	52	20%	317.2	0.81 ha.	2.00 ac.	10.4%
3 Storey Townhouse	(20')	6.10	x	27.0	34	13%	207.4	0.68 ha.	1.68 ac.	8.7%
Detached Homes	CUSTOM				2	1%	0.0	0.10 ha.	0.25 ac.	1.3%
Detached Homes	(36')	11.20	x	23.75	1	0%	11.2	0.04 ha.	0.10 ac.	0.5%
Detached Homes	(43')	13.40	x	23.75	8	3%	107.2	0.26 ha.	0.64 ac.	3.3%
Detached Homes	(34')	10.40	x	27.0	13	5%	135.2	0.43 ha.	1.06 ac.	5.5%
Detached Homes	(36')	11.00	x	27.0	14	5%	154.0	0.42 ha.	1.04 ac.	5.4%
Detached Homes	(38')	11.60	x	27.0	37	14%	429.2	1.26 ha.	3.11 ac.	16.2%
Detached Homes	(42')	12.80	x	27.0	46	17%	588.8	1.81 ha.	4.47 ac.	23.2%
Detached Homes	(45')	13.72	x	27.0	35	13%	480.2	1.57 ha.	3.88 ac.	20.2%
Detached Homes (Key Lots	(45')	15.24	x	34.0	2	1%	30.5	0.18 ha.	0.44 ac.	2.3%
SUB- TOTAL					266	100%	2,601.7	7.79 ha.	19.25 ac.	100.0%
TOTAL					460		2,765.7			

ROW SCHEDULE

	(m) width	(lin.m)	(lin.m) Half
Local Road	18.0	1967.0	22.5
Window Road	16.0	283.5	0.0
Lane	8.0	222.7	0.0
ROW TOTAL		2473.2	22.5

HOLDOUTS LAND USE SUMMARY

Site Area	0.96 ha.	2.37 ac.	
Lands from Newhouse North	0.05 ha.	0.12 ac.	
Lands to Newhouse North	-0.01 ha.	-0.02 ac.	
Sub Total	0.04 ha.	0.10 ac.	
Lands from Argo Kennedy	0.01 ha.	0.02 ac.	
Lands to Argo Kennedy	-0.03 ha.	-0.07 ac.	
Sub Total	-0.02 ha.	-0.05 ac.	
Site Area (Post Land Exchange)	0.98 ha.	2.42 ac.	
NON-DEVELOPABLE			
Net Area	0.98 ha.	2.42 ac.	100.0%
DEVELOPABLE			
Residential (see 'UNIT SUMMARY')	0.74 ha.	1.83 ac.	75.5%
Right of Way	0.24 ha.	0.59 ac.	24.5%
TOTAL (Net Developable)	0.98 ha.	2.42 ac.	100.0%

UNIT SUMMARY

		Unit width		Unit Depth	Unit Count	Lot Mix	Frontage (m)	Area		% Net Res
Residential										
Detached Homes	(37')	11.20	x	24.5	2	10%	22.4	0.09 ha.	0.22 ac.	12.2%
Detached Homes	(41')	12.20	x	24.5	8	38%	97.6	0.25 ha.	0.62 ac.	33.8%
Detached Homes	(43')	13.40	x	24.5	8	38%	107.2	0.27 ha.	0.67 ac.	36.5%
Detached Homes	(48')	14.63	x	24.5	2	10%	29.3	0.08 ha.	0.20 ac.	10.8%
Detached Homes	(45')	13.72	x	27.0	1	5%	13.7	0.05 ha.	0.12 ac.	6.8%
TOTAL					21	100%	270.2	0.74 ha.	1.83 ac.	100.0%

ROW SCHEDULE

	(m) width	(lin.m)	(lin.m) Half
Local Road	18.0	111.6	0.0
Window Road	16.0	11.7	13.2
ROW TOTAL		123.3	13.2

KENNEDY LAND USE SUMMARY

Site Area	30.32 ha.	74.92 ac.	
Lands from Newhouse North	0.01 ha.	0.02 ac.	
Lands to Newhouse North	-0.03 ha.	-0.07 ac.	
Sub Total	-0.02 ha.	-0.05 ac.	
Lands from Holdout	0.03 ha.	0.07 ac.	
Lands to Holdout	-0.01 ha.	-0.02 ac.	
Sub Total	0.02 ha.	0.05 ac.	
Site Area (Post Land Exchange)	30.34 ha.	74.97 ac.	
NON-DEVELOPABLE			
NHS	9.45 ha.	23.35 ac.	
Road Widening	0.27 ha.	0.67 ac.	
Net Area	20.62 ha.	50.95 ac.	100.1%
DEVELOPABLE			
Residential (see 'UNIT SUMMARY')	11.50 ha.	28.42 ac.	55.8%
Parks	0.67 ha.	1.66 ac.	3.3%
Pump House/Servicing Block	0.11 ha.	0.27 ac.	0.5%
SWM Pond	3.16 ha.	7.81 ac.	15.3%
Walkway / Vista	0.11 ha.	0.27 ac.	0.5%
Right of Way	5.05 ha.	12.48 ac.	24.5%
TOTAL (Net Developable)	20.60 ha.	50.90 ac.	100.0%

UNIT SUMMARY

		Unit width		Unit Depth	Unit Count	Lot Mix	Frontage (m)	Area		% Net Res
Residential										
Rear Lane Towns	(20')	6.10	x	21.0	45	14%	274.5	0.66 ha.	1.63 ac.	5.7%
Detached Homes	(37')	11.20	x	24.5	5	2%	56.0	0.19 ha.	0.47 ac.	1.7%
Detached Homes	(41')	12.20	x	24.5	14	4%	170.8	0.42 ha.	1.04 ac.	3.7%
Detached Homes	(43')	13.40	x	24.5	20	6%	268.0	0.68 ha.	1.68 ac.	5.9%
Detached Homes	(48')	14.63	x	24.5	3	1%	43.9	0.11 ha.	0.27 ac.	1.0%
Detached Homes	(34')	10.40	x	27.0	11	3%	114.4	0.42 ha.	1.04 ac.	3.7%
Detached Homes	(36')	11.00	x	27.0	11	3%	121.0	0.34 ha.	0.84 ac.	3.0%
Detached Homes	(38')	11.60	x	27.0	80	24%	928.0	2.84 ha.	7.02 ac.	24.7%
Detached Homes	(42')	12.80	x	27.0	67	20%	857.6	2.54 ha.	6.28 ac.	22.1%
Detached Homes	(45')	13.72	x	27.0	75	23%	1,029.0	3.30 ha.	8.15 ac.	28.7%
TOTAL					331	100%	3,863.2	11.50 ha.	28.42 ac.	100.0%

ROW SCHEDULE

	(m) width	(lin.m)	(lin.m) Half
Local Road	18.0	2441.8	22.5
Window Road	16.0	255.4	13.2
Lane	8.0	159.9	0.0
ROW TOTAL		2857.1	35.7

RUSSELL LAND USE SUMMARY

Site Area	36.81 ha.	90.96 ac.	
Additional Lands	0.18 ha.	0.44 ac.	
Site Area	36.99 ha.	91.40 ac.	
NON-DEVELOPABLE			
Greenbelt	11.00 ha.	27.18 ac.	
Road Widening	0.31 ha.	0.77 ac.	
Net Area	25.68 ha.	63.46 ac.	100.0%
DEVELOPABLE			
Residential (see 'UNIT SUMMARY')	14.39 ha.	35.56 ac.	56.0%
Future Development	1.08 ha.	2.67 ac.	4.2%
Parks	1.87 ha.	4.62 ac.	7.3%
SWM Pond	2.08 ha.	5.14 ac.	8.1%
Walkway / Vista	0.01 ha.	0.02 ac.	0.0%
Right of Way	6.25 ha.	15.44 ac.	24.3%
TOTAL (Net Developable)	25.68 ha.	63.46 ac.	100.0%

UNIT SUMMARY

		Unit width		Unit Depth	Unit Count	Lot Mix	Frontage (m)	Area		% Net Res
Residential										
Rear Lane Towns	(20')	**6.10**	x	21.0	**135**	29%	823.5	2.12 ha.	5.24 ac.	14.7%
Detached Homes	(37')	**11.20**	x	24.5	**2**	0%	22.4	0.08 ha.	0.20 ac.	0.6%
Detached Homes	(41')	**12.20**	x	24.5	**3**	1%	36.6	0.09 ha.	0.22 ac.	0.6%
Detached Homes	(43')	**13.40**	x	24.5	**4**	1%	53.6	0.15 ha.	0.37 ac.	1.0%
Detached Homes	(48')	**14.63**	x	24.5	**4**	1%	58.5	0.15 ha.	0.37 ac.	1.0%
Detached Homes	(34')	**10.40**	x	27.0	**14**	3%	145.6	0.51 ha.	1.26 ac.	3.5%
Detached Homes	(36')	**11.00**	x	27.0	**25**	5%	275.0	0.77 ha.	1.90 ac.	5.4%
Detached Homes	(38')	**11.60**	x	27.0	**112**	24%	1,299.2	3.77 ha.	9.32 ac.	26.2%
Detached Homes	(42')	**12.80**	x	27.0	**107**	23%	1,369.6	4.16 ha.	10.28 ac.	28.9%
Detached Homes	(45')	**13.72**	x	27.0	**62**	13%	850.6	2.59 ha.	6.40 ac.	18.0%
TOTAL					**468**	100%	4,934.7	14.39 ha.	35.56 ac.	100.0%

ROW SCHEDULE

	(m) width	(lin.m)	(lin.m) Half
Local Road	**18.0**	3133.5	0.0
Window Road	**16.0**	54.0	0.0
.	**8.0**	578.9	0.0
ROW TOTAL		3766.4	0.0

APPENDIX D:
Traffic Data

Spectrum

Turning Movement Count
Location Name: HURONTARIO ST & OLD SCHOOL RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

Turning Movement Count (18 . HURONTARIO ST & OLD SCHOOL RD)

Start Time	N Approach HURONTARIO ST						E Approach OLD SCHOOL RD						S Approach HURONTARIO ST						W Approach OLD SCHOOL RD						Int. Total (15 min)	Int. Total (1 hr)
	Left N:E	Thru N:S	Right N:W	U-Turn N:N	Peds N:	Approach Total	Left E:S	Thru E:W	Right E:N	U-Turn E:E	Peds E:	Approach Total	Left S:W	Thru S:N	Right S:E	U-Turn S:S	Peds S:	Approach Total	Left W:N	Thru W:E	Right W:S	U-Turn W:W	Peds W:	Approach Total		
07:00:00	2	469	3	0	0	474	5	7	0	0	0	12	0	143	11	0	0	154	1	9	11	0	0	21	661	
07:15:00	4	549	7	0	0	560	9	11	5	0	0	25	6	190	8	0	0	204	2	11	20	0	0	33	822	
07:30:00	12	525	7	0	0	544	7	10	5	0	0	22	6	209	9	0	0	224	4	21	20	0	0	45	835	
07:45:00	8	489	4	0	0	501	9	8	1	0	0	18	4	210	6	0	0	220	3	13	24	0	0	40	779	3097
08:00:00	4	508	3	0	0	515	12	10	6	0	0	28	8	192	7	0	0	207	1	9	20	0	0	30	780	3216
08:15:00	1	477	2	0	0	480	8	8	3	0	0	19	10	193	3	0	0	206	2	10	11	0	0	23	728	3122
08:30:00	3	375	8	0	0	386	12	6	4	0	0	22	3	190	7	0	0	200	3	9	8	0	0	20	628	2915
08:45:00	4	360	5	0	0	369	10	7	2	0	0	19	6	164	7	0	0	177	4	3	16	0	0	23	588	2724
BREAK																										
11:00:00	3	219	1	0	0	223	5	8	7	0	0	20	6	135	6	0	0	147	1	2	6	0	0	9	399	
11:15:00	2	253	1	0	0	256	7	6	0	0	0	13	2	182	4	0	0	188	1	4	11	0	0	16	473	
11:30:00	3	214	2	0	0	219	5	2	2	0	0	9	5	154	3	0	0	162	1	4	7	0	0	12	402	
11:45:00	1	199	1	0	0	201	3	5	3	0	0	11	13	168	8	0	0	189	7	2	9	0	0	18	419	1693
12:00:00	5	200	1	0	0	206	8	2	1	0	0	11	5	187	6	0	0	198	4	2	6	0	0	12	427	1721
12:15:00	4	227	2	0	0	233	4	5	2	0	0	11	4	183	6	0	0	193	2	1	5	0	0	8	445	1693
12:30:00	4	208	1	0	0	213	3	4	0	0	0	7	6	201	6	0	0	213	0	5	4	0	0	9	442	1733
12:45:00	1	208	2	0	0	211	2	3	2	0	0	7	5	192	3	1	0	201	1	3	6	0	0	10	429	1743
13:00:00	0	196	2	0	0	198	5	2	4	0	0	11	6	213	7	0	0	226	0	3	7	0	0	10	445	1761
13:15:00	0	214	0	0	0	214	4	4	1	0	0	9	4	224	4	0	0	232	3	3	4	0	0	10	465	1781
13:30:00	1	231	3	0	0	235	4	2	3	0	0	9	6	198	5	0	0	209	1	3	8	0	0	12	465	1804
13:45:00	4	200	4	0	0	208	1	4	3	0	0	8	11	240	6	0	0	257	0	4	4	0	0	8	481	1856
BREAK																										
15:00:00	2	186	0	0	0	188	10	11	4	0	0	25	16	369	7	0	0	392	8	5	7	0	0	20	625	
15:15:00	6	181	3	0	0	190	8	12	3	0	0	23	21	417	9	0	0	447	3	9	11	0	0	23	683	
15:30:00	3	192	5	0	0	200	13	11	9	0	0	33	21	453	14	0	0	488	6	8	10	0	0	24	745	
15:45:00	6	229	6	0	0	241	16	11	5	0	0	32	15	490	19	0	0	524	2	6	6	0	0	14	811	2864
16:00:00	3	216	5	0	0	224	16	20	2	1	0	39	17	500	13	0	0	530	6	4	9	0	0	19	812	3051
16:15:00	3	218	4	0	0	225	11	19	4	0	0	34	19	496	11	0	0	526	9	8	3	0	0	20	805	3173
16:30:00	6	181	2	0	0	189	11	12	2	0	0	25	25	530	7	0	0	562	6	5	7	0	0	18	794	3222
16:45:00	3	221	2	0	0	226	14	15	2	0	0	31	22	564	13	0	0	599	5	9	2	0	0	16	872	3283
17:00:00	1	193	5	0	0	199	11	10	3	0	0	24	32	496	7	0	1	535	1	10	6	0	0	17	775	3246
17:15:00	3	149	2	0	0	154	11	15	7	0	0	33	26	456	11	1	0	494	4	7	6	0	0	17	698	3139
17:30:00	4	212	3	0	0	219	8	13	6	0	0	27	19	455	11	0	0	485	7	3	7	0	0	17	748	3093
17:45:00	2	181	1	0	0	184	5	11	0	0	0	16	13	365	12	0	0	390	8	8	6	0	0	22	612	2833
Grand Total	108	8680	97	0	0	8885	257	274	101	1	0	633	362	9359	256	2	1	9979	106	203	287	0	0	596	**20093**	-
Approach%	1.2%	97.7%	1.1%	0%		-	40.6%	43.3%	16%	0.2%		-	3.6%	93.8%	2.6%	0%		-	17.8%	34.1%	48.2%	0%		-	-	-
Totals %	0.5%	43.2%	0.5%	0%		44.2%	1.3%	1.4%	0.5%	0%		3.2%	1.8%	46.6%	1.3%	0%		49.7%	0.5%	1%	1.4%	0%		3%	-	-
Heavy	19	747	7	0		-	15	9	15	0		-	6	828	17	0		-	5	7	9	0		-	-	-
Heavy %	17.6%	8.6%	7.2%	0%		-	5.8%	3.3%	14.9%	0%		-	1.7%	8.8%	6.6%	0%		-	4.7%	3.4%	3.1%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: HURONTARIO ST & OLD SCHOOL RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

Peak Hour: 07:15 AM - 08:15 AM Weather: Overcast (-1.6 °C)

Start Time	N Approach HURONTARIO ST						E Approach OLD SCHOOL RD						S Approach HURONTARIO ST						W Approach OLD SCHOOL RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
07:15:00	4	549	7	0	0	560	9	11	5	0	0	25	6	190	8	0	0	204	2	11	20	0	0	33	822
07:30:00	12	525	7	0	0	544	7	10	5	0	0	22	6	209	9	0	0	224	4	21	20	0	0	45	835
07:45:00	8	489	4	0	0	501	9	8	1	0	0	18	4	210	6	0	0	220	3	13	24	0	0	40	779
08:00:00	4	508	3	0	0	515	12	10	6	0	0	28	8	192	7	0	0	207	1	9	20	0	0	30	780
Grand Total	28	2071	21	0	0	2120	37	39	17	0	0	93	24	801	30	0	0	855	10	54	84	0	0	148	**3216**
Approach%	1.3%	97.7%	1%	0%		-	39.8%	41.9%	18.3%	0%		-	2.8%	93.7%	3.5%	0%		-	6.8%	36.5%	56.8%	0%		-	-
Totals %	0.9%	64.4%	0.7%	0%		65.9%	1.2%	1.2%	0.5%	0%		2.9%	0.7%	24.9%	0.9%	0%		26.6%	0.3%	1.7%	2.6%	0%		4.6%	-
PHF	0.58	0.94	0.75	0		0.95	0.77	0.89	0.71	0		0.83	0.75	0.95	0.83	0		0.95	0.63	0.64	0.88	0		0.82	-
Heavy	8	83	0	0		91	5	1	2	0		8	1	156	4	0		161	0	5	1	0		6	-
Heavy %	28.6%	4%	0%	0%		4.3%	13.5%	2.6%	11.8%	0%		8.6%	4.2%	19.5%	13.3%	0%		18.8%	0%	9.3%	1.2%	0%		4.1%	-
Lights	20	1988	21	0		2029	32	38	15	0		85	23	645	26	0		694	10	49	83	0		142	-
Lights %	71.4%	96%	100%	0%		95.7%	86.5%	97.4%	88.2%	0%		91.4%	95.8%	80.5%	86.7%	0%		81.2%	100%	90.7%	98.8%	0%		95.9%	-
Single-Unit Trucks	1	37	0	0		38	2	0	0	0		2	0	67	3	0		70	0	0	0	0		0	-
Single-Unit Trucks %	3.6%	1.8%	0%	0%		1.8%	5.4%	0%	0%	0%		2.2%	0%	8.4%	10%	0%		8.2%	0%	0%	0%	0%		0%	-
Buses	4	6	0	0		10	1	1	1	0		3	0	11	0	0		11	0	5	1	0		6	-
Buses %	14.3%	0.3%	0%	0%		0.5%	2.7%	2.6%	5.9%	0%		3.2%	0%	1.4%	0%	0%		1.3%	0%	9.3%	1.2%	0%		4.1%	-
Articulated Trucks	3	40	0	0		43	2	0	1	0		3	1	78	1	0		80	0	0	0	0		0	-
Articulated Trucks %	10.7%	1.9%	0%	0%		2%	5.4%	0%	5.9%	0%		3.2%	4.2%	9.7%	3.3%	0%		9.4%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: HURONTARIO ST & OLD SCHOOL RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

Peak Hour: 01:00 PM - 02:00 PM Weather: Overcast (-0.3 °C)

Start Time	N Approach HURONTARIO ST						E Approach OLD SCHOOL RD						S Approach HURONTARIO ST						W Approach OLD SCHOOL RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
13:00:00	0	196	2	0	0	198	5	2	4	0	0	11	6	213	7	0	0	226	0	3	7	0	0	10	445
13:15:00	0	214	0	0	0	214	4	4	1	0	0	9	4	224	4	0	0	232	3	3	4	0	0	10	465
13:30:00	1	231	3	0	0	235	4	2	3	0	0	9	6	198	5	0	0	209	1	3	8	0	0	12	465
13:45:00	4	200	4	0	0	208	1	4	3	0	0	8	11	240	6	0	0	257	0	4	4	0	0	8	481
Grand Total	5	841	9	0	0	855	14	12	11	0	0	37	27	875	22	0	0	924	4	13	23	0	0	40	**1856**
Approach%	0.6%	98.4%	1.1%	0%		-	37.8%	32.4%	29.7%	0%		-	2.9%	94.7%	2.4%	0%		-	10%	32.5%	57.5%	0%		-	-
Totals %	0.3%	45.3%	0.5%	0%		46.1%	0.8%	0.6%	0.6%	0%		2%	1.5%	47.1%	1.2%	0%		49.8%	0.2%	0.7%	1.2%	0%		2.2%	-
PHF	0.31	0.91	0.56	0		0.91	0.7	0.75	0.69	0		0.84	0.61	0.91	0.79	0		0.9	0.33	0.81	0.72	0		0.83	-
Heavy	0	126	2	0		128	1	0	2	0		3	2	131	4	0		137	1	0	1	0		2	-
Heavy %	0%	15%	22.2%	0%		15%	7.1%	0%	18.2%	0%		8.1%	7.4%	15%	18.2%	0%		14.8%	25%	0%	4.3%	0%		5%	-
Lights	5	715	7	0		727	13	12	9	0		34	25	744	18	0		787	3	13	22	0		38	-
Lights %	100%	85%	77.8%	0%		85%	92.9%	100%	81.8%	0%		91.9%	92.6%	85%	81.8%	0%		85.2%	75%	100%	95.7%	0%		95%	-
Single-Unit Trucks	0	62	0	0		62	1	0	1	0		2	2	57	4	0		63	0	0	0	0		0	-
Single-Unit Trucks %	0%	7.4%	0%	0%		7.3%	7.1%	0%	9.1%	0%		5.4%	7.4%	6.5%	18.2%	0%		6.8%	0%	0%	0%	0%		0%	-
Buses	0	7	1	0		8	0	0	1	0		1	0	0	0	0		0	0	0	1	0		1	-
Buses %	0%	0.8%	11.1%	0%		0.9%	0%	0%	9.1%	0%		2.7%	0%	0%	0%	0%		0%	0%	0%	4.3%	0%		2.5%	-
Articulated Trucks	0	57	1	0		58	0	0	0	0		0	0	74	0	0		74	1	0	0	0		1	-
Articulated Trucks %	0%	6.8%	11.1%	0%		6.8%	0%	0%	0%	0%		0%	0%	8.5%	0%	0%		8%	25%	0%	0%	0%		2.5%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

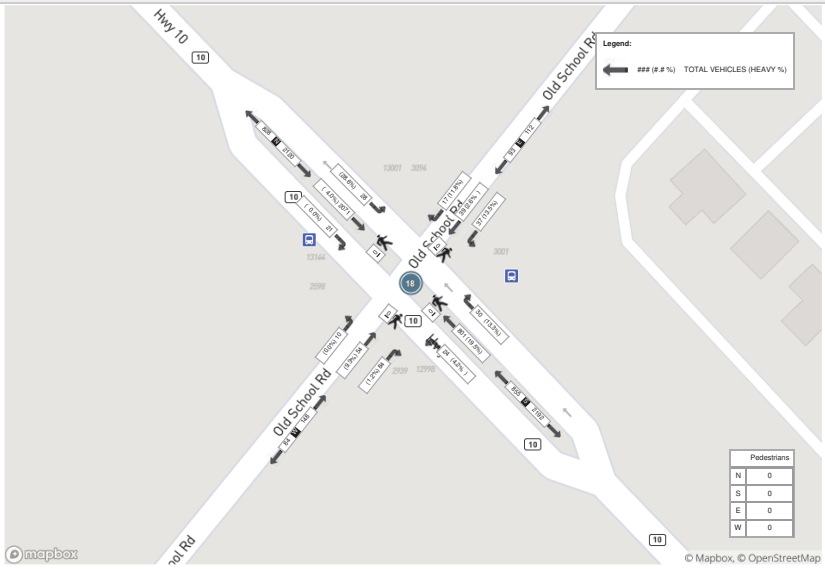
Spectrum

Turning Movement Count
Location Name: HURONTARIO ST & OLD SCHOOL RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

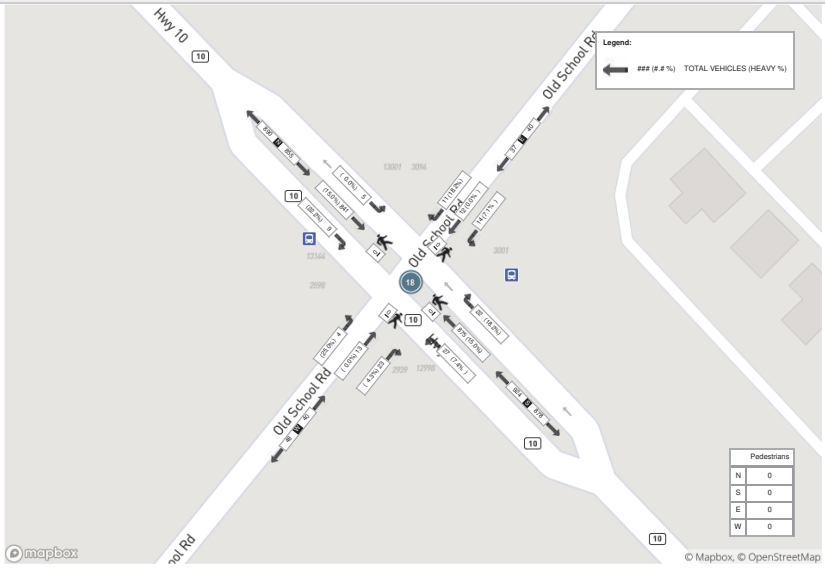
Peak Hour: 04:00 PM - 05:00 PM Weather: Snow (0.2 °C)

Start Time	N Approach HURONTARIO ST						E Approach OLD SCHOOL RD						S Approach HURONTARIO ST						W Approach OLD SCHOOL RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
16:00:00	3	216	5	0	0	224	16	20	2	1	0	39	17	500	13	0	0	530	6	4	9	0	0	19	812
16:15:00	3	218	4	0	0	225	11	19	4	0	0	34	19	496	11	0	0	526	9	8	3	0	0	20	805
16:30:00	6	181	2	0	0	189	11	12	2	0	0	25	25	530	7	0	0	562	6	5	7	0	0	18	794
16:45:00	3	221	2	0	0	226	14	15	2	0	0	31	22	564	13	0	0	599	5	9	2	0	0	16	872
Grand Total	15	836	13	0	0	864	52	66	10	1	0	129	83	2090	44	0	0	2217	26	26	21	0	0	73	**3283**
Approach%	1.7%	96.8%	1.5%	0%		-	40.3%	51.2%	7.8%	0.8%		-	3.7%	94.3%	2%	0%		-	35.6%	35.6%	28.8%	0%		-	-
Totals %	0.5%	25.5%	0.4%	0%		26.3%	1.6%	2%	0.3%	0%		3.9%	2.5%	63.7%	1.3%	0%		67.5%	0.8%	0.8%	0.6%	0%		2.2%	-
PHF	0.63	0.95	0.65	0		0.96	0.81	0.83	0.63	0.25		0.83	0.83	0.93	0.85	0		0.93	0.72	0.72	0.58	0		0.91	-
Heavy	3	57	2	0		62	1	1	0	0		2	0	58	2	0		60	0	1	1	0		2	-
Heavy %	20%	6.8%	15.4%	0%		7.2%	1.9%	1.5%	0%	0%		1.6%	0%	2.8%	4.5%	0%		2.7%	0%	3.8%	4.8%	0%		2.7%	-
Lights	12	779	11	0		802	51	65	10	1		127	83	2032	42	0		2157	26	25	20	0		71	-
Lights %	80%	93.2%	84.6%	0%		92.8%	98.1%	98.5%	100%	100%		98.4%	100%	97.2%	95.5%	0%		97.3%	100%	96.2%	95.2%	0%		97.3%	-
Single-Unit Trucks	0	25	1	0		26	0	1	0	0		1	0	22	0	0		22	0	1	1	0		2	-
Single-Unit Trucks %	0%	3%	7.7%	0%		3%	0%	1.5%	0%	0%		0.8%	0%	1.1%	0%	0%		1%	0%	3.8%	4.8%	0%		2.7%	-
Buses	3	4	1	0		8	0	0	0	0		0	0	8	2	0		10	0	0	0	0		0	-
Buses %	20%	0.5%	7.7%	0%		0.9%	0%	0%	0%	0%		0%	0%	0.4%	4.5%	0%		0.5%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	28	0	0		28	1	0	0	0		1	0	28	0	0		28	0	0	0	0		0	-
Articulated Trucks %	0%	3.3%	0%	0%		3.2%	1.9%	0%	0%	0%		0.8%	0%	1.3%	0%	0%		1.3%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

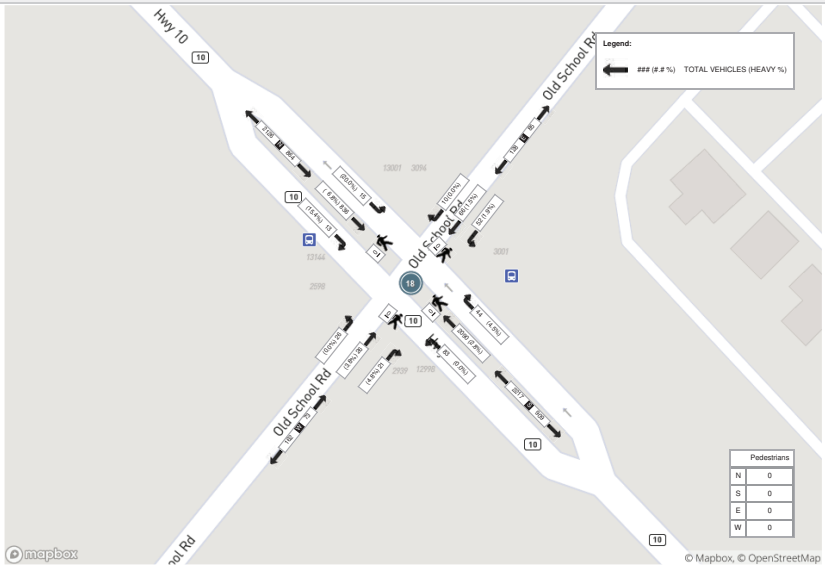
Peak Hour: 07:15 AM - 08:15 AM **Weather: Overcast (-1.6 °C)**



Peak Hour: 01:00 PM - 02:00 PM **Weather: Overcast (-0.3 °C)**



Peak Hour: 04:00 PM - 05:00 PM Weather: Snow (0.2 °C)



File Name : Kennedy Rd at Old School Rd-June-28-2018
Site Code : 00000143
Start Date : 6/28/2018
Page No : 1

Groups Printed- Cars - Trucks - Cyclists

	Kennedy Rd From North					Old School Rd From East					Kennedy Rd From South					Old School Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	12	0	0	18	0	8	1	0	9	12	10	12	0	34	11	18	2	0	31	92
07:15 AM	0	13	3	0	16	1	11	6	0	18	19	12	4	0	35	14	14	1	0	29	98
07:30 AM	2	18	5	0	25	0	8	8	0	16	36	5	12	0	53	16	27	2	0	45	139
07:45 AM	3	22	1	0	26	1	10	14	0	25	24	10	18	0	52	12	31	2	0	45	148
Total	11	65	9	0	85	2	37	29	0	68	91	37	46	0	174	53	90	7	0	150	477
08:00 AM	2	16	4	0	22	0	9	18	0	27	25	16	12	0	53	17	9	2	0	28	130
08:15 AM	3	11	4	0	18	1	8	9	0	18	15	9	15	0	39	9	14	2	0	25	100
08:30 AM	1	12	0	0	13	0	5	1	0	6	23	17	14	0	54	11	19	0	0	30	103
08:45 AM	3	3	1	0	7	1	11	9	0	21	22	17	8	0	47	10	5	1	0	16	91
Total	9	42	9	0	60	2	33	37	0	72	85	59	49	0	193	47	47	5	0	99	424
09:00 AM	4	12	1	0	17	1	6	7	0	14	12	14	11	0	37	7	9	1	0	17	85
09:15 AM	0	5	1	0	6	0	9	16	0	25	14	14	9	0	37	5	15	3	0	23	91
09:30 AM	2	8	3	0	13	0	6	21	0	27	10	7	11	0	28	5	8	1	0	14	82
09:45 AM	1	16	2	0	19	2	14	13	0	29	4	10	7	0	21	4	8	1	0	13	82
Total	7	41	7	0	55	3	35	57	0	95	40	45	38	0	123	21	40	6	0	67	340
11:00 AM	1	10	0	0	11	1	11	5	0	17	5	7	6	0	18	11	4	2	0	17	63
11:15 AM	0	9	4	0	13	1	4	3	0	8	1	10	7	0	18	12	8	1	0	21	60
11:30 AM	3	12	2	0	17	0	9	2	0	11	4	11	11	0	26	6	3	2	0	11	65
11:45 AM	2	5	1	0	8	0	2	2	0	4	3	10	4	0	17	9	3	1	0	13	42
Total	6	36	7	0	49	2	26	12	0	40	13	38	28	0	79	38	18	6	0	62	230
12:00 PM	1	7	1	0	9	1	8	5	0	14	4	8	3	0	15	9	5	3	0	17	55
12:15 PM	2	13	2	0	17	3	1	2	0	6	6	6	11	0	23	6	6	1	0	13	59
12:30 PM	4	8	2	0	14	1	6	7	0	14	4	14	5	0	23	8	3	4	0	15	66
12:45 PM	2	8	1	0	11	0	5	5	0	10	3	12	12	0	27	10	9	1	0	20	68
Total	9	36	6	0	51	5	20	19	0	44	17	40	31	0	88	33	23	9	0	65	248

Horizon Data Services Ltd

318 Simonston Blvd
Thornhill, ON L3T 4T5
"we always count...never estimated"

File Name : Kennedy Rd at Old School Rd-June-28-2018
Site Code : 00000143
Start Date : 6/28/2018
Page No : 2

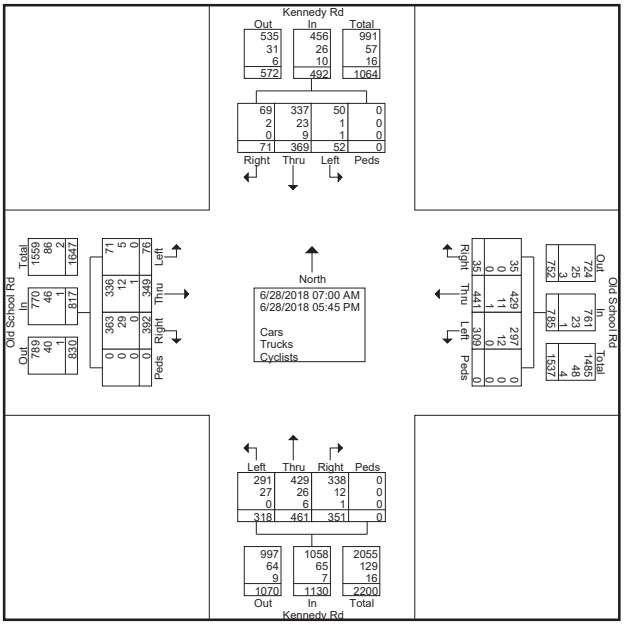
Groups Printed- Cars - Trucks - Cyclists

	Kennedy Rd From North					Old School Rd From East					Kennedy Rd From South					Old School Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	1	9	0	0	10	2	18	8	0	28	8	23	13	0	44	6	10	2	0	18	100
03:15 PM	2	9	1	0	12	2	10	8	0	20	14	25	10	0	49	12	8	5	0	25	106
03:30 PM	3	9	2	0	14	1	26	13	0	40	5	26	15	0	46	9	10	3	0	22	122
03:45 PM	4	13	1	0	18	2	22	12	0	36	13	19	13	0	45	18	12	5	0	35	134
Total	10	40	4	0	54	7	76	41	0	124	40	93	51	0	184	45	40	15	0	100	462
04:00 PM	2	12	1	0	15	1	31	12	0	44	12	21	5	0	38	24	12	4	0	40	137
04:15 PM	1	15	1	0	17	2	28	18	0	48	12	14	10	0	36	20	14	3	0	37	138
04:30 PM	1	14	0	0	15	2	26	7	0	35	9	25	9	0	43	24	9	4	0	37	130
04:45 PM	4	16	1	0	21	1	27	13	0	41	6	21	11	0	38	18	11	5	0	34	134
Total	8	57	3	0	68	6	112	50	0	168	39	81	35	0	155	86	46	16	0	148	539
05:00 PM	5	9	0	0	14	5	40	13	0	58	8	25	5	0	38	9	11	4	0	24	134
05:15 PM	2	13	2	0	17	2	25	15	0	42	4	20	4	0	28	15	14	2	0	31	118
05:30 PM	2	18	3	0	23	0	23	20	0	43	7	12	11	0	30	24	9	6	0	39	135
05:45 PM	2	12	2	0	16	1	14	16	0	31	7	11	20	0	38	21	11	0	0	32	117
Total	11	52	7	0	70	8	102	64	0	174	26	68	40	0	134	69	45	12	0	126	504
Grand Total	71	369	52	0	492	35	441	309	0	785	351	461	318	0	1130	392	349	76	0	817	3224
Apprch %	14.4	75	10.6	0		4.5	56.2	39.4	0		31.1	40.8	28.1	0		48	42.7	9.3	0		
Total %	2.2	11.4	1.6	0	15.3	1.1	13.7	9.6	0	24.3	10.9	14.3	9.9	0	35	12.2	10.8	2.4	0	25.3	
Cars	69	337	50	0	456	35	429	297	0	761	338	429	291	0	1058	363	336	71	0	770	3045
% Cars	97.2	91.3	96.2	0	92.7	100	97.3	96.1	0	96.9	96.3	93.1	91.5	0	93.6	92.6	96.3	93.4	0	94.2	94.4
Trucks	2	23	1	0	26	0	11	12	0	23	12	26	27	0	65	29	12	5	0	46	160
% Trucks	2.8	6.2	1.9	0	5.3	0	2.5	3.9	0	2.9	3.4	5.6	8.5	0	5.8	7.4	3.4	6.6	0	5.6	5
Cyclists	0	9	1	0	10	0	1	0	0	1	1	6	0	0	7	0	1	0	0	1	19
% Cyclists	0	2.4	1.9	0	2	0	0.2	0	0	0.1	0.3	1.3	0	0	0.6	0	0.3	0	0	0.1	0.6

Horizon Data Services Ltd

318 Simonston Blvd
Thornhill, ON L3T 4T5
"we always count...never estimated"

File Name : Kennedy Rd at Old School Rd-June-28-2018
Site Code : 00000143
Start Date : 6/28/2018
Page No : 3



Horizon Data Services Ltd

318 Simonston Blvd
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File Name : Kennedy Rd at Old School Rd-June-28-2018
Site Code : 00000143
Start Date : 6/28/2018
Page No : 4

	Kennedy Rd From North					Old School Rd From East					Kennedy Rd From South					Old School Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	2	18	**5**	0	25	0	8	8	0	16	**36**	5	12	0	**53**	16	27	**2**	0	**45**	139
07:45 AM	**3**	**22**	1	0	**26**	**1**	**10**	14	0	25	24	10	**18**	0	52	12	**31**	2	0	45	**148**
08:00 AM	2	16	4	0	22	0	9	**18**	0	**27**	25	**16**	12	0	53	**17**	9	2	0	28	130
08:15 AM	3	11	4	0	18	1	8	9	0	18	15	9	15	0	39	9	14	2	0	25	100
Total Volume	10	67	14	0	91	2	35	49	0	86	100	40	57	0	197	54	81	8	0	143	517
% App. Total	11	73.6	15.4	0		2.3	40.7	57	0		50.8	20.3	28.9	0		37.8	56.6	5.6	0		
PHF	.833	.761	.700	.000	.875	.500	.875	.681	.000	.796	.694	.625	.792	.000	.929	.794	.653	1.00	.000	.794	.873
Cars	10	61	14	0	85	2	33	44	0	79	97	36	50	0	183	47	81	6	0	134	481
% Cars	100	91.0	100	0	93.4	100	94.3	89.8	0	91.9	97.0	90.0	87.7	0	92.9	87.0	100	75.0	0	93.7	93.0
Trucks	0	6	0	0	6	0	2	5	0	7	3	4	7	0	14	7	0	2	0	9	36
% Trucks	0	9.0	0	0	6.6	0	5.7	10.2	0	8.1	3.0	10.0	12.3	0	7.1	13.0	0	25.0	0	6.3	7.0
Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Horizon Data Services Ltd

318 Simonston Blvd
Thornhill, ON L3T 4T5
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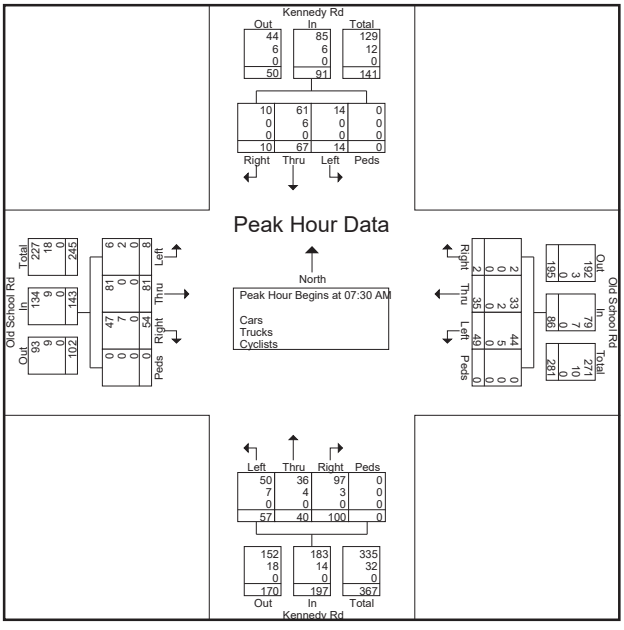
File Name : Kennedy Rd at Old School Rd-June-28-2018
Site Code : 00000143
Start Date : 6/28/2018
Page No : 5



Horizon Data Services Ltd
318 Simonston Blvd
Thornhill, ON L3T 4T5
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File Name : Kennedy Rd at Old School Rd-June-28-2018
Site Code : 00000143
Start Date : 6/28/2018
Page No : 6

	Kennedy Rd From North					Old School Rd From East					Kennedy Rd From South					Old School Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	1	7	1	0	9	1	**8**	5	0	**14**	4	8	3	0	15	9	5	3	0	17	55
12:15 PM	2	**13**	**2**	0	**17**	**3**	1	2	0	6	**6**	6	11	0	23	6	6	1	0	13	59
12:30 PM	**4**	8	2	0	14	1	6	**7**	0	14	4	**14**	5	0	23	8	3	**4**	0	15	66
12:45 PM	2	8	1	0	11	0	5	5	0	10	3	12	**12**	0	**27**	**10**	**9**	1	0	**20**	**68**
Total Volume	9	36	6	0	51	5	20	19	0	44	17	40	31	0	88	33	23	9	0	65	248
% App. Total	17.6	70.6	11.8	0		11.4	45.5	43.2	0		19.3	45.5	35.2	0		50.8	35.4	13.8	0		
PHF	.563	.692	.750	.000	.750	.417	.625	.679	.000	.786	.708	.714	.646	.000	.815	.825	.639	.563	.000	.813	.912
Cars	9	34	5	0	48	5	20	18	0	43	17	39	30	0	86	31	23	9	0	63	240
% Cars	100	94.4	83.3	0	94.1	100	100	94.7	0	97.7	100	97.5	96.8	0	97.7	93.9	100	100	0	96.9	96.8
Trucks	0	2	1	0	3	0	0	1	0	1	0	0	1	0	1	2	0	0	0	2	7
% Trucks	0	5.6	16.7	0	5.9	0	0	5.3	0	2.3	0	0	3.2	0	1.1	6.1	0	0	0	3.1	2.8
Cyclists	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Cyclists	0	0	0	0	0	0	0	0	0	0	0	2.5	0	0	1.1	0	0	0	0	0	0.4

Horizon Data Services Ltd
318 Simonston Blvd
Thornhill, ON L3T 4T5
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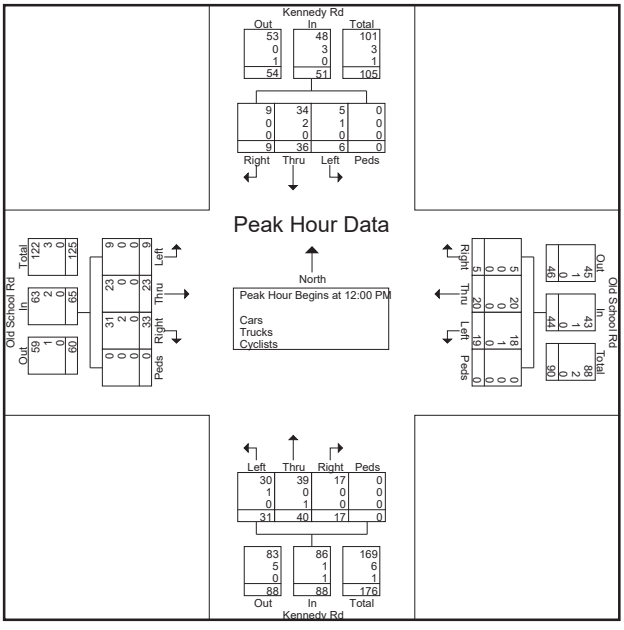
File Name : Kennedy Rd at Old School Rd-June-28-2018
Site Code : 00000143
Start Date : 6/28/2018
Page No : 7



Horizon Data Services Ltd
318 Simonston Blvd
Thornhill, ON L3T 4T5
"we always count...never estimated"

File Name : Kennedy Rd at Old School Rd-June-28-2018
Site Code : 00000143
Start Date : 6/28/2018
Page No : 8

	Kennedy Rd From North					Old School Rd From East					Kennedy Rd From South					Old School Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	**4**	13	**1**	0	**18**	**2**	22	12	0	36	**13**	19	**13**	0	**45**	18	12	**5**	0	35	134
04:00 PM	2	12	1	0	15	1	**31**	12	0	44	12	21	5	0	38	**24**	12	4	0	**40**	137
04:15 PM	1	**15**	1	0	17	2	28	**18**	0	**48**	12	14	10	0	36	20	**14**	3	0	37	**138**
04:30 PM	1	14	0	0	15	2	26	7	0	35	9	**25**	9	0	43	24	9	4	0	37	130
Total Volume	8	54	3	0	65	7	107	49	0	163	46	79	37	0	162	86	47	16	0	149	539
% App. Total	12.3	83.1	4.6	0		4.3	65.6	30.1	0		28.4	48.8	22.8	0		57.7	31.5	10.7	0		
PHF	.500	.900	.750	.000	.903	.875	.863	.681	.000	.849	.885	.790	.712	.000	.900	.896	.839	.800	.000	.931	.976
Cars	7	48	3	0	58	7	105	49	0	161	41	76	36	0	153	82	42	16	0	140	512
% Cars	87.5	88.9	100	0	89.2	100	98.1	100	0	98.8	89.1	96.2	97.3	0	94.4	95.3	89.4	100	0	94.0	95.0
Trucks	1	5	0	0	6	0	2	0	0	2	5	3	1	0	9	4	5	0	0	9	26
% Trucks	12.5	9.3	0	0	9.2	0	1.9	0	0	1.2	10.9	3.8	2.7	0	5.6	4.7	10.6	0	0	6.0	4.8
Cyclists	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Cyclists	0	1.9	0	0	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2

Horizon Data Services Ltd
318 Simonston Blvd
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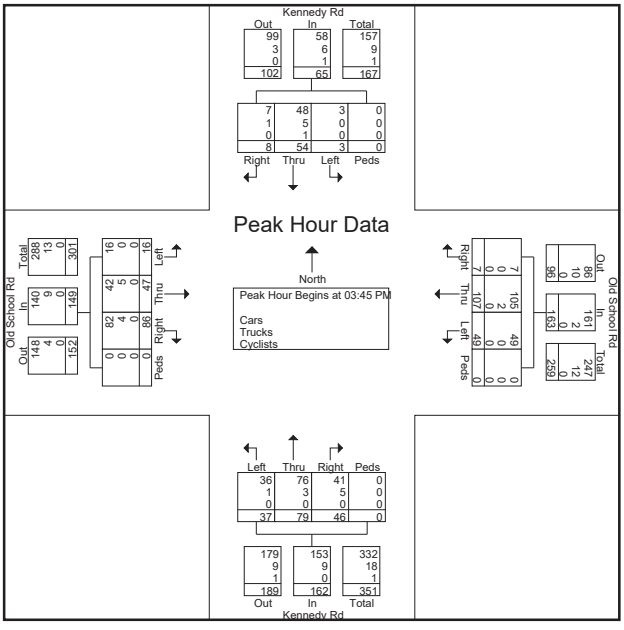
File Name : Kennedy Rd at Old School Rd-June-28-2018
Site Code : 00000143
Start Date : 6/28/2018
Page No : 9



LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 Klo@LEA.ca

Count Name: 21211_Heart Lake Rd & Old School Rd-AM
Site Code: 21211
Start Date: 12/15/2020

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Heart Lake Road Southbound					Old School Road Westbound					Heart Lake Road Northbound					Old School Road Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	2	6	4	0	12	1	10	1	0	12	1	8	0	0	9	3	23	1	0	27	60
7:30 AM	1	5	6	0	12	0	11	1	0	12	2	5	2	0	9	4	31	4	1	39	72
7:45 AM	0	11	0	0	11	3	13	1	0	17	1	6	1	0	8	0	41	2	0	43	79
8:00 AM	1	9	3	0	13	1	11	1	0	13	2	4	3	0	9	0	23	0	0	23	58
Total	4	31	13	0	48	5	45	4	0	54	6	23	6	0	35	7	118	7	1	132	269
Approach %	8.3	64.6	27.1	-	-	9.3	83.3	7.4	-	-	17.1	65.7	17.1	-	-	5.3	89.4	5.3	-	-	-
Total %	1.5	11.5	4.8	-	17.8	1.9	16.7	1.5	-	20.1	2.2	8.6	2.2	-	13.0	2.6	43.9	2.6	-	49.1	-
PHF	0.500	0.705	0.542	-	0.923	0.417	0.865	1.000	-	0.794	0.750	0.719	0.500	-	0.972	0.438	0.720	0.438	-	0.767	0.851
Lights	4	30	12	-	46	5	41	3	-	49	6	18	6	-	30	6	114	7	-	127	252
% Lights	100.0	96.8	92.3	-	95.8	100.0	91.1	75.0	-	90.7	100.0	78.3	100.0	-	85.7	85.7	96.6	100.0	-	96.2	93.7
Buses	0	1	0	-	1	0	2	1	-	3	0	1	0	-	1	1	4	0	-	5	10
% Buses	0.0	3.2	0.0	-	2.1	0.0	4.4	25.0	-	5.6	0.0	4.3	0.0	-	2.9	14.3	3.4	0.0	-	3.8	3.7
Trucks	0	0	1	-	1	0	2	0	-	2	0	4	0	-	4	0	0	0	-	0	7
% Trucks	0.0	0.0	7.7	-	2.1	0.0	4.4	0.0	-	3.7	0.0	17.4	0.0	-	11.4	0.0	0.0	0.0	-	0.0	2.6
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 Klo@LEA.ca

