





# 3056 Neyagawa Boulevard

## Traffic Impact Study

Neatt (16 Mile Creek) Inc.

12 December 2024

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# Executive Summary

GHD Limited is pleased to provide the following Traffic Impact Study for a proposed mixed-use development located on lands municipally known as 3056 Neyagawa Boulevard in the Town of Oakville.

This report determines the site related traffic and subsequent traffic related impacts on the adjacent road network and site driveways during the weekday a.m. and p.m. peak hours. These impacts are based on the projected future background traffic and road network conditions derived for a 2030, 2032, and 2035 future planning horizon year.

Based on the approved Terms of Reference for the study, the following intersections were included in the study area:

- Existing
  - Dundas Street West and Neyagawa Boulevard
  - Neyagawa Boulevard and Sixteen Mile Drive
- New
  - Dundas Street West and Street A (Right-in/Right-out)
  - Sixteen Mile Drive and Street A
  - Sixteen Mile Drive and Street B
  - Street A and Street B
  - Neyagawa Boulevard and Block 1 access (Right-in/Right-out)
  - Street B and Block 1 access/Block 2 access
  - Sixteen Mile Drive and Block 2 access
  - Street B and Block 3 access

The proposed site plan prepared by Core Architects consists of a residential development within 3 blocks containing 7 high-rise buildings with a total of 2,278 dwelling units and 1,551 m<sup>2</sup> of retail GFA. The breakdown between the three blocks is as follows:

- Block 1
  - Building 1: 395 dwelling units, 1,079 m<sup>2</sup> of retail GFA
  - Building 2: 258 dwelling units
- Block 2
  - Building 3: 266 dwelling units, 472 m<sup>2</sup> of retail GFA
  - Building 4: 341 dwelling units
  - Building 5: 389 dwelling units
- Block 3
  - Building 6: 216 dwelling units
  - Building 7: 413 dwelling units

Access to the subject site is proposed via two new roads (Street A and Street B) and a proposed right-in/right-out access to Block 1 on Neyagawa Boulevard. Additional accesses are provided to the three blocks from Sixteen Mile Drive and Street B.

Based on ITE Trip Generation rates, the subject site is expected to generate a total of 508 two-way vehicle trips during the a.m. peak hour consisting of 159 inbound and 349 outbound trips. During the p.m. peak hour, it is expected to generate 677 new two-way vehicle trips consisting of 401 inbound and 276 outbound trips.

Under existing traffic conditions, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2030 future background conditions, with the addition of corridor growth, background development traffic, and the conversion of one through lane in each direction to an HOV lane on Dundas Street West, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the intersection of Dundas Street West and Neyagawa Boulevard.

Under the 2030 future total conditions, with the addition of site traffic from the first phase of construction, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the intersection of Dundas Street West and Neyagawa Boulevard.

Under the 2032 future background conditions, with the addition of corridor growth, background development traffic, and the conversion of one through lane in each direction to an HOV lane on Dundas Street West, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the intersection of Dundas Street West and Neyagawa Boulevard.

Under the 2032 future total conditions, with the addition of site traffic from the first two phases of construction, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the intersection of Dundas Street West and Neyagawa Boulevard.

Under the 2035 future background conditions, with the addition of corridor growth, background development traffic, and the conversion of one through lane in each direction to an HOV lane on Dundas Street West, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the intersection of Dundas Street West and Neyagawa Boulevard.

Under the 2035 future total conditions, with the addition of site traffic from the full build-out of the site, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the intersection of Dundas Street West and Neyagawa Boulevard.

A sensitivity analysis was completed for the intersection of Dundas Street West and Neyagawa Boulevard to include a dual left-turn lane in the eastbound and northbound approaches. The provision of the dual left-turn lane mitigates the over-capacity operation of all movements with the exception of the westbound through movement during the p.m. peak hour under the 2035 horizon year.

Application of the Town of Oakville By-Law 2009-189 parking rates to the subject site results in a requirement of up to 2,848 vehicle parking spaces for residents, a minimum of 456 parking spaces for visitors, a minimum of 55 barrier free spaces, and a minimum of 600 bicycle parking spaces (450 resident spaces and 150 visitor spaces).

The subject site provides a total of 2,799 vehicle parking spaces, including 456 visitor spaces, 86 barrier free spaces, and 2,173 bicycle parking spaces (2,023 lockers that can store a bicycle and 150 short-term spaces). The Town's minimum By-Law requirements are satisfied.