Count Name: 21211_Heart Lake Rd & Old School Rd-PM
Site Code: 21211
Start Date: 12/15/2020

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Heart Lake Road Southbound					Old School Road Westbound					Heart Lake Road Northbound					Old School Road Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:45 PM	0	11	2	0	13	4	40	0	0	44	4	5	1	1	10	2	21	2	0	25	92
5:00 PM	0	9	5	0	14	3	32	1	0	36	9	7	1	0	17	1	20	2	0	23	90
5:15 PM	1	2	1	0	4	8	38	1	0	47	4	9	6	0	19	2	25	3	0	30	100
5:30 PM	0	6	2	0	8	4	52	1	0	57	1	7	3	0	11	1	13	2	0	16	92
Total	1	28	10	0	39	19	162	3	0	184	18	28	11	1	57	6	79	9	0	94	374
Approach %	2.6	71.8	25.6	-	-	10.3	88.0	1.6	-	-	31.6	49.1	19.3	-	-	6.4	84.0	9.6	-	-	-
Total %	0.3	7.5	2.7	-	10.4	5.1	43.3	0.8	-	49.2	4.8	7.5	2.9	-	15.2	1.6	21.1	2.4	-	25.1	-
PHF	0.250	0.636	0.500	-	0.696	0.594	0.779	0.750	-	0.807	0.500	0.778	0.458	-	0.750	0.750	0.790	0.750	-	0.783	0.935
Lights	1	27	10	-	38	19	161	3	-	183	18	28	11	-	57	6	77	9	-	92	370
% Lights	100.0	96.4	100.0	-	97.4	100.0	99.4	100.0	-	99.5	100.0	100.0	100.0	-	100.0	100.0	97.5	100.0	-	97.9	98.9
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	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
Trucks	0	1	0	-	1	0	1	0	-	1	0	0	0	-	0	0	2	0	-	2	4
% Trucks	0.0	3.6	0.0	-	2.6	0.0	0.6	0.0	-	0.5	0.0	0.0	0.0	-	0.0	0.0	2.5	0.0	-	2.1	1.1
Bicycles on Road	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
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

Turning Movement Count (178 . KENNEDY ROAD & STOWMARKET STREET)

Start Time	N Approach HURRUONTAI O						E Approach SU AL I RDT CURe U						S Approach HURRUONTAI O						W Approach f DI t L AHUDT DAUUD						Int. Total (15 min)	Int. Total (1 hr)
	A:Ehr Rtl	Dhig Rtl	SWr RtU	erDgiP RtR	dWsp Ru	ooiacl hTDarc0	A:Ehr UtR	Dhig Utl	SWr Utl	erDgiP UtU	dWsp Uu	ooiacl hTDarc0	A:Ehr f tU	Dhig f tR	SWr f ut	erDgiP f ut	dWsp f u	ooiacl hTDarc0	A:Ehr t ut	Dhig t tU	SWr t tR	erDgiP t ut	dWsp t u	ooiacl hTDarc0		
72u47u77	6	69	3	7	7	65	3	7	1	7	7	66	6	34	7	7	7	39	6	7	7	7	7	6	84	
72u98u77	6	31	7	7	7	47	7	7	67	7	7	67	3	3*	7	7	7	47	9	7	7	7	7	9	59	
75u77u77	6	31	7	7	7	47	6	6	67	7	7	63	6	4*	4	7	7	93	3	6	7	7	7	4	*5	
75u68u77	3	47	6	7	7	44	3	7	64	7	4	68	8	97	4	7	2	9*	5	7	3	7	7	1	678	461
75u47u77	9	43	3	7	7	4*	7	7	5	7	7	5	3	97	6	7	7	94	4	6	8	7	7	1	15	424
75u98u77	6	9*	7	7	7	91	3	7	*	7	7	67	4	46	6	7	7	48	9	7	3	7	7	2	677	4*1
7*u77u77	3	89	7	7	7	82	6	7	67	7	7	66	3	47	6	7	7	44	4	7	4	7	7	2	672	97*
7*u68u77	3	3*	7	7	7	47	6	4	64	7	6	65	2	45	3	7	7	98	9	3	4	7	7	1	676	979
7*u47u77	3	43	3	7	7	42	3	7	1	7	8	66	4	47	6	7	9	49	9	7	5	7	*	66	13	411
7*u98u77	5	32	3	7	7	48	7	7	5	7	7	5	9	3*	6	7	7	44	9	7	2	7	7	67	*8	4*9
71u77u77	7	33	6	7	7	34	3	6	2	7	7	1	4	31	3	7	6	49	7	3	8	7	7	5	54	486
71u68u77	4	47	7	7	7	44	7	6	2	7	9	5	4	39	6	7	7	3*	6	7	3	7	7	4	56	436
EEEKAU HEEB																										
66u77u77	6	61	7	7	7	37	7	7	9	7	9	9	3	33	3	7	7	32	4	6	7	7	7	9	89	
66u68u77	7	38	7	7	7	38	6	6	2	7	6	*	4	37	3	7	7	38	3	7	6	7	7	4	26	
66u47u77	9	33	7	7	7	32	7	7	3	7	6	3	9	68	6	7	7	37	6	7	6	7	7	3	87	
66u98u77	6	39	7	7	7	38	6	7	4	7	7	9	3	6*	6	7	7	36	7	7	6	7	7	6	86	362
63u77u77	3	39	6	7	7	35	7	7	9	7	4	9	6	38	6	7	7	35	6	7	7	7	7	6	81	336
63u68u77	9	38	6	7	7	47	7	7	8	7	6	8	5	43	4	7	7	93	2	6	6	7	6	*	*8	398
63u47u77	7	68	7	7	7	68	7	6	4	7	3	9	9	36	6	7	3	32	6	7	7	7	7	6	92	396
63u98u77	6	33	7	7	6	34	7	7	5	7	3	5	8	65	4	7	7	38	6	7	6	7	3	3	85	395
EEEKAU HEEB																										
68u47u77	7	32	6	7	7	35	6	7	3	7	6	4	8	46	4	7	7	41	6	7	7	7	7	6	57	
68u98u77	8	44	6	7	7	41	6	7	*	7	6	1	1	94	*	7	6	27	3	6	3	7	6	8	664	
62u77u77	4	49	6	7	7	4*	7	7	7	7	6	7	67	3*	6	7	*	41	8	7	9	7	67	1	*2	
62u68u77	8	49	3	7	7	96	3	6	8	7	63	*	67	48	3	7	7	95	4	3	7	7	7	8	676	457
62u47u77	2	45	6	7	7	99	6	6	3	7	3	9	8	32	4	7	7	49	3	7	7	7	7	3	*9	4*9
62u98u77	9	49	3	7	6	97	6	7	4	7	4	9	8	43	*	7	6	98	6	7	6	7	6	3	16	423
65u77u77	9	99	7	7	7	9*	6	4	*	7	3	63	37	38	3	7	3	95	4	7	6	7	7	9	666	4*5
65u68u77	3	35	6	7	7	47	7	7	8	7	4	8	69	4*	8	7	7	85	3	7	7	7	7	3	19	4*7
65u47u77	3	94	9	7	7	91	7	7	9	7	8	9	1	4*	3	7	3	91	9	7	7	7	7	9	672	973
65u98u77	3	35	7	7	7	31	3	7	66	7	8	64	68	32	6	7	3	93	3	7	6	7	7	4	*5	41*
6*u77u77	7	32	7	7	7	32	6	6	8	7	3	5	65	48	3	6	7	88	9	7	6	7	7	8	14	4*7
6*u68u77	6	46	6	7	7	44	7	7	*	7	4	*	1	4*	3	7	3	91	6	7	7	7	7	6	16	455
Grand Total	54	192	32	7	3	6798	38	69	374	7	25	393	616	194	21	6	46	6379	*3	66	87	7	34	694	**2634**	n
Approach%	5.	17%8.	3%8.	7.		n	67%4.	8%.	*4%.	7.		n	68%.	5*%4.	8%5.	7%6.		n	85%4.	5%5.	48.	7.		n	-	n
Totals %	3%.	48%.	6.	7.		41%5.	7%.	7%8.	5%5.	7.		1%3.	5%4.	48%.	3%2.	7.		98%5.	4%6.	7%9.	6%.	7.		8%9.	-	n
Heavy	7	3	7	7		n	7	7	7	7		n	7	3	3	7		n	6	7	7	7		n	-	n
Heavy %	7.	7%3.	7.	7.		n	7.	7.	7.	7.		n	7.	7%3.	3%.	7.		n	6%3.	7.	7.	7.		n	-	n
Bicycles	n	n	n	n		n	n	n	n	n		n	n	n	n	n		n	n	n	n	n		n	-	n
Bicycle %	n	n	n	n		n	n	n	n	n		n	n	n	n	n		n	n	n	n	n		n	-	n

Peak Hour: 07:15 AM - 08:15 AM TTTTWeather:

Start Time	N Approach HURRUONTAI O						E Approach SU AL I RDT CURe U						S Approach HURRUONTAI O						W Approach f DI t L AHUDT DAUUD						Int. Total (15 min)
	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	
75u68u77	3	47	6	7	7	44	3	7	64	7	4	68	8	97	4	7	2	9*	5	7	3	7	7	1	678
75u47u77	9	43	3	7	7	4*	7	7	5	7	7	5	3	97	6	7	7	94	4	6	8	7	7	1	15
75u98u77	6	9*	7	7	7	91	3	7	*	7	7	67	4	46	6	7	7	48	9	7	3	7	7	2	677
7*u77u77	3	89	7	7	7	82	6	7	67	7	7	66	3	47	6	7	7	44	4	7	4	7	7	2	672
Grand Total	1	629	4	7	7	652	8	7	4*	7	4	94	63	696	2	7	2	681	65	6	63	7	7	47	**408**
Approach%	8%6.	14%3.	6%5.	7.		n	66%2.	7.	**%9.	7.		n	5%8.	**%5.	4%.	7.		n	82%5.	4%4.	97.	7.		n	-
Totals %	3%3.	97%3.	7%5.	7.		94%6.	6%3.	7.	1%4.	7.		67%8.	3%.	49%2.	6%8.	7.		41.	9%3.	7%3.	3%.	7.		5%9.	-
PHF	7%82	7%52	7%4*	7		7%51	7%24	7	7%54	7		7%53	7%2	7%*	7%8	7		7%4	7%26	7%38	7%2	7		7%4	-
Heavy	7	7	7	7		7	7	7	7	7		7	7	7	3	7		3	7	7	7	7		7	-
Heavy %	7.	7.	7.	7.		7.	7.	7.	7.	7.		7.	7.	7.	44%4.	7.		6%4.	7.	7.	7.	7.		7.	-
Lights	*	688	6	7		629	9	7	42	7		97	5	648	9	7		692	65	6	63	7		47	-
Lights %	**%.	19%8.	44%4.	7.		14%3.	*7.	7.	19%5.	7.		14.	8*%4.	18%5.	22%5.	7.		16%.	677.	677.	677.	7.		677.	-
Mediums	6	1	3	7		63	6	7	3	7		4	8	2	7	7		66	7	7	7	7		7	-
Mediums %	66%6.	8%8.	22%5.	7.		2%.	37.	7.	8%4.	7.		5.	96%5.	9%4.	7.	7.		2%.	7.	7.	7.	7.		7.	-
Articulated Trucks	7	7	7	7		7	7	7	7	7		7	7	7	3	7		3	7	7	7	7		7	-
Articulated Trucks %	7.	7.	7.	7.		7.	7.	7.	7.	7.		7.	7.	7.	44%4.	7.		6%4.	7.	7.	7.	7.		7.	-
Pedestrians	n	n	n	n	7	n	n	n	n	n	4	n	n	n	n	n	2	n	n	n	n	n	7	n	-
Pedestrians%	n	n	n	n	7.	T	n	n	n	n	44%4.	T	n	n	n	n	22%5.	T	n	n	n	n	7.	T	-

Peak Hour: 12:00 PM - 01:00 PM TTTTWeather:

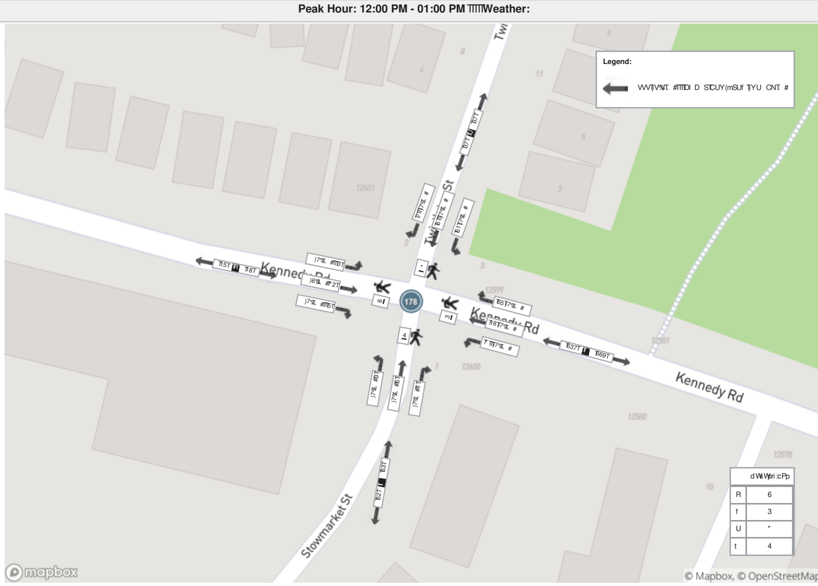
Start Time	N Approach HURRUONTAI O						E Approach SU AL I RDT CURe U						S Approach HURRUONTAI O						W Approach f DI t L AHUDT DAUUD						Int. Total (15 min)
	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	
63u77u77	3	39	6	7	7	35	7	7	9	7	4	9	6	38	6	7	7	35	6	7	7	7	7	6	81
63u68u77	9	38	6	7	7	47	7	7	8	7	6	8	5	43	4	7	7	93	2	6	6	7	6	*	*8
63u47u77	7	68	7	7	7	68	7	6	4	7	3	9	9	36	6	7	3	32	6	7	7	7	7	6	92
63u98u77	6	33	7	7	6	34	7	7	5	7	3	5	8	65	4	7	7	38	6	7	6	7	3	3	85
Grand Total	5	*2	3	7	6	18	7	6	61	7	*	37	65	18	*	7	3	637	1	6	3	7	4	63	**247**
Approach%	5%3.	17%3.	3%6.	7.		n	7.	8.	18.	7.		n	69%3.	51%3.	2%5.	7.		n	58.	*%4.	62%5.	7.		n	-
Totals %	3%.	49%.	7%.	7.		4*%3.	7.	7%9.	5%5.	7.		*%6.	2%1.	4*%3.	4%3.	7.		9*%2.	4%2.	7%9.	7%.	7.		9%1.	-
PHF	7%99	7%.2	7%8	7		7%51	7	7%38	7%2*	7		7%56	7%26	7%59	7%25	7		7%56	7%4*	7%38	7%8	7		7%4*	-
Heavy	7	6	7	7		6	7	7	7	7		7	7	7	7	7		7	7	7	7	7		7	-
Heavy %	7.	6%3.	7.	7.		6%6.	7.	7.	7.	7.		7.	7.	7.	7.	7.		7.	7.	7.	7.	7.		7.	-
Lights	8	51	3	7		*2	7	6	62	7		65	65	**	*	7		664	1	6	3	7		63	-
Lights %	56%9.	16%1.	677.	7.		17%3.	7.	677.	*9%3.	7.		*8.	677.	13%2.	677.	7.		19%3.	677.	677.	677.	7.		677.	-
Mediums	3	2	7	7		*	7	7	4	7		4	7	5	7	7		5	7	7	7	7		7	-
Mediums %	3*%2.	5.	7.	7.		*%9.	7.	7.	68%.	7.		68.	7.	5%9.	7.	7.		8%.	7.	7.	7.	7.		7.	-
Articulated Trucks	7	6	7	7		6	7	7	7	7		7	7	7	7	7		7	7	7	7	7		7	-
Articulated Trucks %	7.	6%3.	7.	7.		6%6.	7.	7.	7.	7.		7.	7.	7.	7.	7.		7.	7.	7.	7.	7.		7.	-
Pedestrians	n	n	n	n	6	n	n	n	n	n	*	n	n	n	n	n	3	n	n	n	n	n	4	n	-
Pedestrians%	n	n	n	n	5%6.	T	n	n	n	n	85%6.	T	n	n	n	n	69%4.	T	n	n	n	n	36%9.	T	-

Peak Hour: 04:45 PM - 05:45 PM TTTTWeather:

Start Time	N Approach HURRUONTAI O						E Approach SU AL I RDT CURe U						S Approach HURRUONTAI O						W Approach f DI t L AHUDT DAUUD						Int. Total (15 min)
	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	A:Ehr	Dhig	SWr	erDgiP	dWsp	ooiacl hTDarc0	
62u98u77	9	49	3	7	6	97	6	7	4	7	4	9	8	43	*	7	6	98	6	7	6	7	6	3	16
65u77u77	9	99	7	7	7	9*	6	4	*	7	3	63	37	38	3	7	3	95	4	7	6	7	7	9	666
65u68u77	3	35	6	7	7	47	7	7	8	7	4	8	69	4*	8	7	7	85	3	7	7	7	7	3	19
65u47u77	3	94	9	7	7	91	7	7	9	7	8	9	1	4*	3	7	3	91	9	7	7	7	7	9	672
Grand Total	63	69*	5	7	6	625	3	4	37	7	64	38	9*	644	65	7	8	61*	67	7	3	7	6	63	**402**
Approach%	5%3.	**%2.	9%3.	7.		n	*.	63.	*7.	7.		n	39%3.	25%3.	*%2.	7.		n	*4%4.	7.	62%5.	7.		n	-
Totals %	4.	42%.	6%5.	7.		96%3.	7%3.	7%5.	8.	7.		2%3.	66%.	44%6.	9%3.	7.		91%4.	3%3.	7.	7%3.	7.		4.	-
PHF	7%58	7%.9	7%99	7		7%.8	7%8	7%38	7%24	7		7%83	7%2	7%.*	7%84	7		7%.5	7%24	7	7%8	7		7%58	-
Heavy	7	7	7	7		7	7	7	7	7		7	7	7	7	7		7	6	7	7	7		6	-
Heavy %	7.	7.	7.	7.		7.	7.	7.	7.	7.		7.	7.	7.	7.	7.		7.	67.	7.	7.	7.		*%4.	-
Lights	63	692	5	7		628	6	4	61	7		34	9*	631	65	7		619	*	7	3	7		67	-
Lights %	677.	1*%2.	677.	7.		1*%.	87.	677.	18.	7.		13.	677.	15.	677.	7.		1*.	*7.	7.	677.	7.		*4%4.	-
Mediums	7	3	7	7		3	6	7	6	7		3	7	9	7	7		9	6	7	7	7		6	-
Mediums %	7.	6%9.	7.	7.		6%3.	87.	7.	8.	7.		*.	7.	4.	7.	7.		3.	67.	7.	7.	7.		*%4.	-
Articulated Trucks	7	7	7	7		7	7	7	7	7		7	7	7	7	7		7	6	7	7	7		6	-
Articulated Trucks %	7.	7.	7.	7.		7.	7.	7.	7.	7.		7.	7.	7.	7.	7.		7.	67.	7.	7.	7.		*%4.	-
Pedestrians	n	n	n	n	6	n	n	n	n	n	64	n	n	n	n	n	8	n	n	n	n	n	6	n	-
Pedestrians%	n	n	n	n	8.	T	n	n	n	n	28.	T	n	n	n	n	38.	T	n	n	n	n	8.	T	-

Peak Hour: 07:15 AM - 08:15 AM Weather:

Peak Hour: 12:00 PM - 01:00 PM Weather:



DgiP:PETL aMW WPrTmagPr
Sal cr:aPTRcv WBHURRUONTAI OT&T DI t L AHUDTI DAUUD
OcrWDgWT oiT6",T3765TTTTOW0ayv WPrTSWcsuBWWT0cp

Peak Hour: 04:45 PM - 05:45 PM Weather:

Turning Movement Count
Location Name: KENNEDY ROAD & DOUGALL AVENUE
Date: Tue, Apr 18, 2017 Deployment Lead: Peter Ilias

Turning Movement Count (179 . KENNEDY ROAD & DOUGALL AVENUE)

Start Time	N Approach KENNEDY ROAD						E Approach DOUGALL AVENUE						S Approach KENNEDY ROAD						W Approach DOUGALL AVENUE						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:30:00	3	31	0	0	0	34	2	1	26	0	0	29	5	18	5	0	0	28	44	0	2	0	0	46	137	
06:45:00	3	45	3	0	0	51	3	3	13	0	1	19	6	21	16	0	0	43	43	0	5	0	0	48	161	
07:00:00	5	41	4	0	0	50	8	1	28	0	0	37	9	33	13	0	0	55	36	2	2	0	1	40	182	
07:15:00	12	41	4	0	1	57	4	2	30	0	2	36	11	35	12	0	0	58	57	2	9	0	0	68	219	699
07:30:00	3	46	8	0	0	57	5	0	43	0	0	48	8	33	21	0	0	62	62	3	7	0	0	72	239	801
07:45:00	6	48	7	0	0	61	3	3	32	0	3	38	11	24	22	0	1	57	70	3	7	0	0	80	236	876
08:00:00	4	54	21	0	3	79	9	3	27	0	5	39	16	23	30	0	6	69	61	10	4	0	0	75	262	956
08:15:00	2	36	19	0	0	57	12	6	39	0	2	57	19	32	21	0	2	72	43	13	5	0	1	61	247	984
08:30:00	5	41	7	0	1	53	4	6	24	0	3	34	4	25	28	0	0	57	50	6	5	0	2	61	205	950
08:45:00	3	38	2	0	2	43	3	3	28	0	3	34	8	24	23	0	2	55	64	3	8	0	1	75	207	921
09:00:00	5	28	2	0	0	35	1	3	15	0	0	19	10	26	13	0	2	49	42	1	9	0	1	52	155	814
09:15:00	7	32	1	0	0	40	3	1	13	0	2	17	7	22	20	0	0	49	30	0	7	0	0	37	143	710
BREAK																										
11:00:00	4	19	3	0	0	26	2	3	10	0	3	15	13	27	24	0	2	64	22	1	1	0	0	24	129	
11:15:00	6	27	3	0	1	36	3	4	11	0	2	18	8	16	22	0	1	46	31	5	7	0	2	43	143	
11:30:00	1	23	6	0	1	30	4	5	12	0	1	21	11	15	20	0	0	46	24	1	3	0	0	28	125	
11:45:00	9	23	2	0	3	34	2	3	9	0	0	14	5	15	24	0	0	44	18	4	8	0	0	30	122	519
12:00:00	1	30	3	0	0	34	1	4	9	0	3	14	10	21	25	0	0	56	30	3	4	0	1	37	141	531
12:15:00	6	35	2	0	2	43	6	2	9	0	2	17	6	29	29	0	5	64	25	4	12	0	4	41	165	553
12:30:00	2	19	7	0	0	28	6	6	10	0	0	22	8	24	19	0	1	51	22	0	6	0	1	28	129	557
12:45:00	8	28	3	0	3	39	2	2	7	0	4	11	11	22	15	0	3	48	28	3	4	0	1	35	133	568
BREAK																										
15:30:00	4	25	2	0	5	31	4	3	6	0	0	13	21	35	54	0	2	110	18	1	5	0	16	24	178	
15:45:00	11	26	6	0	4	43	8	6	8	0	2	22	15	40	50	0	9	105	32	3	18	0	3	53	223	
16:00:00	7	25	10	0	0	42	6	2	14	0	0	22	17	34	57	0	2	108	23	2	6	0	17	31	203	
16:15:00	8	39	6	0	4	53	2	6	17	0	5	25	29	37	41	0	1	107	33	2	11	0	1	46	231	835
16:30:00	7	36	4	0	1	47	4	6	11	0	4	21	24	32	45	0	4	101	35	7	4	0	1	46	215	872
16:45:00	2	38	9	0	0	49	6	8	20	0	3	34	12	40	53	0	1	105	34	2	10	0	1	46	234	883
17:00:00	11	46	6	0	3	63	10	2	12	0	5	24	19	35	57	0	3	111	30	3	8	0	3	41	239	919
17:15:00	9	25	5	0	0	39	4	1	16	0	3	21	30	47	54	0	5	131	30	4	9	0	1	43	234	922
17:30:00	10	41	5	0	1	56	6	3	14	0	5	23	26	49	44	0	3	119	31	5	6	0	3	42	240	947
17:45:00	5	35	5	0	4	45	5	4	16	0	3	25	29	42	55	0	7	126	24	2	3	0	1	29	225	938
18:00:00	3	30	7	0	3	40	4	4	20	0	2	28	28	53	51	0	6	132	27	1	3	0	0	31	231	930
18:15:00	5	37	7	0	0	49	3	1	11	0	4	15	28	42	57	0	1	127	37	2	7	0	2	46	237	933
Grand Total	177	1088	179	0	42	1444	145	107	560	0	72	812	464	971	1020	0	69	2455	1156	98	206	0	64	1460	**6171**	-
Approach%	12.3%	75.3%	12.4%	0%		-	17.9%	13.2%	69%	0%		-	18.9%	39.6%	41.5%	0%		-	79.2%	6.7%	14.1%	0%		-	-	-
Totals %	2.9%	17.6%	2.9%	0%		23.4%	2.3%	1.7%	9.1%	0%		13.2%	7.5%	15.7%	16.5%	0%		39.8%	18.7%	1.6%	3.3%	0%		23.7%	-	-
Heavy	0	2	0	0		-	0	0	2	0		-	0	3	5	0		-	2	0	0	0		-	-	-
Heavy %	0%	0.2%	0%	0%		-	0%	0%	0.4%	0%		-	0%	0.3%	0.5%	0%		-	0.2%	0%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: KENNEDY ROAD & DOUGALL AVENUE
Date: Tue, Apr 18, 2017 Deployment Lead: Peter Ilias

Peak Hour: 07:30 AM - 08:30 AM Weather:

Start Time	N Approach KENNEDY ROAD						E Approach DOUGALL AVENUE						S Approach KENNEDY ROAD						W Approach DOUGALL AVENUE						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
07:30:00	3	46	8	0	0	57	5	0	43	0	0	48	8	33	21	0	0	62	62	3	7	0	0	72	239
07:45:00	6	48	7	0	0	61	3	3	32	0	3	38	11	24	22	0	1	57	70	3	7	0	0	80	236
08:00:00	4	54	21	0	3	79	9	3	27	0	5	39	16	23	30	0	6	69	61	10	4	0	0	75	262
08:15:00	2	36	19	0	0	57	12	6	39	0	2	57	19	32	21	0	2	72	43	13	5	0	1	61	247
Grand Total	15	184	55	0	3	254	29	12	141	0	10	182	54	112	94	0	9	260	236	29	23	0	1	288	**984**
Approach%	5.9%	72.4%	21.7%	0%		-	15.9%	6.6%	77.5%	0%		-	20.8%	43.1%	36.2%	0%		-	81.9%	10.1%	8%	0%		-	-
Totals %	1.5%	18.7%	5.6%	0%		25.8%	2.9%	1.2%	14.3%	0%		18.5%	5.5%	11.4%	9.6%	0%		26.4%	24%	2.9%	2.3%	0%		29.3%	-
PHF	0.63	0.85	0.65	0		0.8	0.6	0.5	0.82	0		0.8	0.71	0.85	0.78	0		0.9	0.84	0.56	0.82	0		0.9	-
Heavy	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.4%	0%	0%	0%	0%		0%	-
Lights	13	177	54	0		244	29	11	136	0		176	51	101	85	0		237	231	25	21	0		277	-
Lights %	86.7%	96.2%	98.2%	0%		96.1%	100%	91.7%	96.5%	0%		96.7%	94.4%	90.2%	90.4%	0%		91.2%	97.9%	86.2%	91.3%	0%		96.2%	-
Mediums	2	7	1	0		10	0	1	5	0		6	3	10	9	0		22	5	4	2	0		11	-
Mediums %	13.3%	3.8%	1.8%	0%		3.9%	0%	8.3%	3.5%	0%		3.3%	5.6%	8.9%	9.6%	0%		8.5%	2.1%	13.8%	8.7%	0%		3.8%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.4%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	10	-	-	-	-	-	9	-	-	-	-	-	1	-	-
Pedestrians%	-	-	-	-	13%		-	-	-	-	43.5%		-	-	-	-	39.1%		-	-	-	-	4.3%		-

Spectrum

Turning Movement Count
Location Name: KENNEDY ROAD & DOUGALL AVENUE
Date: Tue, Apr 18, 2017 Deployment Lead: Peter Ilias

Peak Hour: 12:00 PM - 01:00 PM Weather:

Start Time	N Approach KENNEDY ROAD						E Approach DOUGALL AVENUE						S Approach KENNEDY ROAD						W Approach DOUGALL AVENUE						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
12:00:00	1	30	3	0	0	34	1	4	9	0	3	14	10	21	25	0	0	56	30	3	4	0	1	37	141
12:15:00	6	35	2	0	2	43	6	2	9	0	2	17	6	29	29	0	5	64	25	4	12	0	4	41	165
12:30:00	2	19	7	0	0	28	6	6	10	0	0	22	8	24	19	0	1	51	22	0	6	0	1	28	129
12:45:00	8	28	3	0	3	39	2	2	7	0	4	11	11	22	15	0	3	48	28	3	4	0	1	35	133
Grand Total	17	112	15	0	5	144	15	14	35	0	9	64	35	96	88	0	9	219	105	10	26	0	7	141	**568**
Approach%	11.8%	77.8%	10.4%	0%		-	23.4%	21.9%	54.7%	0%		-	16%	43.8%	40.2%	0%		-	74.5%	7.1%	18.4%	0%		-	-
Totals %	3%	19.7%	2.6%	0%		25.4%	2.6%	2.5%	6.2%	0%		11.3%	6.2%	16.9%	15.5%	0%		38.6%	18.5%	1.8%	4.6%	0%		24.8%	-
PHF	0.53	0.8	0.54	0		0.84	0.63	0.58	0.88	0		0.73	0.8	0.83	0.76	0		0.86	0.88	0.63	0.54	0		0.86	-
Heavy	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Heavy %	0%	0.9%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Lights	17	105	14	0		136	13	14	34	0		61	32	93	86	0		211	101	10	24	0		135	-
Lights %	100%	93.8%	93.3%	0%		94.4%	86.7%	100%	97.1%	0%		95.3%	91.4%	96.9%	97.7%	0%		96.3%	96.2%	100%	92.3%	0%		95.7%	-
Mediums	0	6	1	0		7	2	0	1	0		3	3	3	2	0		8	4	0	2	0		6	-
Mediums %	0%	5.4%	6.7%	0%		4.9%	13.3%	0%	2.9%	0%		4.7%	8.6%	3.1%	2.3%	0%		3.7%	3.8%	0%	7.7%	0%		4.3%	-
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0.9%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	9	-	-	-	-	-	9	-	-	-	-	-	7	-	-
Pedestrians%	-	-	-	-	16.7%		-	-	-	-	30%		-	-	-	-	30%		-	-	-	-	23.3%		-

Spectrum

Turning Movement Count
Location Name: KENNEDY ROAD & DOUGALL AVENUE
Date: Tue, Apr 18, 2017 Deployment Lead: Peter Ilias

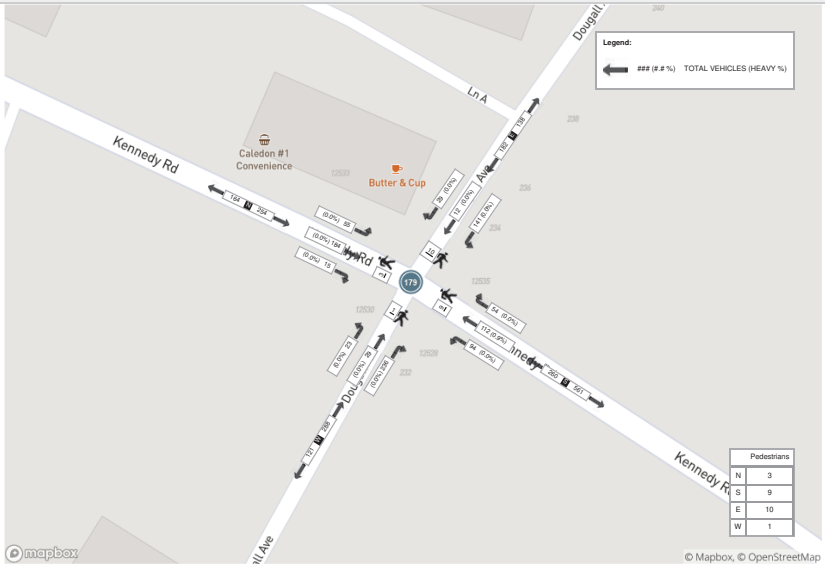
Peak Hour: 04:45 PM - 05:45 PM Weather:

Start Time	N Approach KENNEDY ROAD						E Approach DOUGALL AVENUE						S Approach KENNEDY ROAD						W Approach DOUGALL AVENUE						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:45:00	2	38	9	0	0	49	6	8	20	0	3	34	12	40	53	0	1	105	34	2	10	0	1	46	234
17:00:00	11	46	6	0	3	63	10	2	12	0	5	24	19	35	57	0	3	111	30	3	8	0	3	41	239
17:15:00	9	25	5	0	0	39	4	1	16	0	3	21	30	47	54	0	5	131	30	4	9	0	1	43	234
17:30:00	10	41	5	0	1	56	6	3	14	0	5	23	26	49	44	0	3	119	31	5	6	0	3	42	240
Grand Total	32	150	25	0	4	207	26	14	62	0	16	102	87	171	208	0	12	466	125	14	33	0	8	172	**947**
Approach%	15.5%	72.5%	12.1%	0%		-	25.5%	13.7%	60.8%	0%		-	18.7%	36.7%	44.6%	0%		-	72.7%	8.1%	19.2%	0%		-	-
Totals %	3.4%	15.8%	2.6%	0%		21.9%	2.7%	1.5%	6.5%	0%		10.8%	9.2%	18.1%	22%	0%		49.2%	13.2%	1.5%	3.5%	0%		18.2%	-
PHF	0.73	0.82	0.69	0		0.82	0.65	0.44	0.78	0		0.75	0.73	0.87	0.91	0		0.89	0.92	0.7	0.83	0		0.93	-
Heavy	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Heavy %	0%	0.7%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Lights	31	145	25	0		201	26	14	62	0		102	87	171	207	0		465	123	14	30	0		167	-
Lights %	96.9%	96.7%	100%	0%		97.1%	100%	100%	100%	0%		100%	100%	100%	99.5%	0%		99.8%	98.4%	100%	90.9%	0%		97.1%	-
Mediums	1	4	0	0		5	0	0	0	0		0	0	0	1	0		1	2	0	3	0		5	-
Mediums %	3.1%	2.7%	0%	0%		2.4%	0%	0%	0%	0%		0%	0%	0%	0.5%	0%		0.2%	1.6%	0%	9.1%	0%		2.9%	-
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0.7%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	16	-	-	-	-	-	12	-	-	-	-	-	8	-	-
Pedestrians%	-	-	-	-	10%		-	-	-	-	40%		-	-	-	-	30%		-	-	-	-	20%		-

Spectrum

Turning Movement Count
Location Name: KENNEDY ROAD & DOUGALL AVENUE
Date: Tue, Apr 18, 2017 Deployment Lead: Peter Ilias

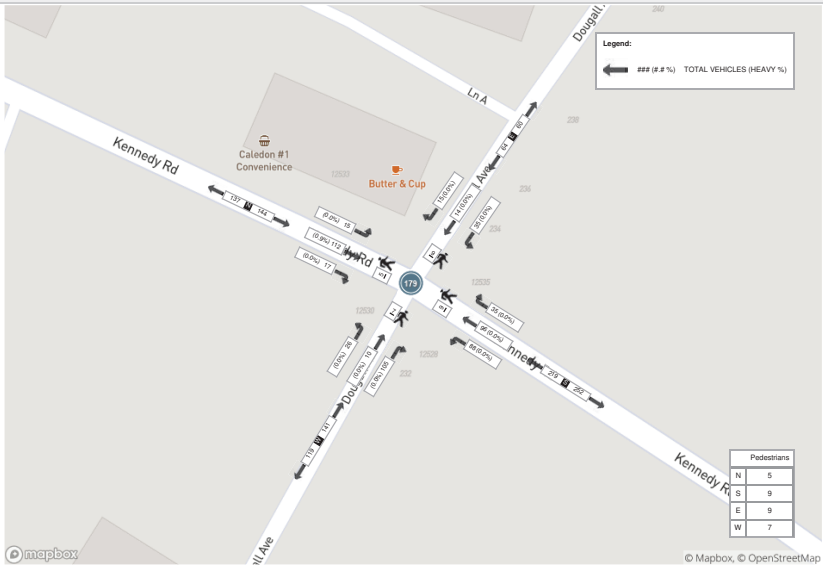
Peak Hour: 07:30 AM - 08:30 AM Weather:



Spectrum

Turning Movement Count
Location Name: KENNEDY ROAD & DOUGALL AVENUE
Date: Tue, Apr 18, 2017 Deployment Lead: Peter Ilias

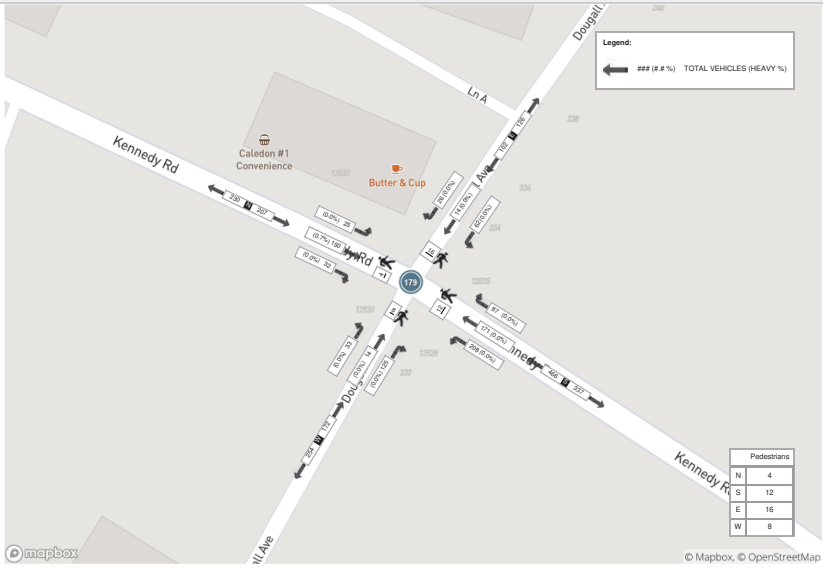
Peak Hour: 12:00 PM - 01:00 PM Weather:



Spectrum

Turning Movement Count
Location Name: KENNEDY ROAD & DOUGALL AVENUE
Date: Tue, Apr 18, 2017 Deployment Lead: Peter Ilias

Peak Hour: 04:45 PM - 05:45 PM Weather:



GENERIC SIGNAL TIMING SHEET

ACTUATED [X] PRE-TIMED [ ] SIGNAL TO BE MAINTAINED BY: Peel Region

LOCATION: Hwy 10 & Old School Rd SIGNAL TO BE OPERATED BY: MTO

MAINSTREET (HWY): Hwy 10 TIMING DEVELOPED BY: MTO

DATE TIMING DEVELOPED: 29/06/2017 DATE TIMING IMPLEMENTED:

GENERIC TIMING IDENTIFIED HERE SHALL BE TRANSCRIBED ONTO "OFFICIAL" TIMING SHEETS FOR THE TRAFFIC SIGNAL CONTROLLER BEING USED AT THIS SIGNALIZED INTERSECTION. A COPY OF THE "OFFICIAL" LOCAL TIMING SHEETS AND COORDINATION SHEETS IF USED, SHALL BE ATTACHED TO THIS FORM AND FILED IN THE MTO REGIONAL TRAFFIC OFFICE

OPERATIONAL NOTES:

1. All Prot/Perm left turn movements shall be followed by parent through movements without exception
2. If serving F2 and F6 the signal must cycle to F4 and/or F8 prior to serving a call for F1 and/or F5 if these left turn movements are protected/permissive.
3. If serving F4 and F8, the signal must cycle to F2 and/or F6 prior to serving a call for F3 and /or F7 if these left turn movements are protected/permissive.
4. Through Movements shall lag left turn movements unless otherwise specified.
5. 100km/h operating speed used for N/S amber, posted speed for all-red.

FUNCTION/OPERATION	MOVEMENT (FAZE)							
	NB LEFT	NB THRU	WB LEFT	WB THRU	SB LEFT	SB THRU	EB LEFT	EB THRU
PERMITTED MOVEMENTS		X		X		X		X
RED LOCK								
AMBER LOCK								
VEHICLE RECALL								
PEDESTRIAN RECALL		X				X		
VEHICLE MAX RECALL		X				X		
OVERLAP A								
OVERLAP B								
PROT/PERM LEFT TURN ARROW								
PROT/PERM FAST FLASH ADVANCE GREEN								
FULLY PROTECTED LEFT TURN								
DISPLAY AMBER ON STARTUP		X				X		
PLACE PED CALLS ON STARTUP		X		X		X		X
PLACE VEHICLE CALLS ON STARTUP		X		X		X		X
REST IN WALK								
MOVEMENTS MUST GAP OUT SIMULTANEOUSLY		X		X		X		X
DOUBLE ENTRY		X		X		X		X
EXCLUSIVE (SEPERATE) PHASING BY APPORACH								

INTERVAL TIMES	MOVEMENT (FAZE)							
	NB LEFT	NB THRU	WB LEFT	WB THRU	SB LEFT	SB THRU	EB LEFT	EB THRU
WALK		19		20		19		20
FLASHING DON'T WALK		14		15		14		15
MINIMUM GREEN		20		10		20		10
VEHICLE EXTENSION (PASSAGE TIME)		4.5		3.0		4.5		3.0
MAXIMUM GREEN (INCLUDES MIN GREEN)		50		25		50		25
MAXIMUM GREEN 2 (ALTERNATE MAX GREEN)								
AMBER CLEARANCE		6.3		5.4		6.3		5.4
ALL RED CLEARANCE		1.8		2.0		1.8		2.0
MAX GAP (VEH. EXTENSION)		4.5		3.0		4.5		3.0
MIN GAP (VEH. EXTENSION)		4.5		3.0		4.5		3.0
REDUCE GAP BY		4.5		3.0		4.5		3.0
REDUCE GAP EVERY		4.5		3.0		4.5		3.0
MAX INITIAL GREEN TIME (VARIABLE INIT)		1.0				1.0		
TIME ADDED/VEHICLE (VARIABLE INIT)		30				30		

DETECTOR SETUP	MOVEMENT (FAZE)							
	NB LEFT	NB THRU	WB LEFT	WB THRU	SB LEFT	SB THRU	EB LEFT	EB THRU
DELAY TIME ON PRESENCE DETECTION				10.0				10.0
DELAY ON LONG DISTANCE DETECTION								
CARRY-OVER ON PRESENCE DETECTION								
CARRY-OVER ON LONG DISTANCE DETECTION								

PRE-EMPTION	MOVEMENT (FAZE)							
	NB LEFT	NB THRU	WB LEFT	WB THRU	SB LEFT	SB THRU	EB LEFT	EB THRU
1ST EMERG. PRE-EMPT MOVEMENTS		X				X		
1ST EMERG. PRE-EMPT DELAY TIME				X				X
1ST EMERG. PRE-EMPT CLEARANCE TIME								
2ND EMERG. PRE-EMPT MOVEMENTS								
2ND EMERG. PRE-EMPT DELAY TIME								
2ND EMERG. PRE-EMPT CLEARANCE TIME								
RR PRE-EMPT TRACK CLEARANCE MOVEMENTS								
RR PRE-EMPT CLEARANCE TIME								
RR PRE-EMPT DELAY TIME								
RR PRE-EMPT LIMITED SERVICE MOVEMENTS								

TIME OF DAY OPERATIONS	TIME OF DAY		DAY OF WEEK							MOVEMENT (FAZE)							
	START	END	S	M	T	W	T	F	S	NB LEFT	NB THRU	WB LEFT	WB THRU	SB LEFT	SB THRU	EB LEFT	EB THRU
PHASE OMIT																	
MAX RECALL																	
PED RECALL																	
MIN RECALL																	
MAX GREEN 2																	
REST IN WALK																	
AMBER LOCK																	
RED LOCK																	

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**June 2019**		**Prepared Date**	**January 19, 2021**
Database Rev	**Cabinet Data**		**Completed By**	**JP**
Timing Card / Field rev	**Cabinet Data**		**Checked By**	**SJ**

Location	**Kennedy Road at Old School Road**

Phase #	**Street Name - Direction**	**Vehicle Minimum (s)**	**Pedestrian Minimum (s)**		**Amber (s)**	**All Red (s)**	**TIME PERIOD (s) (Green+Amber+All Red)**		
			WALK	**FDWALK**			**AM SPLITS**	**OFF MAX**	**PM SPLITS**
1	Not in use	-	-	-	-	-	-	-	
2	Kennedy Road - NB/SB	10	N/A	N/A	4	2	67	31	25
3	Not in use	-	-	-	-	-	-	-	
4	Old School Road - EB/WB	10	N/A	N/A	4	2	23	31	55
5	Not in use	-	-	-	-	-	-	-	-
6	Not in use	-	-	-	-	-	-	-	-
7	Not in use	-	-	-	-	-	-	-	-
8	Not in use	-	-	-	-	-	-	-	-

System Control
No

Semi-Actuated Mode
Yes

TIME (M-F)	**PEAK**	**CYCLE LENGTH (s)**	**OFFSET (s)**
07:00 - 09:00	AM	90	N/A
FREE	OFF	N/A	N/A
15:00 - 18:00	PM	80	N/A

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**October 27, 2020**		**Prepared Date:**	**June 10, 2021**
Database Rev	**1**		**Completed By:**	**RC**
Timing Card / Field rev	**-**		**Checked By:**	**MAN**

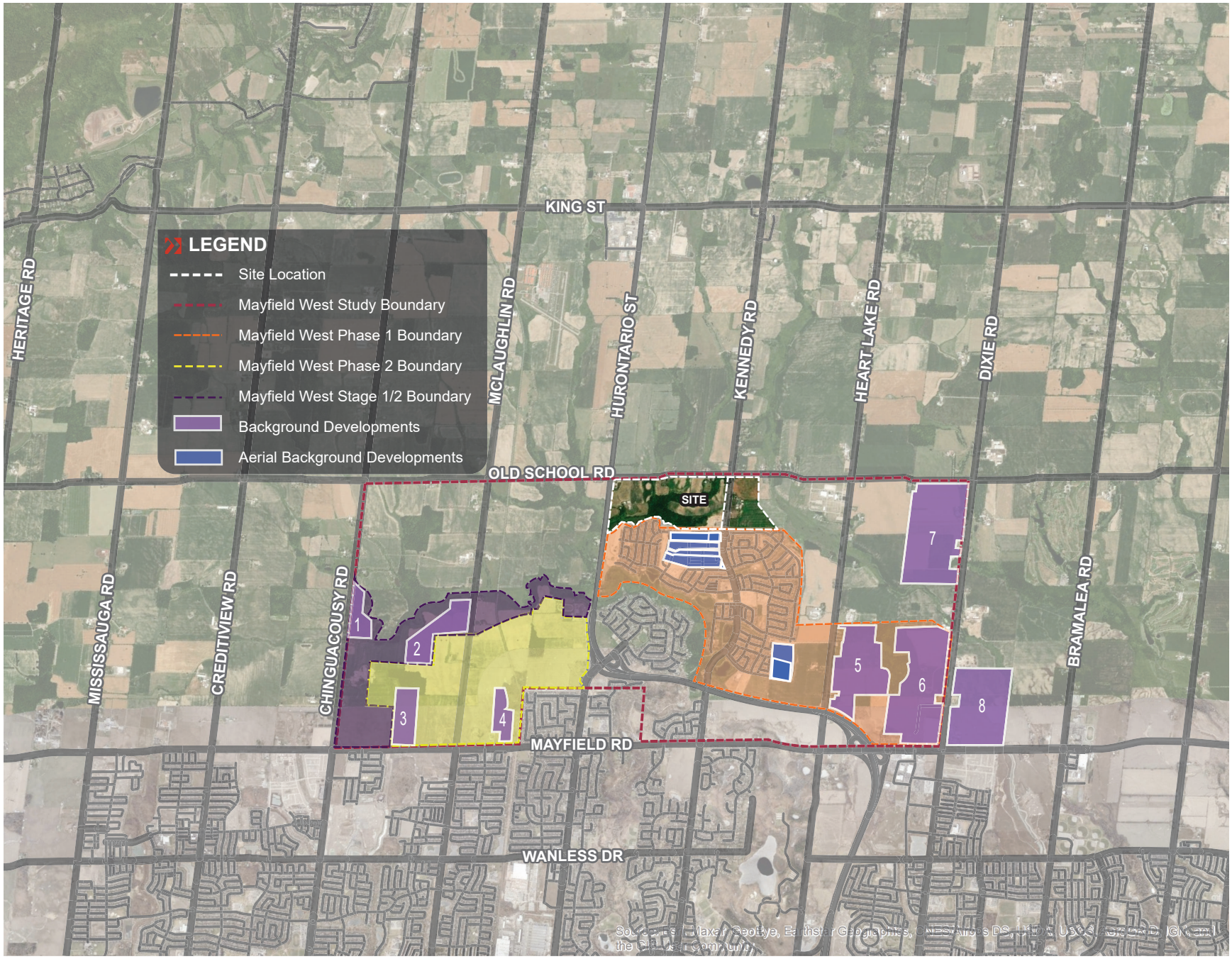
Location: Kennedy Road at Dougall Avenue