The Town's design standards require accesses to be designed with a minimum width of 7.5 metres and a maximum width of 9.0 metres with its minimum curb return radii required to be a minimum of 6.0 metres and a maximum of 7.5 metres. The Region's design standards require accesses to be designed with a minimum width of 3.5 metres and a maximum width of 7.5 metres with its minimum curb return radii required to be a minimum of 1.5 metres and a maximum of 4.5 metres. The subject site proposes to include two accesses onto Regional roads and four accesses onto existing or proposed Town roads that satisfy the Town and Region guidelines.

TDM measures are proposed for the subject site to encourage employees to explore various modes of transportation in order to reduce their dependency on single occupancy vehicle trips. These measures include bicycle parking and education material.

GHD assessed the site circulation for emergency vehicles, MSU trucks, waste collection vehicles, and passenger vehicles and confirmed no issues with the site circulation.

A pavement marking and signage plan has been prepared for the subject site identifying the required signage and pavement markings.

The traffic study confirms that the proposed residential development can be accommodated on the existing/planned road network.

We trust that this satisfies your requirements, but do not hesitate to contact the undersigned if you have any questions.

Sincerely,

GHD



Rafael Andrenacci, B.Eng

Transportation Planner



William Maria, P. Eng.

Transportation Planning Lead

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# 1. Introduction

## 1.1 Retainer and Objective

GHD Limited was retained to prepare a Traffic Impact Study for a proposed mixed-use development development on lands municipally known as 3056 Neyagawa Boulevard in the Town of Oakville.

The site location is illustrated in **Figure 1**.

The purpose of this study is to:

- Establish baseline traffic conditions for the study area in 2024 and determine future background operating conditions for a future planning horizon in 2030, 2032, and 2035.
- Estimate the site trips generated by the proposed development and distribute the traffic to the adjacent road network.
- Determine future operating traffic conditions during the weekday peak periods through intersection capacity analysis.
- Conduct a site access and swept path review of the proposed site plan.
- Recommend TDM measures to reduce single occupancy vehicle trips to the site.



*Figure 1 Site Location*

## 1.2 Study Team

The GHD team involved in the preparation of the study are:

- William Maria, P. Eng., Transportation Planning Lead

- Rafael Andrenacci, B.Eng., Transportation Planner

## 2. Site Characteristics

### 2.1 Study Area

As per the agreed Terms of Reference for the study attached in **Appendix A**, the following intersections were included in the study area:

#### Existing

- Dundas Street West and Neyagawa Boulevard
- Neyagawa Boulevard and Sixteen Mile Drive

#### New

- Dundas Street West and Street A (Right-in/Right-out)
- Sixteen Mile Drive and Street A
- Sixteen Mile Drive and Street B
- Street A and Street B
- Neyagawa Boulevard and Block 1 access (Right-in/Right-out)
- Street B and Block 1 access/Block 2 access
- Sixteen Mile Drive and Block 2 access
- Street B and Block 3 access

### 2.2 Proposed Development Content

A site plan prepared by Core Architects is shown in **Figure 2** and provided in **Appendix B**. The proposed development consists of a total 2,278 dwelling units and 1,551 m<sup>2</sup> of retail GFA within 7 high-rise residential buildings located within three blocks. The breakdown between the three blocks is as follows:

- Block 1
  - Building 1: 395 dwelling units, 1,079 m<sup>2</sup> of retail GFA
  - Building 2: 258 dwelling units
- Block 2
  - Building 3: 266 dwelling units, 472 m<sup>2</sup> of retail GFA
  - Building 4: 341 dwelling units
  - Building 5: 389 dwelling units
- Block 3
  - Building 6: 216 dwelling units
  - Building 7: 413 dwelling units

Access to the subject site is proposed via a series of new roads and accesses from the three blocks, including a new north/south Street A from the future extension of Sixteen Mile Drive to Dundas Street, a new Street B from the future

extension of Sixteen Mile Drive to Street A, a right-in/right-out on Neyagawa Boulevard, and a right-in/right-out access on Dundas Street.

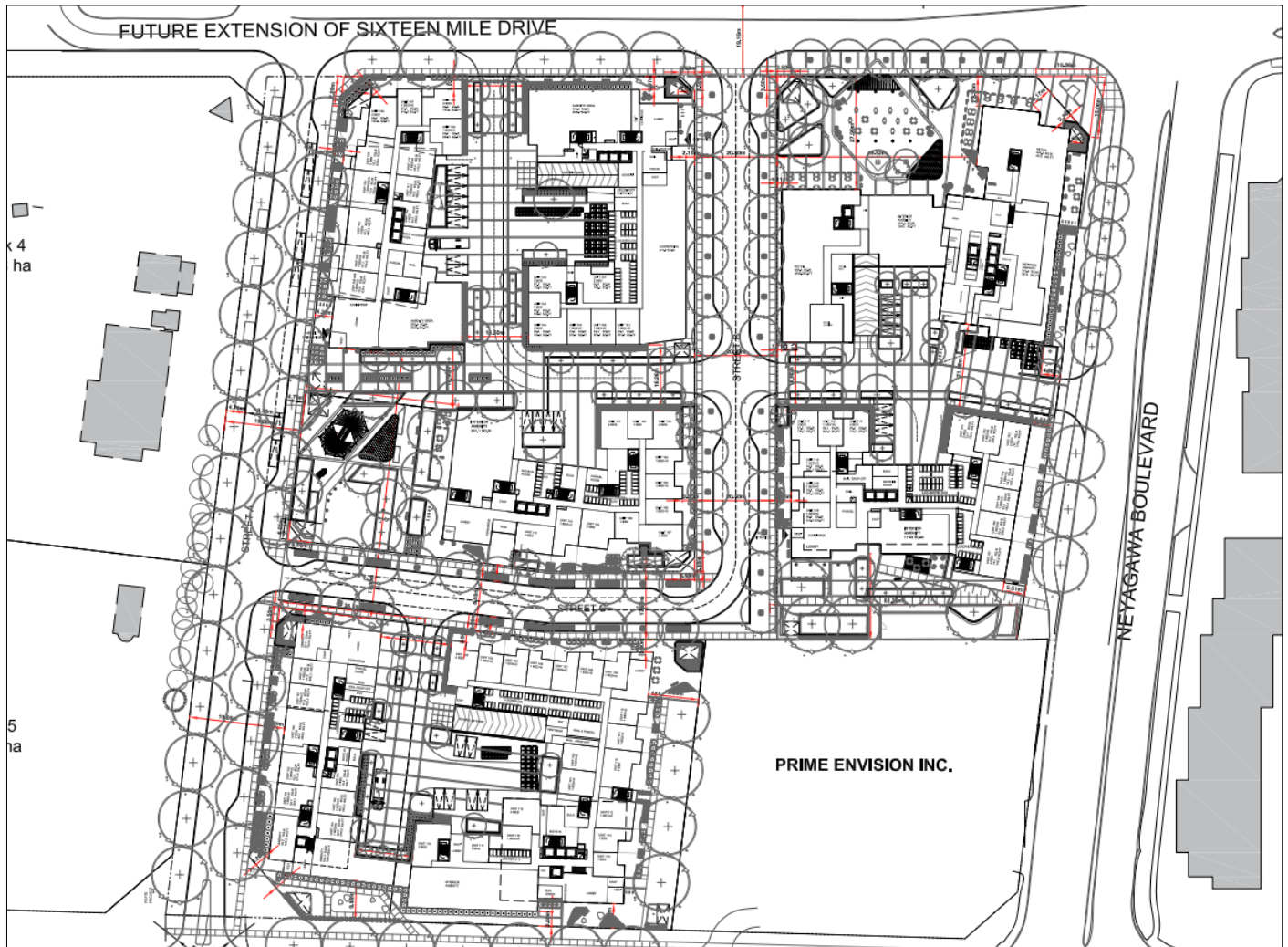


Figure 2 Proposed Site Plan

### 3. Existing Conditions

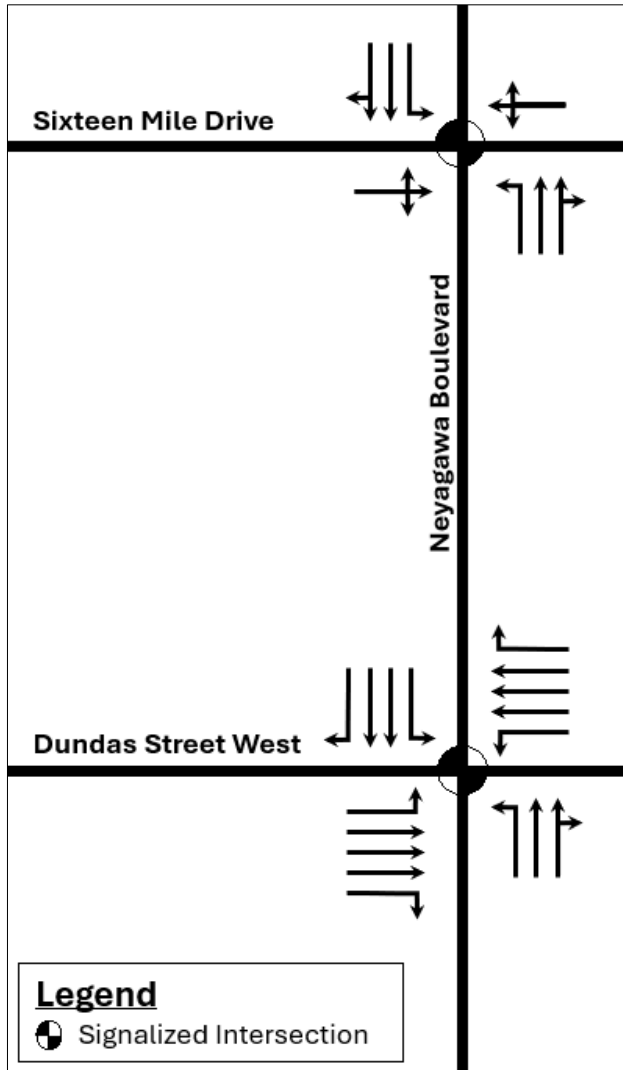
#### 3.1 Existing Road Network

**Dundas Street West** is an east-west major arterial road under the jurisdiction of the Region of Halton. In the study area it has a six-lane urban cross section. The existing intersection of Dundas Street West and Neyagawa Boulevard is signalized, with an auxiliary right-turn and an auxiliary left-turn lane in the eastbound and westbound directions. The posted speed limit on Dundas Street West is 70 km/h.

**Neyagawa Boulevard** is north-south major collector road under the jurisdiction of Halton Region that extends from Highway 407 to Upper Middle Road West. It currently has a four-lane cross-section with a posted speed of 60 km/h. The intersection of Dundas Street West and Neyagawa Boulevard is signalized, with an auxiliary left-turn lane in the northbound and southbound directions. The intersection of Sixteen Mile Drive and Neyagawa Boulevard is signalized with auxiliary left-turn lanes provided in the northbound and southbound directions.

**Sixteen Mile Drive** is an east-west minor collector road under the jurisdiction of the Town of Oakville that extends from Neyagawa Boulevard in the west to Sixth Line in the east, and continues west of Neyagawa as an access to the Sixteen Mile Sports Complex. The existing intersection of Sixteen Mile Drive and Neyagawa Boulevard is signalized, with no provision of auxiliary turning lanes in the eastbound and westbound directions. It currently has a two-lane cross-section with a posted speed of 50 km/h.

The existing lane configurations and intersection control are shown in the figure below.



**Figure 3** Existing Lane Configuration and Traffic Controls

### 3.2 Pedestrian and Bicycle Facilities

Within the study area, pedestrian infrastructure such as sidewalks or multi-use paths are provided along both sides of all study area roads with the exception of Sixteen Mile Drive west of Neyagawa Boulevard.

Cycling infrastructure is provided within the study area as follows:

- Bike lanes:
  - Along both sides of Neyagawa Boulevard north of Dundas Street West, The provision of active transportation facilities within the study area includes a bike lane along both sides of Langstaff Road.

- Multi-use trail:
  - Along the south side of Dundas Street West, from the west of Neyagawa Boulevard towards the east
  - Along the west side of Neyagawa Boulevard to the north of Dundas Street West and both sides of Neyagawa Boulevard south of Dundas Street West

The pedestrian and bicycle routes are illustrated in the figure below.