Phase #	Direction	Vehicle Minimum (sec.)	Pedestrian Minimum (sec.)		Amber (sec.)	All Red (sec.)	TIME PERIOD (sec.) (Green+Amber+All Red)		
			WALK	FDWALK			AM SPLIT	OFF SPLIT	PM SPLIT
1	Not in Use								
2	Kennedy Road - Southbound	8.0	8.0	17.0	4.0	2.2	50.0	40.0	53.0
3	Not in Use								
4	Dougall Avenue - Westbound	8.0	8.0	20.0	4.0	2.4	40.0	40.0	37.0
5	Not in Use								
6	Kennedy Road - Northbound	8.0	8.0	17.0	4.0	2.2	50.0	40.0	53.0
7	Not in Use								
8	Dougall Avenue - Eastbound	8.0	8.0	20.0	4.0	2.4	40.0	40.0	37.0

System Control	No
Local Control	Yes
Semi-Actuated Mode	Yes

TIME (M-F)	PEAK	CYCLE LENGTH (sec.)	OFFSET (sec.)
6:00 - 9:00	**AM**	**90**	**0**
9:00 - 15:00	**OFF**	**80**	**0**
15:00 - 20:00	**PM**	**90**	**0**

APPENDIX E:
Area Background Developments


LEGEND
Site Location
Mayfield West Study Boundary
Mayfield West Phase 1 Boundary
Mayfield West Phase 2 Boundary
Mayfield West Stage 1/2 Boundary
Background Developments
Aerial Background Developments
KING ST
HERITAGE RD
MCLAUGHLIN RD
HURONTARIO ST
KENNEDY RD
HEART LAKE RD
DIXIE RD
OLD SCHOOL RD
SITE
MISSISSAUGA RD
CREDITVIEW RD
CHINGUACOUSY RD
BRAMALEA RD
1
2
3
4
5
6
7
8
MAYFIELD RD
WANLESS DR

APPENDIX F:
Transportation Tomorrow Survey (TTS) Data

Tue Dec 01 2020 14:31:45 GMT-0500 (Eastern Standard Time) - Run Time: 2785ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
Trip purpose of origin - purp_orig In H
and
Start time of trip - start_time In 630-930
and
Primary travel mode of trip - mode_prime In D
and
2006 GTA zone of origin - gta06_orig In 3007-3011

T P M U

3146

Trip 2016
Table:

	3007	3008	3009	3010	3011	3146	**Total**
PD 1 of Toronto	49	0	0	71	0	52	**120**
PD 6 of Toronto	0	22	0	0	0	0	**22**
PD 7 of Toronto	0	102	0	21	0	0	**123**
PD 8 of Toronto	0	32	0	66	0	0	**98**
PD 9 of Toronto	14	0	0	47	0	0	**61**
PD 10 of Toronto	17	0	0	53	0	0	**70**
PD 11 of Toronto	0	0	0	22	0	0	**22**
PD 12 of Toronto	0	45	0	0	0	0	**45**
Richmond Hill	0	22	0	0	0	14	**22**
Markham	0	0	0	16	0	0	**16**
Vaughan	10	4	21	35	19	19	**89**
Caledon	63	89	0	406	55	0	**613**
Brampton	321	198	21	916	181	200	**1637**
Mississauga	151	74	0	379	25	87	**629**
Halton Hills	31	0	0	0	0	0	**31**
Milton	11	0	0	0	0	0	**11**
Burlington	0	9	0	0	0	0	**9**
Hamilton	17	0	0	0	0	0	**17**
Cambridge	17	0	0	0	0	0	**17**
City of Guelph	17	0	0	0	0	0	**17**
Orangeville	22	0	0	24	0	12	**46**
Total	**740**	**597**	**42**	**2056**	**280**	**384**	**3715**

Tue Dec 01 2020 14:35:19 GMT-0500 (Eastern Standard Time) - Run Time: 2282ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
Trip purpose of origin - purp_orig In H
and
Start time of trip - start_time In 630-930
and
Primary travel mode of trip - mode_prime In D
and
2006 GTA zone of origin - gta06_orig In 3007-3011

T P M U

3146

Trip 2016
Table:

	3007	3008	3009	3010	3011	3146	**Total**
PD 1 of Toronto	4	0	0	4	0	1	**8**
PD 6 of Toronto	0	1	0	0	0	0	**1**
PD 7 of Toronto	0	2	0	1	0	0	**3**
PD 8 of Toronto	0	3	0	4	0	0	**7**
PD 9 of Toronto	2	0	0	4	0	0	**6**
PD 10 of Toronto	1	0	0	2	0	0	**3**
PD 11 of Toronto	0	0	0	1	0	0	**1**
PD 12 of Toronto	0	1	0	0	0	0	**1**
Richmond Hill	0	1	0	0	0	1	**1**
Markham	0	0	0	1	0	0	**1**
Vaughan	1	1	1	3	1	1	**7**
Caledon	6	7	0	26	2	0	**41**
Brampton	23	10	1	49	8	7	**91**
Mississauga	10	5	0	20	2	4	**37**
Halton Hills	2	0	0	0	0	0	**2**
Milton	1	0	0	0	0	0	**1**
Burlington	0	1	0	0	0	0	**1**
Hamilton	1	0	0	0	0	0	**1**
Cambridge	1	0	0	0	0	0	**1**
City of Guelph	1	0	0	0	0	0	**1**
Orangeville	1	0	0	2	0	1	**3**
Total	**54**	**32**	**2**	**117**	**13**	**15**	**218**

Tue Dec 01 2020 14:32:28 GMT-0500 (Eastern Standard Time) - Run Time: 2136ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
Trip purpose of origin - purp_orig In H
and
Start time of trip - start_time In 630-930
and
Primary travel mode of trip - mode_prime In D
and
2006 GTA zone of origin - gta06_orig In 3007-3011
and
Planning district of destination - pd_dest In 34

T P M U

3146

Trip 2016
Table:

	3007	3008	3010	3011	**Total**
3006	0	23	0	0	**23**
3010	0	20	94	0	**114**
3012	0	0	137	0	**137**
3014	35	45	135	4	**219**
3151	12	0	0	0	**12**
3191	0	0	16	0	**16**
3194	0	0	26	51	**77**
3197	16	0	0	0	**16**
Total	**63**	**88**	**408**	**55**	**614**

Tue Dec 01 2020 14:34:34 GMT-0500 (Eastern Standard Time) - Run Time: 2584ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
Trip purpose of destination - purp_dest In H
and
Start time of trip - start_time In 1600-1900
and
Primary travel mode of trip - mode_prime In D | T P M U
and
2006 GTA zone of destination - gta06_dest In 3007-3011 | 3146

Trip 2016
Table:

	3007	3008	3010	3011	3146	Total
PD 1 of Toronto	20	0	86	0	52	158
PD 5 of Toronto	0	18	0	0	0	18
PD 7 of Toronto	0	102	21	0	0	123
PD 8 of Toronto	0	34	66	0	46	146
PD 9 of Toronto	6	0	47	0	0	53
PD 10 of Toronto	17	0	53	0	0	70
PD 13 of Toronto	0	0	0	0	11	11
Newmarket	0	0	23	0	0	23
Aurora	11	0	0	0	0	11
Richmond Hill	0	22	16	0	0	38
Markham	0	0	16	0	0	16
King	10	0	0	0	0	10
Vaughan	16	96	60	19	19	210
Caledon	12	52	103	51	0	218
Brampton	364	256	966	125	205	1916
Mississauga	180	52	306	25	87	650
Halton Hills	47	0	0	0	0	47
Oakville	12	0	18	0	0	30
Burlington	0	9	0	0	0	9
City of Guelph	17	0	0	0	0	17
Orangeville	0	0	24	0	0	24
Total	**712**	**641**	**1805**	**220**	**420**	**3798**

Tue Dec 01 2020 14:34:28 GMT-0500 (Eastern Standard Time) - Run Time: 2397ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
Trip purpose of destination - purp_dest In H
and
Start time of trip - start_time In 1600-1900
and
Primary travel mode of trip - mode_prime In D | T P M U
and
2006 GTA zone of destination - gta06_dest In 3007-3011 | 3146

Trip 2016
Table:

	3007	3008	3010	3011	3146	Total
PD 1 of Toronto	3	0	5	0	1	9
PD 5 of Toronto	0	1	0	0	0	1
PD 7 of Toronto	0	2	1	0	0	3
PD 8 of Toronto	0	2	4	0	1	7
PD 9 of Toronto	1	0	4	0	0	5
PD 10 of Toronto	1	0	2	0	0	3
PD 13 of Toronto	0	0	0	0	1	1
Newmarket	0	0	1	0	0	1
Aurora	1	0	0	0	0	1
Richmond Hill	0	1	1	0	0	2
Markham	0	0	1	0	0	1
King	1	0	0	0	0	1
Vaughan	2	2	5	1	1	11
Caledon	1	4	6	1	0	12
Brampton	23	14	56	7	6	106
Mississauga	9	4	17	2	4	36
Halton Hills	3	0	0	0	0	3
Oakville	1	0	1	0	0	2
Burlington	0	1	0	0	0	1
City of Guelph	1	0	0	0	0	1
Orangeville	0	0	2	0	0	2
Total	**47**	**31**	**106**	**11**	**14**	**209**

Tue Dec 01 2020 14:33:22 GMT-0500 (Eastern Standard Time) - Run Time: 2123ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
Trip purpose of destination - purp_dest In H
and
Start time of trip - start_time In 1600-1900
and
Primary travel mode of trip - mode_prime In D | T P M U
and
2006 GTA zone of destination - gta06_dest In 3007-3011 | 3146
and
Planning district of origin - pd_orig In 34

Trip 2016
Table:

	3007	3008	3010	3011	Total
3006	0	23	0	0	23
3010	0	10	0	0	10
3012	0	19	0	0	19
3014	0	0	80	0	80
3151	12	0	0	0	12
3190	0	0	23	0	23
3194	0	0	0	51	51
Total	**12**	**52**	**103**	**51**	**218**

PM IN without GTA West

Origin	Destination						Total	% Total	Route Selection									Trip Distribution								
	3007	3008	3009	3010	3011	3146			urontario St	Hurontario St S	Kennedy Rd N	Kennedy Rd S	Heartlake Rd N	Heartlake Rd S	Old School Rd E	Old School Rd W	Total	Hurontario St N	Hurontario St S	Kennedy Rd N	Kennedy Rd S	Heartlake Rd N	Heartlake Rd S	Old School Rd E	Old School Rd W	Total
PD 1 of Toronto	20	0	0	86	0	52	158	4%		80%				5%	15%		100%	0.0%	3.3%	0.0%	0.0%	0.0%	0.2%	0.6%	0.0%	4%
PD 5 of Toronto	0	18	0	0	0	0	18	0%		80%				5%	15%		100%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0%
PD 6 of Toronto	0	0	0	0	0	0	0	0%		80%				5%	15%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
PD 7 of Toronto	0	102	0	21	0	0	123	3%		70%		5%		5%	20%		100%	0.0%	2.3%	0.0%	0.2%	0.0%	0.2%	0.6%	0.0%	3%
PD 8 of Toronto	0	34	0	66	0	46	146	4%		70%		5%		5%	20%		100%	0.0%	2.7%	0.0%	0.2%	0.0%	0.2%	0.8%	0.0%	4%
PD 9 of Toronto	6	0	0	47	0	0	53	1%		70%		5%		5%	20%		100%	0.0%	1.0%	0.0%	0.1%	0.0%	0.1%	0.3%	0.0%	1%
PD 10 of Toronto	17	0	0	53	0	0	70	2%		70%		5%		5%	20%		100%	0.0%	1.3%	0.0%	0.1%	0.0%	0.1%	0.4%	0.0%	2%
PD 11 of Toronto	0	0	0	0	0	0	0	0%		70%		5%		5%	20%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
PD 12 of Toronto	0	0	0	0	0	0	0	0%		80%				5%	15%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
PD 13 of Toronto	0	0	0	0	0	11	11	0%		80%				5%	15%		100%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Newmarket	0	0	0	23	0	0	23	1%	10%	35%	5%		5%	5%	40%		100%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	1%
Aurora	11	0	0	0	0	0	11	0%	10%	35%	5%		5%	5%	40%		100%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0%
Richmond Hill	0	22	0	16	0	0	38	1%		50%		5%		5%	40%		100%	0.0%	0.5%	0.0%	0.0%	0.0%	0.1%	0.4%	0.0%	1%
Markham	0	0	0	16	0	0	16	0%		70%		5%		5%	20%		100%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0%
King	10	0	0	0	0	0	10	0%	10%	30%	5%		5%	5%	45%		100%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0%
Vaughan	16	96	0	60	19	19	210	6%		45%		5%		5%	45%		100%	0.0%	2.5%	0.0%	0.3%	0.0%	0.3%	2.5%	0.0%	6%
Caledon	12	52	0	103	51	0	218	6%									0%									0%
3006	0	23	0	0	0	0	23	1%		50%						50%	100%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1%
3010	0	10	0	0	0	0	10	0%				80%		20%			100%	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%	0%
3012	0	19	0	0	0	0	19	1%						10%	90%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.5%	0.0%	1%
3014	0	0	0	80	0	0	80	2%				10%		10%	80%		100%	0.0%	0.0%	0.0%	0.2%	0.0%	0.2%	1.7%	0.0%	2%
3151	12	0	0	0	0	0	12	0%	10%		20%		20%		50%		100%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.2%	0.0%	0%
3190	0	0	0	23	0	0	23	1%							100%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	1%
3191	0	0	0	0	0	0	0	0%							100%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
3194	0	0	0	0	51	0	51	1%			40%		10%		50%		100%	0.0%	0.0%	0.5%	0.0%	0.1%	0.0%	0.7%	0.0%	1%
3197	0	0	0	0	0	0	0	0%	5%		10%		10%		75%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Brampton	364	256	0	966	125	205	1916	50%		35%		20%		20%	15%	10%	100%	0.0%	17.7%	0.0%	10.1%	0.0%	10.1%	7.6%	5.0%	50%
Mississauga	180	52	0	306	25	87	650	17%		60%		10%		15%	10%	5%	100%	0.0%	10.3%	0.0%	1.7%	0.0%	2.6%	1.7%	0.9%	17%
Halton Hills	47	0	0	0	0	0	47	1%	15%	10%						75%	100%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	1%
Milton	0	0	0	0	0	0	0	0%		80%						20%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Oakville	12	0	0	18	0	0	30	1%		80%						20%	100%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	1%
Burlington	0	9	0	0	0	0	9	0%		90%						10%	100%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Hamilton	0	0	0	0	0	0	0	0%		100%							100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Cambridge	0	0	0	0	0	0	0	0%		85%						15%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
City of Guelph	17	0	0	0	0	0	17	0%	35%							65%	100%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0%
Orangeville	0	0	0	24	0	0	24	1%	35%		30%		30%		5%		100%	0.2%	0.0%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	1%
Trips Total							**3798**	**100%**									**Total**	**0.7%**	**44.0%**	**0.8%**	**13.1%**	**0.4%**	**14.1%**	**19.1%**	**7.6%**	100%
																	Round	**0%**	**45%**	**0%**	**15%**	**0%**	**15%**	**20%**	**10%**	105%

AM OUT without GTA West

Destination	Origin						Total	% Total	Route Selection									Trip Distribution								
	3007	3008	3009	3010	3011	3146			urontario St	Hurontario St S	Kennedy Rd N	Kennedy Rd S	Heartlake Rd N	Heartlake Rd S	Old School Rd E	Old School Rd W	Total	Hurontario St N	Hurontario St S	Kennedy Rd N	Kennedy Rd S	Heartlake Rd N	Heartlake Rd S	Old School Rd E	Old School Rd W	Total
PD 1 of Toronto	49	0	0	71	0	52	172	4%		80%				5%	15%		100%	0.0%	3.4%	0.0%	0.0%	0.0%	0.2%	0.6%	0.0%	4%
PD 5 of Toronto	0	0	0	0	0	0	0	0%		80%				5%	15%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
PD 6 of Toronto	0	22	0	0	0	0	22	1%		80%				5%	15%		100%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	1%
PD 7 of Toronto	0	102	0	21	0	0	123	3%		70%		5%		5%	20%		100%	0.0%	2.1%	0.0%	0.2%	0.0%	0.2%	0.6%	0.0%	3%
PD 8 of Toronto	0	32	0	66	0	0	98	2%		70%		5%		5%	20%		100%	0.0%	1.7%	0.0%	0.1%	0.0%	0.1%	0.5%	0.0%	2%
PD 9 of Toronto	14	0	0	47	0	0	61	1%		70%		5%		5%	20%		100%	0.0%	1.0%	0.0%	0.1%	0.0%	0.1%	0.3%	0.0%	1%
PD 10 of Toronto	17	0	0	53	0	0	70	2%		70%		5%		5%	20%		100%	0.0%	1.2%	0.0%	0.1%	0.0%	0.1%	0.3%	0.0%	2%
PD 11 of Toronto	0	0	0	22	0	0	22	1%		70%		5%		5%	20%		100%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	1%
PD 12 of Toronto	0	45	0	0	0	0	45	1%		80%				5%	15%		100%	0.0%	0.9%	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%	1%
PD 13 of Toronto	0	0	0	0	0	0	0	0%		80%				5%	15%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Newmarket	0	0	0	0	0	0	0	0%	10%	35%	5%		5%	5%	40%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Aurora	0	0	0	0	0	0	0	0%	10%	35%	5%		5%	5%	40%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Richmond Hill	0	22	0	0	0	14	36	1%		50%		5%		5%	40%		100%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	1%
Markham	0	0	0	16	0	0	16	0%		70%		5%		5%	20%		100%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0%
King	0	0	0	0	0	0	0	0%	10%	30%	5%		5%	5%	45%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Vaughan	10	4	21	35	19	19	108	3%		45%		5%		5%	45%		100%	0.0%	1.2%	0.0%	0.1%	0.0%	0.1%	1.2%	0.0%	3%
Caledon	63	89	0	406	55	0	613	15%									0%									0%
3006	0	23	0	0	0	0	23	1%		50%						50%	100%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1%
3010	0	20	0	94	0	0	114	3%				80%		20%			100%	0.0%	0.0%	0.0%	2.2%	0.0%	0.6%	0.0%	0.0%	3%
3012	0	0	0	137	0	0	137	3%						10%	90%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	3.0%	0.0%	3%
3014	35	45	0	135	4	0	219	5%				10%		10%	80%		100%	0.0%	0.0%	0.0%	0.5%	0.0%	0.5%	4.3%	0.0%	5%
3151	12	0	0	0	0	0	12	0%	10%		20%		20%		50%		100%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0%
3190	0	0	0	0	0	0	0	0%							100%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
3191	0	0	0	16	0	0	16	0%							100%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0%
3194	0	0	0	26	51	0	77	2%			40%		10%		50%		100%	0.0%	0.0%	0.8%	0.0%	0.2%	0.0%	0.9%	0.0%	2%
3197	16	0	0	0	0	0	16	0%	5%		10%		10%		75%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0%
Brampton	321	198	21	916	181	200	1837	45%		35%		20%		20%	15%	10%	100%	0.0%	15.7%	0.0%	9.0%	0.0%	9.0%	6.7%	4.5%	45%
Mississauga	151	74	0	379	25	87	716	17%		60%		10%		15%	10%	5%	100%	0.0%	10.5%	0.0%	1.7%	0.0%	2.6%	1.7%	0.9%	17%
Halton Hills	31	0	0	0	0	0	31	1%	15%	10%						75%	100%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	1%
Milton	11	0	0	0	0	0	11	0%		80%						20%	100%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0%
Oakville	0	0	0	0	0	0	0	0%		80%						20%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Burlington	0	9	0	0	0	0	9	0%		90%						10%	100%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Hamilton	17	0	0	0	0	0	17	0%		100%							100%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Cambridge	17	0	0	0	0	0	17	0%		85%						15%	100%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0%
City of Guelph	17	0	0	0	0	0	17	0%	35%							65%	100%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0%
Orangeville	22	0	0	24	0	12	58	1%	35%		30%		30%		5%		100%	0.5%	0.0%	0.4%	0.0%	0.4%	0.0%	0.1%	0.0%	1%
Trips Total							4100	100%									**Total**	0.8%	40.6%	1.3%	14.1%	0.7%	13.9%	21.9%	6.6%	100%
																	Round	0%	40%	0%	15%	0%	15%	20%	5%	95%

PM IN with GTA West

Origin	Destination						Total	% Total	Route Selection									Trip Distribution								
	3007	3008	3009	3010	3011	3146			urontario St	Hurontario St S	Kennedy Rd N	Kennedy Rd S	Heartlake Rd N	Heartlake Rd S	Old School Rd E	Old School Rd W	Total	Hurontario St N	Hurontario St S	Kennedy Rd N	Kennedy Rd S	Heartlake Rd N	Heartlake Rd S	Old School Rd E	Old School Rd W	Total
PD 1 of Toronto	20	0	0	86	0	52	158	4%		80%				5%	15%		100%	0.0%	3.3%	0.0%	0.0%	0.0%	0.2%	0.6%	0.0%	4%
PD 5 of Toronto	0	18	0	0	0	0	18	0%		80%				5%	15%		100%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0%
PD 6 of Toronto	0	0	0	0	0	0	0	0%		80%				5%	15%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
PD 7 of Toronto	0	102	0	21	0	0	123	3%		70%		5%		5%	20%		100%	0.0%	2.3%	0.0%	0.2%	0.0%	0.2%	0.6%	0.0%	3%
PD 8 of Toronto	0	34	0	66	0	46	146	4%		70%		5%		5%	20%		100%	0.0%	2.7%	0.0%	0.2%	0.0%	0.2%	0.8%	0.0%	4%
PD 9 of Toronto	6	0	0	47	0	0	53	1%		70%		5%		5%	20%		100%	0.0%	1.0%	0.0%	0.1%	0.0%	0.1%	0.3%	0.0%	1%
PD 10 of Toronto	17	0	0	53	0	0	70	2%		70%		5%		5%	20%		100%	0.0%	1.3%	0.0%	0.1%	0.0%	0.1%	0.4%	0.0%	2%
PD 11 of Toronto	0	0	0	0	0	0	0	0%		70%		5%		5%	20%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
PD 12 of Toronto	0	0	0	0	0	0	0	0%		80%				5%	15%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
PD 13 of Toronto	0	0	0	0	0	11	11	0%		80%				5%	15%		100%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Newmarket	0	0	0	23	0	0	23	1%	25%	30%	5%		5%		35%		100%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	1%
Aurora	11	0	0	0	0	0	11	0%	25%	30%	5%		5%		35%		100%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0%
Richmond Hill	0	22	0	16	0	0	38	1%	40%	25%		5%		5%	25%		100%	0.4%	0.3%	0.0%	0.1%	0.0%	0.1%	0.3%	0.0%	1%
Markham	0	0	0	16	0	0	16	0%	40%	25%		5%		5%	25%		100%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0%
King	10	0	0	0	0	0	10	0%	35%	15%	5%		5%	5%	35%		100%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0%
Vaughan	16	96	0	60	19	19	210	6%	40%	25%		5%		5%	25%		100%	2.2%	1.4%	0.0%	0.3%	0.0%	0.3%	1.4%	0.0%	6%
Caledon	12	52	0	103	51	0	218	6%									0%									0%
3006	0	23	0	0	0	0	23	1%		50%						50%	100%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1%
3010	0	10	0	0	0	0	10	0%				80%			20%		100%	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%	0%
3012	0	19	0	0	0	0	19	1%						10%	90%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.5%	0.0%	1%
3014	0	0	0	80	0	0	80	2%				10%		10%	80%		100%	0.0%	0.0%	0.0%	0.2%	0.0%	0.2%	1.7%	0.0%	2%
3151	12	0	0	0	0	0	12	0%	10%		20%		20%		50%		100%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.2%	0.0%	0%
3190	0	0	0	23	0	0	23	1%	20%						80%		100%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	1%
3191	0	0	0	0	0	0	0	0%	20%						80%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
3194	0	0	0	0	51	0	51	1%	15%		10%		10%		65%		100%	0.2%	0.0%	0.1%	0.0%	0.1%	0.0%	0.9%	0.0%	1%
3197	0	0	0	0	0	0	0	0%	15%		10%		10%		65%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Brampton	364	256	0	966	125	205	1916	50%	20%	25%		20%		15%	15%	5%	100%	10.1%	12.6%	0.0%	10.1%	0.0%	7.6%	7.6%	2.5%	50%
Mississauga	180	52	0	306	25	87	650	17%	35%	40%		5%		10%	5%	5%	100%	6.0%	6.8%	0.0%	0.9%	0.0%	1.7%	0.9%	0.9%	17%
Halton Hills	47	0	0	0	0	0	47	1%	20%	10%						70%	100%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	1%
Milton	0	0	0	0	0	0	0	0%	15%	65%						20%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Oakville	12	0	0	18	0	0	30	1%	25%	60%						15%	100%	0.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	1%
Burlington	0	9	0	0	0	0	9	0%	30%	60%						10%	100%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Hamilton	0	0	0	0	0	0	0	0%	35%	65%							100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Cambridge	0	0	0	0	0	0	0	0%	5%	80%						15%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
City of Guelph	17	0	0	0	0	0	17	0%	35%							65%	100%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0%
Orangeville	0	0	0	24	0	0	24	1%	35%		30%		30%		5%		100%	0.2%	0.0%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	1%
Trips Total							3798	100%									**Total**	20.4%	33.7%	0.4%	12.2%	0.4%	10.7%	17.1%	5.0%	100%
																	Round	20%	35%	0%	10%	0%	10%	15%	5%	95%

AM OUT with GTA West

Destination	Origin						Total	% Total	Route Selection									Trip Distribution								
	3007	3008	3009	3010	3011	3146			urontario St	Hurontario St S	Kennedy Rd N	Kennedy Rd S	Heartlake Rd N	Heartlake Rd S	Old School Rd E	Old School Rd W	Total	Hurontario St N	Hurontario St S	Kennedy Rd N	Kennedy Rd S	Heartlake Rd N	Heartlake Rd S	Old School Rd E	Old School Rd W	Total
PD 1 of Toronto	49	0	0	71	0	52	172	4%		80%				5%	15%		100%	0.0%	3.4%	0.0%	0.0%	0.0%	0.2%	0.6%	0.0%	4%
PD 5 of Toronto	0	0	0	0	0	0	0	0%		80%				5%	15%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
PD 6 of Toronto	0	22	0	0	0	0	22	1%		80%				5%	15%		100%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	1%
PD 7 of Toronto	0	102	0	21	0	0	123	3%		70%		5%		5%	20%		100%	0.0%	2.1%	0.0%	0.2%	0.0%	0.2%	0.6%	0.0%	3%
PD 8 of Toronto	0	32	0	66	0	0	98	2%		70%		5%		5%	20%		100%	0.0%	1.7%	0.0%	0.1%	0.0%	0.1%	0.5%	0.0%	2%
PD 9 of Toronto	14	0	0	47	0	0	61	1%		70%		5%		5%	20%		100%	0.0%	1.0%	0.0%	0.1%	0.0%	0.1%	0.3%	0.0%	1%
PD 10 of Toronto	17	0	0	53	0	0	70	2%		70%		5%		5%	20%		100%	0.0%	1.2%	0.0%	0.1%	0.0%	0.1%	0.3%	0.0%	2%
PD 11 of Toronto	0	0	0	22	0	0	22	1%		70%		5%		5%	20%		100%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	1%
PD 12 of Toronto	0	45	0	0	0	0	45	1%		80%				5%	15%		100%	0.0%	0.9%	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%	1%
PD 13 of Toronto	0	0	0	0	0	0	0	0%		80%				5%	15%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Newmarket	0	0	0	0	0	0	0	0%	25%	30%	5%		5%		35%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Aurora	0	0	0	0	0	0	0	0%	25%	30%	5%		5%		35%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Richmond Hill	0	22	0	0	0	14	36	1%	40%	25%		5%		5%	25%		100%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	1%
Markham	0	0	0	16	0	0	16	0%	40%	25%		5%		5%	25%		100%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0%
King	0	0	0	0	0	0	0	0%	35%	15%	5%		5%	5%	35%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Vaughan	10	4	21	35	19	19	108	3%	40%	25%		5%		5%	25%		100%	1.1%	0.7%	0.0%	0.1%	0.0%	0.1%	0.7%	0.0%	3%
Caledon	63	89	0	406	55	0	613	15%									0%									0%
3006	0	23	0	0	0	0	23	1%		50%						50%	100%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1%
3010	0	20	0	94	0	0	114	3%				80%		20%			100%	0.0%	0.0%	0.0%	2.2%	0.0%	0.6%	0.0%	0.0%	3%
3012	0	0	0	137	0	0	137	3%						10%	90%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	3.0%	0.0%	3%
3014	35	45	0	135	4	0	219	5%				10%		10%	80%		100%	0.0%	0.0%	0.0%	0.5%	0.0%	0.5%	4.3%	0.0%	5%
3151	12	0	0	0	0	0	12	0%	10%		20%		20%		50%		100%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0%
3190	0	0	0	0	0	0	0	0%	20%						80%		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
3191	0	0	0	16	0	0	16	0%	20%						80%		100%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0%
3194	0	0	0	26	51	0	77	2%	15%		10%		10%		65%		100%	0.3%	0.0%	0.2%	0.0%	0.2%	0.0%	1.2%	0.0%	2%
3197	16	0	0	0	0	0	16	0%	15%		10%		10%		65%		100%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0%
Brampton	321	198	21	916	181	200	1837	45%	20%	25%		20%		15%	15%	5%	100%	9.0%	11.2%	0.0%	9.0%	0.0%	6.7%	6.7%	2.2%	45%
Mississauga	151	74	0	379	25	87	716	17%	35%	40%		5%		10%	5%	5%	100%	6.1%	7.0%	0.0%	0.9%	0.0%	1.7%	0.9%	0.9%	17%
Halton Hills	31	0	0	0	0	0	31	1%	20%	10%						70%	100%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	1%
Milton	11	0	0	0	0	0	11	0%	15%	65%						20%	100%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0%
Oakville	0	0	0	0	0	0	0	0%	25%	60%						15%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Burlington	0	9	0	0	0	0	9	0%	30%	60%						10%	100%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Hamilton	17	0	0	0	0	0	17	0%	35%	65%							100%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Cambridge	17	0	0	0	0	0	17	0%	5%	80%						15%	100%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0%
City of Guelph	17	0	0	0	0	0	17	0%	35%							65%	100%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0%
Orangeville	22	0	0	24	0	12	58	1%	35%		30%		30%		5%		100%	0.5%	0.0%	0.4%	0.0%	0.4%	0.0%	0.1%	0.0%	1%
Trips Total							4100	100%									Total	18.1%	31.5%	0.7%	13.2%	0.7%	10.8%	20.6%	4.3%	100%
																	Round	20%	30%	0%	15%	0%	10%	20%	5%	100%

APPENDIX G:
Synchro Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	85	85	35	50	15	25	800	30	30	2070	20
Future Volume (vph)	10	85	85	35	50	15	25	800	30	30	2070	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.96		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1692		1566	1763		1716	3032		1384	3506	
Flt Permitted	0.71	1.00		0.64	1.00		0.09	1.00		0.32	1.00	
Satd. Flow (perm)	1339	1692		1063	1763		156	3032		461	3506	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	89	89	36	52	16	26	833	31	31	2156	21
RTOR Reduction (vph)	0	4	0	0	13	0	0	3	0	0	1	0
Lane Group Flow (vph)	10	174	0	36	55	0	26	861	0	31	2176	0
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.3	13.3		13.3	13.3		46.2	46.2		46.2	46.2	
Effective Green, g (s)	13.3	13.3		13.3	13.3		46.2	46.2		46.2	46.2	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.62	0.62		0.62	0.62	
Clearance Time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	237	300		188	312		96	1867		283	2159	
v/s Ratio Prot		c0.10			0.03			0.28			c0.62	
v/s Ratio Perm	0.01			0.03			0.17			0.07		
v/c Ratio	0.04	0.58		0.19	0.18		0.27	0.46		0.11	1.01	
Uniform Delay, d1	25.6	28.3		26.3	26.2		6.6	7.7		5.9	14.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.7		0.5	0.3		6.8	0.8		0.8	21.3	
Delay (s)	25.6	31.0		26.8	26.5		13.5	8.5		6.7	35.7	
Level of Service	C	C		C	C		B	A		A	D	
Approach Delay (s)		30.7			26.6			8.7			35.3	
Approach LOS		C			C			A			D	

Intersection Summary				
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.91			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	94.9%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	85	35	50	25	800	30	2070
Future Volume (vph)	10	85	35	50	25	800	30	2070
Lane Group Flow (vph)	10	178	36	68	26	864	31	2177
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	42.4	42.4	41.1	41.1	41.1	41.1
Total Split (s)	25.0	25.0	25.0	25.0	50.0	50.0	50.0	50.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%
Yellow Time (s)	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	8.1	8.1	8.1	8.1
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.04	0.59	0.19	0.21	0.27	0.46	0.11	1.01
Control Delay	24.0	35.2	27.4	21.8	17.1	9.1	8.3	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	35.2	27.4	21.8	17.1	9.1	8.3	37.9
Queue Length 50th (m)	1.3	24.0	4.6	6.7	1.6	31.3	1.7	150.5
Queue Length 95th (m)	4.8	40.4	11.8	16.1	8.9	52.6	6.3	#244.3
Internal Link Dist (m)		316.5		178.0		1309.2		1382.3
Turn Bay Length (m)	75.0		75.0		50.0		50.0	
Base Capacity (vph)	314	400	249	426	96	1872	283	2163
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	0.03	0.45	0.14	0.16	0.27	0.46	0.11	1.01

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Old School Rd

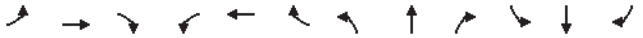
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	80	55	50	35	0	55	40	100	15	75	10
Future Volume (vph)	10	80	55	50	35	0	55	40	100	15	75	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			1.00			0.93			0.99	
Flt Protected		1.00			0.97			0.99			0.99	
Satd. Flow (prot)		1696			1722			1640			1762	
Flt Permitted		0.98			0.65			0.90			0.95	
Satd. Flow (perm)		1663			1155			1488			1688	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	11	92	63	57	40	0	63	46	115	17	86	11
RTOR Reduction (vph)	0	24	0	0	0	0	0	37	0	0	4	0
Lane Group Flow (vph)	0	142	0	0	97	0	0	187	0	0	110	0
Heavy Vehicles (%)	25%	1%	13%	10%	6%	0%	14%	10%	3%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.0			17.0			61.0			61.0	
Effective Green, g (s)		17.0			17.0			61.0			61.0	
Actuated g/C Ratio		0.19			0.19			0.68			0.68	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		314			218			1008			1144	
v/s Ratio Prot												
v/s Ratio Perm		c0.09			0.08			c0.13			0.07	
v/c Ratio		0.45			0.44			0.19			0.10	
Uniform Delay, d1		32.4			32.3			5.3			5.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		4.6			6.5			0.4			0.2	
Delay (s)		37.0			38.8			5.8			5.2	
Level of Service		D			D			A			A	
Approach Delay (s)		37.0			38.8			5.8			5.2	
Approach LOS		D			D			A			A	

Intersection Summary				
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.24			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	49.1%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	80	50	35	55	40	15	75
Future Volume (vph)	10	80	50	35	55	40	15	75
Lane Group Flow (vph)	0	166	0	97	0	224	0	114
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	23.0	23.0	23.0	23.0	67.0	67.0	67.0	67.0
Total Split (%)	25.6%	25.6%	25.6%	25.6%	74.4%	74.4%	74.4%	74.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.49		0.44		0.21		0.10
Control Delay		32.2		39.8		3.1		4.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		32.2		39.8		3.1		4.8
Queue Length 50th (m)		22.1		15.8		6.0		5.6
Queue Length 95th (m)		40.3		30.3		13.0		10.6
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)								
Base Capacity (vph)		338		218		1046		1148
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.49		0.44		0.21		0.10

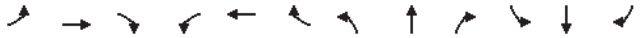
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed

Splits and Phases: 2: Kennedy Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	0	0	0	15	25	0	0	195	45	5	175	0
Future Volume (veh/h)	0	0	0	15	25	0	0	195	45	5	175	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	16	27	0	0	212	49	5	190	0
Approach Volume (veh/h)		0			43			261			195	
Crossing Volume (veh/h)		211			212			5			43	
High Capacity (veh/h)		1174			1173			1379			1339	
High v/c (veh/h)		0.00			0.04			0.19			0.15	
Low Capacity (veh/h)		970			969			1156			1120	
Low v/c (veh/h)		0.00			0.04			0.23			0.17	

Intersection Summary												
Maximum v/c High			0.19									
Maximum v/c Low			0.23									
Intersection Capacity Utilization			23.2%		ICU Level of Service				A			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	180	5	10	60	5	5	30	10	5	40	20
Future Volume (vph)	10	180	5	10	60	5	5	30	10	5	40	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	212	6	12	71	6	6	35	12	6	47	24

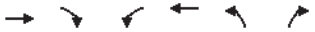
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	230	89	53	77
Volume Left (vph)	12	12	6	6
Volume Right (vph)	6	6	12	24
Hadj (s)	0.05	0.14	0.13	-0.10
Departure Headway (s)	4.4	4.6	4.9	4.6
Degree Utilization, x	0.28	0.11	0.07	0.10
Capacity (veh/h)	797	740	685	719
Control Delay (s)	9.1	8.2	8.3	8.1
Approach Delay (s)	9.1	8.2	8.3	8.1
Approach LOS	A	A	A	A

Intersection Summary												
Delay			8.6									
Level of Service			A									
Intersection Capacity Utilization			22.9%		ICU Level of Service				A			
Analysis Period (min)			15									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	15	15	40	45	5	5	225	10	5	175	10
Future Volume (Veh/h)	10	15	15	40	45	5	5	225	10	5	175	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	10	16	16	42	47	5	5	234	10	5	182	10
Pedestrians					3			6				
Lane Width (m)					3.6			3.6				
Walking Speed (m/s)					1.2			1.2				
Percent Blockage					0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	352	454	102	383	454	125	192			247		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	352	454	102	383	454	125	192			247		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	97	98	92	91	99	100			100		
cM capacity (veh/h)	534	500	935	524	500	906	1357			1327		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	42	94	122	127	96	101
Volume Left	10	42	5	0	5	0
Volume Right	16	5	0	10	0	10
cSH	619	523	1357	1700	1327	1700
Volume to Capacity	0.07	0.18	0.00	0.07	0.00	0.06
Queue Length 95th (m)	1.7	5.2	0.1	0.0	0.1	0.0
Control Delay (s)	11.2	13.4	0.3	0.0	0.4	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	11.2	13.4	0.2		0.2	
Approach LOS	B	B				

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	25.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	50	0	0	40	0	0
Future Volume (Veh/h)	50	0	0	40	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	0	0	43	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			54		97	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			54		97	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1551		902	1013

Direction, Lane #	EB 1	WB 1
Volume Total	54	43
Volume Left	0	0
Volume Right	0	0
cSH	1700	1551
Volume to Capacity	0.03	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			

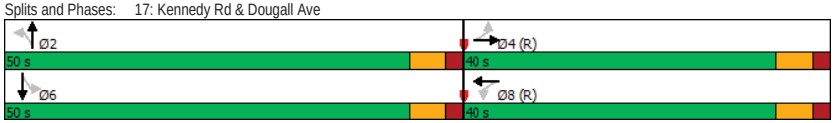
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	45	235	140	55	30	95	185	55	55	160	15
Future Volume (vph)	25	45	235	140	55	30	95	185	55	55	160	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.98			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.90			0.98			0.98			0.99	
Flt Protected		1.00			0.97			0.99			0.99	
Satd. Flow (prot)		1669			1801			3430			3518	
Flt Permitted		0.96			0.56			0.78			0.80	
Satd. Flow (perm)		1609			1049			2721			2841	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	48	250	149	59	32	101	197	59	59	170	16
RTOR Reduction (vph)	0	133	0	0	6	0	0	18	0	0	6	0
Lane Group Flow (vph)	0	192	0	0	234	0	0	339	0	0	239	0
Confl. Peds. (#/hr)	3		9	9		3	1		10	10		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.0			34.0			44.0			44.0	
Effective Green, g (s)		34.0			34.0			44.0			44.0	
Actuated g/C Ratio		0.38			0.38			0.49			0.49	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		607			396			1330			1388	
v/s Ratio Prot												
v/s Ratio Perm		0.12			c0.22			c0.12			0.08	
v/c Ratio		0.32			0.59			0.25			0.17	
Uniform Delay, d1		19.8			22.4			13.4			12.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			6.3			0.5			0.3	
Delay (s)		21.1			28.8			13.9			13.1	
Level of Service		C			C			B			B	
Approach Delay (s)		21.1			28.8			13.9			13.1	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	108.3%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	45	140	55	95	185	55	160
Future Volume (vph)	25	45	140	55	95	185	55	160
Lane Group Flow (vph)	0	325	0	240	0	357	0	245
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.0	34.0	34.0	34.0	31.0	31.0	31.0	31.0
Total Split (s)	40.0	40.0	40.0	40.0	50.0	50.0	50.0	50.0
Total Split (%)	44.4%	44.4%	44.4%	44.4%	55.6%	55.6%	55.6%	55.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.44		0.60		0.27		0.18
Control Delay		9.2		29.0		12.7		12.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		9.2		29.0		12.7		12.7
Queue Length 50th (m)		13.3		33.0		17.0		11.9
Queue Length 95th (m)		34.7		59.3		26.2		19.0
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		740		402		1347		1394
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.44		0.60		0.27		0.18

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 50 (56%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	85	20	50	90	10	85	2090	45	15	835	15
Future Volume (vph)	25	85	20	50	90	10	85	2090	45	15	835	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.98		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1792		1750	1858		1785	3531		1487	3398	
Flt Permitted	0.69	1.00		0.69	1.00		0.31	1.00		0.08	1.00	
Satd. Flow (perm)	1293	1792		1263	1858		585	3531		124	3398	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	90	21	53	96	11	90	2223	48	16	888	16
RTOR Reduction (vph)	0	13	0	0	4	0	0	2	0	0	1	0
Lane Group Flow (vph)	27	98	0	53	103	0	90	2269	0	16	903	0
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.8	8.8		8.8	8.8		50.7	50.7		50.7	50.7	
Effective Green, g (s)	8.8	8.8		8.8	8.8		50.7	50.7		50.7	50.7	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.68	0.68		0.68	0.68	
Clearance Time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	151	210		148	218		395	2386		83	2297	
v/s Ratio Prot		0.05			c0.06			c0.64			0.27	
v/s Ratio Perm	0.02			0.04			0.15			0.13		
v/c Ratio	0.18	0.47		0.36	0.47		0.23	0.95		0.19	0.39	
Uniform Delay, d1	29.8	30.9		30.5	30.9		4.7	11.0		4.5	5.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.6		1.5	1.6		1.3	10.1		5.1	0.5	
Delay (s)	30.4	32.5		32.0	32.6		6.0	21.1		9.6	5.9	
Level of Service	C	C		C	C		A	C		A	A	
Approach Delay (s)		32.1			32.4			20.5			5.9	
Approach LOS		C			C			C			A	

Intersection Summary				
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	93.0%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	85	50	90	85	2090	15	835
Future Volume (vph)	25	85	50	90	85	2090	15	835
Lane Group Flow (vph)	27	111	53	107	90	2271	16	904
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	42.4	42.4	41.1	41.1	41.1	41.1
Total Split (s)	25.0	25.0	25.0	25.0	50.0	50.0	50.0	50.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%
Yellow Time (s)	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	8.1	8.1	8.1	8.1
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.15	0.41	0.29	0.39	0.22	0.90	0.18	0.37
Control Delay	29.4	29.7	32.7	32.2	7.5	18.8	12.1	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.4	29.7	32.7	32.2	7.5	18.8	12.1	6.2
Queue Length 50th (m)	3.6	13.3	7.3	14.3	4.6	145.2	0.8	28.0
Queue Length 95th (m)	10.2	26.9	16.8	27.7	12.9	#241.1	5.2	44.4
Internal Link Dist (m)		316.5		178.0		1309.2		1382.3
Turn Bay Length (m)	75.0		75.0		50.0		50.0	
Base Capacity (vph)	303	432	296	439	418	2533	88	2436
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	0.09	0.26	0.18	0.24	0.22	0.90	0.18	0.37

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Old School Rd

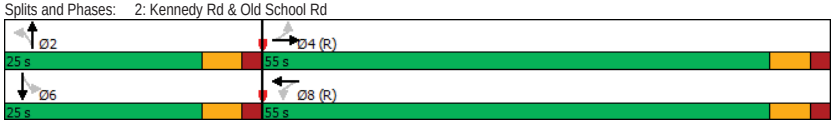
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	45	85	50	105	5	35	80	45	5	55	10
Future Volume (vph)	15	45	85	50	105	5	35	80	45	5	55	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			1.00			0.96			0.98	
Flt Protected		0.99			0.98			0.99			1.00	
Satd. Flow (prot)		1655			1859			1729			1724	
Flt Permitted		0.97			0.88			0.92			0.98	
Satd. Flow (perm)		1615			1668			1607			1692	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	46	87	51	107	5	36	82	46	5	56	10
RTOR Reduction (vph)	0	34	0	0	2	0	0	18	0	0	8	0
Lane Group Flow (vph)	0	114	0	0	161	0	0	146	0	0	63	0
Heavy Vehicles (%)	0%	11%	5%	0%	2%	0%	3%	4%	11%	0%	9%	13%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		49.0			49.0			19.0			19.0	
Effective Green, g (s)		49.0			49.0			19.0			19.0	
Actuated g/C Ratio		0.61			0.61			0.24			0.24	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		989			1021			381			401	
v/s Ratio Prot												
v/s Ratio Perm		0.07			c0.10			c0.09			0.04	
v/c Ratio		0.12			0.16			0.38			0.16	
Uniform Delay, d1		6.5			6.7			25.6			24.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.3			2.9			0.8	
Delay (s)		6.7			7.0			28.5			25.0	
Level of Service		A			A			C			C	
Approach Delay (s)		6.7			7.0			28.5			25.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	15	45	50	105	35	80	5	55
Future Volume (vph)	15	45	50	105	35	80	5	55
Lane Group Flow (vph)	0	148	0	163	0	164	0	71
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	55.0	55.0	55.0	55.0	25.0	25.0	25.0	25.0
Total Split (%)	68.8%	68.8%	68.8%	68.8%	31.3%	31.3%	31.3%	31.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.14		0.16		0.41		0.17
Control Delay		3.4		7.0		25.7		22.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		3.4		7.0		25.7		22.8
Queue Length 50th (m)		3.5		9.8		18.9		7.7
Queue Length 95th (m)		10.4		17.9		36.8		18.4
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)								
Base Capacity (vph)		1022		1023		398		409
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.14		0.16		0.41		0.17

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 60 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed

Splits and Phases: 2: Kennedy Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	0	0	0	15	35	0	0	160	10	20	170	0
Future Volume (veh/h)	0	0	0	15	35	0	0	160	10	20	170	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	16	38	0	0	174	11	22	185	0
Approach Volume (veh/h)		0			54			185			207	
Crossing Volume (veh/h)		223			174			22			54	
High Capacity (veh/h)		1163			1209			1361			1328	
High v/c (veh/h)		0.00			0.04			0.14			0.16	
Low Capacity (veh/h)		960			1001			1140			1109	
Low v/c (veh/h)		0.00			0.05			0.16			0.19	

Intersection Summary												
Maximum v/c High			0.16									
Maximum v/c Low			0.19									
Intersection Capacity Utilization			32.4%		ICU Level of Service				A			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	80	10	20	130	5	20	30	10	0	30	10
Future Volume (vph)	5	80	10	20	130	5	20	30	10	0	30	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	5	85	11	21	138	5	21	32	11	0	32	11

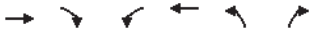
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	101	164	64	43
Volume Left (vph)	5	21	21	0
Volume Right (vph)	11	5	11	11
Hadj (s)	-0.01	0.02	-0.04	-0.10
Departure Headway (s)	4.3	4.3	4.5	4.5
Degree Utilization, x	0.12	0.20	0.08	0.05
Capacity (veh/h)	804	817	747	745
Control Delay (s)	7.9	8.3	7.9	7.7
Approach Delay (s)	7.9	8.3	7.9	7.7
Approach LOS	A	A	A	A

Intersection Summary												
Delay			8.1									
Level of Service			A									
Intersection Capacity Utilization			30.9%		ICU Level of Service				A			
Analysis Period (min)			15									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	55	10	20	30	0	15	170	50	5	170	10
Future Volume (Veh/h)	0	55	10	20	30	0	15	170	50	5	170	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	60	11	22	33	0	16	187	55	5	187	11
Pedestrians		1			13			5			1	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	346	490	105	409	468	135	199			255		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	346	490	105	409	468	135	199			255		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	87	99	95	93	100	99			100		
cM capacity (veh/h)	546	469	925	457	482	885	1384			1307		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	71	55	110	148	98	104
Volume Left	0	22	16	0	5	0
Volume Right	11	0	0	55	0	11
cSH	507	472	1384	1700	1307	1700
Volume to Capacity	0.14	0.12	0.01	0.09	0.00	0.06
Queue Length 95th (m)	3.9	3.1	0.3	0.0	0.1	0.0
Control Delay (s)	13.2	13.6	1.2	0.0	0.4	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	13.2	13.6	0.5		0.2	
Approach LOS	B	B				

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	34.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	30	0	0	50	0	0
Future Volume (Veh/h)	30	0	0	50	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	0	54	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			33		87	33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			33		87	33
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1579		914	1041

Direction, Lane #	EB 1	WB 1
Volume Total	33	54
Volume Left	0	0
Volume Right	0	0
cSH	1700	1579
Volume to Capacity	0.02	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			

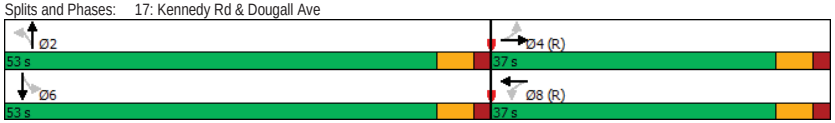
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	70	125	5	40	25	210	175	85	25	145	30
Future Volume (vph)	35	70	125	5	40	25	210	175	85	25	145	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.93			0.95			0.97			0.98	
Flt Protected		0.99			1.00			0.98			0.99	
Satd. Flow (prot)		1724			1791			3389			3458	
Flt Permitted		0.95			0.98			0.73			0.87	
Satd. Flow (perm)		1650			1760			2540			3040	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	35	71	126	5	40	25	212	177	86	25	146	30
RTOR Reduction (vph)	0	48	0	0	16	0	0	21	0	0	14	0
Lane Group Flow (vph)	0	184	0	0	54	0	0	454	0	0	187	0
Confl. Peds. (#/hr)	4		12	12		4	8		16	16		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		31.0			31.0			47.0			47.0	
Effective Green, g (s)		31.0			31.0			47.0			47.0	
Actuated g/C Ratio		0.34			0.34			0.52			0.52	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		568			606			1326			1587	
v/s Ratio Prot												
v/s Ratio Perm		c0.11			0.03			c0.18			0.06	
v/c Ratio		0.32			0.09			0.34			0.12	
Uniform Delay, d1		21.8			19.9			12.5			10.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.5			0.3			0.7			0.2	
Delay (s)		23.3			20.2			13.2			11.1	
Level of Service		C			C			B			B	
Approach Delay (s)		23.3			20.2			13.2			11.1	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.34			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	80.0%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	35	70	5	40	210	175	25	145
Future Volume (vph)	35	70	5	40	210	175	25	145
Lane Group Flow (vph)	0	232	0	70	0	475	0	201
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.0	34.0	34.0	34.0	31.0	31.0	31.0	31.0
Total Split (s)	37.0	37.0	37.0	37.0	53.0	53.0	53.0	53.0
Total Split (%)	41.1%	41.1%	41.1%	41.1%	58.9%	58.9%	58.9%	58.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.38		0.11		0.35		0.13
Control Delay		17.0		14.8		12.2		9.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		17.0		14.8		12.2		9.5
Queue Length 50th (m)		20.7		5.4		22.5		7.8
Queue Length 95th (m)		40.4		14.6		33.4		13.5
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		616		622		1347		1602
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.38		0.11		0.35		0.13

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	165	85	85	100	15	25	1385	45	30	2915	145
Future Volume (vph)	260	165	85	85	100	15	25	1385	45	30	2915	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.95		1.00	0.98		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1715		1566	1807		1716	4358		1384	5016	
Flt Permitted	0.68	1.00		0.45	1.00		0.05	1.00		0.14	1.00	
Satd. Flow (perm)	1277	1715		745	1807		99	4358		199	5016	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	271	172	89	89	104	16	26	1443	47	31	3036	151
RTOR Reduction (vph)	0	0	0	0	5	0	0	2	0	0	4	0
Lane Group Flow (vph)	271	261	0	89	115	0	26	1488	0	31	3183	0
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	31.3	31.3		31.3	31.3		73.2	73.2		73.2	73.2	
Effective Green, g (s)	31.3	31.3		31.3	31.3		73.2	73.2		73.2	73.2	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.61	0.61		0.61	0.61	
Clearance Time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	333	447		194	471		60	2658		121	3059	
v/s Ratio Prot		0.15			0.06			0.34			c0.63	
v/s Ratio Perm	c0.21			0.12			0.26			0.16		
v/c Ratio	0.81	0.58		0.46	0.24		0.43	0.56		0.26	1.04	
Uniform Delay, d1	41.6	38.7		37.2	35.0		12.4	13.9		10.8	23.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.1	1.9		1.7	0.3		21.2	0.9		5.0	28.1	
Delay (s)	55.7	40.6		39.0	35.3		33.6	14.7		15.9	51.5	
Level of Service	E	D		D	D		C	B		B	D	
Approach Delay (s)		48.3			36.8			15.0			51.2	
Approach LOS		D			D			B			D	

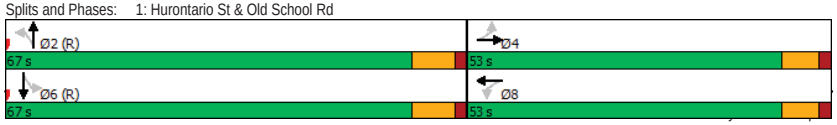
Intersection Summary				
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.97			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	101.4%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	260	165	85	100	25	1385	30	2915
Future Volume (vph)	260	165	85	100	25	1385	30	2915
Lane Group Flow (vph)	271	261	89	120	26	1490	31	3187
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	42.4	42.4	41.1	41.1	41.1	41.1
Total Split (s)	53.0	53.0	53.0	53.0	67.0	67.0	67.0	67.0
Total Split (%)	44.2%	44.2%	44.2%	44.2%	55.8%	55.8%	55.8%	55.8%
Yellow Time (s)	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	8.1	8.1	8.1	8.1
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.81	0.58	0.46	0.25	0.43	0.56	0.26	1.04
Control Delay	59.7	42.8	43.0	32.2	44.8	16.0	21.3	52.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	42.8	43.0	32.2	44.8	16.0	21.3	52.4
Queue Length 50th (m)	63.2	56.5	18.6	22.2	3.2	75.0	3.4	~313.1
Queue Length 95th (m)	85.3	74.1	31.7	33.9	#20.3	112.0	13.3	#384.2
Internal Link Dist (m)		316.5		178.0		1309.2		1382.3
Turn Bay Length (m)	75.0		75.0		50.0		50.0	
Base Capacity (vph)	485	652	283	691	60	2660	120	3063
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	0.40	0.31	0.17	0.43	0.56	0.26	1.04

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



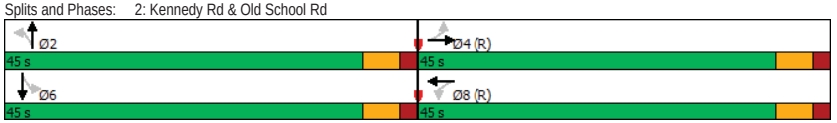
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	165	65	55	125	0	65	55	120	15	95	10
Future Volume (vph)	10	165	65	55	125	0	65	55	120	15	95	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			1.00			0.93			0.99	
Flt Protected		1.00			0.99			0.99			0.99	
Satd. Flow (prot)		1755			1765			1643			1762	
Flt Permitted		0.99			0.83			0.88			0.95	
Satd. Flow (perm)		1736			1488			1464			1682	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	11	190	75	63	144	0	75	63	138	17	109	11
RTOR Reduction (vph)	0	15	0	0	0	0	0	40	0	0	3	0
Lane Group Flow (vph)	0	261	0	0	207	0	0	236	0	0	134	0
Heavy Vehicles (%)	25%	1%	13%	10%	6%	0%	14%	10%	3%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		39.0			39.0			39.0			39.0	
Effective Green, g (s)		39.0			39.0			39.0			39.0	
Actuated g/C Ratio		0.43			0.43			0.43			0.43	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		752			644			634			728	
v/s Ratio Prot												
v/s Ratio Perm		c0.15			0.14			c0.16			0.08	
v/c Ratio		0.35			0.32			0.37			0.18	
Uniform Delay, d1		17.0			16.8			17.2			15.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			1.3			1.7			0.6	
Delay (s)		18.3			18.1			18.9			16.3	
Level of Service		B			B			B			B	
Approach Delay (s)		18.3			18.1			18.9			16.3	
Approach LOS		B			B			B			B	

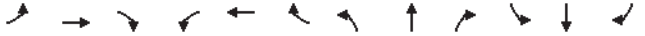
Intersection Summary				
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.36			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	58.3%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	165	55	125	65	55	15	95
Future Volume (vph)	10	165	55	125	65	55	15	95
Lane Group Flow (vph)	0	276	0	207	0	276	0	137
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.36		0.32		0.41		0.19
Control Delay		17.1		18.6		14.9		15.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		17.1		18.6		14.9		15.9
Queue Length 50th (m)		29.4		24.1		24.1		14.2
Queue Length 95th (m)		46.7		39.3		42.4		25.2
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)								
Base Capacity (vph)		766		645		674		731
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.36		0.32		0.41		0.19

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed

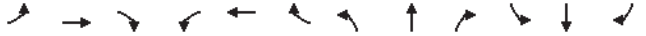
Splits and Phases: 2: Kennedy Rd & Old School Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	5	0	45	15	25	0	10	235	45	5	210	0
Future Volume (veh/h)	5	0	45	15	25	0	10	235	45	5	210	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	49	16	27	0	11	255	49	5	228	0
Approach Volume (veh/h)		54			43			315			233	
Crossing Volume (veh/h)		249			271			10			54	
High Capacity (veh/h)		1139			1120			1374			1328	
High v/c (veh/h)		0.05			0.04			0.23			0.18	
Low Capacity (veh/h)		939			921			1151			1109	
Low v/c (veh/h)		0.06			0.05			0.27			0.21	

Intersection Summary												
Maximum v/c High			0.23									
Maximum v/c Low			0.27									
Intersection Capacity Utilization			32.2%		ICU Level of Service				A			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	265	25	25	135	5	25	60	20	5	140	20
Future Volume (vph)	10	265	25	25	135	5	25	60	20	5	140	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	312	29	29	159	6	29	71	24	6	165	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	353	194	124	195
Volume Left (vph)	12	29	29	6
Volume Right (vph)	29	6	24	24
Hadj (s)	0.01	0.15	0.14	-0.01
Departure Headway (s)	5.2	5.5	5.9	5.6
Degree Utilization, x	0.51	0.30	0.20	0.30
Capacity (veh/h)	659	599	535	582
Control Delay (s)	13.4	10.9	10.4	11.0
Approach Delay (s)	13.4	10.9	10.4	11.0
Approach LOS	B	B	B	B

Intersection Summary												
Delay			11.9									
Level of Service			B									
Intersection Capacity Utilization			42.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	15	115	40	45	5	40	265	15	5	250	15
Future Volume (Veh/h)	20	15	115	40	45	5	40	265	15	5	250	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	21	16	120	42	47	5	42	276	16	5	260	16
Pedestrians					3			6				
Lane Width (m)					3.6			3.6				
Walking Speed (m/s)					1.2			1.2				
Percent Blockage					0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	528	657	144	645	657	149	276			295		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	528	657	144	645	657	149	276			295		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	96	86	86	87	99	97			100		
cM capacity (veh/h)	381	372	879	290	372	875	1262			1275		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	157	94	180	154	135	146
Volume Left	21	42	42	0	5	0
Volume Right	120	5	0	16	0	16
cSH	669	340	1262	1700	1275	1700
Volume to Capacity	0.23	0.28	0.03	0.09	0.00	0.09
Queue Length 95th (m)	7.3	8.9	0.8	0.0	0.1	0.0
Control Delay (s)	12.0	19.6	2.1	0.0	0.3	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.0	19.6	1.1		0.2	
Approach LOS	B	C				

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	39.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	50	0	0	40	0	0
Future Volume (Veh/h)	50	0	0	40	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	0	0	43	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			54		97	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			54		97	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1551		902	1013

Direction, Lane #	EB 1	WB 1
Volume Total	54	43
Volume Left	0	0
Volume Right	0	0
cSH	1700	1551
Volume to Capacity	0.03	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			

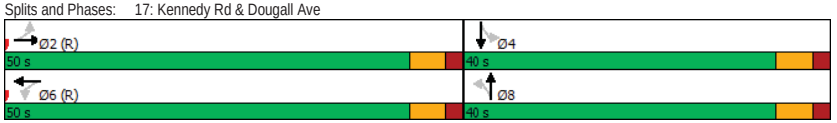
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	45	300	140	55	30	115	260	55	55	330	20
Future Volume (vph)	30	45	300	140	55	30	115	260	55	55	330	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.98			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.89			0.98			0.98			0.99	
Flt Protected		1.00			0.97			0.99			0.99	
Satd. Flow (prot)		1659			1801			3456			3552	
Flt Permitted		0.96			0.56			0.70			0.82	
Satd. Flow (perm)		1601			1046			2461			2942	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	48	319	149	59	32	122	277	59	59	351	21
RTOR Reduction (vph)	0	159	0	0	6	0	0	13	0	0	4	0
Lane Group Flow (vph)	0	240	0	0	234	0	0	445	0	0	427	0
Confl. Peds. (#/hr)	3		9	9		3	1		10	10		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		44.0			44.0			34.0			34.0	
Effective Green, g (s)		44.0			44.0			34.0			34.0	
Actuated g/C Ratio		0.49			0.49			0.38			0.38	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		782			511			929			1111	
v/s Ratio Prot												
v/s Ratio Perm		0.15			c0.22			c0.18			0.15	
v/c Ratio		0.31			0.46			0.48			0.38	
Uniform Delay, d1		13.8			15.1			21.3			20.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			2.9			1.8			1.0	
Delay (s)		14.8			18.1			23.0			21.4	
Level of Service		B			B			C			C	
Approach Delay (s)		14.8			18.1			23.0			21.4	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.47			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	110.8%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	45	140	55	115	260	55	330
Future Volume (vph)	30	45	140	55	115	260	55	330
Lane Group Flow (vph)	0	399	0	240	0	458	0	431
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	31.0	31.0	31.0	31.0	34.0	34.0	34.0	34.0
Total Split (s)	50.0	50.0	50.0	50.0	40.0	40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.42		0.46		0.49		0.39
Control Delay		4.9		18.0		22.4		21.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		4.9		18.0		22.4		21.3
Queue Length 50th (m)		8.2		26.1		31.2		29.0
Queue Length 95th (m)		25.3		47.1		45.8		41.8
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		941		518		943		1116
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.42		0.46		0.49		0.39

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	150	20	100	190	10	85	3300	75	15	1445	290
Future Volume (vph)	325	150	20	100	190	10	85	3300	75	15	1445	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.98		1.00	0.99		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1813		1750	1871		1785	5073		1487	4719	
Flt Permitted	0.57	1.00		0.61	1.00		0.07	1.00		0.06	1.00	
Satd. Flow (perm)	1067	1813		1133	1871		132	5073		95	4719	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	346	160	21	106	202	11	90	3511	80	16	1537	309
RTOR Reduction (vph)	0	4	0	0	0	0	0	2	0	0	25	0
Lane Group Flow (vph)	346	177	0	106	213	0	90	3589	0	16	1821	0
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.6	38.6		38.6	38.6		65.9	65.9		65.9	65.9	
Effective Green, g (s)	38.6	38.6		38.6	38.6		65.9	65.9		65.9	65.9	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.55	0.55		0.55	0.55	
Clearance Time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	343	583		364	601		72	2785		52	2591	
v/s Ratio Prot		0.10			0.11			c0.71			0.39	
v/s Ratio Perm	c0.32			0.09			0.68			0.17		
v/c Ratio	1.01	0.30		0.29	0.35		1.25	1.29		0.31	0.70	
Uniform Delay, d1	40.7	30.6		30.5	31.2		27.0	27.0		14.7	19.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	50.8	0.3		0.4	0.4		187.5	132.8		14.7	1.6	
Delay (s)	91.5	30.9		30.9	31.5		214.6	159.8		29.4	21.5	
Level of Service	F	C		C	C		F	F		C	C	
Approach Delay (s)		70.7			31.3			161.2			21.5	
Approach LOS		E			C			F			C	

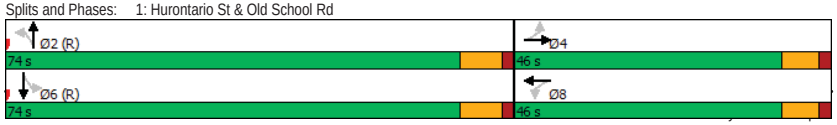
Intersection Summary				
HCM 2000 Control Delay	106.5	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.18			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	118.3%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	325	150	100	190	85	3300	15	1445
Future Volume (vph)	325	150	100	190	85	3300	15	1445
Lane Group Flow (vph)	346	181	106	213	90	3591	16	1846
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	42.4	42.4	41.1	41.1	41.1	41.1
Total Split (s)	46.0	46.0	46.0	46.0	74.0	74.0	74.0	74.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	61.7%	61.7%	61.7%	61.7%
Yellow Time (s)	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	8.1	8.1	8.1	8.1
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	1.01	0.31	0.29	0.35	1.25	1.29	0.31	0.71
Control Delay	92.1	31.4	33.2	33.3	216.8	159.1	33.8	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.1	31.4	33.2	33.3	216.8	159.1	33.8	21.1
Queue Length 50th (m)	~86.9	32.5	19.6	40.3	~27.7	~417.4	2.1	114.6
Queue Length 95th (m)	#150.3	52.4	35.6	62.3	#45.4	#441.8	9.9	132.9
Internal Link Dist (m)		316.5		178.0		1309.2		1382.3
Turn Bay Length (m)	75.0		75.0		50.0		50.0	
Base Capacity (vph)	343	587	364	601	72	2788	52	2617
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	1.01	0.31	0.29	0.35	1.25	1.29	0.31	0.71

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



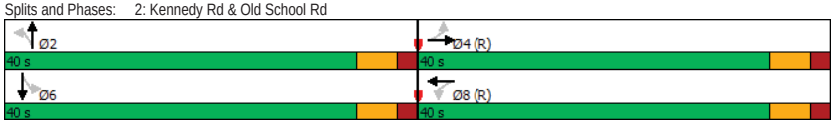
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	115	110	70	250	5	40	105	60	5	80	10
Future Volume (vph)	15	115	110	70	250	5	40	105	60	5	80	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.94			1.00			0.96			0.99	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1670			1868			1727			1734	
Flt Permitted		0.97			0.88			0.93			0.99	
Satd. Flow (perm)		1627			1657			1624			1716	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	117	112	71	255	5	41	107	61	5	82	10
RTOR Reduction (vph)	0	38	0	0	1	0	0	18	0	0	5	0
Lane Group Flow (vph)	0	206	0	0	330	0	0	191	0	0	92	0
Heavy Vehicles (%)	0%	11%	5%	0%	2%	0%	3%	4%	11%	0%	9%	13%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.0			34.0			34.0			34.0	
Effective Green, g (s)		34.0			34.0			34.0			34.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		691			704			690			729	
v/s Ratio Prot												
v/s Ratio Perm		0.13			c0.20			c0.12			0.05	
v/c Ratio		0.30			0.47			0.28			0.13	
Uniform Delay, d1		15.1			16.5			15.0			14.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.1			2.2			1.0			0.4	
Delay (s)		16.2			18.8			16.0			14.3	
Level of Service		B			B			B			B	
Approach Delay (s)		16.2			18.8			16.0			14.3	
Approach LOS		B			B			B			B	

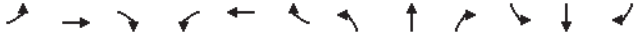
Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	15	115	70	250	40	105	5	80
Future Volume (vph)	15	115	70	250	40	105	5	80
Lane Group Flow (vph)	0	244	0	331	0	209	0	97
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.33		0.47		0.29		0.13
Control Delay		12.5		19.2		14.1		13.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		12.5		19.2		14.1		13.3
Queue Length 50th (m)		17.8		36.7		17.7		8.3
Queue Length 95th (m)		34.5		59.8		33.0		17.4
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)								
Base Capacity (vph)		729		704		709		734
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.33		0.47		0.29		0.13

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 60 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed

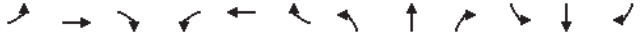
Splits and Phases: 2: Kennedy Rd & Old School Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	0	0	25	15	35	0	40	205	10	20	235	5
Future Volume (veh/h)	0	0	25	15	35	0	40	205	10	20	235	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	27	16	38	0	43	223	11	22	255	5
Approach Volume (veh/h)		27			54			277			282	
Crossing Volume (veh/h)		293			266			22			97	
High Capacity (veh/h)		1100			1124			1361			1284	
High v/c (veh/h)		0.02			0.05			0.20			0.22	
Low Capacity (veh/h)		904			925			1140			1069	
Low v/c (veh/h)		0.03			0.06			0.24			0.26	

Intersection Summary												
Maximum v/c High			0.22									
Maximum v/c Low			0.26									
Intersection Capacity Utilization			38.9%		ICU Level of Service				A			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	155	20	25	250	5	65	100	35	0	75	10
Future Volume (vph)	5	155	20	25	250	5	65	100	35	0	75	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	5	165	21	27	266	5	69	106	37	0	80	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	191	298	212	91
Volume Left (vph)	5	27	69	0
Volume Right (vph)	21	5	37	11
Hadj (s)	-0.02	0.02	-0.04	-0.01
Departure Headway (s)	5.2	5.1	5.3	5.5
Degree Utilization, x	0.27	0.42	0.31	0.14
Capacity (veh/h)	643	672	618	574
Control Delay (s)	10.1	11.6	10.7	9.4
Approach Delay (s)	10.1	11.6	10.7	9.4
Approach LOS	B	B	B	A

Intersection Summary												
Delay			10.8									
Level of Service			B									
Intersection Capacity Utilization			49.6%		ICU Level of Service				A			
Analysis Period (min)			15									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	55	75	20	30	0	120	250	55	5	245	25
Future Volume (Veh/h)	5	55	75	20	30	0	120	250	55	5	245	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	5	60	82	22	33	0	132	275	60	5	269	27
Pedestrians		1			13			5			1	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	712	906	154	844	889	182	297			348		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	712	906	154	844	889	182	297			348		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	76	90	87	87	100	90			100		
cM capacity (veh/h)	264	246	860	172	251	827	1275			1209		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	147	55	270	198	140	162
Volume Left	5	22	132	0	5	0
Volume Right	82	0	0	60	0	27
cSH	410	212	1275	1700	1209	1700
Volume to Capacity	0.36	0.26	0.10	0.12	0.00	0.10
Queue Length 95th (m)	12.8	8.0	2.8	0.0	0.1	0.0
Control Delay (s)	18.6	27.8	4.5	0.0	0.3	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	18.6	27.8	2.6		0.1	
Approach LOS	C	D				

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	42.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	30	0	0	50	0	0
Future Volume (Veh/h)	30	0	0	50	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	0	54	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			33		87	33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			33		87	33
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1579		914	1041

Direction, Lane #	EB 1	WB 1
Volume Total	33	54
Volume Left	0	0
Volume Right	0	0
cSH	1700	1579
Volume to Capacity	0.02	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			

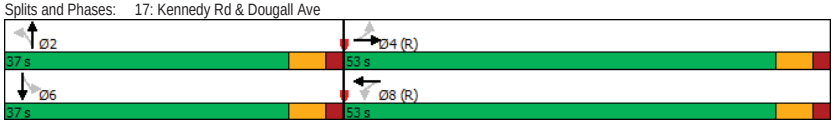
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	70	170	5	40	25	280	360	85	25	275	40
Future Volume (vph)	40	70	170	5	40	25	280	360	85	25	275	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.92			0.95			0.98			0.98	
Flt Protected		0.99			1.00			0.98			1.00	
Satd. Flow (prot)		1706			1791			3448			3490	
Flt Permitted		0.96			0.98			0.70			0.87	
Satd. Flow (perm)		1641			1763			2460			3042	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	40	71	172	5	40	25	283	364	86	25	278	40
RTOR Reduction (vph)	0	62	0	0	12	0	0	11	0	0	11	0
Lane Group Flow (vph)	0	221	0	0	58	0	0	722	0	0	332	0
Confl. Peds. (#/hr)	4		12	12		4	8		16	16		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		47.0			47.0			31.0			31.0	
Effective Green, g (s)		47.0			47.0			31.0			31.0	
Actuated g/C Ratio		0.52			0.52			0.34			0.34	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		856			920			847			1047	
v/s Ratio Prot												
v/s Ratio Perm		c0.13			0.03			c0.29			0.11	
v/c Ratio		0.26			0.06			0.85			0.32	
Uniform Delay, d1		11.9			10.6			27.4			21.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.1			10.6			0.8	
Delay (s)		12.6			10.8			38.0			22.5	
Level of Service		B			B			D			C	
Approach Delay (s)		12.6			10.8			38.0			22.5	
Approach LOS		B			B			D			C	

Intersection Summary				
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.49			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	80.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	70	5	40	280	360	25	275
Future Volume (vph)	40	70	5	40	280	360	25	275
Lane Group Flow (vph)	0	283	0	70	0	733	0	343
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	53.0	53.0	53.0	53.0	37.0	37.0	37.0	37.0
Total Split (s)	53.0	53.0	53.0	53.0	37.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%	58.9%	58.9%	41.1%	41.1%	41.1%	41.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.31		0.08		0.85		0.32
Control Delay		7.3		7.8		38.3		21.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		7.3		7.8		38.3		21.7
Queue Length 50th (m)		13.9		3.8		63.1		22.6
Queue Length 95th (m)		28.7		10.2		#96.6		34.1
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		919		933		858		1059
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.31		0.08		0.85		0.32

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	185	85	340	140	20	25	1385	135	30	2915	145
Future Volume (vph)	260	185	85	340	140	20	25	1385	135	30	2915	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1719		1566	1810		1716	4371	1413	1384	5043	1597
Flt Permitted	0.65	1.00		0.33	1.00		0.07	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	1224	1719		546	1810		123	4371	1413	177	5043	1597
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	271	193	89	354	146	21	26	1443	141	31	3036	151
RTOR Reduction (vph)	0	14	0	0	4	0	0	0	72	0	0	45
Lane Group Flow (vph)	271	268	0	354	163	0	26	1443	69	31	3036	106
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.6	27.6		45.6	45.6		58.9	58.9	58.9	58.9	58.9	58.9
Effective Green, g (s)	27.6	27.6		45.6	45.6		58.9	58.9	58.9	58.9	58.9	58.9
Actuated g/C Ratio	0.23	0.23		0.38	0.38		0.49	0.49	0.49	0.49	0.49	0.49
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	281	395		326	687		60	2145	693	86	2475	783
v/s Ratio Prot		0.16		c0.13	0.09			0.33			c0.60	
v/s Ratio Perm	0.22			c0.29			0.21		0.05	0.17		0.07
v/c Ratio	0.96	0.68		1.09	0.24		0.43	0.67	0.10	0.36	1.23	0.14
Uniform Delay, d1	45.7	42.2		34.4	25.3		19.8	23.2	16.4	18.9	30.6	16.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.6	4.6		74.7	0.2		21.2	1.7	0.3	11.3	105.8	0.4
Delay (s)	89.3	46.7		109.2	25.5		40.9	24.9	16.6	30.2	136.3	17.0
Level of Service	F	D		F	C		D	C	B	C	F	B
Approach Delay (s)		67.6			82.4			24.5			129.7	
Approach LOS		E			F			C			F	

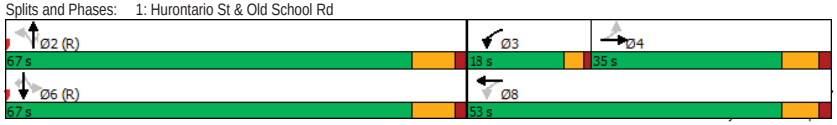
Intersection Summary				
HCM 2000 Control Delay	91.0	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.20			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	106.3%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	260	185	340	140	25	1385	135	30	2915	145
Future Volume (vph)	260	185	340	140	25	1385	135	30	2915	145
Lane Group Flow (vph)	271	282	354	167	26	1443	141	31	3036	151
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	41.1	41.1	41.1
Total Split (s)	35.0	35.0	18.0	53.0	67.0	67.0	67.0	67.0	67.0	67.0
Total Split (%)	29.2%	29.2%	15.0%	44.2%	55.8%	55.8%	55.8%	55.8%	55.8%	55.8%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	8.1	8.1	8.1
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.96	0.69	1.04	0.24	0.43	0.67	0.18	0.36	1.23	0.18
Control Delay	91.8	49.4	89.9	25.5	46.9	25.2	3.3	33.3	135.1	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.8	49.4	89.9	25.5	46.9	25.2	3.3	33.3	135.1	8.0
Queue Length 50th (m)	66.9	60.3	~69.9	26.7	4.0	96.7	0.0	4.6	~339.7	8.0
Queue Length 95th (m)	#121.9	92.1	#143.0	43.8	#18.0	114.1	10.7	15.1	#366.7	20.0
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	281	409	341	692	60	2145	765	87	2475	828
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	0.96	0.69	1.04	0.24	0.43	0.67	0.18	0.36	1.23	0.18

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	260	150	85	190	0	215	75	195	15	100	10
Future Volume (vph)	30	260	150	85	190	0	215	75	195	15	100	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00		1.00	0.89		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1428	1723		1623	1812		1566	1632		1785	1752	
Flt Permitted	0.62	1.00		0.42	1.00		0.68	1.00		0.41	1.00	
Satd. Flow (perm)	935	1723		723	1812		1114	1632		768	1752	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	34	299	172	98	218	0	247	86	224	17	115	11
RTOR Reduction (vph)	0	17	0	0	0	0	0	131	0	0	5	0
Lane Group Flow (vph)	34	454	0	98	218	0	247	179	0	17	121	0
Heavy Vehicles (%)	25%	1%	13%	10%	6%	0%	14%	10%	3%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	52.2	52.2		52.2	52.2		25.8	25.8		25.8	25.8	
Effective Green, g (s)	52.2	52.2		52.2	52.2		25.8	25.8		25.8	25.8	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.29	0.29		0.29	0.29	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	542	999		419	1050		319	467		220	502	
v/s Ratio Prot		c0.26			0.12			0.11			0.07	
v/s Ratio Perm	0.04			0.14			c0.22			0.02		
v/c Ratio	0.06	0.45		0.23	0.21		0.77	0.38		0.08	0.24	
Uniform Delay, d1	8.2	10.8		9.2	9.0		29.4	25.7		23.4	24.6	
Progression Factor	1.00	1.00		1.00	1.00		1.03	1.24		1.00	1.00	
Incremental Delay, d2	0.2	1.5		1.3	0.4		10.9	0.5		0.2	0.3	
Delay (s)	8.5	12.3		10.5	9.5		41.3	32.3		23.6	24.8	
Level of Service	A	B		B	A		D	C		C	C	
Approach Delay (s)		12.0			9.8			36.3			24.7	
Approach LOS		B			A			D			C	

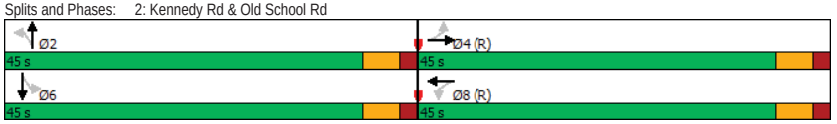
Intersection Summary				
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	64.7%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	260	85	190	215	75	15	100
Future Volume (vph)	30	260	85	190	215	75	15	100
Lane Group Flow (vph)	34	471	98	218	247	310	17	126
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
v/c Ratio	0.06	0.46	0.23	0.21	0.77	0.52	0.08	0.25
Control Delay	11.6	13.4	13.7	11.5	45.3	14.6	20.2	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	13.4	13.7	11.5	45.3	14.6	20.2	22.2
Queue Length 50th (m)	2.5	41.3	8.0	17.6	42.9	20.7	2.2	16.5
Queue Length 95th (m)	8.6	81.2	21.7	37.1	56.0	23.0	5.9	24.5
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)	70.0		70.0		70.0		70.0	
Base Capacity (vph)	542	1016	418	1050	482	811	332	763
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	0.06	0.46	0.23	0.21	0.51	0.38	0.05	0.17

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 2: Kennedy Rd & Old School Rd



HCM Unsignalized Intersection Capacity Analysis
4: Kennedy Rd & Newhouse Blvd/Bonnieglen Farm Blvd

Future Total (AM)
2028 Horizon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	5	0	45	20	25	35	10	265	45	20	295	0
Future Volume (veh/h)	5	0	45	20	25	35	10	265	45	20	295	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	49	22	27	38	11	288	49	22	321	0
Approach Volume (veh/h)		54			87			348			343	
Crossing Volume (veh/h)		365			304			27			60	
High Capacity (veh/h)		1039			1091			1356			1321	
High v/c (veh/h)		0.05			0.08			0.26			0.26	
Low Capacity (veh/h)		849			895			1135			1104	
Low v/c (veh/h)		0.06			0.10			0.31			0.31	

Intersection Summary												
Maximum v/c High			0.26									
Maximum v/c Low			0.31									
Intersection Capacity Utilization			39.9%		ICU Level of Service				A			

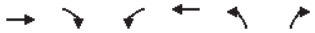
HCM Unsignalized Intersection Capacity Analysis
3: Heart Lake Rd & Old School Rd

Future Total (AM)
2028 Horizon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	375	110	25	170	5	55	60	20	5	140	20
Future Volume (vph)	15	375	110	25	170	5	55	60	20	5	140	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	18	441	129	29	200	6	65	71	24	6	165	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	588	235	160	195
Volume Left (vph)	18	29	65	6
Volume Right (vph)	129	6	24	24
Hadj (s)	-0.08	0.15	0.16	-0.01
Departure Headway (s)	5.6	6.4	7.0	6.7
Degree Utilization, x	0.91	0.42	0.31	0.37
Capacity (veh/h)	638	534	471	500
Control Delay (s)	39.8	13.9	13.2	13.6
Approach Delay (s)	39.8	13.9	13.2	13.6
Approach LOS	E	B	B	B

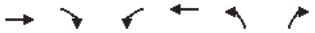
Intersection Summary												
Delay			26.7									
Level of Service			D									
Intersection Capacity Utilization			55.6%		ICU Level of Service				B			
Analysis Period (min)			15									



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	365	10	30	420	80	45
Future Volume (Veh/h)	365	10	30	420	80	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	397	11	33	457	87	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			408		926	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			408		926	402
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		70	92
cM capacity (veh/h)			1151		290	648

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	408	33	457	136
Volume Left	0	33	0	87
Volume Right	11	0	0	49
cSH	1700	1151	1700	362
Volume to Capacity	0.24	0.03	0.27	0.38
Queue Length 95th (m)	0.0	0.7	0.0	13.6
Control Delay (s)	0.0	8.2	0.0	20.8
Lane LOS		A		C
Approach Delay (s)	0.0	0.6		20.8
Approach LOS				C

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	335	15	0	500	0	40
Future Volume (Veh/h)	335	15	0	500	0	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	364	16	0	543	0	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	202					
pX, platoon unblocked			0.92		0.92	0.92
vC, conflicting volume			380		915	372
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			276		861	268
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	94
cM capacity (veh/h)			1178		298	706

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	380	543	43
Volume Left	0	0	0
Volume Right	16	0	43
cSH	1700	1700	706
Volume to Capacity	0.22	0.32	0.06
Queue Length 95th (m)	0.0	0.0	1.6
Control Delay (s)	0.0	0.0	10.4
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	415	10	15	400	50	25
Future Volume (Veh/h)	415	10	15	400	50	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	451	11	16	435	54	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			462		924	456
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			462		924	456
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		82	96
cM capacity (veh/h)			1099		295	604

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	462	16	435	81
Volume Left	0	16	0	54
Volume Right	11	0	0	27
cSH	1700	1099	1700	356
Volume to Capacity	0.27	0.01	0.26	0.23
Queue Length 95th (m)	0.0	0.4	0.0	6.9
Control Delay (s)	0.0	8.3	0.0	18.1
Lane LOS		A		C
Approach Delay (s)	0.0	0.3		18.1
Approach LOS				C

Intersection Summary				
Average Delay			1.6	
Intersection Capacity Utilization			33.4%	ICU Level of Service
Analysis Period (min)			15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	400	10	0	450	0	25
Future Volume (Veh/h)	400	10	0	450	0	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	435	11	0	489	0	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			446		930	440
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			446		930	440
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			1114		297	617

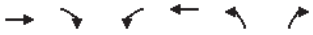
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	446	489	27
Volume Left	0	0	0
Volume Right	11	0	27
cSH	1700	1700	617
Volume to Capacity	0.26	0.29	0.04
Queue Length 95th (m)	0.0	0.0	1.1
Control Delay (s)	0.0	0.0	11.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.1
Approach LOS			B

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			31.7%	ICU Level of Service
Analysis Period (min)			15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	485	325	10
Future Volume (Veh/h)	0	0	0	485	325	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	527	353	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				212	109	
pX, platoon unblocked	0.95	0.97	0.97			
vC, conflicting volume	886	358	364			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	782	322	328			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	346	697	1194			

Direction, Lane #	NB 1	SB 1
Volume Total	527	364
Volume Left	0	0
Volume Right	0	11
cSH	1700	1700
Volume to Capacity	0.31	0.21
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		28.9%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	455	15	10	235	40	45
Future Volume (Veh/h)	455	15	10	235	40	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	495	16	11	255	43	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	236					
pX, platoon unblocked						
vC, conflicting volume			511		780	503
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			511		780	503
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		88	91
cM capacity (veh/h)			1054		360	569

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	511	266	92
Volume Left	0	11	43
Volume Right	16	0	49
cSH	1700	1054	447
Volume to Capacity	0.30	0.01	0.21
Queue Length 95th (m)	0.0	0.3	6.1
Control Delay (s)	0.0	0.4	15.1
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	15.1
Approach LOS			C

Intersection Summary				
Average Delay		1.7		
Intersection Capacity Utilization		36.5%	ICU Level of Service	A
Analysis Period (min)		15		

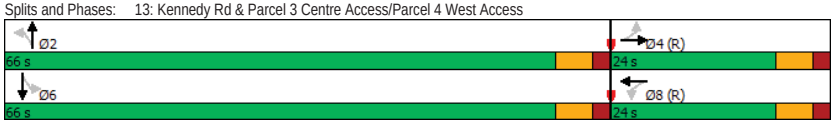
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	0	15	20	0	90	5	325	5	30	285	10
Future Volume (vph)	70	0	15	20	0	90	5	325	5	30	285	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.89			1.00			1.00	
Flt Protected		0.96			0.99			1.00			1.00	
Satd. Flow (prot)		1747			1642			1858			1846	
Flt Permitted		0.69			0.93			1.00			0.95	
Satd. Flow (perm)		1258			1546			1852			1754	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	0	16	22	0	98	5	353	5	33	310	11
RTOR Reduction (vph)	0	29	0	0	78	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	63	0	0	42	0	0	362	0	0	353	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0			60.0			60.0	
Effective Green, g (s)		18.0			18.0			60.0			60.0	
Actuated g/C Ratio		0.20			0.20			0.67			0.67	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		251			309			1234			1169	
v/s Ratio Prot												
v/s Ratio Perm		c0.05			0.03			0.20			c0.20	
v/c Ratio		0.25			0.13			0.29			0.30	
Uniform Delay, d1		30.3			29.6			6.2			6.3	
Progression Factor		1.00			1.00			1.00			1.08	
Incremental Delay, d2		2.4			0.9			0.6			0.6	
Delay (s)		32.7			30.5			6.8			7.4	
Level of Service		C			C			A			A	
Approach Delay (s)		32.7			30.5			6.8			7.4	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.29			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	54.9%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	70	0	20	0	5	325	30	285
Future Volume (vph)	70	0	20	0	5	325	30	285
Lane Group Flow (vph)	0	92	0	120	0	363	0	354
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	66.0	66.0	66.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	73.3%	73.3%	73.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.33		0.31		0.29		0.30
Control Delay		23.7		11.8		6.9		7.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		23.7		11.8		6.9		7.5
Queue Length 50th (m)		8.6		3.3		24.0		24.5
Queue Length 95th (m)		22.8		17.9		37.0		35.8
Internal Link Dist (m)		133.2		141.7		81.9		188.3
Turn Bay Length (m)								
Base Capacity (vph)		280		387		1235		1171
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.33		0.31		0.29		0.30

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 13: Kennedy Rd & Parcel 3 Centre Access/Parcel 4 West Access



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	50	0	0	40	0	0	0	0	0	0	40
Future Volume (Veh/h)	15	50	0	0	40	0	0	0	0	0	0	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	54	0	0	43	0	0	0	0	0	0	43
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	43			54			172	129	54	129	129	43
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	43			54			172	129	54	129	129	43
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	96
cM capacity (veh/h)	1566			1551			752	754	1013	837	754	1027

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	70	43	0	43
Volume Left	16	0	0	0
Volume Right	0	0	0	43
cSH	1566	1551	1700	1027
Volume to Capacity	0.01	0.00	0.00	0.04
Queue Length 95th (m)	0.2	0.0	0.0	1.0
Control Delay (s)	1.7	0.0	0.0	8.7
Lane LOS	A		A	A
Approach Delay (s)	1.7	0.0	0.0	8.7
Approach LOS			A	A

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	20.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	5	5	300	310	10
Future Volume (Veh/h)	35	5	5	300	310	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	5	5	326	337	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					106	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	678	342	348			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	620	259	265			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	99	100			
cM capacity (veh/h)	420	727	1212			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	43	331	348
Volume Left	38	5	0
Volume Right	5	0	11
cSH	442	1212	1700
Volume to Capacity	0.10	0.00	0.20
Queue Length 95th (m)	2.6	0.1	0.0
Control Delay (s)	14.0	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	14.0	0.2	0.0
Approach LOS	B		

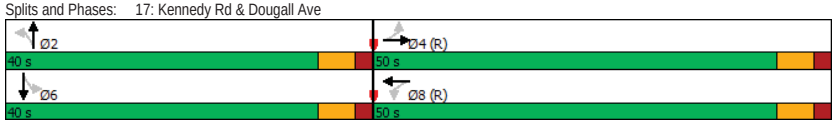
Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	29.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	45	140	55	115	290	55	420
Future Volume (vph)	30	45	140	55	115	290	55	420
Lane Group Flow (vph)	0	399	0	240	0	490	0	527
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.0	34.0	34.0	34.0	31.0	31.0	31.0	31.0
Total Split (s)	50.0	50.0	50.0	50.0	40.0	40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.44		0.46		0.55		0.47
Control Delay		7.6		18.0		23.9		22.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		7.6		18.0		23.9		22.6
Queue Length 50th (m)		16.7		26.1		34.7		37.0
Queue Length 95th (m)		37.8		47.1		50.7		51.9
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		901		518		892		1131
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.44		0.46		0.55		0.47

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	15	115	40	45	5	40	295	15	5	340	15
Future Volume (Veh/h)	20	15	115	40	45	5	40	295	15	5	340	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	21	16	120	42	47	5	42	307	16	5	354	16
Pedestrians					3			6				
Lane Width (m)					3.6			3.6				
Walking Speed (m/s)					1.2			1.2				
Percent Blockage					0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	638	782	191	723	782	164	370			326		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	638	782	191	723	782	164	370			326		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	95	85	83	85	99	96			100		
cM capacity (veh/h)	311	314	821	250	314	855	1164			1242		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	157	94	196	170	182	193
Volume Left	21	42	42	0	5	0
Volume Right	120	5	0	16	0	16
cSH	593	291	1164	1700	1242	1700
Volume to Capacity	0.26	0.32	0.04	0.10	0.00	0.11
Queue Length 95th (m)	8.5	10.9	0.9	0.0	0.1	0.0
Control Delay (s)	13.2	23.2	2.0	0.0	0.3	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	13.2	23.2	1.1		0.1	
Approach LOS	B	C				

Intersection Summary

Average Delay	4.7			
Intersection Capacity Utilization	42.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Queues
1: Hurontario St & Old School Rd

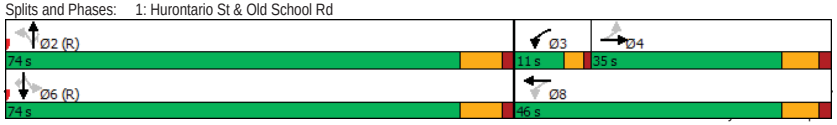
Future Total (PM)
2028 Horizon

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	325	200	265	215	85	3300	375	20	1445	290
Future Volume (vph)	325	200	265	215	85	3300	375	20	1445	290
Lane Group Flow (vph)	346	234	282	245	90	3511	399	21	1537	309
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	41.1	41.1	41.1
Total Split (s)	35.0	35.0	11.0	46.0	74.0	74.0	74.0	74.0	74.0	74.0
Total Split (%)	29.2%	29.2%	9.2%	38.3%	61.7%	61.7%	61.7%	61.7%	61.7%	61.7%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	8.1	8.1	8.1
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	1.32	0.55	0.88	0.41	0.75	1.26	0.43	0.40	0.57	0.34
Control Delay	206.1	45.9	61.6	34.3	60.5	145.0	7.8	43.4	18.8	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	206.1	45.9	61.6	34.3	60.5	145.0	7.8	43.4	18.8	2.6
Queue Length 50th (m)	~110.9	50.6	53.8	47.2	16.3	~399.1	20.8	2.9	87.7	0.0
Queue Length 95th (m)	#171.2	77.8	#101.6	71.4	#50.3	#423.7	43.3	#15.3	102.1	12.9
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	262	422	322	600	120	2796	937	52	2692	902
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	1.32	0.55	0.88	0.41	0.75	1.26	0.43	0.40	0.57	0.34

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



HCM Signalized Intersection Capacity Analysis
17: Kennedy Rd & Dougall Ave

Future Total (AM)
2028 Horizon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	45	300	140	55	30	115	290	55	55	420	20
Future Volume (vph)	30	45	300	140	55	30	115	290	55	55	420	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.98			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.89			0.98			0.98			0.99	
Flt Protected		1.00			0.97			0.99			0.99	
Satd. Flow (prot)		1660			1801			3463			3562	
Flt Permitted		0.96			0.56			0.67			0.83	
Satd. Flow (perm)		1603			1047			2332			2989	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	48	319	149	59	32	122	309	59	59	447	21
RTOR Reduction (vph)	0	118	0	0	6	0	0	12	0	0	3	0
Lane Group Flow (vph)	0	281	0	0	234	0	0	478	0	0	524	0
Confl. Peds. (#/hr)	3		9	9		3	1		10	10		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		44.0			44.0			34.0			34.0	
Effective Green, g (s)		44.0			44.0			34.0			34.0	
Actuated g/C Ratio		0.49			0.49			0.38			0.38	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		783			511			880			1129	
v/s Ratio Prot												
v/s Ratio Perm		0.18			c0.22			c0.21			0.18	
v/c Ratio		0.36			0.46			0.54			0.46	
Uniform Delay, d1		14.3			15.1			21.9			21.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			2.9			2.4			1.4	
Delay (s)		15.5			18.1			24.3			22.5	
Level of Service		B			B			C			C	
Approach Delay (s)		15.5			18.1			24.3			22.5	
Approach LOS		B			B			C			C	

Intersection Summary

HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.3%	ICU Level of Service	G
Analysis Period (min)	15		

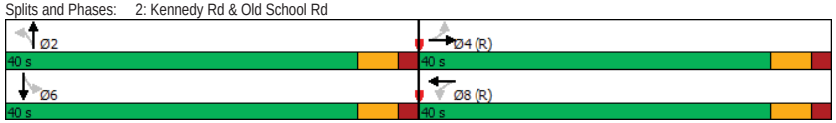
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	210	150	370	170	115	5	100
Future Volume (vph)	25	210	150	370	170	115	5	100
Lane Group Flow (vph)	26	520	153	383	173	234	5	117
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
v/c Ratio	0.04	0.48	0.30	0.32	0.66	0.57	0.03	0.32
Control Delay	7.4	8.4	10.0	8.4	43.6	27.8	21.8	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	8.4	10.0	8.4	43.6	27.8	21.8	24.5
Queue Length 50th (m)	1.4	28.0	9.6	24.1	29.6	27.2	0.7	14.3
Queue Length 95th (m)	5.4	65.5	26.0	50.4	27.8	25.2	3.1	25.2
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)	70.0		70.0		70.0		70.0	
Base Capacity (vph)	620	1083	503	1203	528	747	388	738
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	0.04	0.48	0.30	0.32	0.33	0.31	0.01	0.16

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 60 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Splits and Phases: 2: Kennedy Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	200	20	265	215	15	85	3300	375	20	1445	290
Future Volume (vph)	325	200	20	265	215	15	85	3300	375	20	1445	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1821		1750	1867		1785	5092	1521	1487	4902	1389
Flt Permitted	0.61	1.00		0.41	1.00		0.12	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	1140	1821		757	1867		219	5092	1521	95	4902	1389
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	346	213	21	282	229	16	90	3511	399	21	1537	309
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	102	0	0	139
Lane Group Flow (vph)	346	231	0	282	245	0	90	3511	297	21	1537	170
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.6	27.6		38.6	38.6		65.9	65.9	65.9	65.9	65.9	65.9
Effective Green, g (s)	27.6	27.6		38.6	38.6		65.9	65.9	65.9	65.9	65.9	65.9
Actuated g/C Ratio	0.23	0.23		0.32	0.32		0.55	0.55	0.55	0.55	0.55	0.55
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	262	418		301	600		120	2796	835	52	2692	762
v/s Ratio Prot		0.13		c0.05	0.13			c0.69			0.31	
v/s Ratio Perm	c0.30			0.25			0.41		0.20	0.22		0.12
v/c Ratio	1.32	0.55		0.94	0.41		0.75	1.26	0.36	0.40	0.57	0.22
Uniform Delay, d1	46.2	40.8		39.9	31.8		20.7	27.0	15.2	15.7	17.8	13.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	168.5	1.6		35.2	0.5		34.5	118.2	1.2	21.7	0.9	0.7
Delay (s)	214.7	42.3		75.1	32.2		55.2	145.2	16.3	37.4	18.7	14.6
Level of Service	F	D		E	C		E	F	B	D	B	B
Approach Delay (s)		145.2			55.2			130.3			18.2	
Approach LOS		F			E			F			B	

Intersection Summary

HCM 2000 Control Delay	95.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	120.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	225	75	25	365	5	160	100	35	0	75	15
Future Volume (vph)	10	225	75	25	365	5	160	100	35	0	75	15
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	11	239	80	27	388	5	170	106	37	0	80	16

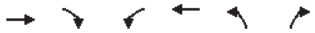
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	330	420	313	96
Volume Left (vph)	11	27	170	0
Volume Right (vph)	80	5	37	16
Hadj (s)	-0.10	0.02	0.04	-0.04
Departure Headway (s)	6.0	6.0	6.4	7.0
Degree Utilization, x	0.55	0.70	0.56	0.19
Capacity (veh/h)	557	569	518	411
Control Delay (s)	16.2	21.6	17.2	11.6
Approach Delay (s)	16.2	21.6	17.2	11.6
Approach LOS	C	C	C	B