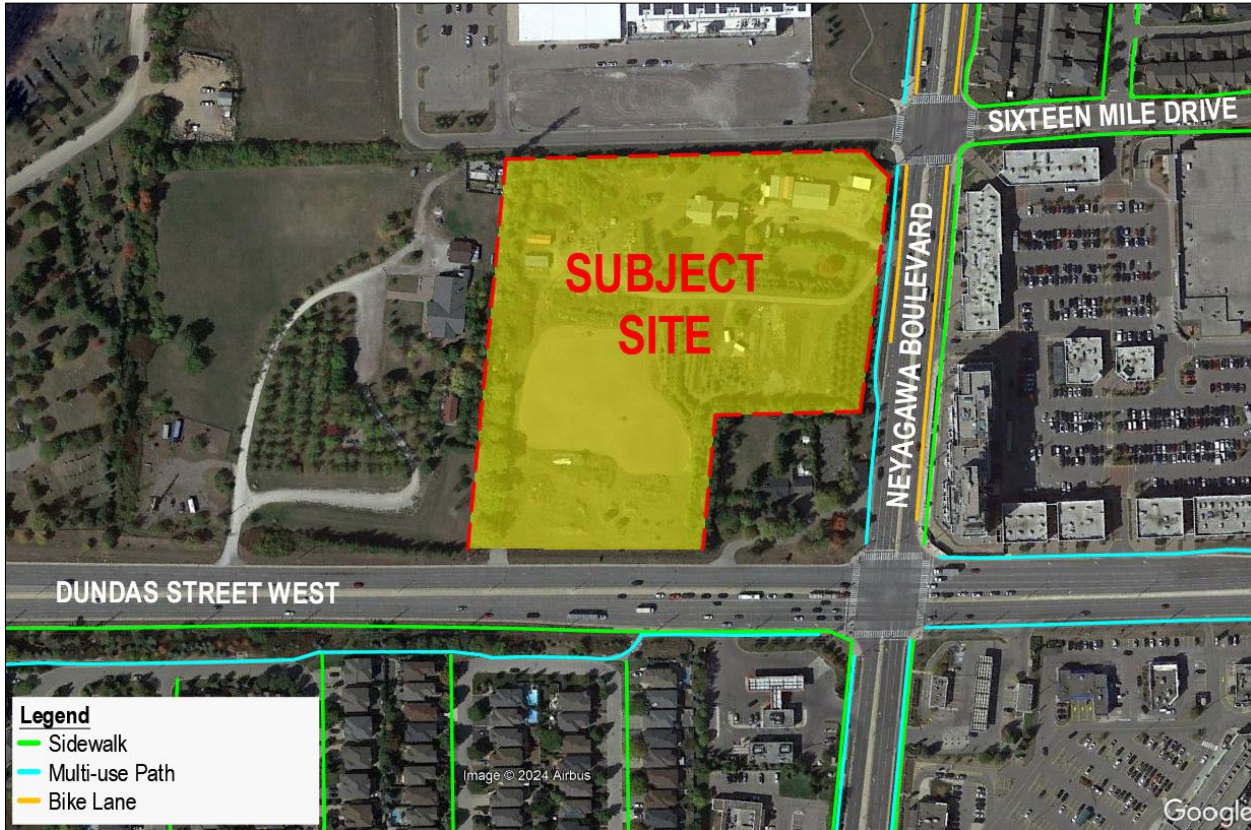


Figure 4 Existing Active Transportation Facilities

### 3.3 Transit Services

Oakville Transit currently offers transit service along the following routes within the study area:

Route 5/5A (**Dundas**) operates between the Oakville GO Station and the Dundas at Highway 407 Park & Ride generally along Trafalgar Road and Dundas Street West. The Route 5A deviates slightly from Route 5 by travelling north of Dundas Street on Sixteen Mile Drive/Wheat Boom Drive between Ernest Appelbe Boulevard and Neyagawa Boulevard. The combination of routes 5 and 5A operate with a general headway of 15 minutes during the peak hours, with the respective legs operating with 30-minute headways.

Transit stops are provided for the eastbound and westbound direction on Route 5 at Dundas Street West and Neyagawa Boulevard and transit stops for Route 5A provided in the southbound approach at Dundas Street West and Neyagawa Boulevard for the westbound direction and in the northbound approach at Sixteen Mile Drive and Neyagawa Boulevard for the eastbound direction.

Route 5/5A and its transit routes within the study area are shown in the figure below.



Figure 5 Existing Transit Routes and Transit Stops

### 3.4 Existing Traffic Data

GHD contracted Ontario Traffic Inc. to conduct updated turning movement counts at all existing study intersections in May 2024. The baseline 2024 traffic volumes for the a.m. and p.m. peak hours are summarized in **Figure 6** below with the full turning movement counts provided in **Appendix C**. Signal timings were also provided by Halton Region and included in **Appendix C**.