Intersection Summary				
Delay			18.0	
Level of Service			C	
Intersection Capacity Utilization			59.9%	ICU Level of Service
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	210	300	150	370	5	170	115	115	5	100	15
Future Volume (vph)	25	210	300	150	370	5	170	115	115	5	100	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00		1.00	0.93		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1630		1785	1880		1733	1653		1785	1720	
Flt Permitted	0.52	1.00		0.42	1.00		0.68	1.00		0.49	1.00	
Satd. Flow (perm)	970	1630		787	1880		1244	1653		916	1720	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	214	306	153	378	5	173	117	117	5	102	15
RTOR Reduction (vph)	0	40	0	0	0	0	0	62	0	0	9	0
Lane Group Flow (vph)	26	480	0	153	383	0	173	172	0	5	108	0
Heavy Vehicles (%)	0%	11%	5%	0%	2%	0%	3%	4%	11%	0%	9%	13%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.2	51.2		51.2	51.2		16.8	16.8		16.8	16.8	
Effective Green, g (s)	51.2	51.2		51.2	51.2		16.8	16.8		16.8	16.8	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.21	0.21		0.21	0.21	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	620	1043		503	1203		261	347		192	361	
v/s Ratio Prot		c0.29			0.20			0.10			0.06	
v/s Ratio Perm	0.03			0.19			c0.14			0.01		
v/c Ratio	0.04	0.46		0.30	0.32		0.66	0.50		0.03	0.30	
Uniform Delay, d1	5.3	7.3		6.4	6.5		29.0	27.9		25.1	26.6	
Progression Factor	1.00	1.00		1.00	1.00		1.12	1.27		1.00	1.00	
Incremental Delay, d2	0.1	1.5		1.6	0.7		6.0	1.1		0.1	0.5	
Delay (s)	5.5	8.8		8.0	7.2		38.6	36.5		25.2	27.1	
Level of Service	A	A		A	A		D	D		C	C	
Approach Delay (s)		8.6			7.4			37.4			27.0	
Approach LOS		A			A			D			C	

Intersection Summary				
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	68.9%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group



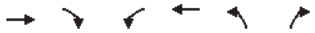
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	550	45	0	495	0	25
Future Volume (Veh/h)	550	45	0	495	0	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	598	49	0	538	0	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	202					
pX, platoon unblocked			0.90		0.90	0.90
vC, conflicting volume			647		1160	622
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			553		1123	526
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	95
cM capacity (veh/h)			916		205	497

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	647	538	27
Volume Left	0	0	0
Volume Right	49	0	27
cSH	1700	1700	497
Volume to Capacity	0.38	0.32	0.05
Queue Length 95th (m)	0.0	0.0	1.4
Control Delay (s)	0.0	0.0	12.7
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.7
Approach LOS			B

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	41.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	0	0	25	20	35	20	40	285	15	60	285	5
Future Volume (veh/h)	0	0	25	20	35	20	40	285	15	60	285	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	27	22	38	22	43	310	16	65	310	5
Approach Volume (veh/h)		27			82			369			380	
Crossing Volume (veh/h)		397			353			65			103	
High Capacity (veh/h)		1013			1049			1316			1278	
High v/c (veh/h)		0.03			0.08			0.28			0.30	
Low Capacity (veh/h)		826			858			1099			1064	
Low v/c (veh/h)		0.03			0.10			0.34			0.36	

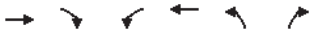
Intersection Summary					
Maximum v/c High		0.30			
Maximum v/c Low		0.36			
Intersection Capacity Utilization		45.7%	ICU Level of Service		A



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	530	30	0	530	0	20
Future Volume (Veh/h)	530	30	0	530	0	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	576	33	0	576	0	22
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			609		1168	592
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			609		1168	592
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			970		214	506

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	609	576	22
Volume Left	0	0	0
Volume Right	33	0	22
cSH	1700	1700	506
Volume to Capacity	0.36	0.34	0.04
Queue Length 95th (m)	0.0	0.0	1.1
Control Delay (s)	0.0	0.0	12.4
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.4
Approach LOS			B

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		39.7%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	530	45	85	445	50	30
Future Volume (Veh/h)	530	45	85	445	50	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	576	49	92	484	54	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			625		1268	600
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			625		1268	600
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		68	93
cM capacity (veh/h)			956		168	501

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	625	92	484	87
Volume Left	0	92	0	54
Volume Right	49	0	0	33
cSH	1700	956	1700	225
Volume to Capacity	0.37	0.10	0.28	0.39
Queue Length 95th (m)	0.0	2.5	0.0	13.8
Control Delay (s)	0.0	9.2	0.0	30.8
Lane LOS		A		D
Approach Delay (s)	0.0	1.5		30.8
Approach LOS				D

Intersection Summary				
Average Delay		2.7		
Intersection Capacity Utilization		49.9%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	285	45	40	500	25	25
Future Volume (Veh/h)	285	45	40	500	25	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	310	49	43	543	27	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	236					
pX, platoon unblocked						
vC, conflicting volume			359		964	334
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			359		964	334
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		90	96
cM capacity (veh/h)			1200		273	707

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	359	586	54
Volume Left	0	43	27
Volume Right	49	0	27
cSH	1700	1200	394
Volume to Capacity	0.21	0.04	0.14
Queue Length 95th (m)	0.0	0.9	3.8
Control Delay (s)	0.0	1.0	15.6
Lane LOS		A	C
Approach Delay (s)	0.0	1.0	15.6
Approach LOS			C

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	520	30	55	500	30	15
Future Volume (Veh/h)	520	30	55	500	30	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	565	33	60	543	33	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			598		1244	582
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			598		1244	582
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		82	97
cM capacity (veh/h)			979		180	513

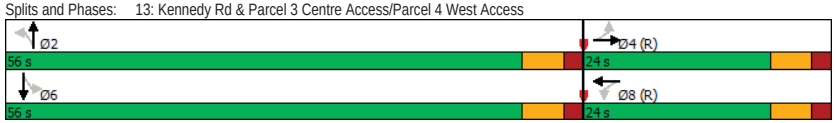
Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	598	60	543	49
Volume Left	0	60	0	33
Volume Right	33	0	0	16
cSH	1700	979	1700	229
Volume to Capacity	0.35	0.06	0.32	0.21
Queue Length 95th (m)	0.0	1.6	0.0	6.3
Control Delay (s)	0.0	8.9	0.0	25.0
Lane LOS		A		C
Approach Delay (s)	0.0	0.9		25.0
Approach LOS				C

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	0	15	0	10	295	105	365
Future Volume (vph)	45	0	15	0	10	295	105	365
Lane Group Flow (vph)	0	60	0	81	0	354	0	554
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	56.0	56.0	56.0	56.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.18		0.20		0.31		0.57
Control Delay		13.7		10.9		7.7		12.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		13.7		10.9		7.7		12.7
Queue Length 50th (m)		2.4		2.0		22.9		50.9
Queue Length 95th (m)		12.0		12.9		36.8		90.2
Internal Link Dist (m)		133.2		141.7		81.9		188.3
Turn Bay Length (m)								
Base Capacity (vph)		330		402		1137		980
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.18		0.20		0.31		0.57

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 60 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 13: Kennedy Rd & Parcel 3 Centre Access/Parcel 4 West Access



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	400	510	40
Future Volume (Veh/h)	0	0	0	400	510	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	435	554	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				212	109	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	1010	576	597			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	901	538	560			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	298	522	971			

Direction, Lane #	NB 1	SB 1
Volume Total	435	597
Volume Left	0	0
Volume Right	0	43
cSH	1700	1700
Volume to Capacity	0.26	0.35
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
14: Kennedy Rd & Parcel 3 South Access

Future Total (PM)
2028 Horizon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	5	5	300	345	45
Future Volume (Veh/h)	25	5	5	300	345	45
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	5	5	326	375	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					106	
pX, platoon unblocked	0.87	0.87	0.87			
vC, conflicting volume	736	400	424			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	622	237	265			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	99	100			
cM capacity (veh/h)	390	699	1132			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	32	331	424
Volume Left	27	5	0
Volume Right	5	0	49
cSH	419	1132	1700
Volume to Capacity	0.08	0.00	0.25
Queue Length 95th (m)	2.0	0.1	0.0
Control Delay (s)	14.3	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	14.3	0.2	0.0
Approach LOS	B		

Intersection Summary				
Average Delay		0.7		
Intersection Capacity Utilization		30.9%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Signalized Intersection Capacity Analysis
13: Kennedy Rd & Parcel 3 Centre Access/Parcel 4 West Access

Future Total (PM)
2028 Horizon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	10	15	0	60	10	295	20	105	365	40
Future Volume (vph)	45	0	10	15	0	60	10	295	20	105	365	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.89			0.99			0.99	
Flt Protected		0.96			0.99			1.00			0.99	
Satd. Flow (prot)		1745			1645			1844			1824	
Flt Permitted		0.73			0.94			0.98			0.85	
Satd. Flow (perm)		1327			1564			1814			1561	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	0	11	16	0	65	11	321	22	114	397	43
RTOR Reduction (vph)	0	32	0	0	50	0	0	3	0	0	4	0
Lane Group Flow (vph)	0	28	0	0	31	0	0	351	0	0	550	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0			50.0			50.0	
Effective Green, g (s)		18.0			18.0			50.0			50.0	
Actuated g/C Ratio		0.22			0.22			0.62			0.62	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		298			351			1133			975	
v/s Ratio Prot												
v/s Ratio Perm		c0.02			0.02			0.19			c0.35	
v/c Ratio		0.09			0.09			0.31			0.56	
Uniform Delay, d1		24.5			24.5			7.0			8.7	
Progression Factor		1.00			1.00			1.00			1.17	
Incremental Delay, d2		0.6			0.5			0.7			2.3	
Delay (s)		25.2			25.0			7.7			12.4	
Level of Service		C			C			A			B	
Approach Delay (s)		25.2			25.0			7.7			12.4	
Approach LOS		C			C			A			B	

Intersection Summary				
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.44			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	69.5%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	55	75	20	30	0	120	335	55	5	300	25
Future Volume (Veh/h)	5	55	75	20	30	0	120	335	55	5	300	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	5	60	82	22	33	0	132	368	60	5	330	27
Pedestrians		1			13			5			1	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	820	1060	184	967	1043	228	358			441		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	820	1060	184	967	1043	228	358			441		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	70	90	83	84	100	89			100		
cM capacity (veh/h)	214	198	822	131	203	772	1211			1117		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	147	55	316	244	170	192
Volume Left	5	22	132	0	5	0
Volume Right	82	0	0	60	0	27
cSH	345	166	1211	1700	1117	1700
Volume to Capacity	0.43	0.33	0.11	0.14	0.00	0.11
Queue Length 95th (m)	16.4	10.8	2.9	0.0	0.1	0.0
Control Delay (s)	22.9	37.0	4.1	0.0	0.3	0.0
Lane LOS	C	E	A		A	
Approach Delay (s)	22.9	37.0	2.3		0.1	
Approach LOS	C	E				

Intersection Summary					
Average Delay	6.0				
Intersection Capacity Utilization	45.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	30	0	0	50	0	0	0	0	0	0	25
Future Volume (Veh/h)	45	30	0	0	50	0	0	0	0	0	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	33	0	0	54	0	0	0	0	0	0	27
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	54			33			212	185	33	185	185	54
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	54			33			212	185	33	185	185	54
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	100	100	97
cM capacity (veh/h)	1551			1579			708	687	1041	757	687	1013

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	82	54	0	27
Volume Left	49	0	0	0
Volume Right	0	0	0	27
cSH	1551	1579	1700	1013
Volume to Capacity	0.03	0.00	0.00	0.03
Queue Length 95th (m)	0.8	0.0	0.0	0.7
Control Delay (s)	4.5	0.0	0.0	8.7
Lane LOS	A		A	A
Approach Delay (s)	4.5	0.0	0.0	8.7
Approach LOS			A	A

Intersection Summary					
Average Delay	3.7				
Intersection Capacity Utilization	20.7%	ICU Level of Service		A	
Analysis Period (min)	15				

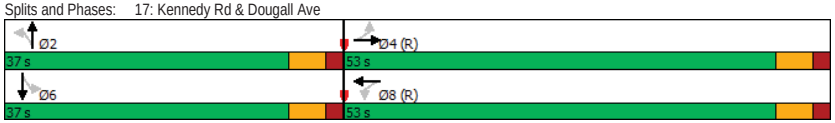
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	70	170	5	40	25	280	445	85	25	330	40
Future Volume (vph)	40	70	170	5	40	25	280	445	85	25	330	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.92			0.95			0.98			0.98	
Flt Protected		0.99			1.00			0.98			1.00	
Satd. Flow (prot)		1706			1791			3465			3501	
Flt Permitted		0.96			0.98			0.68			0.84	
Satd. Flow (perm)		1641			1763			2413			2963	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	40	71	172	5	40	25	283	449	86	25	333	40
RTOR Reduction (vph)	0	62	0	0	12	0	0	10	0	0	9	0
Lane Group Flow (vph)	0	221	0	0	58	0	0	808	0	0	389	0
Confl. Peds. (#/hr)	4		12	12		4	8		16	16		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		47.0			47.0			31.0			31.0	
Effective Green, g (s)		47.0			47.0			31.0			31.0	
Actuated g/C Ratio		0.52			0.52			0.34			0.34	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		856			920			831			1020	
v/s Ratio Prot												
v/s Ratio Perm		c0.13			0.03			c0.33			0.13	
v/c Ratio		0.26			0.06			0.97			0.38	
Uniform Delay, d1		11.9			10.6			29.1			22.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.1			25.2			1.1	
Delay (s)		12.6			10.8			54.3			23.3	
Level of Service		B			B			D			C	
Approach Delay (s)		12.6			10.8			54.3			23.3	
Approach LOS		B			B			D			C	

Intersection Summary				
HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	82.9%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	70	5	40	280	445	25	330
Future Volume (vph)	40	70	5	40	280	445	25	330
Lane Group Flow (vph)	0	283	0	70	0	818	0	398
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.0	34.0	34.0	34.0	31.0	31.0	31.0	31.0
Total Split (s)	53.0	53.0	53.0	53.0	37.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%	58.9%	58.9%	41.1%	41.1%	41.1%	41.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.31		0.08		0.97		0.39
Control Delay		7.3		7.8		55.4		22.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		7.3		7.8		55.4		22.8
Queue Length 50th (m)		13.9		3.8		75.1		27.4
Queue Length 95th (m)		28.7		10.2		#117.2		40.2
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		919		933		840		1030
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.31		0.08		0.97		0.39

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	510	190	85	130	120	15	25	1890	60	30	3560	270
Future Volume (vph)	510	190	85	130	120	15	25	1890	60	30	3560	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.95		1.00	0.98		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1720		1566	1815		1716	4358		1384	5003	
Flt Permitted	0.67	1.00		0.50	1.00		0.07	1.00		0.07	1.00	
Satd. Flow (perm)	1253	1720		821	1815		123	4358		99	5003	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	531	198	89	135	125	16	26	1969	62	31	3708	281
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	0	0	7	0
Lane Group Flow (vph)	531	287	0	135	139	0	26	2029	0	31	3982	0
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	45.6	45.6		45.6	45.6		58.9	58.9		58.9	58.9	
Effective Green, g (s)	45.6	45.6		45.6	45.6		58.9	58.9		58.9	58.9	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.49	0.49		0.49	0.49	
Clearance Time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	476	653		311	689		60	2139		48	2455	
v/s Ratio Prot		0.17			0.08			0.47			c0.80	
v/s Ratio Perm	c0.42			0.16			0.21			0.31		
v/c Ratio	1.12	0.44		0.43	0.20		0.43	0.95		0.65	1.62	
Uniform Delay, d1	37.2	27.7		27.6	25.0		19.8	29.1		22.8	30.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	76.7	0.5		1.0	0.1		21.2	10.7		51.6	281.8	
Delay (s)	113.9	28.2		28.6	25.1		40.9	39.8		74.4	312.3	
Level of Service	F	C		C	C		D	D		E	F	
Approach Delay (s)		83.8			26.8			39.8			310.5	
Approach LOS		F			C			D			F	

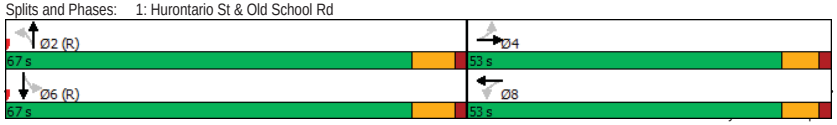
Intersection Summary				
HCM 2000 Control Delay	196.0	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.40			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	130.5%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	510	190	130	120	25	1890	30	3560
Future Volume (vph)	510	190	130	120	25	1890	30	3560
Lane Group Flow (vph)	531	287	135	141	26	2032	31	3989
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	42.4	42.4	41.1	41.1	41.1	41.1
Total Split (s)	53.0	53.0	53.0	53.0	67.0	67.0	67.0	67.0
Total Split (%)	44.2%	44.2%	44.2%	44.2%	55.8%	55.8%	55.8%	55.8%
Yellow Time (s)	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	8.1	8.1	8.1	8.1
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	1.12	0.44	0.43	0.20	0.43	0.95	0.65	1.62
Control Delay	112.4	30.4	33.1	25.3	46.9	40.1	83.2	307.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.4	30.4	33.1	25.3	46.9	40.1	83.2	307.0
Queue Length 50th (m)	~151.1	52.4	24.6	22.5	4.0	170.3	5.5	~525.3
Queue Length 95th (m)	#220.2	78.2	44.6	37.9	#18.0	#212.1	#25.1	#547.0
Internal Link Dist (m)		316.5		178.0		1309.2		1382.3
Turn Bay Length (m)	75.0		75.0		50.0		50.0	
Base Capacity (vph)	476	653	311	692	60	2141	48	2461
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	1.12	0.44	0.43	0.20	0.43	0.95	0.65	1.62

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



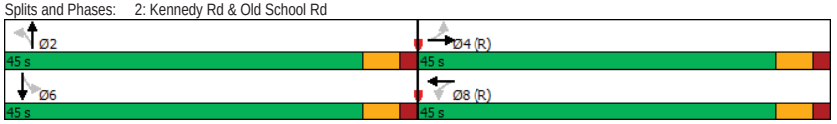
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	205	65	55	190	0	65	60	120	15	105	10
Future Volume (vph)	10	205	65	55	190	0	65	60	120	15	105	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			1.00			0.93			0.99	
Flt Protected		1.00			0.99			0.99			0.99	
Satd. Flow (prot)		1776			1777			1645			1762	
Flt Permitted		0.99			0.86			0.88			0.95	
Satd. Flow (perm)		1755			1552			1463			1687	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	11	236	75	63	218	0	75	69	138	17	121	11
RTOR Reduction (vph)	0	12	0	0	0	0	0	39	0	0	3	0
Lane Group Flow (vph)	0	310	0	0	281	0	0	243	0	0	146	0
Heavy Vehicles (%)	25%	1%	13%	10%	6%	0%	14%	10%	3%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		39.0			39.0			39.0			39.0	
Effective Green, g (s)		39.0			39.0			39.0			39.0	
Actuated g/C Ratio		0.43			0.43			0.43			0.43	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		760			672			633			731	
v/s Ratio Prot												
v/s Ratio Perm		0.18			c0.18			c0.17			0.09	
v/c Ratio		0.41			0.42			0.38			0.20	
Uniform Delay, d1		17.6			17.6			17.3			15.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.6			1.9			1.8			0.6	
Delay (s)		19.2			19.6			19.1			16.4	
Level of Service		B			B			B			B	
Approach Delay (s)		19.2			19.6			19.1			16.4	
Approach LOS		B			B			B			B	

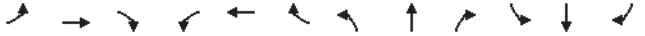
Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	205	55	190	65	60	15	105
Future Volume (vph)	10	205	55	190	65	60	15	105
Lane Group Flow (vph)	0	322	0	281	0	282	0	149
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.42		0.42		0.42		0.20
Control Delay		18.4		20.1		15.4		16.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		18.4		20.1		15.4		16.1
Queue Length 50th (m)		36.6		34.3		25.4		15.6
Queue Length 95th (m)		56.0		53.2		44.1		27.2
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)								
Base Capacity (vph)		772		672		672		734
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.42		0.42		0.42		0.20

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed

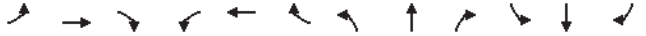
Splits and Phases: 2: Kennedy Rd & Old School Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	5	0	45	15	25	0	10	240	45	5	220	0
Future Volume (veh/h)	5	0	45	15	25	0	10	240	45	5	220	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	49	16	27	0	11	261	49	5	239	0
Approach Volume (veh/h)		54			43			321			244	
Crossing Volume (veh/h)		260			277			10			54	
High Capacity (veh/h)		1129			1114			1374			1328	
High v/c (veh/h)		0.05			0.04			0.23			0.18	
Low Capacity (veh/h)		930			916			1151			1109	
Low v/c (veh/h)		0.06			0.05			0.28			0.22	

Intersection Summary												
Maximum v/c High			0.23									
Maximum v/c Low			0.28									
Intersection Capacity Utilization			32.6%		ICU Level of Service				A			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	305	25	25	200	5	25	60	20	5	140	20
Future Volume (vph)	10	305	25	25	200	5	25	60	20	5	140	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	359	29	29	235	6	29	71	24	6	165	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	400	270	124	195
Volume Left (vph)	12	29	29	6
Volume Right (vph)	29	6	24	24
Hadj (s)	0.02	0.15	0.14	-0.01
Departure Headway (s)	5.4	5.7	6.3	6.0
Degree Utilization, x	0.60	0.43	0.22	0.33
Capacity (veh/h)	635	587	485	531
Control Delay (s)	16.1	13.0	11.1	11.9
Approach Delay (s)	16.1	13.0	11.1	11.9
Approach LOS	C	B	B	B

Intersection Summary												
Delay			13.8									
Level of Service			B									
Intersection Capacity Utilization			46.5%		ICU Level of Service				A			
Analysis Period (min)			15									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	15	115	40	45	5	40	270	15	5	260	15
Future Volume (Veh/h)	20	15	115	40	45	5	40	270	15	5	260	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	21	16	120	42	47	5	42	281	16	5	271	16
Pedestrians					3			6				
Lane Width (m)					3.6			3.6				
Walking Speed (m/s)					1.2			1.2				
Percent Blockage					0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	542	673	150	656	673	152	287			300		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	542	673	150	656	673	152	287			300		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	96	86	85	87	99	97			100		
cM capacity (veh/h)	372	364	872	285	364	872	1250			1269		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	157	94	182	156	140	152
Volume Left	21	42	42	0	5	0
Volume Right	120	5	0	16	0	16
cSH	660	333	1250	1700	1269	1700
Volume to Capacity	0.24	0.28	0.03	0.09	0.00	0.09
Queue Length 95th (m)	7.4	9.1	0.8	0.0	0.1	0.0
Control Delay (s)	12.2	20.0	2.1	0.0	0.3	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.2	20.0	1.1		0.1	
Approach LOS	B	C				

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	39.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	50	0	0	40	0	0
Future Volume (Veh/h)	50	0	0	40	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	0	0	43	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			54		97	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			54		97	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1551		902	1013

Direction, Lane #	EB 1	WB 1
Volume Total	54	43
Volume Left	0	0
Volume Right	0	0
cSH	1700	1551
Volume to Capacity	0.03	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			

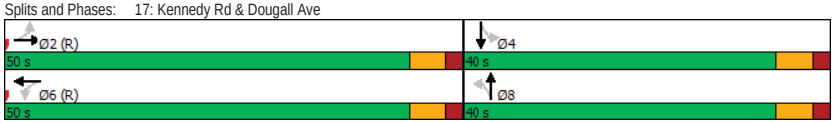
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	45	300	140	55	30	115	265	55	55	340	20
Future Volume (vph)	30	45	300	140	55	30	115	265	55	55	340	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.98			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.89			0.98			0.98			0.99	
Flt Protected		1.00			0.97			0.99			0.99	
Satd. Flow (prot)		1659			1801			3457			3553	
Flt Permitted		0.96			0.56			0.70			0.82	
Satd. Flow (perm)		1601			1046			2447			2948	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	48	319	149	59	32	122	282	59	59	362	21
RTOR Reduction (vph)	0	159	0	0	6	0	0	13	0	0	4	0
Lane Group Flow (vph)	0	240	0	0	234	0	0	450	0	0	438	0
Confl. Peds. (#/hr)	3		9	9		3	1		10	10		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		44.0			44.0			34.0			34.0	
Effective Green, g (s)		44.0			44.0			34.0			34.0	
Actuated g/C Ratio		0.49			0.49			0.38			0.38	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		782			511			924			1113	
v/s Ratio Prot												
v/s Ratio Perm		0.15			c0.22			c0.18			0.15	
v/c Ratio		0.31			0.46			0.49			0.39	
Uniform Delay, d1		13.8			15.1			21.3			20.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			2.9			1.8			1.0	
Delay (s)		14.8			18.1			23.2			21.5	
Level of Service		B			B			C			C	
Approach Delay (s)		14.8			18.1			23.2			21.5	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.47			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	110.8%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	45	140	55	115	265	55	340
Future Volume (vph)	30	45	140	55	115	265	55	340
Lane Group Flow (vph)	0	399	0	240	0	463	0	442
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	31.0	31.0	31.0	31.0	34.0	34.0	34.0	34.0
Total Split (s)	50.0	50.0	50.0	50.0	40.0	40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.42		0.46		0.49		0.40
Control Delay		4.9		18.0		22.6		21.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		4.9		18.0		22.6		21.5
Queue Length 50th (m)		8.2		26.1		31.6		30.0
Queue Length 95th (m)		25.3		47.1		46.5		43.1
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		941		518		938		1117
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.42		0.46		0.49		0.40

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	630	180	20	145	215	10	85	4315	100	15	1970	565
Future Volume (vph)	630	180	20	145	215	10	85	4315	100	15	1970	565
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.99		1.00	0.99		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1818		1750	1872		1785	5072		1487	4660	
Flt Permitted	0.53	1.00		0.57	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	993	1818		1048	1872		114	5072		95	4660	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	670	191	21	154	229	11	90	4590	106	16	2096	601
RTOR Reduction (vph)	0	3	0	0	0	0	0	2	0	0	43	0
Lane Group Flow (vph)	670	209	0	154	240	0	90	4694	0	16	2654	0
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.6	38.6		38.6	38.6		65.9	65.9		65.9	65.9	
Effective Green, g (s)	38.6	38.6		38.6	38.6		65.9	65.9		65.9	65.9	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.55	0.55		0.55	0.55	
Clearance Time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	319	584		337	602		62	2785		52	2559	
v/s Ratio Prot		0.11			0.13			c0.93			0.57	
v/s Ratio Perm	c0.67			0.15			0.79			0.17		
v/c Ratio	2.10	0.36		0.46	0.40		1.45	1.69		0.31	1.04	
Uniform Delay, d1	40.7	31.2		32.4	31.7		27.0	27.0		14.7	27.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	505.7	0.4		1.0	0.4		272.8	310.1		14.7	28.3	
Delay (s)	546.4	31.6		33.4	32.1		299.8	337.1		29.4	55.4	
Level of Service	F	C		C	C		F	F		C	E	
Approach Delay (s)		422.6			32.6			336.4			55.2	
Approach LOS		F			C			F			E	

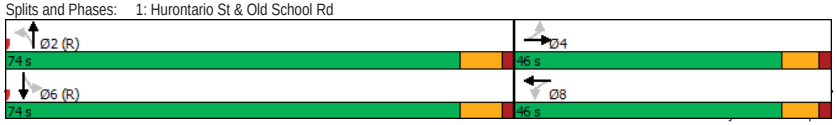
Intersection Summary				
HCM 2000 Control Delay	244.5	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.84			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	151.5%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	630	180	145	215	85	4315	15	1970
Future Volume (vph)	630	180	145	215	85	4315	15	1970
Lane Group Flow (vph)	670	212	154	240	90	4696	16	2697
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	42.4	42.4	41.1	41.1	41.1	41.1
Total Split (s)	46.0	46.0	46.0	46.0	74.0	74.0	74.0	74.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	61.7%	61.7%	61.7%	61.7%
Yellow Time (s)	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	8.1	8.1	8.1	8.1
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	2.10	0.36	0.46	0.40	1.43	1.68	0.31	1.04
Control Delay	529.9	32.6	37.8	34.1	290.2	333.5	33.8	54.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	529.9	32.6	37.8	34.1	290.2	333.5	33.8	54.3
Queue Length 50th (m)	~263.1	39.2	30.3	46.1	~30.1	~629.7	2.1	~259.7
Queue Length 95th (m)	#336.9	61.3	51.9	70.1	#50.2	#646.3	9.9	#288.9
Internal Link Dist (m)		316.5		178.0		1309.2		1382.3
Turn Bay Length (m)	75.0		75.0		50.0		50.0	
Base Capacity (vph)	319	588	337	602	63	2788	52	2603
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	2.10	0.36	0.46	0.40	1.43	1.68	0.31	1.04

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	170	110	70	320	5	40	115	60	5	90	10
Future Volume (vph)	15	170	110	70	320	5	40	115	60	5	90	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			1.00			0.96			0.99	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1682			1871			1732			1737	
Flt Permitted		0.97			0.89			0.93			0.99	
Satd. Flow (perm)		1640			1681			1630			1720	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	173	112	71	327	5	41	117	61	5	92	10
RTOR Reduction (vph)	0	27	0	0	1	0	0	17	0	0	5	0
Lane Group Flow (vph)	0	273	0	0	402	0	0	202	0	0	102	0
Heavy Vehicles (%)	0%	11%	5%	0%	2%	0%	3%	4%	11%	0%	9%	13%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.0			34.0			34.0			34.0	
Effective Green, g (s)		34.0			34.0			34.0			34.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		697			714			692			731	
v/s Ratio Prot												
v/s Ratio Perm		0.17			c0.24			c0.12			0.06	
v/c Ratio		0.39			0.56			0.29			0.14	
Uniform Delay, d1		15.9			17.4			15.1			14.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.7			3.2			1.1			0.4	
Delay (s)		17.5			20.6			16.2			14.5	
Level of Service		B			C			B			B	
Approach Delay (s)		17.5			20.6			16.2			14.5	
Approach LOS		B			C			B			B	

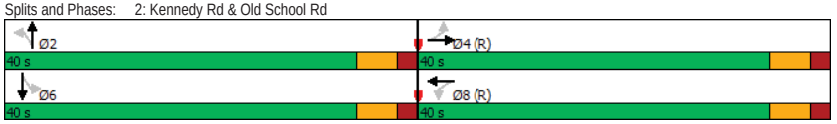
Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

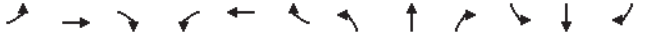
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	15	170	70	320	40	115	5	90
Future Volume (vph)	15	170	70	320	40	115	5	90
Lane Group Flow (vph)	0	300	0	403	0	219	0	107
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.41		0.56		0.31		0.15
Control Delay		15.5		21.2		14.5		13.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		15.5		21.2		14.5		13.7
Queue Length 50th (m)		26.8		47.0		19.0		9.3
Queue Length 95th (m)		47.2		75.2		34.9		19.1
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)								
Base Capacity (vph)		724		715		710		735
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.41		0.56		0.31		0.15

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 60 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed

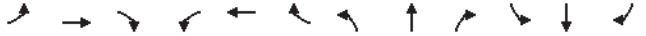
Splits and Phases: 2: Kennedy Rd & Old School Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	0	0	25	15	35	0	40	215	10	20	245	5
Future Volume (veh/h)	0	0	25	15	35	0	40	215	10	20	245	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	27	16	38	0	43	234	11	22	266	5
Approach Volume (veh/h)		27			54			288			293	
Crossing Volume (veh/h)		304			277			22			97	
High Capacity (veh/h)		1091			1114			1361			1284	
High v/c (veh/h)		0.02			0.05			0.21			0.23	
Low Capacity (veh/h)		895			916			1140			1069	
Low v/c (veh/h)		0.03			0.06			0.25			0.27	

Intersection Summary						
Maximum v/c High			0.23			
Maximum v/c Low			0.27			
Intersection Capacity Utilization			39.7%	ICU Level of Service		A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	210	20	25	320	5	65	100	35	0	75	10
Future Volume (vph)	5	210	20	25	320	5	65	100	35	0	75	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	5	223	21	27	340	5	69	106	37	0	80	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	249	372	212	91
Volume Left (vph)	5	27	69	0
Volume Right (vph)	21	5	37	11
Hadj (s)	0.00	0.02	-0.04	-0.01
Departure Headway (s)	5.4	5.2	5.7	6.0
Degree Utilization, x	0.37	0.54	0.34	0.15
Capacity (veh/h)	620	656	567	503
Control Delay (s)	11.6	14.2	11.5	10.1
Approach Delay (s)	11.6	14.2	11.5	10.1
Approach LOS	B	B	B	B

Intersection Summary						
Delay			12.5			
Level of Service			B			
Intersection Capacity Utilization			54.4%	ICU Level of Service		A
Analysis Period (min)			15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	55	75	20	30	0	120	260	55	5	255	25
Future Volume (Veh/h)	5	55	75	20	30	0	120	260	55	5	255	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	5	60	82	22	33	0	132	286	60	5	280	27
Pedestrians		1			13			5			1	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	729	928	160	860	911	187	308			359		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	729	928	160	860	911	187	308			359		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	75	90	87	86	100	90			100		
cM capacity (veh/h)	256	238	853	166	243	820	1263			1198		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	147	55	275	203	145	167
Volume Left	5	22	132	0	5	0
Volume Right	82	0	0	60	0	27
cSH	400	205	1263	1700	1198	1700
Volume to Capacity	0.37	0.27	0.10	0.12	0.00	0.10
Queue Length 95th (m)	13.3	8.3	2.8	0.0	0.1	0.0
Control Delay (s)	19.1	28.9	4.4	0.0	0.3	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	19.1	28.9	2.5		0.1	
Approach LOS	C	D				

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	42.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	30	0	0	50	0	0
Future Volume (Veh/h)	30	0	0	50	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	0	54	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			33		87	33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			33		87	33
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1579		914	1041

Direction, Lane #	EB 1	WB 1
Volume Total	33	54
Volume Left	0	0
Volume Right	0	0
cSH	1700	1579
Volume to Capacity	0.02	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			

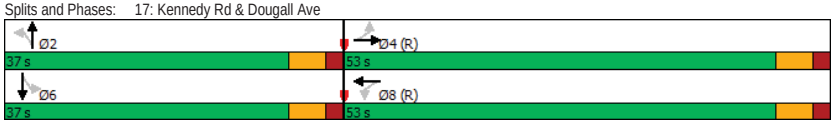
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	70	170	5	40	25	280	370	85	25	285	40
Future Volume (vph)	40	70	170	5	40	25	280	370	85	25	285	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.92			0.95			0.98			0.98	
Flt Protected		0.99			1.00			0.98			1.00	
Satd. Flow (prot)		1706			1791			3450			3492	
Flt Permitted		0.96			0.98			0.70			0.87	
Satd. Flow (perm)		1641			1763			2448			3046	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	40	71	172	5	40	25	283	374	86	25	288	40
RTOR Reduction (vph)	0	62	0	0	12	0	0	11	0	0	11	0
Lane Group Flow (vph)	0	221	0	0	58	0	0	732	0	0	342	0
Confl. Peds. (#/hr)	4		12	12		4	8		16	16		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		47.0			47.0			31.0			31.0	
Effective Green, g (s)		47.0			47.0			31.0			31.0	
Actuated g/C Ratio		0.52			0.52			0.34			0.34	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		856			920			843			1049	
v/s Ratio Prot												
v/s Ratio Perm		c0.13			0.03			c0.30			0.11	
v/c Ratio		0.26			0.06			0.87			0.33	
Uniform Delay, d1		11.9			10.6			27.6			21.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.1			11.7			0.8	
Delay (s)		12.6			10.8			39.3			22.6	
Level of Service		B			B			D			C	
Approach Delay (s)		12.6			10.8			39.3			22.6	
Approach LOS		B			B			D			C	

Intersection Summary				
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	80.8%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	70	5	40	280	370	25	285
Future Volume (vph)	40	70	5	40	280	370	25	285
Lane Group Flow (vph)	0	283	0	70	0	743	0	353
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.0	34.0	34.0	34.0	31.0	31.0	31.0	31.0
Total Split (s)	53.0	53.0	53.0	53.0	37.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%	58.9%	58.9%	41.1%	41.1%	41.1%	41.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.31		0.08		0.87		0.33
Control Delay		7.3		7.8		39.7		21.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		7.3		7.8		39.7		21.8
Queue Length 50th (m)		13.9		3.8		64.4		23.4
Queue Length 95th (m)		28.7		10.2		#99.1		35.1
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		919		933		854		1059
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.31		0.08		0.87		0.33

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	510	210	85	385	160	20	25	1890	150	30	3560	270
Future Volume (vph)	510	210	85	385	160	20	25	1890	150	30	3560	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1723		1566	1816		1716	4371	1413	1384	5043	1597
Flt Permitted	0.64	1.00		0.29	1.00		0.07	1.00	1.00	0.07	1.00	1.00
Satd. Flow (perm)	1201	1723		476	1816		123	4371	1413	99	5043	1597
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	531	219	89	401	167	21	26	1969	156	31	3708	281
RTOR Reduction (vph)	0	12	0	0	2	0	0	0	71	0	0	68
Lane Group Flow (vph)	531	296	0	401	186	0	26	1969	85	31	3708	213
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.6	27.6		45.6	45.6		58.9	58.9	58.9	58.9	58.9	58.9
Effective Green, g (s)	27.6	27.6		45.6	45.6		58.9	58.9	58.9	58.9	58.9	58.9
Actuated g/C Ratio	0.23	0.23		0.38	0.38		0.49	0.49	0.49	0.49	0.49	0.49
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	276	396		308	690		60	2145	693	48	2475	783
v/s Ratio Prot		0.17		c0.15	0.10			0.45			c0.74	
v/s Ratio Perm	c0.44			0.34			0.21		0.06	0.31		0.13
v/c Ratio	1.92	0.75		1.30	0.27		0.43	0.92	0.12	0.65	1.50	0.27
Uniform Delay, d1	46.2	42.9		33.9	25.7		19.8	28.3	16.5	22.8	30.6	17.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	428.9	7.5		157.6	0.2		21.2	7.8	0.4	51.6	226.3	0.9
Delay (s)	475.1	50.4		191.5	25.9		40.9	36.1	16.9	74.4	256.9	18.8
Level of Service	F	D		F	C		D	D	B	E	F	B
Approach Delay (s)		319.2			138.6			34.7			238.8	
Approach LOS		F			F			C			F	

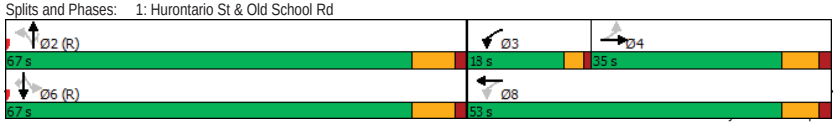
Intersection Summary				
HCM 2000 Control Delay	182.2	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.59			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	125.8%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	510	210	385	160	25	1890	150	30	3560	270
Future Volume (vph)	510	210	385	160	25	1890	150	30	3560	270
Lane Group Flow (vph)	531	308	401	188	26	1969	156	31	3708	281
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	41.1	41.1	41.1
Total Split (s)	35.0	35.0	18.0	53.0	67.0	67.0	67.0	67.0	67.0	67.0
Total Split (%)	29.2%	29.2%	15.0%	44.2%	55.8%	55.8%	55.8%	55.8%	55.8%	55.8%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	8.1	8.1	8.1
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	1.92	0.75	1.25	0.27	0.43	0.92	0.20	0.65	1.50	0.33
Control Delay	456.4	53.7	163.7	26.5	46.9	36.5	4.3	83.2	253.3	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	456.4	53.7	163.7	26.5	46.9	36.5	4.3	83.2	253.3	10.4
Queue Length 50th (m)	~202.6	68.0	~104.0	31.2	4.0	160.8	2.0	5.5	~466.7	19.8
Queue Length 95th (m)	#271.8	#107.6	#186.8	49.8	#18.0	186.6	13.5	#25.1	#489.9	38.9
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	276	408	321	692	60	2145	764	48	2475	852
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	1.92	0.75	1.25	0.27	0.43	0.92	0.20	0.65	1.50	0.33

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	300	150	85	255	0	215	80	195	15	110	10
Future Volume (vph)	30	300	150	85	255	0	215	80	195	15	110	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00		1.00	0.89		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1428	1738		1623	1812		1566	1634		1785	1753	
Flt Permitted	0.56	1.00		0.39	1.00		0.67	1.00		0.40	1.00	
Satd. Flow (perm)	849	1738		662	1812		1103	1634		757	1753	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	34	345	172	98	293	0	247	92	224	17	126	11
RTOR Reduction (vph)	0	15	0	0	0	0	0	122	0	0	4	0
Lane Group Flow (vph)	34	502	0	98	293	0	247	194	0	17	133	0
Heavy Vehicles (%)	25%	1%	13%	10%	6%	0%	14%	10%	3%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.9	51.9		51.9	51.9		26.1	26.1		26.1	26.1	
Effective Green, g (s)	51.9	51.9		51.9	51.9		26.1	26.1		26.1	26.1	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.29	0.29		0.29	0.29	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	489	1002		381	1044		319	473		219	508	
v/s Ratio Prot		c0.29			0.16			0.12			0.08	
v/s Ratio Perm	0.04			0.15			c0.22			0.02		
v/c Ratio	0.07	0.50		0.26	0.28		0.77	0.41		0.08	0.26	
Uniform Delay, d1	8.4	11.3		9.5	9.6		29.3	25.7		23.2	24.5	
Progression Factor	1.00	1.00		1.00	1.00		1.02	1.18		1.00	1.00	
Incremental Delay, d2	0.3	1.8		1.6	0.7		10.8	0.6		0.2	0.3	
Delay (s)	8.7	13.1		11.1	10.3		40.7	31.0		23.4	24.8	
Level of Service	A	B		B	B		D	C		C	C	
Approach Delay (s)		12.9			10.5			35.3			24.7	
Approach LOS		B			B			D			C	

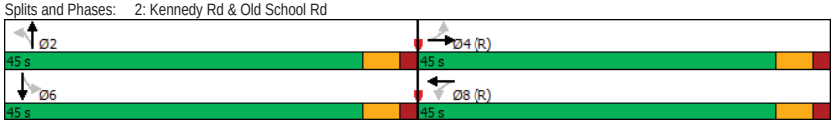
Intersection Summary				
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	66.8%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	300	85	255	215	80	15	110
Future Volume (vph)	30	300	85	255	215	80	15	110
Lane Group Flow (vph)	34	517	98	293	247	316	17	137
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
v/c Ratio	0.07	0.51	0.26	0.28	0.77	0.53	0.08	0.27
Control Delay	11.9	14.6	14.5	12.3	44.5	15.4	19.9	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	14.6	14.5	12.3	44.5	15.4	19.9	22.6
Queue Length 50th (m)	2.5	48.4	8.2	25.0	39.1	21.7	2.2	18.2
Queue Length 95th (m)	8.7	93.5	22.5	50.1	60.0	23.2	5.9	26.4
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)	70.0		70.0		70.0		70.0	
Base Capacity (vph)	489	1016	381	1044	477	805	328	763
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	0.07	0.51	0.26	0.28	0.52	0.39	0.05	0.18

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 2: Kennedy Rd & Old School Rd



HCM Unsignalized Intersection Capacity Analysis
4: Kennedy Rd & Newhouse Blvd/Bonnieglen Farm Blvd

Future Total (AM)
2033 Horizon (without GTA West Highway)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	5	0	45	20	25	35	10	270	45	20	305	0
Future Volume (veh/h)	5	0	45	20	25	35	10	270	45	20	305	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	49	22	27	38	11	293	49	22	332	0
Approach Volume (veh/h)		54			87			353			354	
Crossing Volume (veh/h)		376			309			27			60	
High Capacity (veh/h)		1030			1087			1356			1321	
High v/c (veh/h)		0.05			0.08			0.26			0.27	
Low Capacity (veh/h)		841			891			1135			1104	
Low v/c (veh/h)		0.06			0.10			0.31			0.32	

Intersection Summary												
Maximum v/c High			0.27									
Maximum v/c Low			0.32									
Intersection Capacity Utilization			40.4%		ICU Level of Service				A			

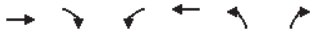
HCM Unsignalized Intersection Capacity Analysis
3: Heart Lake Rd & Old School Rd

Future Total (AM)
2033 Horizon (without GTA West Highway)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	415	110	25	235	5	55	60	20	5	140	20
Future Volume (vph)	15	415	110	25	235	5	55	60	20	5	140	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	18	488	129	29	276	6	65	71	24	6	165	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	635	311	160	195
Volume Left (vph)	18	29	65	6
Volume Right (vph)	129	6	24	24
Hadj (s)	-0.07	0.15	0.16	-0.01
Departure Headway (s)	5.8	6.5	7.4	7.1
Degree Utilization, x	1.03	0.56	0.33	0.38
Capacity (veh/h)	613	527	449	478
Control Delay (s)	67.8	17.6	13.9	14.5
Approach Delay (s)	67.8	17.6	13.9	14.5
Approach LOS	F	C	B	B

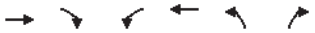
Intersection Summary												
Delay			41.2									
Level of Service			E									
Intersection Capacity Utilization			58.3%		ICU Level of Service				B			
Analysis Period (min)			15									



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	405	10	30	485	80	45
Future Volume (Veh/h)	405	10	30	485	80	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	440	11	33	527	87	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			451		1038	446
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			451		1038	446
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		65	92
cM capacity (veh/h)			1109		248	613

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	451	33	527	136
Volume Left	0	33	0	87
Volume Right	11	0	0	49
cSH	1700	1109	1700	316
Volume to Capacity	0.27	0.03	0.31	0.43
Queue Length 95th (m)	0.0	0.7	0.0	16.6
Control Delay (s)	0.0	8.3	0.0	24.8
Lane LOS		A		C
Approach Delay (s)	0.0	0.5		24.8
Approach LOS				C

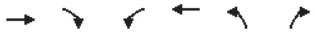
Intersection Summary				
Average Delay			3.2	
Intersection Capacity Utilization			39.4%	ICU Level of Service
Analysis Period (min)			15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	375	15	0	565	0	40
Future Volume (Veh/h)	375	15	0	565	0	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	408	16	0	614	0	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	202					
pX, platoon unblocked			0.89		0.89	0.89
vC, conflicting volume			424		1030	416
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			289		971	280
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	94
cM capacity (veh/h)			1131		249	674

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	424	614	43
Volume Left	0	0	0
Volume Right	16	0	43
cSH	1700	1700	674
Volume to Capacity	0.25	0.36	0.06
Queue Length 95th (m)	0.0	0.0	1.6
Control Delay (s)	0.0	0.0	10.7
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.7
Approach LOS			B

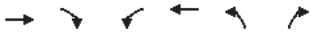
Intersection Summary				
Average Delay			0.4	
Intersection Capacity Utilization			33.1%	ICU Level of Service
Analysis Period (min)			15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	455	10	15	465	50	25
Future Volume (Veh/h)	455	10	15	465	50	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	495	11	16	505	54	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			506		1038	500
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			506		1038	500
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		79	95
cM capacity (veh/h)			1059		252	570

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	506	16	505	81
Volume Left	0	16	0	54
Volume Right	11	0	0	27
cSH	1700	1059	1700	310
Volume to Capacity	0.30	0.02	0.30	0.26
Queue Length 95th (m)	0.0	0.4	0.0	8.2
Control Delay (s)	0.0	8.5	0.0	20.7
Lane LOS		A		C
Approach Delay (s)	0.0	0.3		20.7
Approach LOS				C

Intersection Summary				
Average Delay			1.6	
Intersection Capacity Utilization			35.5%	ICU Level of Service
Analysis Period (min)			15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	440	10	0	515	0	25
Future Volume (Veh/h)	440	10	0	515	0	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	478	11	0	560	0	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			489		1044	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			489		1044	484
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	95
cM capacity (veh/h)			1074		254	583

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	489	560	27
Volume Left	0	0	0
Volume Right	11	0	27
cSH	1700	1700	583
Volume to Capacity	0.29	0.33	0.05
Queue Length 95th (m)	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	11.5
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.5
Approach LOS			B

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			33.8%	ICU Level of Service
Analysis Period (min)			15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	490	335	10
Future Volume (Veh/h)	0	0	0	490	335	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	533	364	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				212	109	
pX, platoon unblocked	0.95	0.96	0.96			
vC, conflicting volume	902	370	375			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	784	325	331			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	345	689	1182			

Direction, Lane #	NB 1	SB 1
Volume Total	533	375
Volume Left	0	0
Volume Right	0	11
cSH	1700	1700
Volume to Capacity	0.31	0.22
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		29.1%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	495	15	10	300	40	45
Future Volume (Veh/h)	495	15	10	300	40	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	538	16	11	326	43	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	236					
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			554		894	546
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			516		870	508
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		86	91
cM capacity (veh/h)			1009		306	543

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	554	337	92
Volume Left	0	11	43
Volume Right	16	0	49
cSH	1700	1009	399
Volume to Capacity	0.33	0.01	0.23
Queue Length 95th (m)	0.0	0.3	7.0
Control Delay (s)	0.0	0.4	16.7
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	16.7
Approach LOS			C

Intersection Summary				
Average Delay		1.7		
Intersection Capacity Utilization		38.6%	ICU Level of Service	A
Analysis Period (min)		15		

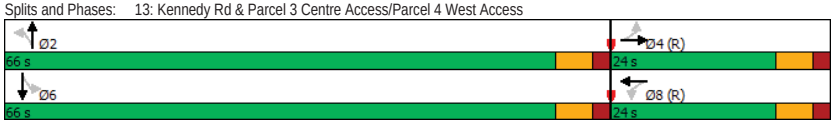
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	0	15	20	0	90	5	330	5	30	295	10
Future Volume (vph)	70	0	15	20	0	90	5	330	5	30	295	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.89			1.00			1.00	
Flt Protected		0.96			0.99			1.00			1.00	
Satd. Flow (prot)		1747			1642			1858			1847	
Flt Permitted		0.69			0.93			1.00			0.95	
Satd. Flow (perm)		1258			1546			1852			1756	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	0	16	22	0	98	5	359	5	33	321	11
RTOR Reduction (vph)	0	29	0	0	78	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	63	0	0	42	0	0	368	0	0	364	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0			60.0			60.0	
Effective Green, g (s)		18.0			18.0			60.0			60.0	
Actuated g/C Ratio		0.20			0.20			0.67			0.67	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		251			309			1234			1170	
v/s Ratio Prot												
v/s Ratio Perm		c0.05			0.03			0.20			c0.21	
v/c Ratio		0.25			0.13			0.30			0.31	
Uniform Delay, d1		30.3			29.6			6.2			6.3	
Progression Factor		1.00			1.00			1.00			0.97	
Incremental Delay, d2		2.4			0.9			0.6			0.7	
Delay (s)		32.7			30.5			6.9			6.8	
Level of Service		C			C			A			A	
Approach Delay (s)		32.7			30.5			6.9			6.8	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.30			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	55.4%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	70	0	20	0	5	330	30	295
Future Volume (vph)	70	0	20	0	5	330	30	295
Lane Group Flow (vph)	0	92	0	120	0	369	0	365
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	66.0	66.0	66.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	73.3%	73.3%	73.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.33		0.31		0.30		0.31
Control Delay		23.7		11.8		7.0		6.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		23.7		11.8		7.0		6.9
Queue Length 50th (m)		8.6		3.3		24.4		31.3
Queue Length 95th (m)		22.8		17.9		37.6		11.8
Internal Link Dist (m)		133.2		141.7		81.9		188.3
Turn Bay Length (m)								
Base Capacity (vph)		280		387		1235		1172
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.33		0.31		0.30		0.31

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 13: Kennedy Rd & Parcel 3 Centre Access/Parcel 4 West Access



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	50	0	0	40	0	0	0	0	0	0	40
Future Volume (Veh/h)	15	50	0	0	40	0	0	0	0	0	0	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	54	0	0	43	0	0	0	0	0	0	43
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	43			54			172	129	54	129	129	43
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	43			54			172	129	54	129	129	43
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	96
cM capacity (veh/h)	1566			1551			752	754	1013	837	754	1027

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	70	43	0	43
Volume Left	16	0	0	0
Volume Right	0	0	0	43
cSH	1566	1551	1700	1027
Volume to Capacity	0.01	0.00	0.00	0.04
Queue Length 95th (m)	0.2	0.0	0.0	1.0
Control Delay (s)	1.7	0.0	0.0	8.7
Lane LOS	A		A	A
Approach Delay (s)	1.7	0.0	0.0	8.7
Approach LOS			A	A

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	20.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	5	5	305	320	10
Future Volume (Veh/h)	35	5	5	305	320	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	5	5	332	348	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					106	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	696	354	359			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	634	266	272			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	99	100			
cM capacity (veh/h)	410	718	1200			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	43	337	359
Volume Left	38	5	0
Volume Right	5	0	11
cSH	432	1200	1700
Volume to Capacity	0.10	0.00	0.21
Queue Length 95th (m)	2.6	0.1	0.0
Control Delay (s)	14.3	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	14.3	0.2	0.0
Approach LOS	B		

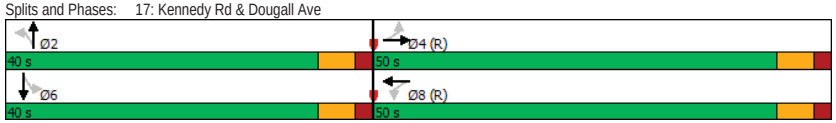
Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	30.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	45	140	55	115	295	55	430
Future Volume (vph)	30	45	140	55	115	295	55	430
Lane Group Flow (vph)	0	399	0	240	0	495	0	537
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.0	34.0	34.0	34.0	31.0	31.0	31.0	31.0
Total Split (s)	50.0	50.0	50.0	50.0	40.0	40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.44		0.46		0.56		0.47
Control Delay		7.9		18.0		24.1		22.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		7.9		18.0		24.1		22.7
Queue Length 50th (m)		17.6		26.1		35.2		37.8
Queue Length 95th (m)		39.2		47.1		51.4		53.0
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		897		518		888		1133
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.44		0.46		0.56		0.47

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	15	115	40	45	5	40	300	15	5	350	15
Future Volume (Veh/h)	20	15	115	40	45	5	40	300	15	5	350	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	21	16	120	42	47	5	42	312	16	5	365	16
Pedestrians					3			6				
Lane Width (m)					3.6			3.6				
Walking Speed (m/s)					1.2			1.2				
Percent Blockage					0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	652	798	196	734	798	167	381			331		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	652	798	196	734	798	167	381			331		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	95	85	83	85	99	96			100		
cM capacity (veh/h)	304	308	814	245	308	852	1153			1237		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	157	94	198	172	188	198
Volume Left	21	42	42	0	5	0
Volume Right	120	5	0	16	0	16
cSH	584	285	1153	1700	1237	1700
Volume to Capacity	0.27	0.33	0.04	0.10	0.00	0.12
Queue Length 95th (m)	8.6	11.2	0.9	0.0	0.1	0.0
Control Delay (s)	13.4	23.7	2.0	0.0	0.2	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	13.4	23.7	1.1		0.1	
Approach LOS	B	C				

Intersection Summary

Average Delay	4.7			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Queues
1: Hurontario St & Old School Rd

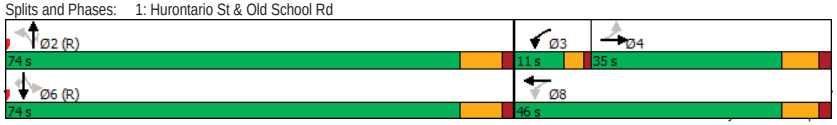
Future Total (PM)
2033 Horizon (without GTA West Highway)

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	630	230	310	240	85	4315	400	20	1970	565
Future Volume (vph)	630	230	310	240	85	4315	400	20	1970	565
Lane Group Flow (vph)	670	266	330	271	90	4590	426	21	2096	601
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	41.1	41.1	41.1
Total Split (s)	35.0	35.0	11.0	46.0	74.0	74.0	74.0	74.0	74.0	74.0
Total Split (%)	29.2%	29.2%	9.2%	38.3%	61.7%	61.7%	61.7%	61.7%	61.7%	61.7%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	8.1	8.1	8.1
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	2.62	0.63	1.12	0.45	1.43	1.64	0.46	0.40	0.78	0.64
Control Delay	759.8	48.9	124.0	35.3	290.2	314.7	10.5	43.4	23.9	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	759.8	48.9	124.0	35.3	290.2	314.7	10.5	43.4	23.9	9.3
Queue Length 50th (m)	~279.5	59.1	~76.0	53.2	~30.1	~603.0	32.4	2.9	143.5	30.3
Queue Length 95th (m)	#353.2	89.0	#145.3	79.1	#50.2	#620.0	57.5	#15.3	163.8	68.6
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	256	421	294	601	63	2796	918	52	2692	939
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	2.62	0.63	1.12	0.45	1.43	1.64	0.46	0.40	0.78	0.64

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



HCM Signalized Intersection Capacity Analysis
17: Kennedy Rd & Dougall Ave

Future Total (AM)
2033 Horizon (without GTA West Highway)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	45	300	140	55	30	115	295	55	55	430	20
Future Volume (vph)	30	45	300	140	55	30	115	295	55	55	430	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.98			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.89			0.98			0.98			0.99	
Flt Protected		1.00			0.97			0.99			0.99	
Satd. Flow (prot)		1660			1801			3464			3563	
Flt Permitted		0.96			0.56			0.66			0.84	
Satd. Flow (perm)		1603			1047			2320			2992	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	48	319	149	59	32	122	314	59	59	457	21
RTOR Reduction (vph)	0	114	0	0	6	0	0	12	0	0	3	0
Lane Group Flow (vph)	0	285	0	0	234	0	0	483	0	0	534	0
Confl. Peds. (#/hr)	3		9	9		3	1		10	10		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		44.0			44.0			34.0			34.0	
Effective Green, g (s)		44.0			44.0			34.0			34.0	
Actuated g/C Ratio		0.49			0.49			0.38			0.38	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		783			511			876			1130	
v/s Ratio Prot												
v/s Ratio Perm		0.18			c0.22			c0.21			0.18	
v/c Ratio		0.36			0.46			0.55			0.47	
Uniform Delay, d1		14.3			15.1			22.0			21.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			2.9			2.5			1.4	
Delay (s)		15.6			18.1			24.5			22.6	
Level of Service		B			B			C			C	
Approach Delay (s)		15.6			18.1			24.5			22.6	
Approach LOS		B			B			C			C	

Intersection Summary

HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.3%	ICU Level of Service	G
Analysis Period (min)	15		

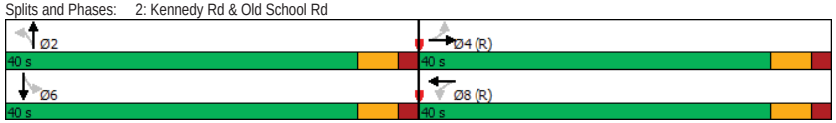
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	265	150	440	170	125	5	110
Future Volume (vph)	25	265	150	440	170	125	5	110
Lane Group Flow (vph)	26	576	153	454	173	245	5	127
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
v/c Ratio	0.05	0.53	0.33	0.38	0.67	0.60	0.03	0.34
Control Delay	7.5	9.9	10.8	9.1	41.0	27.0	21.8	25.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	9.9	10.8	9.1	41.0	27.0	21.8	25.5
Queue Length 50th (m)	1.4	36.1	9.8	30.2	27.7	26.9	0.7	16.0
Queue Length 95th (m)	5.5	81.4	27.5	62.3	27.5	27.1	3.1	27.3
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)	70.0		70.0		70.0		70.0	
Base Capacity (vph)	557	1078	457	1201	524	747	371	738
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	0.05	0.53	0.33	0.38	0.33	0.33	0.01	0.17

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 60 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 2: Kennedy Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	630	230	20	310	240	15	85	4315	400	20	1970	565
Future Volume (vph)	630	230	20	310	240	15	85	4315	400	20	1970	565
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1824		1750	1869		1785	5092	1521	1487	4902	1389
Flt Permitted	0.59	1.00		0.36	1.00		0.06	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	1113	1824		658	1869		114	5092	1521	95	4902	1389
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	670	245	21	330	255	16	90	4590	426	21	2096	601
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	83	0	0	177
Lane Group Flow (vph)	670	264	0	330	271	0	90	4590	343	21	2096	424
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.6	27.6		38.6	38.6		65.9	65.9	65.9	65.9	65.9	65.9
Effective Green, g (s)	27.6	27.6		38.6	38.6		65.9	65.9	65.9	65.9	65.9	65.9
Actuated g/C Ratio	0.23	0.23		0.32	0.32		0.55	0.55	0.55	0.55	0.55	0.55
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	255	419		275	601		62	2796	835	52	2692	762
v/s Ratio Prot		0.14		c0.07	0.15			c0.90			0.43	
v/s Ratio Perm	c0.60			0.32			0.79		0.23	0.22		0.31
v/c Ratio	2.63	0.63		1.20	0.45		1.45	1.64	0.41	0.40	0.78	0.56
Uniform Delay, d1	46.2	41.6		41.0	32.3		27.0	27.0	15.7	15.7	21.3	17.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	743.6	3.0		119.6	0.5		272.8	290.4	1.5	21.7	2.3	2.9
Delay (s)	789.8	44.5		160.6	32.8		299.8	317.4	17.2	37.4	23.6	20.5
Level of Service	F	D		F	C		F	F	B	D	C	C
Approach Delay (s)		578.0			103.0			292.1			23.0	
Approach LOS		F			F			F			C	

Intersection Summary

HCM 2000 Control Delay	230.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	150.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	280	75	25	435	5	160	100	35	0	75	15
Future Volume (vph)	10	280	75	25	435	5	160	100	35	0	75	15
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	11	298	80	27	463	5	170	106	37	0	80	16

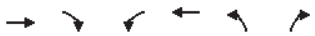
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	389	495	313	96
Volume Left (vph)	11	27	170	0
Volume Right (vph)	80	5	37	16
Hadj (s)	-0.08	0.02	0.04	-0.04
Departure Headway (s)	6.4	6.3	7.0	7.8
Degree Utilization, x	0.70	0.87	0.61	0.21
Capacity (veh/h)	389	557	484	391
Control Delay (s)	22.9	37.6	20.3	12.8
Approach Delay (s)	22.9	37.6	20.3	12.8
Approach LOS	C	E	C	B

Intersection Summary				
Delay		27.1		
Level of Service		D		
Intersection Capacity Utilization	64.3%	ICU Level of Service	C	
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	265	300	150	440	5	170	125	115	5	110	15
Future Volume (vph)	25	265	300	150	440	5	170	125	115	5	110	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	1.00		1.00	0.93		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1640		1785	1881		1733	1661		1785	1724	
Flt Permitted	0.46	1.00		0.38	1.00		0.68	1.00		0.47	1.00	
Satd. Flow (perm)	872	1640		716	1881		1232	1661		874	1724	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	270	306	153	449	5	173	128	117	5	112	15
RTOR Reduction (vph)	0	32	0	0	0	0	0	57	0	0	8	0
Lane Group Flow (vph)	26	544	0	153	454	0	173	188	0	5	119	0
Heavy Vehicles (%)	0%	11%	5%	0%	2%	0%	3%	4%	11%	0%	9%	13%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.1	51.1		51.1	51.1		16.9	16.9		16.9	16.9	
Effective Green, g (s)	51.1	51.1		51.1	51.1		16.9	16.9		16.9	16.9	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.21	0.21		0.21	0.21	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	556	1047		457	1201		260	350		184	364	
v/s Ratio Prot		c0.33			0.24			0.11			0.07	
v/s Ratio Perm	0.03			0.21			c0.14			0.01		
v/c Ratio	0.05	0.52		0.33	0.38		0.67	0.54		0.03	0.33	
Uniform Delay, d1	5.4	7.8		6.6	6.9		29.0	28.1		25.0	26.7	
Progression Factor	1.00	1.00		1.00	1.00		1.03	1.10		1.00	1.00	
Incremental Delay, d2	0.2	1.8		2.0	0.9		6.1	1.5		0.1	0.5	
Delay (s)	5.5	9.7		8.6	7.8		35.9	32.5		25.1	27.3	
Level of Service	A	A		A	A		D	C		C	C	
Approach Delay (s)		9.5			8.0			33.9			27.2	
Approach LOS		A			A			C			C	

Intersection Summary						
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B			
HCM 2000 Volume to Capacity ratio	0.56					
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0			
Intersection Capacity Utilization	82.6%	ICU Level of Service	E			
Analysis Period (min)	15					

c Critical Lane Group



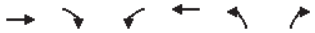
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	605	45	0	565	0	25
Future Volume (Veh/h)	605	45	0	565	0	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	658	49	0	614	0	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	202					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			707		1296	682
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			599		1269	571
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	94
cM capacity (veh/h)			861		164	458

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	707	614	27
Volume Left	0	0	0
Volume Right	49	0	27
cSH	1700	1700	458
Volume to Capacity	0.42	0.36	0.06
Queue Length 95th (m)	0.0	0.0	1.5
Control Delay (s)	0.0	0.0	13.4
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.4
Approach LOS			B

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	44.6%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	0	0	25	20	35	20	40	295	15	60	295	5
Future Volume (veh/h)	0	0	25	20	35	20	40	295	15	60	295	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	27	22	38	22	43	321	16	65	321	5
Approach Volume (veh/h)		27			82			380			391	
Crossing Volume (veh/h)		408			364			65			103	
High Capacity (veh/h)		1004			1040			1316			1278	
High v/c (veh/h)		0.03			0.08			0.29			0.31	
Low Capacity (veh/h)		818			850			1099			1064	
Low v/c (veh/h)		0.03			0.10			0.35			0.37	

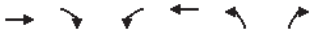
Intersection Summary					
Maximum v/c High		0.31			
Maximum v/c Low		0.37			
Intersection Capacity Utilization		46.5%	ICU Level of Service		A



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	585	30	0	600	0	20
Future Volume (Veh/h)	585	30	0	600	0	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	636	33	0	652	0	22
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			669		1304	652
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			669		1304	652
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	95
cM capacity (veh/h)			921		177	468

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	669	652	22
Volume Left	0	0	0
Volume Right	33	0	22
cSH	1700	1700	468
Volume to Capacity	0.39	0.38	0.05
Queue Length 95th (m)	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	13.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.1
Approach LOS			B

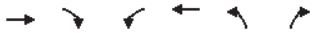
Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		42.6%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	585	45	85	515	50	30
Future Volume (Veh/h)	585	45	85	515	50	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	636	49	92	560	54	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			685		1404	660
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			685		1404	660
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		61	93
cM capacity (veh/h)			908		138	463

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	685	92	560	87
Volume Left	0	92	0	54
Volume Right	49	0	0	33
cSH	1700	908	1700	188
Volume to Capacity	0.40	0.10	0.33	0.46
Queue Length 95th (m)	0.0	2.7	0.0	17.6
Control Delay (s)	0.0	9.4	0.0	39.6
Lane LOS		A		E
Approach Delay (s)	0.0	1.3		39.6
Approach LOS				E

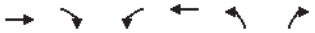
Intersection Summary				
Average Delay		3.0		
Intersection Capacity Utilization		52.8%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	340	45	40	570	25	25
Future Volume (Veh/h)	340	45	40	570	25	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	370	49	43	620	27	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	236					
pX, platoon unblocked						
vC, conflicting volume			419		1100	394
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			419		1100	394
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		88	96
cM capacity (veh/h)			1140		226	655

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	419	663	54
Volume Left	0	43	27
Volume Right	49	0	27
cSH	1700	1140	336
Volume to Capacity	0.25	0.04	0.16
Queue Length 95th (m)	0.0	0.9	4.5
Control Delay (s)	0.0	1.0	17.8
Lane LOS		A	C
Approach Delay (s)	0.0	1.0	17.8
Approach LOS			C

Intersection Summary				
Average Delay			1.4	
Intersection Capacity Utilization			66.2%	ICU Level of Service C
Analysis Period (min)			15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	575	30	55	570	30	15
Future Volume (Veh/h)	575	30	55	570	30	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	625	33	60	620	33	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			658		1382	642
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			658		1382	642
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		78	97
cM capacity (veh/h)			930		149	474

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	658	60	620	49
Volume Left	0	60	0	33
Volume Right	33	0	0	16
cSH	1700	930	1700	191
Volume to Capacity	0.39	0.06	0.36	0.26
Queue Length 95th (m)	0.0	1.7	0.0	7.8
Control Delay (s)	0.0	9.1	0.0	30.2
Lane LOS		A		D
Approach Delay (s)	0.0	0.8		30.2
Approach LOS				D

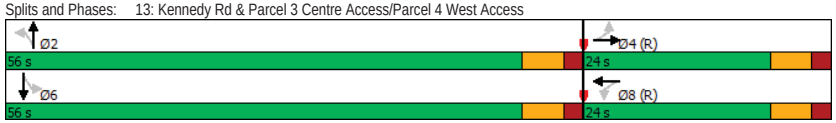
Intersection Summary				
Average Delay			1.5	
Intersection Capacity Utilization			48.7%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	0	15	0	10	305	105	375
Future Volume (vph)	45	0	15	0	10	305	105	375
Lane Group Flow (vph)	0	60	0	81	0	365	0	565
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	56.0	56.0	56.0	56.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.18		0.20		0.32		0.58
Control Delay		13.7		10.9		7.8		11.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		13.7		10.9		7.8		11.9
Queue Length 50th (m)		2.4		2.0		23.7		65.3
Queue Length 95th (m)		12.0		12.9		37.9		91.3
Internal Link Dist (m)		133.2		141.7		81.9		188.3
Turn Bay Length (m)								
Base Capacity (vph)		330		402		1137		980
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.18		0.20		0.32		0.58

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 60 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 13: Kennedy Rd & Parcel 3 Centre Access/Parcel 4 West Access



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	410	520	40
Future Volume (Veh/h)	0	0	0	410	520	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	446	565	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				212	109	
pX, platoon unblocked	0.96	0.95	0.95			
vC, conflicting volume	1032	586	608			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	905	542	564			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	296	515	960			

Direction, Lane #	NB 1	SB 1
Volume Total	446	608
Volume Left	0	0
Volume Right	0	43
cSH	1700	1700
Volume to Capacity	0.26	0.36
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	5	5	310	355	45
Future Volume (Veh/h)	25	5	5	310	355	45
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	5	5	337	386	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					106	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	758	410	435			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	642	240	269			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	99	100			
cM capacity (veh/h)	378	691	1120			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	32	342	435
Volume Left	27	5	0
Volume Right	5	0	49
cSH	407	1120	1700
Volume to Capacity	0.08	0.00	0.26
Queue Length 95th (m)	2.0	0.1	0.0
Control Delay (s)	14.6	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	14.6	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		31.4%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	10	15	0	60	10	305	20	105	375	40
Future Volume (vph)	45	0	10	15	0	60	10	305	20	105	375	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.89			0.99			0.99	
Flt Protected		0.96			0.99			1.00			0.99	
Satd. Flow (prot)		1745			1645			1845			1825	
Flt Permitted		0.73			0.94			0.98			0.85	
Satd. Flow (perm)		1327			1564			1815			1561	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	0	11	16	0	65	11	332	22	114	408	43
RTOR Reduction (vph)	0	32	0	0	50	0	0	3	0	0	4	0
Lane Group Flow (vph)	0	28	0	0	31	0	0	362	0	0	561	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0			50.0			50.0	
Effective Green, g (s)		18.0			18.0			50.0			50.0	
Actuated g/C Ratio		0.22			0.22			0.62			0.62	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		298			351			1134			975	
v/s Ratio Prot												
v/s Ratio Perm		c0.02			0.02			0.20			c0.36	
v/c Ratio		0.09			0.09			0.32			0.58	
Uniform Delay, d1		24.5			24.5			7.0			8.8	
Progression Factor		1.00			1.00			1.00			1.05	
Incremental Delay, d2		0.6			0.5			0.7			2.3	
Delay (s)		25.2			25.0			7.8			11.6	
Level of Service		C			C			A			B	
Approach Delay (s)		25.2			25.0			7.8			11.6	
Approach LOS		C			C			A			B	

Intersection Summary				
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	70.6%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
16: Kennedy Rd & Stowmarket St/Twistleton St

Future Total (PM)
2033 Horizon (without GTA West Highway)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	55	75	20	30	0	120	345	55	5	310	25
Future Volume (Veh/h)	5	55	75	20	30	0	120	345	55	5	310	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	5	60	82	22	33	0	132	379	60	5	341	27
Pedestrians		1			13			5			1	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	836	1082	190	984	1065	234	369			452		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	836	1082	190	984	1065	234	369			452		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	69	90	83	83	100	89			100		
cM capacity (veh/h)	208	192	815	126	196	766	1200			1107		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	147	55	322	250	176	198
Volume Left	5	22	132	0	5	0
Volume Right	82	0	0	60	0	27
cSH	336	160	1200	1700	1107	1700
Volume to Capacity	0.44	0.34	0.11	0.15	0.00	0.12
Queue Length 95th (m)	17.1	11.3	3.0	0.0	0.1	0.0
Control Delay (s)	23.7	38.7	4.0	0.0	0.3	0.0
Lane LOS	C	E	A		A	
Approach Delay (s)	23.7	38.7	2.3		0.1	
Approach LOS	C	E				

Intersection Summary					
Average Delay	6.1				
Intersection Capacity Utilization	46.1%	ICU Level of Service		A	
Analysis Period (min)	15				

HCM Unsignalized Intersection Capacity Analysis
15: Arcadia Rd/Parcel 4 South Access & Bonnieglen Farm Blvd

Future Total (PM)
2033 Horizon (without GTA West Highway)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	30	0	0	50	0	0	0	0	0	0	25
Future Volume (Veh/h)	45	30	0	0	50	0	0	0	0	0	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	33	0	0	54	0	0	0	0	0	0	27
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	54			33			212	185	33	185	185	54
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	54			33			212	185	33	185	185	54
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	100	100	97
cM capacity (veh/h)	1551			1579			708	687	1041	757	687	1013

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	82	54	0	27
Volume Left	49	0	0	0
Volume Right	0	0	0	27
cSH	1551	1579	1700	1013
Volume to Capacity	0.03	0.00	0.00	0.03
Queue Length 95th (m)	0.8	0.0	0.0	0.7
Control Delay (s)	4.5	0.0	0.0	8.7
Lane LOS	A		A	A
Approach Delay (s)	4.5	0.0	0.0	8.7
Approach LOS			A	A

Intersection Summary					
Average Delay	3.7				
Intersection Capacity Utilization	20.7%	ICU Level of Service		A	
Analysis Period (min)	15				

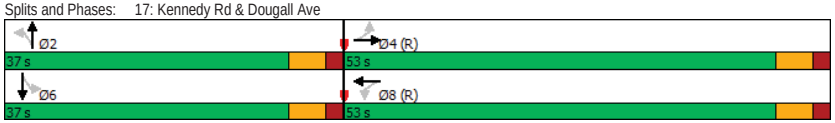
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	70	170	5	40	25	280	455	85	25	340	40
Future Volume (vph)	40	70	170	5	40	25	280	455	85	25	340	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.92			0.95			0.98			0.99	
Flt Protected		0.99			1.00			0.98			1.00	
Satd. Flow (prot)		1706			1791			3467			3503	
Flt Permitted		0.96			0.98			0.68			0.84	
Satd. Flow (perm)		1641			1763			2401			2952	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	40	71	172	5	40	25	283	460	86	25	343	40
RTOR Reduction (vph)	0	62	0	0	12	0	0	10	0	0	9	0
Lane Group Flow (vph)	0	221	0	0	58	0	0	819	0	0	399	0
Confl. Peds. (#/hr)	4		12	12		4	8		16	16		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		47.0			47.0			31.0			31.0	
Effective Green, g (s)		47.0			47.0			31.0			31.0	
Actuated g/C Ratio		0.52			0.52			0.34			0.34	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		856			920			827			1016	
v/s Ratio Prot												
v/s Ratio Perm		c0.13			0.03			c0.34			0.14	
v/c Ratio		0.26			0.06			0.99			0.39	
Uniform Delay, d1		11.9			10.6			29.4			22.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.1			29.1			1.1	
Delay (s)		12.6			10.8			58.4			23.5	
Level of Service		B			B			E			C	
Approach Delay (s)		12.6			10.8			58.4			23.5	
Approach LOS		B			B			E			C	

Intersection Summary				
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	83.2%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	70	5	40	280	455	25	340
Future Volume (vph)	40	70	5	40	280	455	25	340
Lane Group Flow (vph)	0	283	0	70	0	829	0	408
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.0	34.0	34.0	34.0	31.0	31.0	31.0	31.0
Total Split (s)	53.0	53.0	53.0	53.0	37.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%	58.9%	58.9%	41.1%	41.1%	41.1%	41.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.31		0.08		0.99		0.40
Control Delay		7.3		7.8		59.5		23.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		7.3		7.8		59.5		23.0
Queue Length 50th (m)		13.9		3.8		76.9		28.2
Queue Length 95th (m)		28.7		10.2		#120.1		41.2
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		919		933		836		1025
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.31		0.08		0.99		0.40

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	510	200	85	325	145	130	25	1890	130	70	3560	270
Future Volume (vph)	510	200	85	325	145	130	25	1890	130	70	3560	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.96		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1721		1566	1664		1716	4371	1413	1384	5043	1597
Flt Permitted	0.58	1.00		0.31	1.00		0.07	1.00	1.00	0.07	1.00	1.00
Satd. Flow (perm)	1098	1721		505	1664		123	4371	1413	99	5043	1597
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	531	208	89	339	151	135	26	1969	135	73	3708	281
RTOR Reduction (vph)	0	13	0	0	2	0	0	0	62	0	0	68
Lane Group Flow (vph)	531	284	0	339	284	0	26	1969	73	73	3708	213
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.6	27.6		45.6	45.6		58.9	58.9	58.9	58.9	58.9	58.9
Effective Green, g (s)	27.6	27.6		45.6	45.6		58.9	58.9	58.9	58.9	58.9	58.9
Actuated g/C Ratio	0.23	0.23		0.38	0.38		0.49	0.49	0.49	0.49	0.49	0.49
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	252	395		315	632		60	2145	693	48	2475	783
v/s Ratio Prot		0.16		c0.13	0.17			0.45			0.74	
v/s Ratio Perm	c0.48			0.28			0.21		0.05	c0.74		0.13
v/c Ratio	2.11	0.72		1.08	0.45		0.43	0.92	0.11	1.52	1.50	0.27
Uniform Delay, d1	46.2	42.6		34.1	27.8		19.8	28.3	16.4	30.6	30.6	17.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	511.5	6.2		72.5	0.5		21.2	7.8	0.3	315.7	226.3	0.9
Delay (s)	557.7	48.8		106.6	28.3		40.9	36.1	16.7	346.2	256.9	18.8
Level of Service	F	D		F	C		D	D	B	F	F	B
Approach Delay (s)		375.1			70.7			34.9			242.0	
Approach LOS		F			E			C			F	

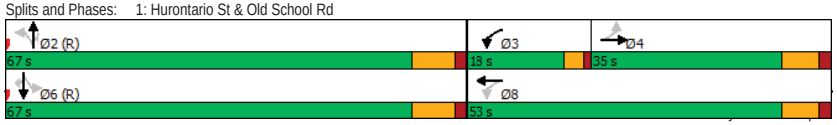
Intersection Summary				
HCM 2000 Control Delay	184.7	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.61			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	131.7%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	510	200	325	145	25	1890	130	70	3560	270
Future Volume (vph)	510	200	325	145	25	1890	130	70	3560	270
Lane Group Flow (vph)	531	297	339	286	26	1969	135	73	3708	281
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	41.1	41.1	41.1
Total Split (s)	35.0	35.0	18.0	53.0	67.0	67.0	67.0	67.0	67.0	67.0
Total Split (%)	29.2%	29.2%	15.0%	44.2%	55.8%	55.8%	55.8%	55.8%	55.8%	55.8%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	8.1	8.1	8.1
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	2.11	0.73	1.03	0.45	0.43	0.92	0.18	1.52	1.50	0.33
Control Delay	536.8	51.8	87.6	30.3	46.9	36.5	4.4	343.8	253.3	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	536.8	51.8	87.6	30.3	46.9	36.5	4.4	343.8	253.3	10.4
Queue Length 50th (m)	~208.8	64.7	~65.2	51.7	4.0	160.8	1.7	~25.1	~466.7	19.8
Queue Length 95th (m)	#277.9	97.9	#135.6	77.7	#18.0	186.6	12.5	#45.8	#489.9	38.9
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	252	408	330	634	60	2145	755	48	2475	852
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	2.11	0.73	1.03	0.45	0.43	0.92	0.18	1.52	1.50	0.33

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	290	155	75	255	5	230	75	185	15	110	10
Future Volume (vph)	25	290	155	75	255	5	230	75	185	15	110	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00		1.00	0.89		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1428	1731		1623	1809		1566	1634		1785	1753	
Flt Permitted	0.55	1.00		0.38	1.00		0.67	1.00		0.45	1.00	
Satd. Flow (perm)	834	1731		651	1809		1103	1634		841	1753	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	29	333	178	86	293	6	264	86	213	17	126	11
RTOR Reduction (vph)	0	15	0	0	0	0	0	133	0	0	5	0
Lane Group Flow (vph)	29	496	0	86	299	0	264	166	0	17	132	0
Heavy Vehicles (%)	25%	1%	13%	10%	6%	0%	14%	10%	3%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	49.9	49.9		49.9	49.9		28.1	28.1		28.1	28.1	
Effective Green, g (s)	49.9	49.9		49.9	49.9		28.1	28.1		28.1	28.1	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.31	0.31		0.31	0.31	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	462	959		360	1002		344	510		262	547	
v/s Ratio Prot		c0.29			0.17			0.10			0.08	
v/s Ratio Perm	0.03			0.13			c0.24			0.02		
v/c Ratio	0.06	0.52		0.24	0.30		0.77	0.32		0.06	0.24	
Uniform Delay, d1	9.3	12.5		10.3	10.7		28.0	23.7		21.7	23.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.10		1.00	1.00	
Incremental Delay, d2	0.3	2.0		1.6	0.8		9.6	0.4		0.1	0.2	
Delay (s)	9.5	14.5		11.9	11.5		37.5	26.3		21.8	23.3	
Level of Service	A	B		B	B		D	C		C	C	
Approach Delay (s)		14.2			11.6			31.5			23.1	
Approach LOS		B			B			C			C	

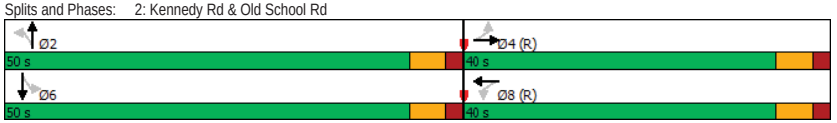
Intersection Summary				
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	67.5%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	290	75	255	230	75	15	110
Future Volume (vph)	25	290	75	255	230	75	15	110
Lane Group Flow (vph)	29	511	86	299	264	299	17	137
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	50.0	50.0	50.0	50.0
Total Split (%)	44.4%	44.4%	44.4%	44.4%	55.6%	55.6%	55.6%	55.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
v/c Ratio	0.06	0.52	0.24	0.30	0.77	0.47	0.07	0.25
Control Delay	13.3	16.2	15.7	13.7	41.3	10.5	18.1	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	16.2	15.7	13.7	41.3	10.5	18.1	20.7
Queue Length 50th (m)	2.3	50.5	7.5	26.9	37.4	9.2	2.2	17.5
Queue Length 95th (m)	8.2	98.6	21.0	54.5	62.1	19.6	5.5	24.7
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)	70.0		70.0		70.0		70.0	
Base Capacity (vph)	462	976	361	1004	539	898	410	860
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	0.06	0.52	0.24	0.30	0.49	0.33	0.04	0.16

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 2: Kennedy Rd & Old School Rd



HCM Unsignalized Intersection Capacity Analysis
4: Kennedy Rd & Newhouse Blvd/Bonnieglen Farm Blvd

Future Total (AM)
2033 Horizon (with GTA West Highway)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	5	0	45	20	25	30	10	265	45	15	300	0
Future Volume (veh/h)	5	0	45	20	25	30	10	265	45	15	300	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	49	22	27	33	11	288	49	16	326	0
Approach Volume (veh/h)		54			82			348			342	
Crossing Volume (veh/h)		364			304			21			60	
High Capacity (veh/h)		1040			1091			1362			1321	
High v/c (veh/h)		0.05			0.08			0.26			0.26	
Low Capacity (veh/h)		850			895			1141			1104	
Low v/c (veh/h)		0.06			0.09			0.31			0.31	

Intersection Summary												
Maximum v/c High			0.26									
Maximum v/c Low			0.31									
Intersection Capacity Utilization			37.6%		ICU Level of Service				A			

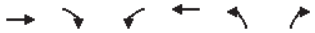
HCM Unsignalized Intersection Capacity Analysis
3: Heart Lake Rd & Old School Rd

Future Total (AM)
2033 Horizon (with GTA West Highway)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	400	95	25	235	5	45	60	20	5	140	20
Future Volume (vph)	15	400	95	25	235	5	45	60	20	5	140	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	18	471	112	29	276	6	53	71	24	6	165	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	601	311	148	195
Volume Left (vph)	18	29	53	6
Volume Right (vph)	112	6	24	24
Hadj (s)	-0.06	0.15	0.15	-0.01
Departure Headway (s)	5.8	6.5	7.4	7.1
Degree Utilization, x	0.96	0.56	0.30	0.38
Capacity (veh/h)	618	532	449	483
Control Delay (s)	51.4	17.4	13.6	14.4
Approach Delay (s)	51.4	17.4	13.6	14.4
Approach LOS	F	C	B	B

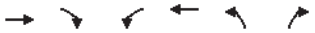
Intersection Summary												
Delay			32.8									
Level of Service			D									
Intersection Capacity Utilization			56.0%		ICU Level of Service				B			
Analysis Period (min)			15									



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	405	20	20	515	85	40
Future Volume (Veh/h)	405	20	20	515	85	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	440	22	22	560	92	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			462		1055	451
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			462		1055	451
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		62	93
cM capacity (veh/h)			1099		245	608

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	462	22	560	135
Volume Left	0	22	0	92
Volume Right	22	0	0	43
cSH	1700	1099	1700	302
Volume to Capacity	0.27	0.02	0.33	0.45
Queue Length 95th (m)	0.0	0.5	0.0	17.5
Control Delay (s)	0.0	8.3	0.0	26.2
Lane LOS		A		D
Approach Delay (s)	0.0	0.3		26.2
Approach LOS				D

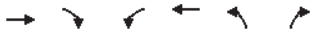
Intersection Summary				
Average Delay			3.2	
Intersection Capacity Utilization			40.9%	ICU Level of Service A
Analysis Period (min)			15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	385	15	0	600	0	40
Future Volume (Veh/h)	385	15	0	600	0	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	418	16	0	652	0	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	202					
pX, platoon unblocked			0.90		0.90	0.90
vC, conflicting volume			434		1078	426
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			315		1031	306
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	93
cM capacity (veh/h)			1120		232	660

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	434	652	43
Volume Left	0	0	0
Volume Right	16	0	43
cSH	1700	1700	660
Volume to Capacity	0.26	0.38	0.07
Queue Length 95th (m)	0.0	0.0	1.7
Control Delay (s)	0.0	0.0	10.8
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.8
Approach LOS			B

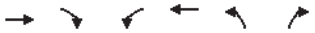
Intersection Summary				
Average Delay			0.4	
Intersection Capacity Utilization			34.9%	ICU Level of Service A
Analysis Period (min)			15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	450	10	15	480	55	20
Future Volume (Veh/h)	450	10	15	480	55	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	489	11	16	522	60	22
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			500		1048	494
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			500		1048	494
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		76	96
cM capacity (veh/h)			1064		248	575

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	500	16	522	82
Volume Left	0	16	0	60
Volume Right	11	0	0	22
cSH	1700	1064	1700	293
Volume to Capacity	0.29	0.02	0.31	0.28
Queue Length 95th (m)	0.0	0.4	0.0	8.9
Control Delay (s)	0.0	8.4	0.0	22.0
Lane LOS		A		C
Approach Delay (s)	0.0	0.3		22.0
Approach LOS				C

Intersection Summary				
Average Delay			1.7	
Intersection Capacity Utilization			36.2%	ICU Level of Service
Analysis Period (min)			15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	435	10	0	535	0	25
Future Volume (Veh/h)	435	10	0	535	0	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	473	11	0	582	0	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			484		1060	478
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			484		1060	478
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	95
cM capacity (veh/h)			1079		248	587

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	484	582	27
Volume Left	0	0	0
Volume Right	11	0	27
cSH	1700	1700	587
Volume to Capacity	0.28	0.34	0.05
Queue Length 95th (m)	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	11.4
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.4
Approach LOS			B

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			33.5%	ICU Level of Service
Analysis Period (min)			15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	490	330	10
Future Volume (Veh/h)	0	0	0	490	330	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	533	359	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				212	109	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	898	364	370			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	786	323	328			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	345	693	1187			

Direction, Lane #	NB 1	SB 1
Volume Total	533	370
Volume Left	0	0
Volume Right	0	11
cSH	1700	1700
Volume to Capacity	0.31	0.22
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		29.1%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	475	15	10	290	45	35
Future Volume (Veh/h)	475	15	10	290	45	35
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	516	16	11	315	49	38
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	236					
pX, platoon unblocked			0.98		0.98	0.98
vC, conflicting volume			532		861	524
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			509		846	500
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		85	93
cM capacity (veh/h)			1031		322	557

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	532	326	87
Volume Left	0	11	49
Volume Right	16	0	38
cSH	1700	1031	394
Volume to Capacity	0.31	0.01	0.22
Queue Length 95th (m)	0.0	0.3	6.6
Control Delay (s)	0.0	0.4	16.7
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	16.7
Approach LOS			C

Intersection Summary				
Average Delay		1.7		
Intersection Capacity Utilization		37.2%	ICU Level of Service	A
Analysis Period (min)		15		

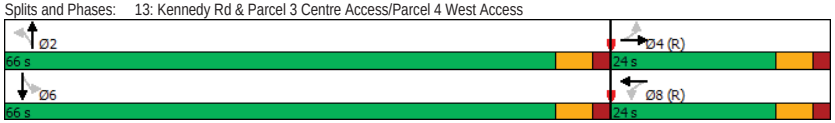
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	0	10	20	0	100	5	320	5	35	285	10
Future Volume (vph)	70	0	10	20	0	100	5	320	5	35	285	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.89			1.00			1.00	
Flt Protected		0.96			0.99			1.00			0.99	
Satd. Flow (prot)		1754			1640			1858			1845	
Flt Permitted		0.66			0.94			1.00			0.94	
Satd. Flow (perm)		1200			1552			1851			1737	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	0	11	22	0	109	5	348	5	38	310	11
RTOR Reduction (vph)	0	29	0	0	87	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	58	0	0	44	0	0	357	0	0	358	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0			60.0			60.0	
Effective Green, g (s)		18.0			18.0			60.0			60.0	
Actuated g/C Ratio		0.20			0.20			0.67			0.67	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		240			310			1234			1158	
v/s Ratio Prot												
v/s Ratio Perm		c0.05			0.03			0.19			c0.21	
v/c Ratio		0.24			0.14			0.29			0.31	
Uniform Delay, d1		30.3			29.6			6.2			6.3	
Progression Factor		1.00			1.00			1.00			1.02	
Incremental Delay, d2		2.4			1.0			0.6			0.7	
Delay (s)		32.7			30.6			6.8			7.1	
Level of Service		C			C			A			A	
Approach Delay (s)		32.7			30.6			6.8			7.1	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.29			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	57.6%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	70	0	20	0	5	320	35	285
Future Volume (vph)	70	0	20	0	5	320	35	285
Lane Group Flow (vph)	0	87	0	131	0	358	0	359
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	66.0	66.0	66.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	73.3%	73.3%	73.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.32		0.33		0.29		0.31
Control Delay		23.4		11.4		6.9		7.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		23.4		11.4		6.9		7.2
Queue Length 50th (m)		7.8		3.3		23.5		36.2
Queue Length 95th (m)		21.6		18.4		36.4		14.8
Internal Link Dist (m)		133.2		141.7		81.9		188.3
Turn Bay Length (m)								
Base Capacity (vph)		268		397		1235		1160
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.32		0.33		0.29		0.31

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 13: Kennedy Rd & Parcel 3 Centre Access/Parcel 4 West Access



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	50	0	0	40	0	0	0	0	0	0	35
Future Volume (Veh/h)	10	50	0	0	40	0	0	0	0	0	0	35
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	54	0	0	43	0	0	0	0	0	0	38
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	43			54			157	119	54	119	119	43
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	43			54			157	119	54	119	119	43
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	96
cM capacity (veh/h)	1566			1551			775	766	1013	852	766	1027

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	65	43	0	38
Volume Left	11	0	0	0
Volume Right	0	0	0	38
cSH	1566	1551	1700	1027
Volume to Capacity	0.01	0.00	0.00	0.04
Queue Length 95th (m)	0.2	0.0	0.0	0.9
Control Delay (s)	1.3	0.0	0.0	8.6
Lane LOS	A		A	A
Approach Delay (s)	1.3	0.0	0.0	8.6
Approach LOS			A	A

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	19.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	10	5	295	305	10
Future Volume (Veh/h)	35	10	5	295	305	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	11	5	321	332	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					106	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	668	338	343			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	609	254	260			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	98	100			
cM capacity (veh/h)	426	732	1217			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	49	326	343
Volume Left	38	5	0
Volume Right	11	0	11
cSH	470	1217	1700
Volume to Capacity	0.10	0.00	0.20
Queue Length 95th (m)	2.8	0.1	0.0
Control Delay (s)	13.5	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	13.5	0.2	0.0
Approach LOS	B		

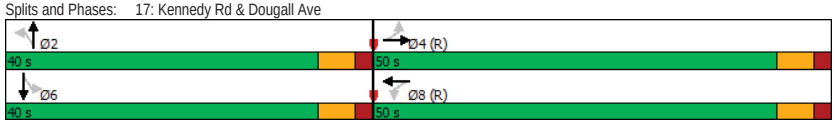
Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	29.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	45	140	55	115	290	55	425
Future Volume (vph)	30	45	140	55	115	290	55	425
Lane Group Flow (vph)	0	399	0	240	0	490	0	532
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.0	34.0	34.0	34.0	31.0	31.0	31.0	31.0
Total Split (s)	50.0	50.0	50.0	50.0	40.0	40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.44		0.46		0.55		0.47
Control Delay		7.8		18.0		23.9		22.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		7.8		18.0		23.9		22.7
Queue Length 50th (m)		17.1		26.1		34.7		37.4
Queue Length 95th (m)		38.5		47.1		50.8		52.5
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		899		518		890		1133
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.44		0.46		0.55		0.47

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	15	115	40	45	5	40	295	15	5	345	15
Future Volume (Veh/h)	20	15	115	40	45	5	40	295	15	5	345	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	21	16	120	42	47	5	42	307	16	5	359	16
Pedestrians					3			6				
Lane Width (m)					3.6			3.6				
Walking Speed (m/s)					1.2			1.2				
Percent Blockage					0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	643	787	194	726	787	164	375			326		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	643	787	194	726	787	164	375			326		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	95	85	83	85	99	96			100		
cM capacity (veh/h)	309	312	818	249	312	855	1159			1242		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	157	94	196	170	184	196
Volume Left	21	42	42	0	5	0
Volume Right	120	5	0	16	0	16
cSH	590	289	1159	1700	1242	1700
Volume to Capacity	0.27	0.33	0.04	0.10	0.00	0.12
Queue Length 95th (m)	8.5	10.9	0.9	0.0	0.1	0.0
Control Delay (s)	13.3	23.3	2.0	0.0	0.2	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	13.3	23.3	1.1		0.1	
Approach LOS	B	C				

Intersection Summary

Average Delay	4.7			
Intersection Capacity Utilization	42.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Queues
1: Hurontario St & Old School Rd

Future Total (PM)
2033 Horizon (with GTA West Highway)

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	630	215	270	230	85	4315	330	155	1970	565
Future Volume (vph)	630	215	270	230	85	4315	330	155	1970	565
Lane Group Flow (vph)	670	250	287	335	90	4590	351	165	2096	601
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4	3	8		2		1	6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	4.5	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	9.0	41.1	41.1
Total Split (s)	30.0	30.0	9.0	39.0	72.0	72.0	72.0	9.0	81.0	81.0
Total Split (%)	25.0%	25.0%	7.5%	32.5%	60.0%	60.0%	60.0%	7.5%	67.5%	67.5%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	3.0	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.0	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	4.0	8.1	8.1
Lead/Lag	Lag	Lag	Lead		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	4.09	0.72	1.29	0.69	1.45	1.69	0.40	1.41	0.70	0.62
Control Delay	1416.8	58.4	195.3	46.2	300.3	337.8	10.7	250.2	17.8	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1416.8	58.4	195.3	46.2	300.3	337.8	10.7	250.2	17.8	9.2
Queue Length 50th (m)	~303.1	58.2	~79.5	71.6	~30.2	~611.0	27.0	~40.6	122.6	36.7
Queue Length 95th (m)	#376.9	#92.4	#147.0	105.6	#50.4	#628.0	48.9	#86.8	139.9	71.7
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	164	345	222	489	62	2711	878	117	2977	971
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	4.09	0.72	1.29	0.69	1.45	1.69	0.40	1.41	0.70	0.62

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd

BA Group

HCM Signalized Intersection Capacity Analysis
17: Kennedy Rd & Dougall Ave

Future Total (AM)
2033 Horizon (with GTA West Highway)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	45	300	140	55	30	115	290	55	55	425	20
Future Volume (vph)	30	45	300	140	55	30	115	290	55	55	425	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.98			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.89			0.98			0.98			0.99	
Flt Protected		1.00			0.97			0.99			0.99	
Satd. Flow (prot)		1660			1801			3463			3562	
Flt Permitted		0.96			0.56			0.66			0.84	
Satd. Flow (perm)		1603			1047			2324			2992	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	48	319	149	59	32	122	309	59	59	452	21
RTOR Reduction (vph)	0	116	0	0	6	0	0	12	0	0	3	0
Lane Group Flow (vph)	0	283	0	0	234	0	0	478	0	0	529	0
Confl. Peds. (#/hr)	3		9	9		3	1		10	10		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		44.0			44.0			34.0			34.0	
Effective Green, g (s)		44.0			44.0			34.0			34.0	
Actuated g/C Ratio		0.49			0.49			0.38			0.38	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		783			511			877			1130	
v/s Ratio Prot												
v/s Ratio Perm		0.18			c0.22			c0.21			0.18	
v/c Ratio		0.36			0.46			0.55			0.47	
Uniform Delay, d1		14.3			15.1			21.9			21.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			2.9			2.4			1.4	
Delay (s)		15.6			18.1			24.4			22.6	
Level of Service		B			B			C			C	
Approach Delay (s)		15.6			18.1			24.4			22.6	
Approach LOS		B			B			C			C	

Intersection Summary

HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.3%	ICU Level of Service	G
Analysis Period (min)	15		

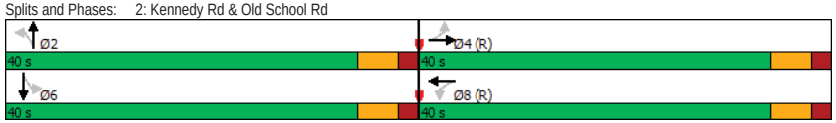
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	260	135	425	175	125	5	105
Future Volume (vph)	25	260	135	425	175	125	5	105
Lane Group Flow (vph)	26	592	138	439	179	235	5	117
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
v/c Ratio	0.05	0.55	0.31	0.37	0.67	0.58	0.03	0.31
Control Delay	7.6	10.2	10.7	9.1	41.4	26.9	21.4	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.6	10.2	10.7	9.1	41.4	26.9	21.4	25.2
Queue Length 50th (m)	1.4	37.6	8.8	29.3	30.2	30.2	0.7	14.9
Queue Length 95th (m)	5.5	85.1	25.2	60.3	28.5	26.9	3.1	25.5
Internal Link Dist (m)		220.5		211.8		85.0		885.4
Turn Bay Length (m)	70.0		70.0		70.0		70.0	
Base Capacity (vph)	566	1075	440	1195	528	747	390	740
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	0.05	0.55	0.31	0.37	0.34	0.31	0.01	0.16