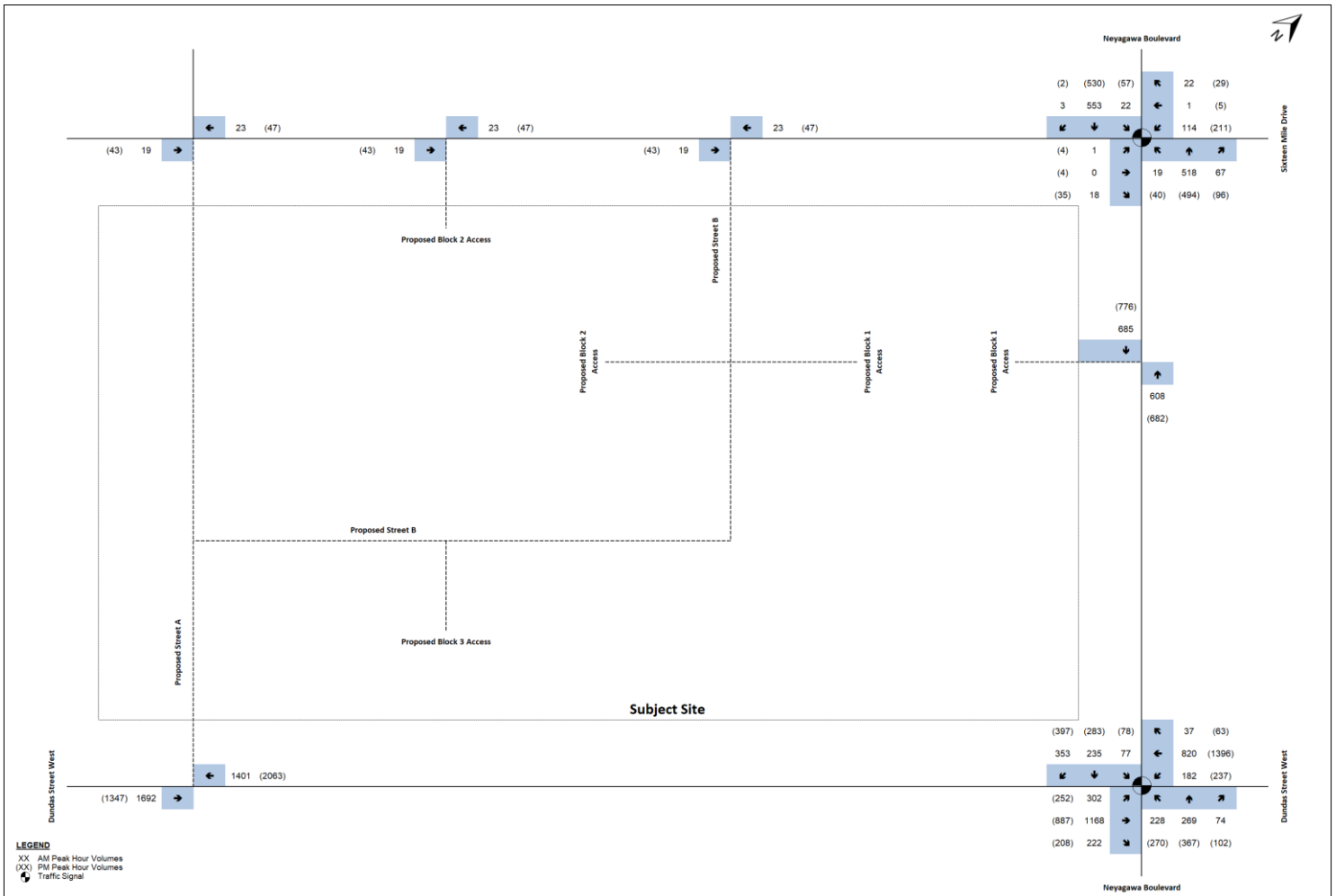


Figure 6 Baseline 2024 Traffic Volumes

## 4. Future Conditions

### 4.1 Study Horizon Year

Future horizon years of 2030, 2032, and 2035 were selected for the analysis of future traffic conditions, corresponding to the anticipated build-out year of Phase 1, Phase 2, and Phase 3, generally consistent with the Town and Region’s TIS Guidelines and confirmed through the Terms of Reference.

### 4.2 Corridor Growth

The growth rates used to project the 2030, 2032, and 2035 traffic volumes were provided by Region staff and consisted of a 2% per annum growth rate. The growth rate was applied to all movements with the exception of the inbound and outbound movements for the west leg of the intersection of Neyagawa Boulevard and Sixteen Mile Creek as it currently operates as an access to the Sixteen Mile Sports Complex and assumed to not be subject to any growth.

## 4.3 Background Development Traffic

GHD reviewed the Town's development application portal to identify any developments located in proximity to the subject site that would generate additional traffic along the study area roadways and retrieve relevant documents from the respective studies.

The following developments have been identified, and approved through the Terms of Reference:

- 393 Dundas Street West
- 407 Dundas Street West
- 509 Dundas Street West
- 3009 Gladeside Avenue

The locations of the background developments are shown in **Figure 7** below.



**Figure 7** Location of Background Developments

The estimated site trips generated by each background development were extracted from their respective Traffic Studies and is summarized in **Table 1** below with detailed excerpts from the background studies attached in **Appendix D**. All background developments are assumed to be occupied by the 2030 horizon year.

The total site trips for all the background developments are summarized in **Table 1**.