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 60 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Splits and Phases: 2: Kennedy Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	630	215	20	270	230	85	85	4315	330	155	1970	565
Future Volume (vph)	630	215	20	270	230	85	85	4315	330	155	1970	565
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	4.0	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.99		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1822		1750	1817		1785	5092	1521	1487	4902	1389
Flt Permitted	0.46	1.00		0.32	1.00		0.06	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	873	1822		598	1817		118	5092	1521	92	4902	1389
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	670	229	21	287	245	90	90	4590	351	165	2096	601
RTOR Reduction (vph)	0	2	0	0	11	0	0	0	69	0	0	128
Lane Group Flow (vph)	670	248	0	287	324	0	90	4590	282	165	2096	473
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	22.6	22.6		31.6	31.6		63.9	63.9	63.9	72.9	72.9	72.9
Effective Green, g (s)	22.6	22.6		31.6	31.6		63.9	63.9	63.9	72.9	72.9	72.9
Actuated g/C Ratio	0.19	0.19		0.26	0.26		0.53	0.53	0.53	0.61	0.61	0.61
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	4.0	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	3.0	4.5	4.5
Lane Grp Cap (vph)	164	343		205	478		62	2711	809	114	2977	843
v/s Ratio Prot		0.14		c0.06	0.18			c0.90		c0.06	0.43	
v/s Ratio Perm	c0.77			0.31			0.77		0.19	0.82		0.34
v/c Ratio	4.09	0.72		1.40	0.68		1.45	1.69	0.35	1.45	0.70	0.56
Uniform Delay, d1	48.7	45.7		45.0	39.6		28.1	28.1	16.1	33.9	16.2	14.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1402.8	7.3		206.8	3.8		272.8	313.5	1.2	243.5	1.4	2.7
Delay (s)	1451.5	53.1		251.8	43.4		300.8	341.6	17.3	277.4	17.6	16.7
Level of Service	F	D		F	D		F	F	B	F	B	B
Approach Delay (s)		1071.5			139.6			318.2			32.4	
Approach LOS		F			F			F			C	

Intersection Summary

HCM 2000 Control Delay	293.2	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	2.23			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.5	
Intersection Capacity Utilization	166.6%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	270	65	25	420	5	140	100	35	0	75	15
Future Volume (vph)	10	270	65	25	420	5	140	100	35	0	75	15
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	11	287	69	27	447	5	149	106	37	0	80	16

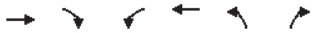
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	367	479	292	96
Volume Left (vph)	11	27	149	0
Volume Right (vph)	69	5	37	16
Hadj (s)	-0.07	0.02	0.03	-0.04
Departure Headway (s)	6.2	6.1	6.7	7.3
Degree Utilization, x	0.63	0.81	0.55	0.20
Capacity (veh/h)	548	569	486	405
Control Delay (s)	19.2	29.6	17.6	12.1
Approach Delay (s)	19.2	29.6	17.6	12.1
Approach LOS	C	D	C	B

Intersection Summary				
Delay			22.3	
Level of Service			C	
Intersection Capacity Utilization			62.1%	ICU Level of Service
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	260	320	135	425	5	175	125	105	5	105	10
Future Volume (vph)	25	260	320	135	425	5	175	125	105	5	105	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	1.00		1.00	0.93		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1636		1785	1881		1733	1670		1785	1734	
Flt Permitted	0.47	1.00		0.37	1.00		0.68	1.00		0.49	1.00	
Satd. Flow (perm)	891	1636		694	1881		1244	1670		919	1734	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	265	327	138	434	5	179	128	107	5	107	10
RTOR Reduction (vph)	0	35	0	0	0	0	0	51	0	0	6	0
Lane Group Flow (vph)	26	557	0	138	439	0	179	184	0	5	111	0
Heavy Vehicles (%)	0%	11%	5%	0%	2%	0%	3%	4%	11%	0%	9%	13%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.9	50.9		50.9	50.9		17.1	17.1		17.1	17.1	
Effective Green, g (s)	50.9	50.9		50.9	50.9		17.1	17.1		17.1	17.1	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.21	0.21		0.21	0.21	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	566	1040		441	1196		265	356		196	370	
v/s Ratio Prot		c0.34			0.23			0.11			0.06	
v/s Ratio Perm	0.03			0.20			c0.14			0.01		
v/c Ratio	0.05	0.54		0.31	0.37		0.68	0.52		0.03	0.30	
Uniform Delay, d1	5.5	8.0		6.6	6.9		28.9	27.8		24.9	26.4	
Progression Factor	1.00	1.00		1.00	1.00		1.04	1.12		1.00	1.00	
Incremental Delay, d2	0.2	2.0		1.8	0.9		6.5	1.2		0.1	0.5	
Delay (s)	5.6	10.0		8.5	7.8		36.6	32.4		24.9	26.9	
Level of Service	A	B		A	A		D	C		C	C	
Approach Delay (s)		9.8			7.9			34.2			26.8	
Approach LOS		A			A			C			C	

Intersection Summary				
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.57			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	73.0%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group



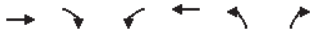
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	645	55	0	585	0	25
Future Volume (Veh/h)	645	55	0	585	0	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	701	60	0	636	0	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	202					
pX, platoon unblocked			0.87		0.87	0.87
vC, conflicting volume			761		1367	731
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			655		1348	621
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	94
cM capacity (veh/h)			815		146	426

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	761	636	27
Volume Left	0	0	0
Volume Right	60	0	27
cSH	1700	1700	426
Volume to Capacity	0.45	0.37	0.06
Queue Length 95th (m)	0.0	0.0	1.6
Control Delay (s)	0.0	0.0	14.0
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.0
Approach LOS			B

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	47.3%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	0	0	25	20	35	15	40	295	15	55	295	5
Future Volume (veh/h)	0	0	25	20	35	15	40	295	15	55	295	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	27	22	38	16	43	321	16	60	321	5
Approach Volume (veh/h)		27			76			380			386	
Crossing Volume (veh/h)		403			364			60			103	
High Capacity (veh/h)		1008			1040			1321			1278	
High v/c (veh/h)		0.03			0.07			0.29			0.30	
Low Capacity (veh/h)		821			850			1104			1064	
Low v/c (veh/h)		0.03			0.09			0.34			0.36	

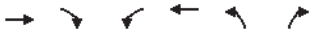
Intersection Summary					
Maximum v/c High	0.30				
Maximum v/c Low	0.36				
Intersection Capacity Utilization	44.9%	ICU Level of Service		A	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	610	35	0	600	0	15
Future Volume (Veh/h)	610	35	0	600	0	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	663	38	0	652	0	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			701		1334	682
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			701		1334	682
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			896		170	450

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	701	652	16
Volume Left	0	0	0
Volume Right	38	0	16
cSH	1700	1700	450
Volume to Capacity	0.41	0.38	0.04
Queue Length 95th (m)	0.0	0.0	0.9
Control Delay (s)	0.0	0.0	13.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.3
Approach LOS			B

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		44.2%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	620	50	70	530	55	25
Future Volume (Veh/h)	620	50	70	530	55	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	674	54	76	576	60	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			728		1429	701
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			728		1429	701
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		56	94
cM capacity (veh/h)			876		136	439

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	728	76	576	87
Volume Left	0	76	0	60
Volume Right	54	0	0	27
cSH	1700	876	1700	173
Volume to Capacity	0.43	0.09	0.34	0.50
Queue Length 95th (m)	0.0	2.3	0.0	19.8
Control Delay (s)	0.0	9.5	0.0	45.3
Lane LOS		A		E
Approach Delay (s)	0.0	1.1		45.3
Approach LOS				E

Intersection Summary				
Average Delay		3.2		
Intersection Capacity Utilization		54.1%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	320	50	35	540	25	25
Future Volume (Veh/h)	320	50	35	540	25	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	348	54	38	587	27	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	236					
pX, platoon unblocked						
vC, conflicting volume			402		1038	375
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			402		1038	375
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		89	96
cM capacity (veh/h)			1157		247	671

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	402	625	54
Volume Left	0	38	27
Volume Right	54	0	27
cSH	1700	1157	362
Volume to Capacity	0.24	0.03	0.15
Queue Length 95th (m)	0.0	0.8	4.2
Control Delay (s)	0.0	0.9	16.7
Lane LOS		A	C
Approach Delay (s)	0.0	0.9	16.7
Approach LOS			C

Intersection Summary				
Average Delay		1.3		
Intersection Capacity Utilization		63.6%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	590	35	45	565	35	15
Future Volume (Veh/h)	590	35	45	565	35	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	641	38	49	614	38	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			679		1372	660
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			679		1372	660
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		75	97
cM capacity (veh/h)			913		152	463

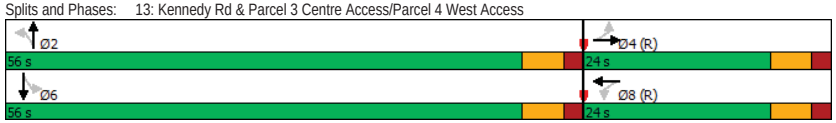
Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	679	49	614	54
Volume Left	0	49	0	38
Volume Right	38	0	0	16
cSH	1700	913	1700	190
Volume to Capacity	0.40	0.05	0.36	0.28
Queue Length 95th (m)	0.0	1.4	0.0	8.9
Control Delay (s)	0.0	9.2	0.0	31.3
Lane LOS		A		D
Approach Delay (s)	0.0	0.7		31.3
Approach LOS				D

Intersection Summary				
Average Delay		1.5		
Intersection Capacity Utilization		47.4%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	0	15	0	15	295	110	370
Future Volume (vph)	45	0	15	0	15	295	110	370
Lane Group Flow (vph)	0	54	0	87	0	359	0	565
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	56.0	56.0	56.0	56.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.17		0.21		0.32		0.58
Control Delay		12.7		10.6		7.8		12.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		12.7		10.6		7.8		12.1
Queue Length 50th (m)		1.6		2.0		23.3		67.7
Queue Length 95th (m)		10.8		13.3		37.4		92.9
Internal Link Dist (m)		133.2		141.7		81.9		188.3
Turn Bay Length (m)								
Base Capacity (vph)		323		407		1124		971
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.17		0.21		0.32		0.58

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 60 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 13: Kennedy Rd & Parcel 3 Centre Access/Parcel 4 West Access



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	405	520	40
Future Volume (Veh/h)	0	0	0	405	520	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	440	565	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				212	109	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	1026	586	608			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	920	550	573			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	290	514	962			

Direction, Lane #	NB 1	SB 1
Volume Total	440	608
Volume Left	0	0
Volume Right	0	43
cSH	1700	1700
Volume to Capacity	0.26	0.36
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	33.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	5	5	305	350	40
Future Volume (Veh/h)	25	5	5	305	350	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	5	5	332	380	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					106	
pX, platoon unblocked	0.87	0.87	0.87			
vC, conflicting volume	744	402	423			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	628	233	258			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	99	100			
cM capacity (veh/h)	386	699	1133			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	32	337	423
Volume Left	27	5	0
Volume Right	5	0	43
cSH	415	1133	1700
Volume to Capacity	0.08	0.00	0.25
Queue Length 95th (m)	2.0	0.1	0.0
Control Delay (s)	14.4	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	14.4	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		30.8%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	5	15	0	65	15	295	20	110	370	40
Future Volume (vph)	45	0	5	15	0	65	15	295	20	110	370	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.89			0.99			0.99	
Flt Protected		0.96			0.99			1.00			0.99	
Satd. Flow (prot)		1760			1642			1843			1824	
Flt Permitted		0.71			0.95			0.97			0.84	
Satd. Flow (perm)		1299			1568			1793			1548	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	0	5	16	0	71	16	321	22	120	402	43
RTOR Reduction (vph)	0	32	0	0	55	0	0	3	0	0	4	0
Lane Group Flow (vph)	0	22	0	0	32	0	0	356	0	0	561	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0			50.0			50.0	
Effective Green, g (s)		18.0			18.0			50.0			50.0	
Actuated g/C Ratio		0.22			0.22			0.62			0.62	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		292			352			1120			967	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.02			0.20			c0.36	
v/c Ratio		0.08			0.09			0.32			0.58	
Uniform Delay, d1		24.4			24.5			7.0			8.8	
Progression Factor		1.00			1.00			1.00			1.07	
Incremental Delay, d2		0.5			0.5			0.7			2.4	
Delay (s)		25.0			25.0			7.8			11.8	
Level of Service		C			C			A			B	
Approach Delay (s)		25.0			25.0			7.8			11.8	
Approach LOS		C			C			A			B	

Intersection Summary				
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	70.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	55	75	20	30	0	120	345	55	5	310	25
Future Volume (Veh/h)	5	55	75	20	30	0	120	345	55	5	310	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	5	60	82	22	33	0	132	379	60	5	341	27
Pedestrians		1			13			5			1	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								257				
pX, platoon unblocked												
vC, conflicting volume	836	1082	190	984	1065	234	369			452		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	836	1082	190	984	1065	234	369			452		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	69	90	83	83	100	89			100		
cM capacity (veh/h)	208	192	815	126	196	766	1200			1107		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	147	55	322	250	176	198
Volume Left	5	22	132	0	5	0
Volume Right	82	0	0	60	0	27
cSH	336	160	1200	1700	1107	1700
Volume to Capacity	0.44	0.34	0.11	0.15	0.00	0.12
Queue Length 95th (m)	17.1	11.3	3.0	0.0	0.1	0.0
Control Delay (s)	23.7	38.7	4.0	0.0	0.3	0.0
Lane LOS	C	E	A		A	
Approach Delay (s)	23.7	38.7	2.3		0.1	
Approach LOS	C	E				

Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	46.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	30	0	0	50	0	0	0	0	0	0	20
Future Volume (Veh/h)	40	30	0	0	50	0	0	0	0	0	0	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	33	0	0	54	0	0	0	0	0	0	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	54			33			195	173	33	173	173	54
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	54			33			195	173	33	173	173	54
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	100	100	98
cM capacity (veh/h)	1551			1579			732	700	1041	773	700	1013

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	76	54	0	22
Volume Left	43	0	0	0
Volume Right	0	0	0	22
cSH	1551	1579	1700	1013
Volume to Capacity	0.03	0.00	0.00	0.02
Queue Length 95th (m)	0.7	0.0	0.0	0.5
Control Delay (s)	4.3	0.0	0.0	8.6
Lane LOS	A		A	A
Approach Delay (s)	4.3	0.0	0.0	8.6
Approach LOS			A	A

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	20.5%	ICU Level of Service	A	
Analysis Period (min)	15			

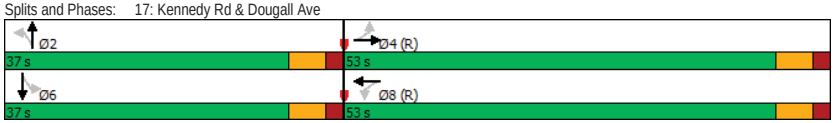
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	70	170	5	40	25	280	455	85	25	340	40
Future Volume (vph)	40	70	170	5	40	25	280	455	85	25	340	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.92			0.95			0.98			0.99	
Flt Protected		0.99			1.00			0.98			1.00	
Satd. Flow (prot)		1706			1791			3467			3503	
Flt Permitted		0.96			0.98			0.68			0.84	
Satd. Flow (perm)		1641			1763			2401			2952	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	40	71	172	5	40	25	283	460	86	25	343	40
RTOR Reduction (vph)	0	62	0	0	12	0	0	10	0	0	9	0
Lane Group Flow (vph)	0	221	0	0	58	0	0	819	0	0	399	0
Confl. Peds. (#/hr)	4		12	12		4	8		16	16		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		47.0			47.0			31.0			31.0	
Effective Green, g (s)		47.0			47.0			31.0			31.0	
Actuated g/C Ratio		0.52			0.52			0.34			0.34	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		856			920			827			1016	
v/s Ratio Prot												
v/s Ratio Perm		c0.13			0.03			c0.34			0.14	
v/c Ratio		0.26			0.06			0.99			0.39	
Uniform Delay, d1		11.9			10.6			29.4			22.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.1			29.1			1.1	
Delay (s)		12.6			10.8			58.4			23.5	
Level of Service		B			B			E			C	
Approach Delay (s)		12.6			10.8			58.4			23.5	
Approach LOS		B			B			E			C	

Intersection Summary				
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	83.2%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	70	5	40	280	455	25	340
Future Volume (vph)	40	70	5	40	280	455	25	340
Lane Group Flow (vph)	0	283	0	70	0	829	0	408
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.0	34.0	34.0	34.0	31.0	31.0	31.0	31.0
Total Split (s)	53.0	53.0	53.0	53.0	37.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%	58.9%	58.9%	41.1%	41.1%	41.1%	41.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.31		0.08		0.99		0.40
Control Delay		7.3		7.8		59.5		23.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		7.3		7.8		59.5		23.0
Queue Length 50th (m)		13.9		3.8		76.9		28.2
Queue Length 95th (m)		28.7		10.2		#120.1		41.2
Internal Link Dist (m)		122.6		122.1		160.2		233.0
Turn Bay Length (m)								
Base Capacity (vph)		919		933		836		1025
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.31		0.08		0.99		0.40

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: Kennedy Rd & Dougall Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	155	85	35	95	15	25	975	30	30	2525	20
Future Volume (vph)	10	155	85	35	95	15	25	975	30	30	2525	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.95		1.00	0.98		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1713		1566	1804		1716	4359		1384	5038	
Flt Permitted	0.68	1.00		0.39	1.00		0.05	1.00		0.25	1.00	
Satd. Flow (perm)	1283	1713		641	1804		89	4359		369	5038	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	161	89	36	99	16	26	1016	31	31	2630	21
RTOR Reduction (vph)	0	1	0	0	6	0	0	2	0	0	0	0
Lane Group Flow (vph)	10	249	0	36	109	0	26	1045	0	31	2651	0
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	23.1	23.1		23.1	23.1		81.4	81.4		81.4	81.4	
Effective Green, g (s)	23.1	23.1		23.1	23.1		81.4	81.4		81.4	81.4	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.68	0.68		0.68	0.68	
Clearance Time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	246	329		123	347		60	2956		250	3417	
v/s Ratio Prot		c0.15			0.06			0.24			c0.53	
v/s Ratio Perm	0.01			0.06			0.29			0.08		
v/c Ratio	0.04	0.76		0.29	0.31		0.43	0.35		0.12	0.78	
Uniform Delay, d1	39.4	45.8		41.5	41.6		8.8	8.2		6.8	13.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	9.6		1.3	0.5		21.2	0.3		1.0	1.8	
Delay (s)	39.5	55.4		42.8	42.1		30.0	8.5		7.8	14.9	
Level of Service	D	E		D	D		C	A		A	B	
Approach Delay (s)		54.8			42.3			9.0			14.8	
Approach LOS		D			D			A			B	

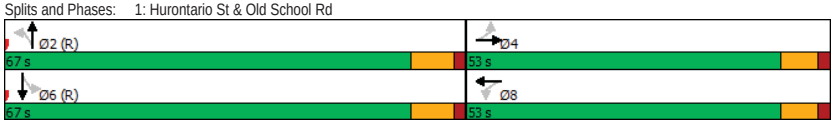
Intersection Summary				
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	90.0%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	155	35	95	25	975	30	2525
Future Volume (vph)	10	155	35	95	25	975	30	2525
Lane Group Flow (vph)	10	250	36	115	26	1047	31	2651
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	42.4	42.4	41.1	41.1	41.1	41.1
Total Split (s)	53.0	53.0	53.0	53.0	67.0	67.0	67.0	67.0
Total Split (%)	44.2%	44.2%	44.2%	44.2%	55.8%	55.8%	55.8%	55.8%
Yellow Time (s)	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	8.1	8.1	8.1	8.1
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.04	0.76	0.29	0.32	0.43	0.35	0.12	0.78
Control Delay	36.1	59.5	45.3	39.6	39.8	9.2	10.0	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	59.5	45.3	39.6	39.8	9.2	10.0	16.2
Queue Length 50th (m)	2.1	58.9	7.7	23.0	2.7	36.3	2.5	148.5
Queue Length 95th (m)	6.4	81.6	17.1	37.5	#19.5	54.8	8.2	209.3
Internal Link Dist (m)		316.5		178.0		1309.2		1382.3
Turn Bay Length (m)	75.0		75.0		50.0		50.0	
Base Capacity (vph)	487	651	243	690	60	2958	250	3416
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	0.02	0.38	0.15	0.17	0.43	0.35	0.12	0.78

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	145	20	50	175	10	85	2550	45	15	1020	15
Future Volume (vph)	25	145	20	50	175	10	85	2550	45	15	1020	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1812		1750	1870		1785	5077		1487	4886	
Flt Permitted	0.45	1.00		0.52	1.00		0.24	1.00		0.05	1.00	
Satd. Flow (perm)	851	1812		954	1870		455	5077		72	4886	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	154	21	53	186	11	90	2713	48	16	1085	16
RTOR Reduction (vph)	0	5	0	0	1	0	0	1	0	0	1	0
Lane Group Flow (vph)	27	170	0	53	196	0	90	2760	0	16	1100	0
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.0	18.0		18.0	18.0		86.5	86.5		86.5	86.5	
Effective Green, g (s)	18.0	18.0		18.0	18.0		86.5	86.5		86.5	86.5	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.72	0.72		0.72	0.72	
Clearance Time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	127	271		143	280		327	3659		51	3521	
v/s Ratio Prot		0.09			c0.10			c0.54			0.23	
v/s Ratio Perm	0.03			0.06			0.20			0.22		
v/c Ratio	0.21	0.63		0.37	0.70		0.28	0.75		0.31	0.31	
Uniform Delay, d1	44.8	47.8		45.9	48.4		5.8	10.2		6.0	6.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	4.5		1.6	7.7		2.1	1.5		15.4	0.2	
Delay (s)	45.6	52.3		47.5	56.1		7.9	11.7		21.4	6.3	
Level of Service	D	D		D	E		A	B		C	A	
Approach Delay (s)		51.4			54.3			11.6			6.5	
Approach LOS		D			D			B			A	

Intersection Summary				
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	107.9%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	145	50	175	85	2550	15	1020
Future Volume (vph)	25	145	50	175	85	2550	15	1020
Lane Group Flow (vph)	27	175	53	197	90	2761	16	1101
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	42.4	42.4	41.1	41.1	41.1	41.1
Total Split (s)	46.0	46.0	46.0	46.0	74.0	74.0	74.0	74.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	61.7%	61.7%	61.7%	61.7%
Yellow Time (s)	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	8.1	8.1	8.1	8.1
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.21	0.63	0.37	0.70	0.28	0.75	0.31	0.31
Control Delay	46.6	55.9	51.7	61.1	9.5	12.7	27.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	55.9	51.7	61.1	9.5	12.7	27.2	6.7
Queue Length 50th (m)	6.0	39.9	12.0	46.7	6.9	135.5	1.3	31.7
Queue Length 95th (m)	14.5	60.4	24.0	68.4	18.3	188.4	10.2	46.7
Internal Link Dist (m)		316.5		178.0		1309.2		1382.3
Turn Bay Length (m)	75.0		75.0		50.0		50.0	
Base Capacity (vph)	273	586	306	602	327	3659	51	3522
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	0.30	0.17	0.33	0.28	0.75	0.31	0.31

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hurontario St & Old School Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	175	85	290	135	20	25	1275	120	30	2525	20
Future Volume (vph)	10	175	85	290	135	20	25	1275	120	30	2525	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1717		1566	1808		1716	4371	1413	1384	5043	1597
Flt Permitted	0.65	1.00		0.28	1.00		0.06	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	1230	1717		460	1808		116	4371	1413	223	5043	1597
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	182	89	302	141	21	26	1328	125	31	2630	21
RTOR Reduction (vph)	0	15	0	0	5	0	0	0	60	0	0	10
Lane Group Flow (vph)	10	256	0	302	157	0	26	1328	65	31	2630	11
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	22.3	22.3		42.3	42.3		62.2	62.2	62.2	62.2	62.2	62.2
Effective Green, g (s)	22.3	22.3		42.3	42.3		62.2	62.2	62.2	62.2	62.2	62.2
Actuated g/C Ratio	0.19	0.19		0.35	0.35		0.52	0.52	0.52	0.52	0.52	0.52
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	228	319		309	637		60	2265	732	115	2613	827
v/s Ratio Prot		0.15		c0.13	0.09			0.30			c0.52	
v/s Ratio Perm	0.01			c0.21			0.22		0.05	0.14		0.01
v/c Ratio	0.04	0.80		0.98	0.25		0.43	0.59	0.09	0.27	1.01	0.01
Uniform Delay, d1	40.1	46.7		34.2	27.6		18.0	20.0	14.6	16.2	28.9	14.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	13.4		44.6	0.2		21.2	1.1	0.2	5.7	19.2	0.0
Delay (s)	40.2	60.2		78.8	27.8		39.1	21.1	14.8	21.9	48.1	14.0
Level of Service	D	E		E	C		D	C	B	C	D	B
Approach Delay (s)		59.4			61.0			20.9			47.5	
Approach LOS		E			E			C			D	

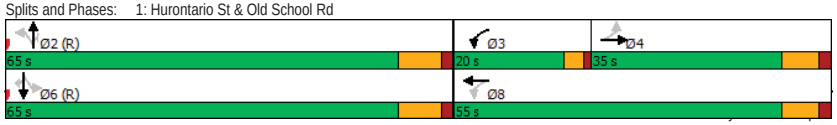
Intersection Summary				
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.02			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	95.5%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	10	175	290	135	25	1275	120	30	2525	20
Future Volume (vph)	10	175	290	135	25	1275	120	30	2525	20
Lane Group Flow (vph)	10	271	302	162	26	1328	125	31	2630	21
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	41.1	41.1	41.1
Total Split (s)	35.0	35.0	20.0	55.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	29.2%	29.2%	16.7%	45.8%	54.2%	54.2%	54.2%	54.2%	54.2%	54.2%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	8.1	8.1	8.1
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.04	0.81	0.94	0.25	0.43	0.59	0.16	0.27	1.01	0.02
Control Delay	37.7	62.1	67.0	26.5	48.4	22.0	3.5	26.2	48.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	62.1	67.0	26.5	48.4	22.0	3.5	26.2	48.5	0.1
Queue Length 50th (m)	2.1	60.2	56.3	26.8	3.9	81.5	0.0	4.2	~252.7	0.0
Queue Length 95th (m)	6.7	87.7	#88.7	41.4	#19.4	105.0	10.5	13.8	#299.8	0.0
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	282	409	322	721	60	2267	793	115	2615	865
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	0.04	0.66	0.94	0.22	0.43	0.59	0.16	0.27	1.01	0.02

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	195	20	215	200	15	85	2550	345	20	1020	15
Future Volume (vph)	25	195	20	215	200	15	85	2550	345	20	1020	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1820		1750	1866		1785	5092	1521	1487	4902	1389
Flt Permitted	0.62	1.00		0.33	1.00		0.23	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	1157	1820		610	1866		437	5092	1521	86	4902	1389
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	207	21	229	213	16	90	2713	367	21	1085	16
RTOR Reduction (vph)	0	3	0	0	1	0	0	0	105	0	0	6
Lane Group Flow (vph)	27	225	0	229	228	0	90	2713	262	21	1085	10
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	20.0	20.0		32.0	32.0		72.5	72.5	72.5	72.5	72.5	72.5
Effective Green, g (s)	20.0	20.0		32.0	32.0		72.5	72.5	72.5	72.5	72.5	72.5
Actuated g/C Ratio	0.17	0.17		0.27	0.27		0.60	0.60	0.60	0.60	0.60	0.60
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	192	303		238	497		264	3076	918	51	2961	839
v/s Ratio Prot		0.12		c0.06	0.12			c0.53			0.22	
v/s Ratio Perm	0.02			c0.19			0.21		0.17	0.24		0.01
v/c Ratio	0.14	0.74		0.96	0.46		0.34	0.88	0.29	0.41	0.37	0.01
Uniform Delay, d1	42.7	47.5		42.3	36.8		11.8	20.1	11.4	12.5	12.1	9.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	9.4		47.5	0.7		3.5	4.1	0.8	22.8	0.4	0.0
Delay (s)	43.0	56.9		89.8	37.4		15.3	24.2	12.1	35.3	12.4	9.5
Level of Service	D	E		F	D		B	C	B	D	B	A
Approach Delay (s)		55.5			63.6			22.5			12.8	
Approach LOS		E			E			C			B	

Intersection Summary				
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.93			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	110.3%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	25	195	215	200	85	2550	345	20	1020	15
Future Volume (vph)	25	195	215	200	85	2550	345	20	1020	15
Lane Group Flow (vph)	27	228	229	229	90	2713	367	21	1085	16
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	41.1	41.1	41.1
Total Split (s)	35.0	35.0	12.0	47.0	73.0	73.0	73.0	73.0	73.0	73.0
Total Split (%)	29.2%	29.2%	10.0%	39.2%	60.8%	60.8%	60.8%	60.8%	60.8%	60.8%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	8.1	8.1	8.1
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.14	0.75	0.90	0.46	0.34	0.88	0.36	0.41	0.37	0.02
Control Delay	41.9	61.1	72.0	38.9	18.0	25.4	4.8	44.6	13.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	61.1	72.0	38.9	18.0	25.4	4.8	44.6	13.1	0.1
Queue Length 50th (m)	5.8	53.5	46.0	47.4	10.5	196.2	10.1	2.6	47.1	0.0
Queue Length 95th (m)	13.8	76.6	#76.4	66.5	26.5	#277.7	29.6	#16.8	65.5	0.0
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	266	421	255	616	264	3077	1024	51	2962	869
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	0.54	0.90	0.37	0.34	0.88	0.36	0.41	0.37	0.02

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Old School Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	170	85	35	110	15	25	1075	30	30	2785	20
Future Volume (vph)	10	170	85	35	110	15	25	1075	30	30	2785	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.95		1.00	0.98		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1716		1566	1812		1716	4360		1384	5039	
Flt Permitted	0.67	1.00		0.37	1.00		0.05	1.00		0.22	1.00	
Satd. Flow (perm)	1259	1716		610	1812		90	4360		324	5039	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	177	89	36	115	16	26	1120	31	31	2901	21
RTOR Reduction (vph)	0	0	0	0	6	0	0	2	0	0	0	0
Lane Group Flow (vph)	10	266	0	36	125	0	26	1149	0	31	2922	0
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.3	24.3		24.3	24.3		80.2	80.2		80.2	80.2	
Effective Green, g (s)	24.3	24.3		24.3	24.3		80.2	80.2		80.2	80.2	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.67	0.67		0.67	0.67	
Clearance Time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	254	347		123	366		60	2913		216	3367	
v/s Ratio Prot		c0.15			0.07			0.26			c0.58	
v/s Ratio Perm	0.01			0.06			0.29			0.10		
v/c Ratio	0.04	0.77		0.29	0.34		0.43	0.39		0.14	0.87	
Uniform Delay, d1	38.5	45.2		40.6	41.0		9.3	9.0		7.3	15.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	9.7		1.3	0.6		21.2	0.4		1.4	3.3	
Delay (s)	38.5	54.9		41.9	41.6		30.5	9.4		8.7	19.0	
Level of Service	D	D		D	D		C	A		A	B	
Approach Delay (s)		54.3			41.6			9.8			18.9	
Approach LOS		D			D			A			B	

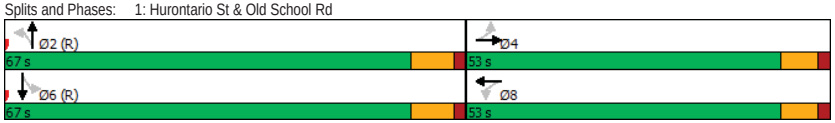
Intersection Summary				
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	95.8%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	170	35	110	25	1075	30	2785
Future Volume (vph)	10	170	35	110	25	1075	30	2785
Lane Group Flow (vph)	10	266	36	131	26	1151	31	2922
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	42.4	42.4	41.1	41.1	41.1	41.1
Total Split (s)	53.0	53.0	53.0	53.0	67.0	67.0	67.0	67.0
Total Split (%)	44.2%	44.2%	44.2%	44.2%	55.8%	55.8%	55.8%	55.8%
Yellow Time (s)	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	8.1	8.1	8.1	8.1
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.04	0.77	0.29	0.35	0.43	0.39	0.14	0.87
Control Delay	35.0	59.2	44.5	39.9	40.7	10.1	11.2	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	59.2	44.5	39.9	40.7	10.1	11.2	20.6
Queue Length 50th (m)	2.0	62.8	7.6	26.5	2.8	42.8	2.6	191.5
Queue Length 95th (m)	6.3	85.9	16.9	41.7	#19.6	63.9	8.9	#281.2
Internal Link Dist (m)		316.5		178.0		1309.2		1382.3
Turn Bay Length (m)	75.0		75.0		50.0		50.0	
Base Capacity (vph)	478	652	231	692	60	2915	215	3368
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	0.02	0.41	0.16	0.19	0.43	0.39	0.14	0.87

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	165	20	50	190	10	85	2815	45	15	1125	15
Future Volume (vph)	25	165	20	50	190	10	85	2815	45	15	1125	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1785	1816		1750	1871		1785	5078		1487	4887	
Flt Permitted	0.42	1.00		0.47	1.00		0.21	1.00		0.05	1.00	
Satd. Flow (perm)	796	1816		862	1871		397	5078		73	4887	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	176	21	53	202	11	90	2995	48	16	1197	16
RTOR Reduction (vph)	0	4	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	27	193	0	53	213	0	90	3042	0	16	1212	0
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.1	19.1		19.1	19.1		85.4	85.4		85.4	85.4	
Effective Green, g (s)	19.1	19.1		19.1	19.1		85.4	85.4		85.4	85.4	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.71	0.71		0.71	0.71	
Clearance Time (s)	7.4	7.4		7.4	7.4		8.1	8.1		8.1	8.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	126	289		137	297		282	3613		51	3477	
v/s Ratio Prot		0.11			c0.11			c0.60			0.25	
v/s Ratio Perm	0.03			0.06			0.23			0.22		
v/c Ratio	0.21	0.67		0.39	0.72		0.32	0.84		0.31	0.35	
Uniform Delay, d1	43.9	47.5		45.2	47.9		6.5	12.4		6.4	6.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	5.7		1.8	8.0		3.0	2.6		15.4	0.3	
Delay (s)	44.8	53.2		47.0	55.9		9.4	15.0		21.8	6.9	
Level of Service	D	D		D	E		A	B		C	A	
Approach Delay (s)		52.2			54.1			14.8			7.1	
Approach LOS		D			D			B			A	

Intersection Summary				
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	108.7%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	165	50	190	85	2815	15	1125
Future Volume (vph)	25	165	50	190	85	2815	15	1125
Lane Group Flow (vph)	27	197	53	213	90	3043	16	1213
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	42.4	42.4	41.1	41.1	41.1	41.1
Total Split (s)	46.0	46.0	46.0	46.0	74.0	74.0	74.0	74.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	61.7%	61.7%	61.7%	61.7%
Yellow Time (s)	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	8.1	8.1	8.1	8.1
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.21	0.67	0.39	0.72	0.32	0.84	0.31	0.35
Control Delay	45.8	57.2	51.9	61.0	11.4	16.3	27.2	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	57.2	51.9	61.0	11.4	16.3	27.2	7.4
Queue Length 50th (m)	5.9	45.4	11.9	50.7	7.4	176.6	1.3	37.5
Queue Length 95th (m)	14.4	66.8	24.0	72.9	20.6	244.8	10.1	54.6
Internal Link Dist (m)		316.5		178.0		1309.2		1382.3
Turn Bay Length (m)	75.0		75.0		50.0		50.0	
Base Capacity (vph)	256	587	277	601	281	3616	52	3478
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	0.11	0.34	0.19	0.35	0.32	0.84	0.31	0.35

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hurontario St & Old School Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	190	85	290	150	20	25	1075	120	30	2785	20
Future Volume (vph)	10	190	85	290	150	20	25	1075	120	30	2785	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1720		1566	1813		1716	4371	1413	1384	5043	1597
Flt Permitted	0.65	1.00		0.26	1.00		0.07	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1213	1720		430	1813		118	4371	1413	300	5043	1597
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	198	89	302	156	21	26	1120	125	31	2901	21
RTOR Reduction (vph)	0	15	0	0	4	0	0	0	61	0	0	10
Lane Group Flow (vph)	10	272	0	302	173	0	26	1120	64	31	2901	11
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	23.1	23.1		43.1	43.1		61.4	61.4	61.4	61.4	61.4	61.4
Effective Green, g (s)	23.1	23.1		43.1	43.1		61.4	61.4	61.4	61.4	61.4	61.4
Actuated g/C Ratio	0.19	0.19		0.36	0.36		0.51	0.51	0.51	0.51	0.51	0.51
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	233	331		305	651		60	2236	722	153	2580	817
v/s Ratio Prot		0.16		c0.13	0.10			0.26			c0.58	
v/s Ratio Perm	0.01			c0.22			0.22		0.05	0.10		0.01
v/c Ratio	0.04	0.82		0.99	0.26		0.43	0.50	0.09	0.20	1.12	0.01
Uniform Delay, d1	39.4	46.5		33.8	27.2		18.4	19.2	15.0	16.0	29.3	14.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	15.1		48.7	0.2		21.2	0.8	0.2	3.0	61.7	0.0
Delay (s)	39.5	61.6		82.5	27.5		39.6	20.0	15.2	18.9	91.0	14.4
Level of Service	D	E		F	C		D	C	B	B	F	B
Approach Delay (s)		60.9			62.2			20.0			89.7	
Approach LOS		E			E			B			F	

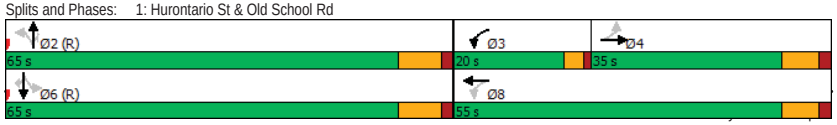
Intersection Summary				
HCM 2000 Control Delay	67.6	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.10			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	101.3%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	10	190	290	150	25	1075	120	30	2785	20
Future Volume (vph)	10	190	290	150	25	1075	120	30	2785	20
Lane Group Flow (vph)	10	287	302	177	26	1120	125	31	2901	21
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	41.1	41.1	41.1
Total Split (s)	35.0	35.0	20.0	55.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	29.2%	29.2%	16.7%	45.8%	54.2%	54.2%	54.2%	54.2%	54.2%	54.2%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	8.1	8.1	8.1
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.04	0.83	0.95	0.27	0.44	0.50	0.16	0.20	1.13	0.02
Control Delay	37.2	63.4	69.3	26.4	49.3	20.9	3.5	22.3	91.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	63.4	69.3	26.4	49.3	20.9	3.5	22.3	91.2	0.1
Queue Length 50th (m)	2.0	64.3	55.4	29.2	4.0	65.6	0.0	4.1	~308.3	0.0
Queue Length 95th (m)	6.7	94.0	#93.2	44.9	#19.2	84.1	10.5	12.2	#349.7	0.0
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	279	409	318	723	59	2235	783	153	2578	853
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	0.04	0.70	0.95	0.24	0.44	0.50	0.16	0.20	1.13	0.02

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	215	20	215	215	15	85	2815	345	20	1125	15
Future Volume (vph)	25	215	20	215	215	15	85	2815	345	20	1125	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1822		1750	1867		1785	5092	1521	1487	4902	1389
Flt Permitted	0.61	1.00		0.30	1.00		0.20	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	1140	1822		559	1867		375	5092	1521	88	4902	1389
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	229	21	229	229	16	90	2995	367	21	1197	16
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	97	0	0	6
Lane Group Flow (vph)	27	247	0	229	245	0	90	2995	270	21	1197	10
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	21.2	21.2		33.2	33.2		71.3	71.3	71.3	71.3	71.3	71.3
Effective Green, g (s)	21.2	21.2		33.2	33.2		71.3	71.3	71.3	71.3	71.3	71.3
Actuated g/C Ratio	0.18	0.18		0.28	0.28		0.59	0.59	0.59	0.59	0.59	0.59
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	201	321		234	516		222	3025	903	52	2912	825
v/s Ratio Prot		0.14		c0.07	0.13			c0.59			0.24	
v/s Ratio Perm	0.02			c0.21			0.24		0.18	0.24		0.01
v/c Ratio	0.13	0.77		0.98	0.47		0.41	0.99	0.30	0.40	0.41	0.01
Uniform Delay, d1	41.7	47.1		41.9	36.1		13.0	24.0	12.0	13.0	13.1	10.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	10.6		52.2	0.7		5.4	14.2	0.8	21.7	0.4	0.0
Delay (s)	42.0	57.6		94.1	36.8		18.4	38.2	12.9	34.7	13.5	10.0
Level of Service	D	E		F	D		B	D	B	C	B	A
Approach Delay (s)		56.1			64.5			35.0			13.8	
Approach LOS		E			E			C			B	

Intersection Summary				
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	1.02			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	111.3%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	25	215	215	215	85	2815	345	20	1125	15
Future Volume (vph)	25	215	215	215	85	2815	345	20	1125	15
Lane Group Flow (vph)	27	250	229	245	90	2995	367	21	1197	16
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	41.1	41.1	41.1
Total Split (s)	35.0	35.0	12.0	47.0	73.0	73.0	73.0	73.0	73.0	73.0
Total Split (%)	29.2%	29.2%	10.0%	39.2%	60.8%	60.8%	60.8%	60.8%	60.8%	60.8%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	8.1	8.1	8.1
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.13	0.77	0.92	0.47	0.40	0.99	0.37	0.40	0.41	0.02
Control Delay	40.8	61.6	75.3	38.6	21.7	39.0	5.7	44.1	14.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	61.6	75.3	38.6	21.7	39.0	5.7	44.1	14.2	0.1
Queue Length 50th (m)	5.7	58.7	45.2	50.5	11.3	254.3	13.2	2.6	55.3	0.0
Queue Length 95th (m)	13.7	83.1	#78.8	70.4	29.8	#332.8	34.7	#16.6	75.1	0.0
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	262	422	250	616	223	3025	1000	52	2912	856
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	0.59	0.92	0.40	0.40	0.99	0.37	0.40	0.41	0.02

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Old School Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	180	85	230	135	130	25	1075	100	70	2785	20
Future Volume (vph)	10	180	85	230	135	130	25	1075	100	70	2785	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1718		1566	1657		1716	4371	1413	1384	5043	1597
Flt Permitted	0.59	1.00		0.27	1.00		0.06	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1108	1718		449	1657		113	4371	1413	306	5043	1597
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	188	89	240	141	135	26	1120	104	73	2901	21
RTOR Reduction (vph)	0	15	0	0	30	0	0	0	49	0	0	10
Lane Group Flow (vph)	10	262	0	240	246	0	26	1120	55	73	2901	11
Heavy Vehicles (%)	0%	9%	1%	14%	3%	12%	4%	20%	13%	29%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	22.6	22.6		40.5	40.5		64.0	64.0	64.0	64.0	64.0	64.0
Effective Green, g (s)	22.6	22.6		40.5	40.5		64.0	64.0	64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.19	0.19		0.34	0.34		0.53	0.53	0.53	0.53	0.53	0.53
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	8.1	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	208	323		280	559		60	2331	753	163	2689	851
v/s Ratio Prot		0.15		c0.10	0.15			0.26			c0.58	
v/s Ratio Perm	0.01			c0.19			0.23		0.04	0.24		0.01
v/c Ratio	0.05	0.81		0.86	0.44		0.43	0.48	0.07	0.45	1.08	0.01
Uniform Delay, d1	39.9	46.7		32.7	30.9		17.0	17.6	13.6	17.2	28.0	13.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	14.4		21.9	0.6		21.2	0.7	0.2	8.7	43.0	0.0
Delay (s)	40.0	61.0		54.5	31.5		38.2	18.3	13.8	25.8	71.0	13.2
Level of Service	D	E		D	C		D	B	B	C	E	B
Approach Delay (s)		60.3			42.2			18.3			69.5	
Approach LOS		E			D			B			E	

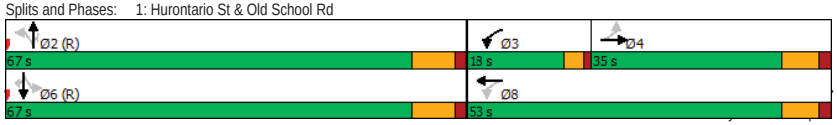
Intersection Summary				
HCM 2000 Control Delay	53.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.02			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	101.8%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	10	180	230	135	25	1075	100	70	2785	20
Future Volume (vph)	10	180	230	135	25	1075	100	70	2785	20
Lane Group Flow (vph)	10	277	240	276	26	1120	104	73	2901	21
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	41.1	41.1	41.1
Total Split (s)	35.0	35.0	18.0	53.0	67.0	67.0	67.0	67.0	67.0	67.0
Total Split (%)	29.2%	29.2%	15.0%	44.2%	55.8%	55.8%	55.8%	55.8%	55.8%	55.8%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	6.3	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	8.1	8.1	8.1
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.05	0.82	0.82	0.47	0.44	0.48	0.13	0.45	1.08	0.02
Control Delay	37.7	62.7	51.4	27.8	48.4	19.1	3.5	30.4	71.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	62.7	51.4	27.8	48.4	19.1	3.5	30.4	71.2	0.1
Queue Length 50th (m)	2.1	61.9	43.6	43.8	3.8	62.4	0.0	10.8	~297.5	0.0
Queue Length 95th (m)	6.8	90.2	#72.2	65.8	#19.4	81.2	9.3	29.6	#341.8	0.0
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	255	409	294	658	59	2331	802	163	2690	887
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	0.04	0.68	0.82	0.42	0.44	0.48	0.13	0.45	1.08	0.02

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	200	20	175	205	85	85	2815	275	155	1125	15
Future Volume (vph)	25	200	20	175	205	85	85	2815	275	155	1125	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	4.0	8.1	8.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.99		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1821		1750	1811		1785	5092	1521	1487	4902	1389
Flt Permitted	0.53	1.00		0.31	1.00		0.22	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	1002	1821		565	1811		420	5092	1521	94	4902	1389
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	213	21	186	218	90	90	2995	293	165	1197	16
RTOR Reduction (vph)	0	3	0	0	13	0	0	0	88	0	0	6
Lane Group Flow (vph)	27	231	0	186	295	0	90	2995	205	165	1197	10
Heavy Vehicles (%)	0%	4%	5%	2%	2%	0%	0%	3%	5%	20%	7%	15%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	19.3	19.3		29.3	29.3		62.9	62.9	62.9	75.2	75.2	75.2
Effective Green, g (s)	19.3	19.3		29.3	29.3		62.9	62.9	62.9	75.2	75.2	75.2
Actuated g/C Ratio	0.16	0.16		0.24	0.24		0.52	0.52	0.52	0.63	0.63	0.63
Clearance Time (s)	7.4	7.4		4.0	7.4		8.1	8.1	8.1	4.0	8.1	8.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5	4.5	3.0	4.5	4.5
Lane Grp Cap (vph)	161	292		197	442		220	2669	797	155	3071	870
v/s Ratio Prot		0.13		c0.05	0.16			c0.59		c0.07	0.24	
v/s Ratio Perm	0.03			c0.18			0.21		0.13	0.59		0.01
v/c Ratio	0.17	0.79		0.94	0.67		0.41	1.12	0.26	1.06	0.39	0.01
Uniform Delay, d1	43.4	48.4		44.2	41.0		17.3	28.6	15.7	38.7	11.1	8.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	13.3		48.0	3.8		5.5	60.6	0.8	90.5	0.4	0.0
Delay (s)	43.9	61.7		92.2	44.8		22.8	89.1	16.5	129.2	11.4	8.4
Level of Service	D	E		F	D		C	F	B	F	B	A
Approach Delay (s)		59.8			62.6			81.1			25.5	
Approach LOS		E			E			F			C	

Intersection Summary				
HCM 2000 Control Delay	64.5	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.10			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.5	
Intersection Capacity Utilization	109.7%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	25	200	175	205	85	2815	275	155	1125	15
Future Volume (vph)	25	200	175	205	85	2815	275	155	1125	15
Lane Group Flow (vph)	27	234	186	308	90	2995	293	165	1197	16
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4	3	8		2		1	6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	3	8	2	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	4.5	20.0	20.0
Minimum Split (s)	42.4	42.4	9.0	42.4	41.1	41.1	41.1	9.0	41.1	41.1
Total Split (s)	30.0	30.0	10.0	40.0	71.0	71.0	71.0	9.0	80.0	80.0
Total Split (%)	25.0%	25.0%	8.3%	33.3%	59.2%	59.2%	59.2%	7.5%	66.7%	66.7%
Yellow Time (s)	5.4	5.4	3.0	5.4	6.3	6.3	6.3	3.0	6.3	6.3
All-Red Time (s)	2.0	2.0	1.0	2.0	1.8	1.8	1.8	1.0	1.8	1.8
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)	7.4	7.4	4.0	7.4	8.1	8.1	8.1	4.0	8.1	8.1
Lead/Lag	Lag	Lag	Lead		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.17	0.79	0.87	0.68	0.41	1.12	0.33	1.04	0.39	0.02
Control Delay	44.4	66.4	74.5	46.4	24.5	89.1	6.9	113.0	11.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	66.4	74.5	46.4	24.5	89.1	6.9	113.0	11.9	0.1
Queue Length 50th (m)	5.8	54.9	37.2	65.0	13.1	~313.6	13.2	~32.8	51.3	0.0
Queue Length 95th (m)	14.6	82.3	#71.7	94.3	28.8	#340.9	30.2	#86.5	64.3	0.0
Internal Link Dist (m)		316.5		178.0		1309.2			1382.3	
Turn Bay Length (m)	75.0		75.0		50.0			50.0		
Base Capacity (vph)	188	346	213	504	219	2669	885	158	3072	898
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	0.68	0.87	0.61	0.41	1.12	0.33	1.04	0.39	0.02

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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: Hurontario St & Old School Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	265	25	25	135	5	25	60	20	5	140	20
Future Volume (vph)	10	265	25	25	135	5	25	60	20	5	140	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.97			0.98	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1839			1756			1642			1817	
Flt Permitted		0.99			0.92			0.91			0.99	
Satd. Flow (perm)		1822			1619			1509			1808	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	12	312	29	29	159	6	29	71	24	6	165	24
RTOR Reduction (vph)	0	3	0	0	1	0	0	10	0	0	6	0
Lane Group Flow (vph)	0	350	0	0	193	0	0	114	0	0	189	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	14%	3%	0%	0%	9%	25%	0%	22%	0%	0%	3%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		39.0			39.0			39.0			39.0	
Effective Green, g (s)		39.0			39.0			39.0			39.0	
Actuated g/C Ratio		0.43			0.43			0.43			0.43	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		789			701			653			783	
v/s Ratio Prot												
v/s Ratio Perm		c0.19			0.12			0.08			c0.10	
v/c Ratio		0.44			0.28			0.18			0.24	
Uniform Delay, d1		17.9			16.4			15.6			16.1	
Progression Factor		1.29			1.00			1.00			1.00	
Incremental Delay, d2		1.7			1.0			0.6			0.7	
Delay (s)		24.8			17.4			16.2			16.9	
Level of Service		C			B			B			B	
Approach Delay (s)		24.8			17.4			16.2			16.9	
Approach LOS		C			B			B			B	

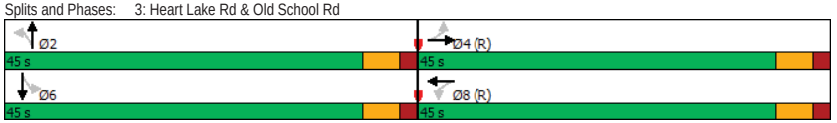
Intersection Summary				
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.34			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	46.2%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	265	25	135	25	60	5	140
Future Volume (vph)	10	265	25	135	25	60	5	140
Lane Group Flow (vph)	0	353	0	194	0	124	0	195
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.45		0.28		0.19		0.25
Control Delay		25.0		17.6		14.4		16.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		25.0		17.6		14.4		16.4
Queue Length 50th (m)		52.4		21.8		11.5		20.6
Queue Length 95th (m)		72.1		34.8		21.4		33.1
Internal Link Dist (m)		322.9		579.2		1133.5		1048.0
Turn Bay Length (m)								
Base Capacity (vph)		792		702		663		788
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.45		0.28		0.19		0.25

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 22.5 (25%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed

Splits and Phases: 3: Heart Lake Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	155	20	25	250	5	65	100	35	0	75	10
Future Volume (vph)	5	155	20	25	250	5	65	100	35	0	75	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.98			0.98	
Flt Protected		1.00			1.00			0.98			1.00	
Satd. Flow (prot)		1838			1891			1846			1826	
Flt Permitted		0.99			0.96			0.88			1.00	
Satd. Flow (perm)		1825			1829			1646			1826	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	5	165	21	27	266	5	69	106	37	0	80	11
RTOR Reduction (vph)	0	6	0	0	1	0	0	10	0	0	6	0
Lane Group Flow (vph)	0	185	0	0	297	0	0	202	0	0	85	0
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.0			34.0			34.0			34.0	
Effective Green, g (s)		34.0			34.0			34.0			34.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		775			777			699			776	
v/s Ratio Prot											0.05	
v/s Ratio Perm		0.10			c0.16			c0.12				
v/c Ratio		0.24			0.38			0.29			0.11	
Uniform Delay, d1		14.7			15.8			15.1			13.9	
Progression Factor		0.94			1.00			1.00			1.00	
Incremental Delay, d2		0.7			1.4			1.0			0.3	
Delay (s)		14.5			17.2			16.1			14.2	
Level of Service		B			B			B			B	
Approach Delay (s)		14.5			17.2			16.1			14.2	
Approach LOS		B			B			B			B	

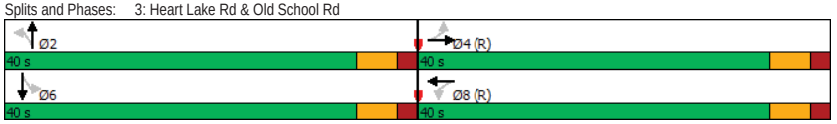
Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	5	155	25	250	65	100	75
Future Volume (vph)	5	155	25	250	65	100	75
Lane Group Flow (vph)	0	191	0	298	0	212	91
Turn Type	Perm	NA	Perm	NA	Perm	NA	NA
Protected Phases		4		8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	8	8	2	2	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0	6.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.24		0.38		0.30	0.12
Control Delay		14.1		17.6		15.3	12.8
Queue Delay		0.0		0.0		0.0	0.0
Total Delay		14.1		17.6		15.3	12.8
Queue Length 50th (m)		18.9		31.5		19.7	7.4
Queue Length 95th (m)		33.5		51.2		35.4	16.2
Internal Link Dist (m)		322.9		579.2		1133.5	1048.0
Turn Bay Length (m)							
Base Capacity (vph)		781		778		709	782
Starvation Cap Reductn		0		0		0	0
Spillback Cap Reductn		0		0		0	0
Storage Cap Reductn		0		0		0	0
Reduced v/c Ratio		0.24		0.38		0.30	0.12

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 22.5 (28%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed

Splits and Phases: 3: Heart Lake Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	375	110	25	170	5	55	60	20	5	140	20
Future Volume (vph)	15	375	110	25	170	5	55	60	20	5	140	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			1.00			0.98			0.98	
Flt Protected		1.00			0.99			0.98			1.00	
Satd. Flow (prot)		1813			1757			1680			1817	
Flt Permitted		0.99			0.90			0.82			0.99	
Satd. Flow (perm)		1792			1599			1398			1807	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	18	441	129	29	200	6	65	71	24	6	165	24
RTOR Reduction (vph)	0	11	0	0	1	0	0	7	0	0	6	0
Lane Group Flow (vph)	0	577	0	0	234	0	0	153	0	0	189	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	14%	3%	0%	0%	9%	25%	0%	22%	0%	0%	3%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		39.0			39.0			39.0			39.0	
Effective Green, g (s)		39.0			39.0			39.0			39.0	
Actuated g/C Ratio		0.43			0.43			0.43			0.43	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		776			692			605			783	
v/s Ratio Prot												
v/s Ratio Perm		c0.32			0.15			c0.11			0.10	
v/c Ratio		0.74			0.34			0.25			0.24	
Uniform Delay, d1		21.3			16.9			16.2			16.1	
Progression Factor		1.02			1.00			1.00			1.00	
Incremental Delay, d2		5.6			1.3			1.0			0.7	
Delay (s)		27.4			18.3			17.2			16.9	
Level of Service		C			B			B			B	
Approach Delay (s)		27.4			18.3			17.2			16.9	
Approach LOS		C			B			B			B	

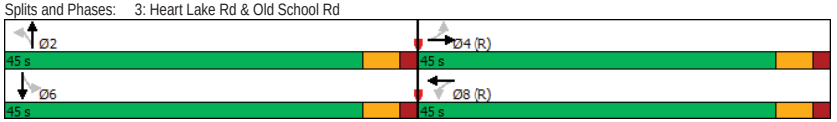
Intersection Summary				
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	61.3%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	15	375	25	170	55	60	5	140
Future Volume (vph)	15	375	25	170	55	60	5	140
Lane Group Flow (vph)	0	588	0	235	0	160	0	195
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.75		0.34		0.26		0.25
Control Delay		27.5		18.5		16.4		16.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		27.5		18.5		16.4		16.4
Queue Length 50th (m)		72.7		27.3		16.6		20.6
Queue Length 95th (m)		m118.4		42.1		28.5		33.1
Internal Link Dist (m)		322.9		579.2		1133.5		1048.0
Turn Bay Length (m)								
Base Capacity (vph)		787		694		613		788
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.75		0.34		0.26		0.25

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 22.5 (25%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Heart Lake Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	225	75	25	365	5	160	100	35	0	75	15
Future Volume (vph)	10	225	75	25	365	5	160	100	35	0	75	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			1.00			0.98			0.98	
Flt Protected		1.00			1.00			0.97			1.00	
Satd. Flow (prot)		1806			1894			1840			1817	
Flt Permitted		0.98			0.96			0.78			1.00	
Satd. Flow (perm)		1778			1831			1472			1817	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	11	239	80	27	388	5	170	106	37	0	80	16
RTOR Reduction (vph)	0	14	0	0	1	0	0	6	0	0	9	0
Lane Group Flow (vph)	0	316	0	0	419	0	0	307	0	0	87	0
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.0			34.0			34.0			34.0	
Effective Green, g (s)		34.0			34.0			34.0			34.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		755			778			625			772	
v/s Ratio Prot											0.05	
v/s Ratio Perm		0.18			c0.23			c0.21				
v/c Ratio		0.42			0.54			0.49			0.11	
Uniform Delay, d1		16.1			17.2			16.7			13.9	
Progression Factor		1.11			1.00			1.00			1.00	
Incremental Delay, d2		1.6			2.7			2.8			0.3	
Delay (s)		19.5			19.8			19.5			14.2	
Level of Service		B			B			B			B	
Approach Delay (s)		19.5			19.8			19.5			14.2	
Approach LOS		B			B			B			B	

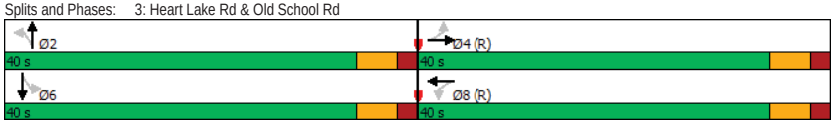
Intersection Summary				
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	63.2%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	10	225	25	365	160	100	75
Future Volume (vph)	10	225	25	365	160	100	75
Lane Group Flow (vph)	0	330	0	420	0	313	96
Turn Type	Perm	NA	Perm	NA	Perm	NA	NA
Protected Phases		4		8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	8	8	2	2	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0	6.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.43		0.54		0.50	0.12
Control Delay		18.6		20.3		19.5	12.2
Queue Delay		0.0		0.0		0.0	0.0
Total Delay		18.6		20.3		19.5	12.2
Queue Length 50th (m)		32.1		48.3		34.1	7.4
Queue Length 95th (m)		59.3		75.5		57.4	16.5
Internal Link Dist (m)		322.9		579.2		1133.5	1048.0
Turn Bay Length (m)							
Base Capacity (vph)		770		778		631	781
Starvation Cap Reductn		0		0		0	0
Spillback Cap Reductn		0		0		0	0
Storage Cap Reductn		0		0		0	0
Reduced v/c Ratio		0.43		0.54		0.50	0.12

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 22.5 (28%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Pretimed

Splits and Phases: 3: Heart Lake Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	305	25	25	200	5	25	60	20	5	140	20
Future Volume (vph)	10	305	25	25	200	5	25	60	20	5	140	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.97			0.98	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1842			1758			1642			1817	
Flt Permitted		0.99			0.93			0.91			0.99	
Satd. Flow (perm)		1823			1646			1509			1808	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	12	359	29	29	235	6	29	71	24	6	165	24
RTOR Reduction (vph)	0	3	0	0	1	0	0	10	0	0	6	0
Lane Group Flow (vph)	0	397	0	0	269	0	0	114	0	0	189	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	14%	3%	0%	0%	9%	25%	0%	22%	0%	0%	3%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		39.0			39.0			39.0			39.0	
Effective Green, g (s)		39.0			39.0			39.0			39.0	
Actuated g/C Ratio		0.43			0.43			0.43			0.43	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		789			713			653			783	
v/s Ratio Prot												
v/s Ratio Perm		c0.22			0.16			0.08			c0.10	
v/c Ratio		0.50			0.38			0.18			0.24	
Uniform Delay, d1		18.5			17.3			15.6			16.1	
Progression Factor		1.39			1.00			1.00			1.00	
Incremental Delay, d2		2.1			1.5			0.6			0.7	
Delay (s)		27.8			18.8			16.2			16.9	
Level of Service		C			B			B			B	
Approach Delay (s)		27.8			18.8			16.2			16.9	
Approach LOS		C			B			B			B	

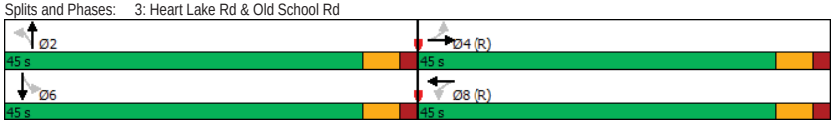
Intersection Summary				
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.37			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	49.8%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	305	25	200	25	60	5	140
Future Volume (vph)	10	305	25	200	25	60	5	140
Lane Group Flow (vph)	0	400	0	270	0	124	0	195
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.51		0.38		0.19		0.25
Control Delay		28.1		19.1		14.4		16.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		28.1		19.1		14.4		16.4
Queue Length 50th (m)		68.1		32.0		11.5		20.6
Queue Length 95th (m)		88.2		48.2		21.4		33.1
Internal Link Dist (m)		322.9		579.2		1133.5		1048.0
Turn Bay Length (m)								
Base Capacity (vph)		792		713		663		788
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.51		0.38		0.19		0.25

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 22.5 (25%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed

Splits and Phases: 3: Heart Lake Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	210	20	25	320	5	65	100	35	0	75	10
Future Volume (vph)	5	210	20	25	320	5	65	100	35	0	75	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.98			0.98	
Flt Protected		1.00			1.00			0.98			1.00	
Satd. Flow (prot)		1844			1893			1846			1826	
Flt Permitted		0.99			0.97			0.88			1.00	
Satd. Flow (perm)		1832			1834			1646			1826	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	5	223	21	27	340	5	69	106	37	0	80	11
RTOR Reduction (vph)	0	4	0	0	1	0	0	10	0	0	6	0
Lane Group Flow (vph)	0	245	0	0	371	0	0	202	0	0	85	0
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.0			34.0			34.0			34.0	
Effective Green, g (s)		34.0			34.0			34.0			34.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		778			779			699			776	
v/s Ratio Prot											0.05	
v/s Ratio Perm		0.13			c0.20			c0.12				
v/c Ratio		0.31			0.48			0.29			0.11	
Uniform Delay, d1		15.3			16.6			15.1			13.9	
Progression Factor		0.98			1.00			1.00			1.00	
Incremental Delay, d2		1.0			2.1			1.0			0.3	
Delay (s)		16.0			18.7			16.1			14.2	
Level of Service		B			B			B			B	
Approach Delay (s)		16.0			18.7			16.1			14.2	
Approach LOS		B			B			B			B	

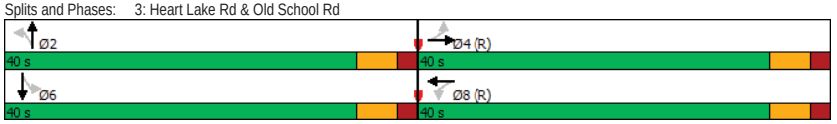
Intersection Summary				
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.38			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	57.8%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	5	210	25	320	65	100	75
Future Volume (vph)	5	210	25	320	65	100	75
Lane Group Flow (vph)	0	249	0	372	0	212	91
Turn Type	Perm	NA	Perm	NA	Perm	NA	NA
Protected Phases		4		8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	8	8	2	2	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0	6.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.32		0.48		0.30	0.12
Control Delay		15.9		19.1		15.3	12.8
Queue Delay		0.0		0.0		0.0	0.0
Total Delay		15.9		19.1		15.3	12.8
Queue Length 50th (m)		29.1		41.4		19.7	7.4
Queue Length 95th (m)		48.3		65.7		35.4	16.2
Internal Link Dist (m)		322.9		579.2		1133.5	1048.0
Turn Bay Length (m)							
Base Capacity (vph)		783		779		709	782
Starvation Cap Reductn		0		0		0	0
Spillback Cap Reductn		0		0		0	0
Storage Cap Reductn		0		0		0	0
Reduced v/c Ratio		0.32		0.48		0.30	0.12

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 22.5 (28%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed

Splits and Phases: 3: Heart Lake Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	415	110	25	235	5	55	60	20	5	140	20
Future Volume (vph)	15	415	110	25	235	5	55	60	20	5	140	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			1.00			0.98			0.98	
Flt Protected		1.00			1.00			0.98			1.00	
Satd. Flow (prot)		1817			1758			1680			1817	
Flt Permitted		0.99			0.92			0.82			0.99	
Satd. Flow (perm)		1794			1625			1398			1807	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	18	488	129	29	276	6	65	71	24	6	165	24
RTOR Reduction (vph)	0	10	0	0	1	0	0	7	0	0	6	0
Lane Group Flow (vph)	0	625	0	0	310	0	0	153	0	0	189	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	14%	3%	0%	0%	9%	25%	0%	22%	0%	0%	3%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		39.0			39.0			39.0			39.0	
Effective Green, g (s)		39.0			39.0			39.0			39.0	
Actuated g/C Ratio		0.43			0.43			0.43			0.43	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		777			704			605			783	
v/s Ratio Prot												
v/s Ratio Perm		c0.35			0.19			c0.11			0.10	
v/c Ratio		0.80			0.44			0.25			0.24	
Uniform Delay, d1		22.2			17.9			16.2			16.1	
Progression Factor		1.12			1.00			1.00			1.00	
Incremental Delay, d2		7.5			2.0			1.0			0.7	
Delay (s)		32.3			19.9			17.2			16.9	
Level of Service		C			B			B			B	
Approach Delay (s)		32.3			19.9			17.2			16.9	
Approach LOS		C			B			B			B	

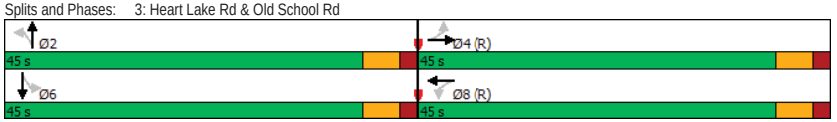
Intersection Summary				
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.53			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	64.1%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	15	415	25	235	55	60	5	140
Future Volume (vph)	15	415	25	235	55	60	5	140
Lane Group Flow (vph)	0	635	0	311	0	160	0	195
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.81		0.44		0.26		0.25
Control Delay		32.6		20.3		16.4		16.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		32.6		20.3		16.4		16.4
Queue Length 50th (m)		98.8		38.4		16.6		20.6
Queue Length 95th (m)		m131.5		56.5		28.5		33.1
Internal Link Dist (m)		322.9		579.2		1133.5		1048.0
Turn Bay Length (m)								
Base Capacity (vph)		788		704		613		788
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.81		0.44		0.26		0.25

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 22.5 (25%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Heart Lake Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	280	75	25	435	5	160	100	35	0	75	15
Future Volume (vph)	10	280	75	25	435	5	160	100	35	0	75	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			1.00			0.98			0.98	
Flt Protected		1.00			1.00			0.97			1.00	
Satd. Flow (prot)		1815			1895			1840			1817	
Flt Permitted		0.98			0.97			0.78			1.00	
Satd. Flow (perm)		1788			1834			1472			1817	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	11	298	80	27	463	5	170	106	37	0	80	16
RTOR Reduction (vph)	0	12	0	0	1	0	0	6	0	0	9	0
Lane Group Flow (vph)	0	378	0	0	494	0	0	307	0	0	87	0
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.0			34.0			34.0			34.0	
Effective Green, g (s)		34.0			34.0			34.0			34.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		759			779			625			772	
v/s Ratio Prot											0.05	
v/s Ratio Perm		0.21			c0.27			c0.21				
v/c Ratio		0.50			0.63			0.49			0.11	
Uniform Delay, d1		16.8			18.1			16.7			13.9	
Progression Factor		1.16			1.00			1.00			1.00	
Incremental Delay, d2		2.2			3.9			2.8			0.3	
Delay (s)		21.6			22.0			19.5			14.2	
Level of Service		C			C			B			B	
Approach Delay (s)		21.6			22.0			19.5			14.2	
Approach LOS		C			C			B			B	

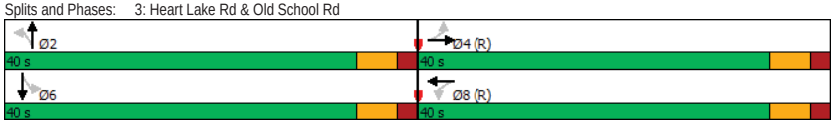
Intersection Summary				
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	10	280	25	435	160	100	75
Future Volume (vph)	10	280	25	435	160	100	75
Lane Group Flow (vph)	0	389	0	495	0	313	96
Turn Type	Perm	NA	Perm	NA	Perm	NA	NA
Protected Phases		4		8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	8	8	2	2	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0	6.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.51		0.63		0.50	0.12
Control Delay		21.2		22.6		19.5	12.2
Queue Delay		0.0		0.0		0.0	0.0
Total Delay		21.2		22.6		19.5	12.2
Queue Length 50th (m)		51.8		60.1		34.1	7.4
Queue Length 95th (m)		76.8		93.1		57.4	16.5
Internal Link Dist (m)		322.9		579.2		1133.5	1048.0
Turn Bay Length (m)							
Base Capacity (vph)		770		780		631	781
Starvation Cap Reductn		0		0		0	0
Spillback Cap Reductn		0		0		0	0
Storage Cap Reductn		0		0		0	0
Reduced v/c Ratio		0.51		0.63		0.50	0.12

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 22.5 (28%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 3: Heart Lake Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	400	95	25	235	5	45	60	20	5	140	20
Future Volume (vph)	15	400	95	25	235	5	45	60	20	5	140	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			1.00			0.98			0.98	
Flt Protected		1.00			1.00			0.98			1.00	
Satd. Flow (prot)		1820			1758			1669			1817	
Flt Permitted		0.99			0.92			0.84			0.99	
Satd. Flow (perm)		1795			1632			1431			1807	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	18	471	112	29	276	6	53	71	24	6	165	24
RTOR Reduction (vph)	0	9	0	0	1	0	0	8	0	0	6	0
Lane Group Flow (vph)	0	592	0	0	310	0	0	140	0	0	189	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	14%	3%	0%	0%	9%	25%	0%	22%	0%	0%	3%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		39.0			39.0			39.0			39.0	
Effective Green, g (s)		39.0			39.0			39.0			39.0	
Actuated g/C Ratio		0.43			0.43			0.43			0.43	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		777			707			620			783	
v/s Ratio Prot												
v/s Ratio Perm		c0.33			0.19			0.10			c0.10	
v/c Ratio		0.76			0.44			0.23			0.24	
Uniform Delay, d1		21.6			17.8			16.0			16.1	
Progression Factor		1.13			1.00			1.00			1.00	
Incremental Delay, d2		6.1			2.0			0.8			0.7	
Delay (s)		30.4			19.8			16.9			16.9	
Level of Service		C			B			B			B	
Approach Delay (s)		30.4			19.8			16.9			16.9	
Approach LOS		C			B			B			B	

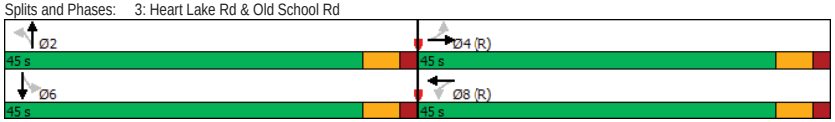
Intersection Summary				
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	62.4%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	15	400	25	235	45	60	5	140
Future Volume (vph)	15	400	25	235	45	60	5	140
Lane Group Flow (vph)	0	601	0	311	0	148	0	195
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.76		0.44		0.24		0.25
Control Delay		30.7		20.3		15.7		16.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		30.7		20.3		15.7		16.4
Queue Length 50th (m)		83.5		38.3		14.8		20.6
Queue Length 95th (m)		m127.0		56.5		26.1		33.1
Internal Link Dist (m)		322.9		579.2		1133.5		1048.0
Turn Bay Length (m)								
Base Capacity (vph)		786		707		628		788
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.76		0.44		0.24		0.25

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 22.5 (25%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Heart Lake Rd & Old School Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	270	65	25	420	5	140	100	35	0	75	15
Future Volume (vph)	10	270	65	25	420	5	140	100	35	0	75	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			1.00			0.98			0.98	
Flt Protected		1.00			1.00			0.98			1.00	
Satd. Flow (prot)		1819			1895			1841			1817	
Flt Permitted		0.98			0.97			0.79			1.00	
Satd. Flow (perm)		1791			1835			1490			1817	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	11	287	69	27	447	5	149	106	37	0	80	16
RTOR Reduction (vph)	0	10	0	0	1	0	0	6	0	0	9	0
Lane Group Flow (vph)	0	357	0	0	478	0	0	286	0	0	87	0
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.0			34.0			34.0			34.0	
Effective Green, g (s)		34.0			34.0			34.0			34.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		761			779			633			772	
v/s Ratio Prot											0.05	
v/s Ratio Perm		0.20			c0.26			c0.19				
v/c Ratio		0.47			0.61			0.45			0.11	
Uniform Delay, d1		16.5			17.9			16.4			13.9	
Progression Factor		1.18			1.00			1.00			1.00	
Incremental Delay, d2		2.0			3.6			2.3			0.3	
Delay (s)		21.5			21.5			18.7			14.2	
Level of Service		C			C			B			B	
Approach Delay (s)		21.5			21.5			18.7			14.2	
Approach LOS		C			C			B			B	

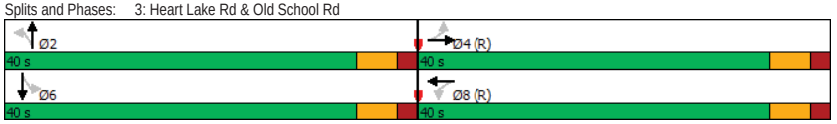
Intersection Summary				
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.53			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	65.5%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	10	270	25	420	140	100	75
Future Volume (vph)	10	270	25	420	140	100	75
Lane Group Flow (vph)	0	367	0	479	0	292	96
Turn Type	Perm	NA	Perm	NA	Perm	NA	NA
Protected Phases		4		8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	8	8	2	2	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0	6.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Max	Max	Max	Max	Max	Max	Max
v/c Ratio		0.48		0.61		0.46	0.12
Control Delay		21.1		22.1		18.6	12.2
Queue Delay		0.0		0.0		0.0	0.0
Total Delay		21.1		22.1		18.6	12.2
Queue Length 50th (m)		49.4		57.5		30.9	7.4
Queue Length 95th (m)		73.0		89.1		52.7	16.5
Internal Link Dist (m)		322.9		579.2		1133.5	1048.0
Turn Bay Length (m)							
Base Capacity (vph)		771		780		639	781
Starvation Cap Reductn		0		0		0	0
Spillback Cap Reductn		0		0		0	0
Storage Cap Reductn		0		0		0	0
Reduced v/c Ratio		0.48		0.61		0.46	0.12

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 22.5 (28%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Pretimed

Splits and Phases: 3: Heart Lake Rd & Old School Rd



APPENDIX H:
Signal Traffic Warrant

Project No. 7597-04
Intersection Kennedy Road / Parcel 3 Centre Access - Parcel 4 West Access

ITE 210 - Single-Family Detached Housing Temporal Variation

Time Ending	% of daily total	% of daily peak hour
8:00	6.7	100%
9:00	6.2	93%
12:00	5.2	78%
13:00	5.5	61%
14:00	6	67%
16:00	7.2	80%
17:00	9	100%
18:00	8.8	98%

Temporal Variation

Time Ending	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
8:00	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	AM Peak
9:00	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	
12:00	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	
13:00	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	
14:00	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	
16:00	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	
17:00	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	PM Peak
18:00	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	

Future Total (2028)

Time Ending	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
8:00	5	325	5	30	285	10	70	0	15	20	0	90	AM Peak
9:00	5	301	5	28	264	9	65	0	14	19	0	83	
12:00	4	252	4	23	221	8	54	0	12	16	0	70	
13:00	6	180	12	64	223	24	28	0	6	9	0	37	
14:00	7	197	13	70	243	27	30	0	7	10	0	40	
16:00	8	236	16	84	292	32	36	0	8	12	0	48	
17:00	10	295	20	105	365	40	45	0	10	15	0	60	PM Peak
18:00	10	288	20	103	357	39	44	0	10	15	0	59	

Future Total (2033 no GTAW)

Time Ending	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
8:00	5	330	5	30	295	10	70	0	15	20	0	90	AM Peak
9:00	5	305	5	28	273	9	65	0	14	19	0	83	
12:00	4	256	4	23	229	8	54	0	12	16	0	70	
13:00	6	186	12	64	229	24	28	0	6	9	0	37	
14:00	7	203	13	70	250	27	30	0	7	10	0	40	
16:00	8	244	16	84	300	32	36	0	8	12	0	48	
17:00	10	305	20	105	375	40	45	0	10	15	0	60	PM Peak
18:00	10	298	20	103	367	39	44	0	10	15	0	59	

Future Total (2033 with GTAW)

Time Ending	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
8:00	5	320	5	35	285	10	70	0	10	20	0	100	AM Peak
9:00	5	296	5	32	264	9	65	0	9	19	0	93	
12:00	4	248	4	27	221	8	54	0	8	16	0	78	
13:00	9	180	12	67	226	24	28	0	3	9	0	40	
14:00	10	197	13	73	247	27	30	0	3	10	0	43	
16:00	12	236	16	88	296	32	36	0	4	12	0	52	
17:00	15	295	20	110	370	40	45	0	5	15	0	65	PM Peak
18:00	15	288	20	108	362	39	44	0	5	15	0	64	

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision | GO TO Justification:

Intersection: Kennedy Road / Site Access | Count Date: Future Total 2028

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
1A	480	720	600	900	855	791	664	590	643	772	965	944		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	195	180	151	79	87	104	130	127		
	COMPLIANCE %				100	100	100	66	72	87	100	100	725	91

Free Flow Signal Justification 1:	Both 1A and 1B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 1A or 1B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
2A	480	720	600	900	660	611	512	510	557	668	835	816		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	90	83	70	37	40	48	60	59		
	COMPLIANCE %				100	100	100	73	80	96	100	100	749	94

Free Flow Signal Justification 2:	Both 2A and 2B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 2A or 2B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	660	110	222	50 %	42 %
	16:00	668	60	219	27 %	
	17:00	835	75	161	47 %	
	18:00	816	73	167	44 %	

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision | GO TO Justification:

Intersection: Kennedy Road / Site Access

Count Date: Future Total 2033 without GTA West

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
1A	480	720	600	900	870	805	675	602	657	788	985	963		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	195	180	151	79	87	104	130	127		
	COMPLIANCE %				100	100	100	66	72	87	100	100	725	91

Free Flow Signal Justification 1:	Both 1A and 1B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 1A or 1B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
2A	480	720	600	900	675	625	524	523	570	684	855	836		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	90	83	70	37	40	48	60	59		
	COMPLIANCE %				100	100	100	73	80	96	100	100	749	94

Free Flow Signal Justification 2:	Both 2A and 2B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 2A or 2B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	675	110	216	51 %	43 %
	16:00	684	60	213	28 %	
	17:00	855	75	155	48 %	
	18:00	836	73	161	46 %	

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision | GO TO Justification:

Intersection: Kennedy Road / Site Access

Count Date: Future Total 2033 with GTA West

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
1A	480	720	600	900	860	796	667	599	653	784	980	958		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	200	185	155	79	87	104	130	127		
	COMPLIANCE %				100	100	100	66	72	87	100	100	725	91

Free Flow Signal Justification 1:	Both 1A and 1B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 1A or 1B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
2A	480	720	600	900	660	611	512	519	567	680	850	831		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	90	83	70	37	40	48	60	59		
	COMPLIANCE %				100	100	100	73	80	96	100	100	749	94

Free Flow Signal Justification 2:	Both 2A and 2B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 2A or 2B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	660	120	222	54 %	46 %
	16:00	680	64	214	30 %	
	17:00	850	80	157	51 %	
	18:00	831	78	162	48 %	

Project No. 7597-04
Intersection Heart Lake Road / Old School Road

ITE 210 - Single-Family Detached Housing Temporal Variation

Time Ending	% of daily total	% of daily peak hour
8:00	6.7	100%
9:00	6.2	93%
12:00	5.2	78%
13:00	5.5	61%
14:00	6	67%
16:00	7.2	80%
17:00	9	100%
18:00	8.8	98%

Temporal Variation

Time Ending	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
8:00	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	AM Peak
9:00	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	
12:00	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	
13:00	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	
14:00	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	
16:00	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	
17:00	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	PM Peak
18:00	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	

Future Background (2028)

Time Ending	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
8:00	25	60	20	5	140	20	10	265	25	25	135	5	AM Peak
9:00	23	56	19	5	130	19	9	245	23	23	125	5	
12:00	19	47	16	4	109	16	8	206	19	19	105	4	
13:00	40	61	21	0	46	6	3	95	12	15	153	3	
14:00	43	67	23	0	50	7	3	103	13	17	167	3	
16:00	52	80	28	0	60	8	4	124	16	20	200	4	
17:00	65	100	35	0	75	10	5	155	20	25	250	5	PM Peak
18:00	64	98	34	0	73	10	5	152	20	24	244	5	

Future Background (2033)

Time Ending	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
8:00	25	60	20	5	140	20	10	305	25	25	200	5	AM Peak
9:00	23	56	19	5	130	19	9	282	23	23	185	5	
12:00	19	47	16	4	109	16	8	237	19	19	155	4	
13:00	40	61	21	0	46	6	3	128	12	15	196	3	
14:00	43	67	23	0	50	7	3	140	13	17	213	3	
16:00	52	80	28	0	60	8	4	168	16	20	256	4	
17:00	65	100	35	0	75	10	5	210	20	25	320	5	PM Peak
18:00	64	98	34	0	73	10	5	205	20	24	313	5	

Future Total (2028)

Time Ending	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
8:00	55	60	20	5	140	20	15	365	110	25	165	5	AM Peak
9:00	51	56	19	5	130	19	14	338	102	23	153	5	
12:00	43	47	16	4	109	16	12	283	85	19	128	4	
13:00	95	61	21	0	46	9	6	131	46	15	220	3	
14:00	103	67	23	0	50	10	7	143	50	17	240	3	
16:00	124	80	28	0	60	12	8	172	60	20	288	4	
17:00	155	100	35	0	75	15	10	215	75	25	360	5	PM Peak
18:00	152	98	34	0	73	15	10	210	73	24	352	5	

Future Total (2033 no GTAW)

Time Ending	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
8:00	55	60	20	5	140	20	15	405	110	25	230	5	AM Peak
9:00	51	56	19	5	130	19	14	375	102	23	213	5	
12:00	43	47	16	4	109	16	12	314	85	19	179	4	
13:00	95	61	21	0	46	9	6	165	46	15	263	3	
14:00	103	67	23	0	50	10	7	180	50	17	287	3	
16:00	124	80	28	0	60	12	8	216	60	20	344	4	
17:00	155	100	35	0	75	15	10	270	75	25	430	5	PM Peak
18:00	152	98	34	0	73	15	10	264	73	24	420	5	

Future Total (2033 with GTAW)

Time Ending	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
8:00	45	60	20	5	140	20	15	395	90	25	230	5	AM Peak
9:00	42	56	19	5	130	19	14	366	83	23	213	5	
12:00	35	47	16	4	109	16	12	307	70	19	179	4	
13:00	83	61	21	0	46	9	6	165	37	15	254	3	
14:00	90	67	23	0	50	10	7	180	40	17	277	3	
16:00	108	80	28	0	60	12	8	216	48	20	332	4	
17:00	135	100	35	0	75	15	10	270	60	25	415	5	PM Peak
18:00	132	98	34	0	73	15	10	264	59	24	406	5	

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision | GO TO Justification:

Intersection: Heart Lake Road / Old School Road | Count Date: Future Background 2028

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
1A	480	720	600	900	735	680	570	455	497	596	745	728		
	COMPLIANCE %				100	100	100	95	100	100	100	100	795	99
1B	120	170	120	170	270	250	210	174	190	228	285	279		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Free Flow Signal Justification 1:	Both 1A and 1B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 1A or 1B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
2A	480	720	600	900	465	430	361	281	307	368	460	450		
	COMPLIANCE %				97	90	75	59	64	77	96	94	650	81
2B	50	75	50	75	170	157	132	101	110	132	165	161		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Free Flow Signal Justification 2:	Both 2A and 2B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 2A or 2B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	465	165	306	54 %	57 %
	9:00	430	153	323	47 %	
	17:00	460	200	308	65 %	
	18:00	450	196	313	62 %	

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision | GO TO Justification:

Intersection: Heart Lake Road / Old School Road | Count Date: Future Total 2028

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
1A	480	720	600	900	1,090	1,009	846	730	797	956	1,195	1,168		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	300	278	233	232	253	304	380	372		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Free Flow Signal Justification 1:	Both 1A and 1B 100% Fullfilled each of 8 hours	Yes ☑	No ☐
	Lesser of 1A or 1B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
2A	480	720	600	900	790	731	613	498	543	652	815	797		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	200	185	155	156	170	204	255	249		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Free Flow Signal Justification 2:	Both 2A and 2B 100% Fullfilled each of 8 hours	Yes ☑	No ☐
	Lesser of 2A or 2B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	790	165	175	94 %	93 %
	9:00	731	153	195	78 %	
	17:00	815	290	167	100 %	
	18:00	797	284	173	100 %	

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision | GO TO Justification:

Intersection: Heart Lake Road / Old School Road | Count Date: Future Background 2033

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
1A	480	720	600	900	840	777	652	532	580	696	870	851		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	270	250	210	174	190	228	285	279		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Free Flow Signal Justification 1:	Both 1A and 1B 100% Fullfilled each of 8 hours	Yes ☑	No ☐
	Lesser of 1A or 1B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
2A	480	720	600	900	570	527	442	358	390	468	585	572		
	COMPLIANCE %				100	100	92	74	81	98	100	100	745	93
2B	50	75	50	75	170	157	132	101	110	132	165	161		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Free Flow Signal Justification 2:	Both 2A and 2B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 2A or 2B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	570	165	258	64 %	69 %
	9:00	527	153	277	55 %	
	17:00	585	200	252	79 %	
	18:00	572	196	258	76 %	

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision | GO TO Justification:

Intersection: Heart Lake Road / Old School Road | Count Date: Future Total 2033 no GTAW

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
1A	480	720	600	900	1,090	1,009	846	730	797	956	1,195	1,168		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	300	278	233	232	253	304	380	372		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Free Flow Signal Justification 1:	Both 1A and 1B 100% Fullfilled each of 8 hours	Yes ☑	No ☐
	Lesser of 1A or 1B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
2A	480	720	600	900	790	731	613	498	543	652	815	797		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	200	185	155	156	170	204	255	249		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Free Flow Signal Justification 2:	Both 2A and 2B 100% Fullfilled each of 8 hours	Yes ☑	No ☐
	Lesser of 2A or 2B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	790	165	175	94 %	93 %
	9:00	731	153	195	78 %	
	17:00	815	290	167	100 %	
	18:00	797	284	173	100 %	

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision | GO TO Justification:

Intersection: Heart Lake Road / Old School Road | Count Date: Future Total 2033 with GTAW

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
1A	480	720	600	900	1,050	972	815	700	763	916	1,145	1,120		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	290	268	225	220	240	288	360	352		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Free Flow Signal Justification 1:	Both 1A and 1B 100% Fullfilled each of 8 hours	Yes ☑	No ☐
	Lesser of 1A or 1B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☑	RESTR. FLOW ☐	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00		
2A	480	720	600	900	760	703	590	480	523	628	785	768		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	190	176	147	144	157	188	235	230		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100

Free Flow Signal Justification 2:	Both 2A and 2B 100% Fullfilled each of 8 hours	Yes ☐	No ☑
	Lesser of 2A or 2B at least 80% fulfilled each of 8 hours	Yes ☑	No ☐

Justification 3: Combination

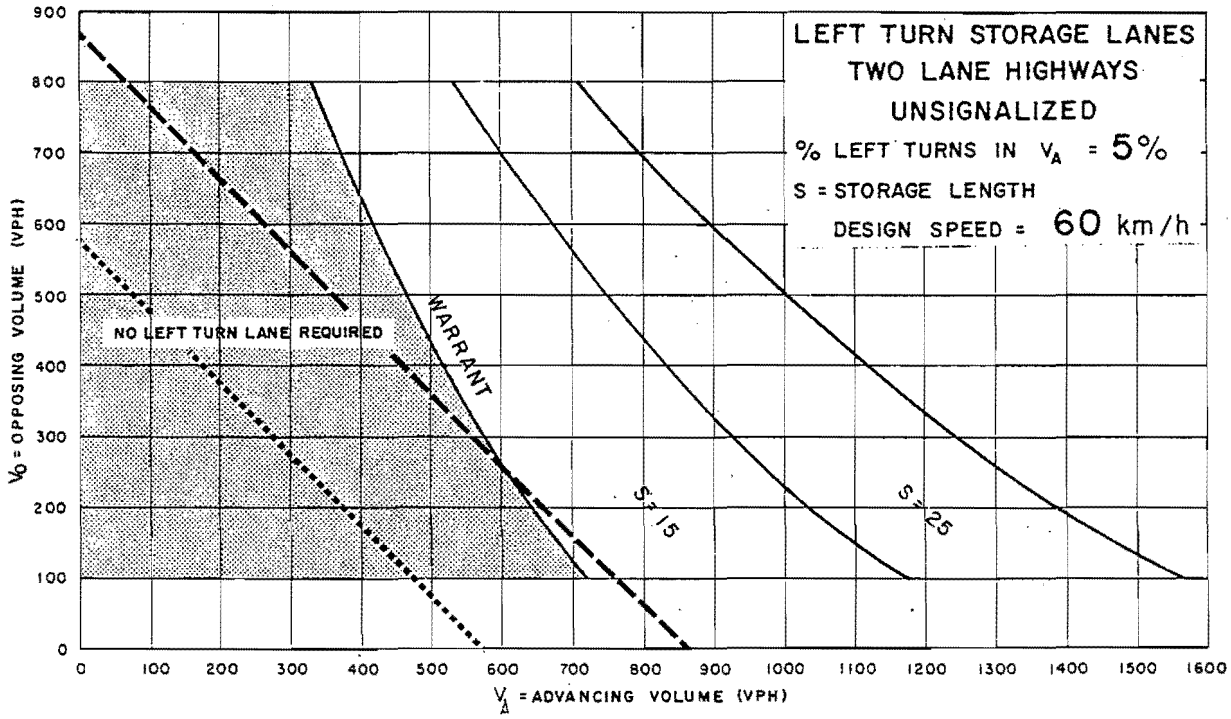
Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☑	NO ☐	YES ☑	NO ☐
Justification 2	Delay Cross Traffic	YES ☑	NO ☐	JUSTIFIED	

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	760	165	185	89 %	91 %
	9:00	703	153	205	74 %	
	17:00	785	270	177	100 %	
	18:00	768	264	183	100 %	

APPENDIX I:
Left Turn Warrant



TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

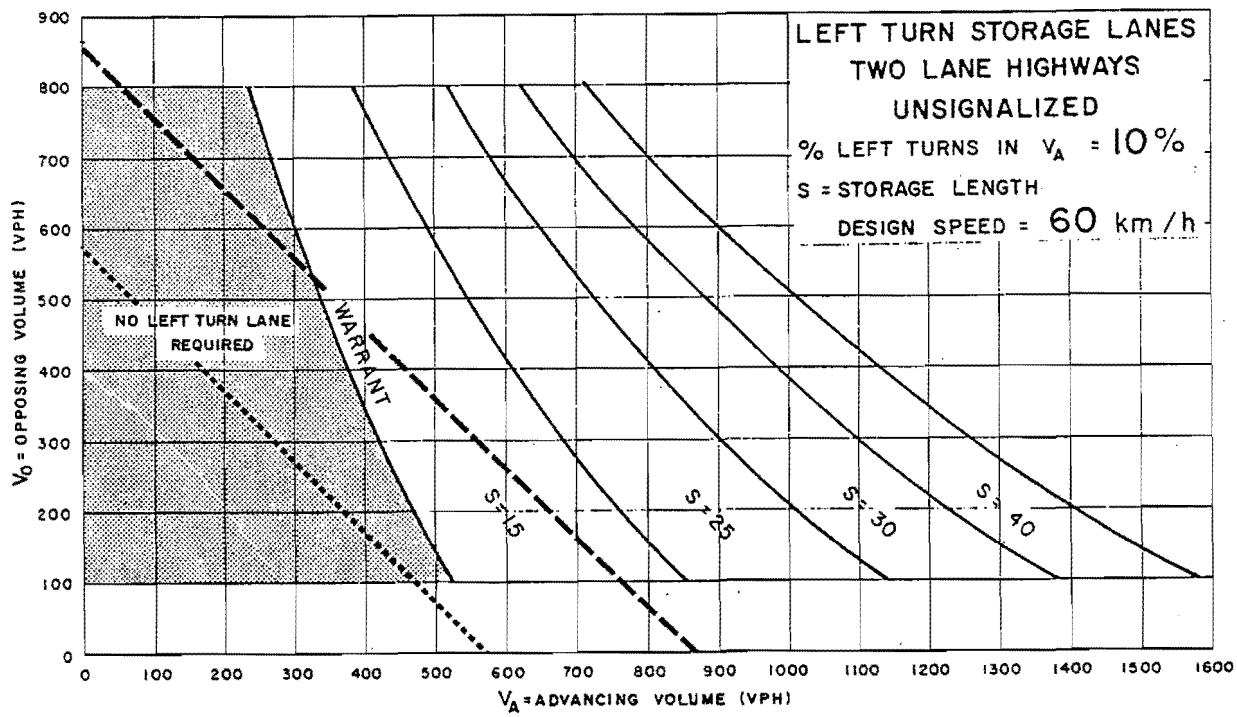
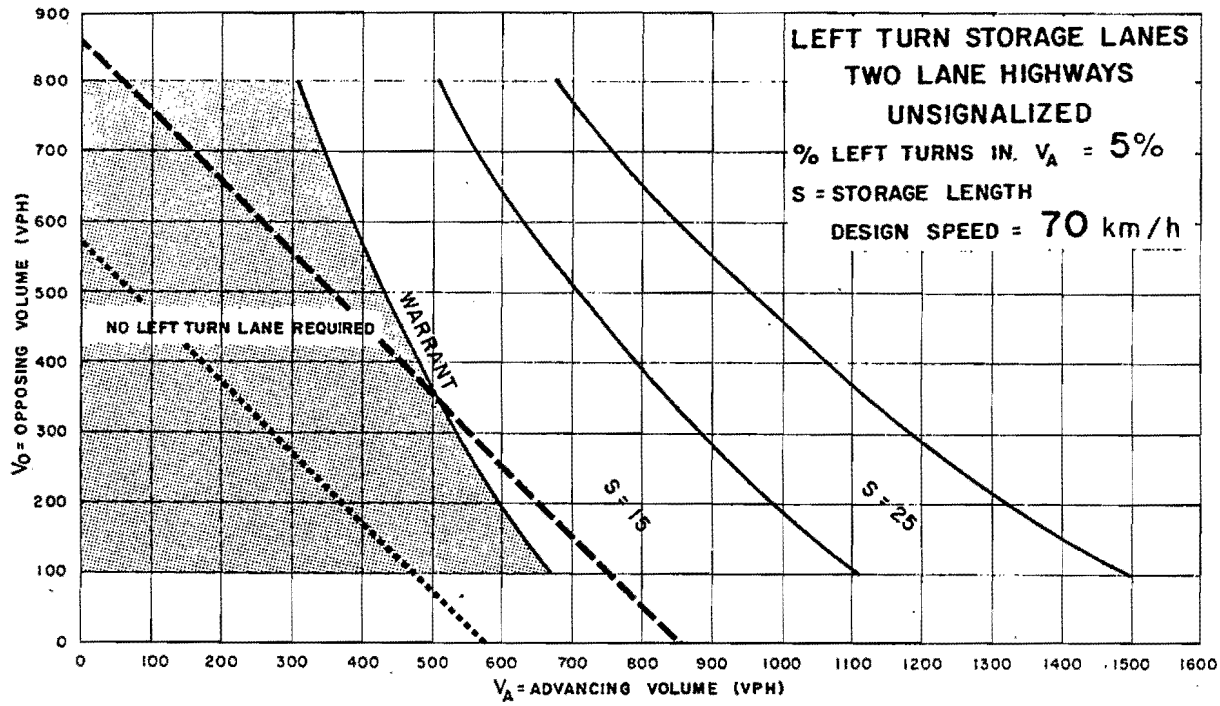


Figure EA-6



TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

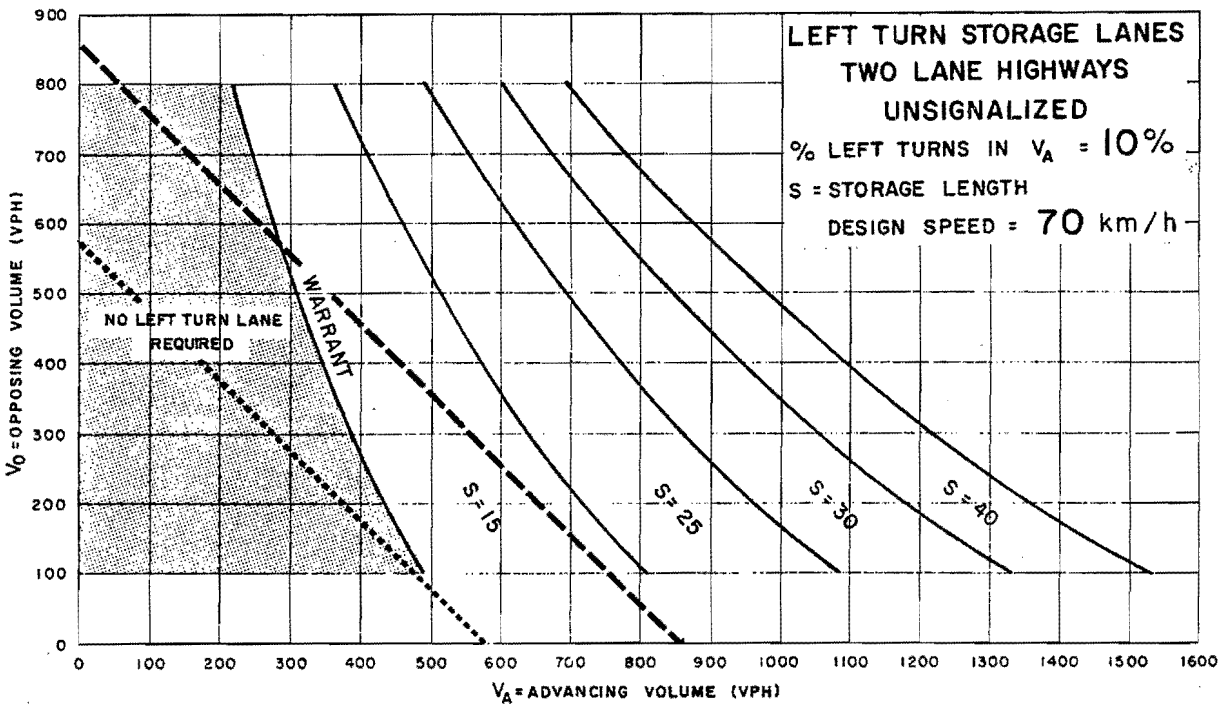


Figure EA-10