**Table 1 Background Development Traffic**

Background Development	Units/GFA	Peak Hour Trips					
		Weekday AM			Weekday PM		
		In	Out	Total	In	Out	Total
393 Dundas Street West	318 high-rise dwelling units, 15 townhouse dwelling units, and 2,494 ft <sup>2</sup> commercial GFA	24	74	98	84	62	146
407 Dundas Street West	283 high-rise dwelling units, 36 stacked townhouse dwelling units, and 3,757 ft <sup>2</sup> commercial GFA	28	80	108	91	66	157
509 Dundas Street West	153 mid-rise dwelling units	11	56	67	54	26	80
3009 Gladeside Avenue	318 mid-rise dwelling units and 383 m <sup>2</sup>	31	82	113	79	57	136
<b>Total</b>		<b>94</b>	<b>292</b>	<b>386</b>	<b>308</b>	<b>211</b>	<b>519</b>

The total background development traffic from the background developments is summarized in **Figure 8** with the relevant excerpts provided in **Appendix D**.

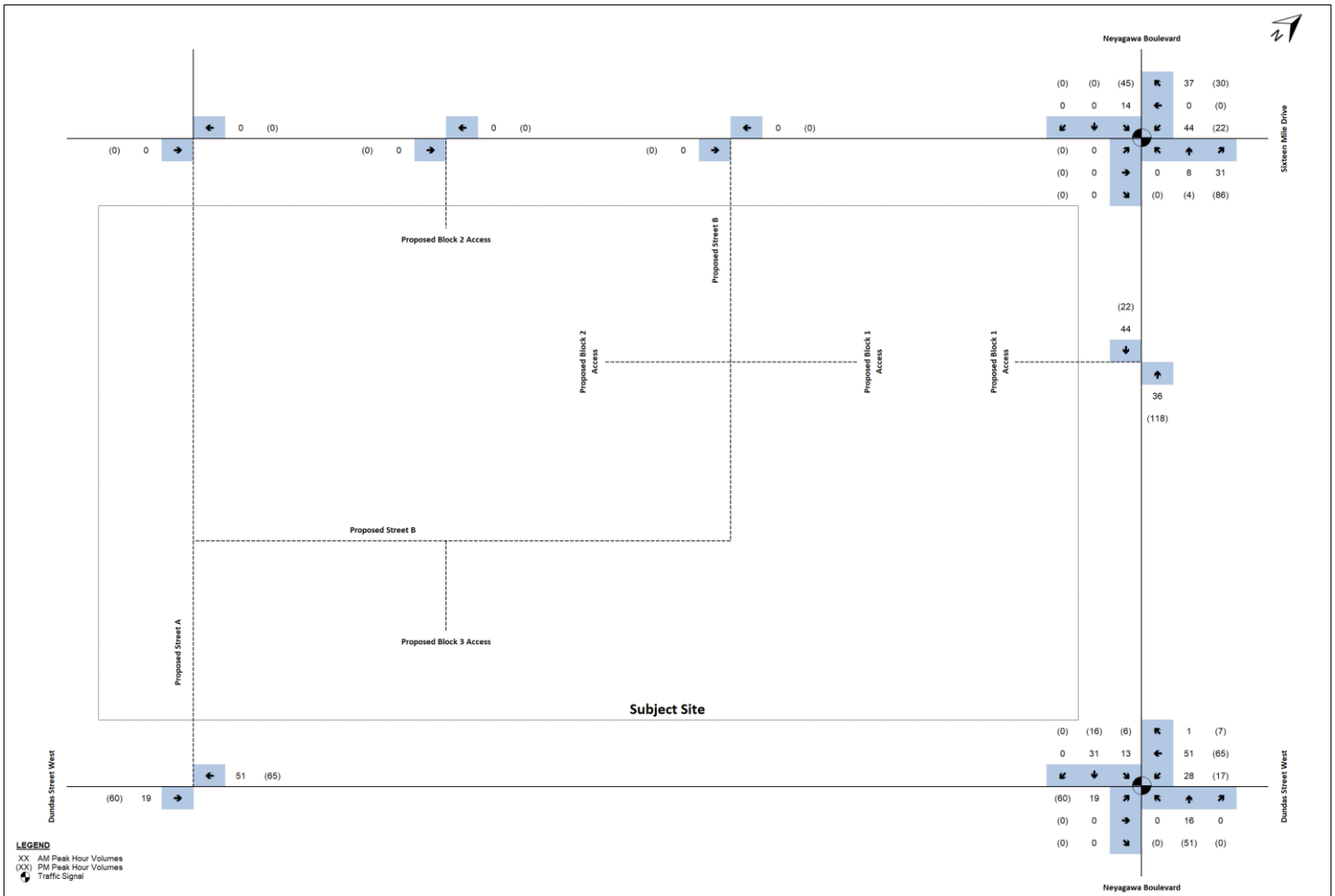


Figure 8 Total Background Development Traffic

## 4.4 Roadway Improvements

As identified by Region staff, the currently constructed 6-lane cross-section of Dundas Street West will include an HOV lane in both direction in the future. The timeline for the implementation of the HOV lane is currently unknown, however Region staff requested GHD to include the HOV lane under a 2029 horizon year. As a result, GHD will include an HOV lane under all three future horizon years.

As directed by Region staff, the capacity analysis will include a lane utilization factor of 0.80 for through movements along Dundas Street to account for the assumption that 20% of the lane capacity is assigned to the HOV lane.

## 4.5 Future Background Traffic Volumes

The background traffic volumes for the 2030, 2032, and 2035 horizon year were derived by applying the respective growth rates to the study area roads and the total background development traffic from **Figure 8**. The resulting 2030, 2032, and 2035 future background traffic volumes are summarized in **Figure 9**, **Figure 10**, and **Figure 11**, respectively.

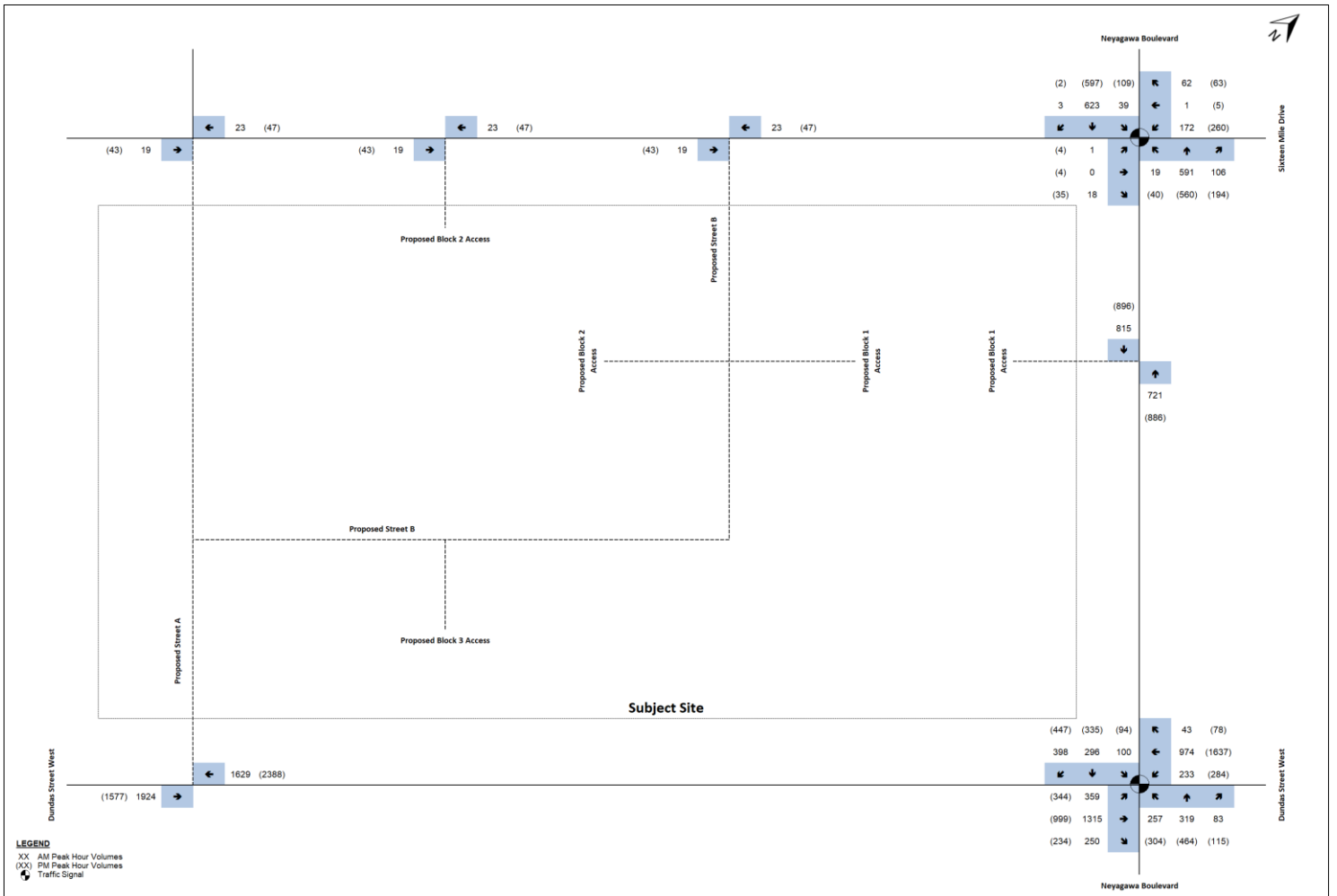


Figure 9 2030 Future Background Traffic Volumes

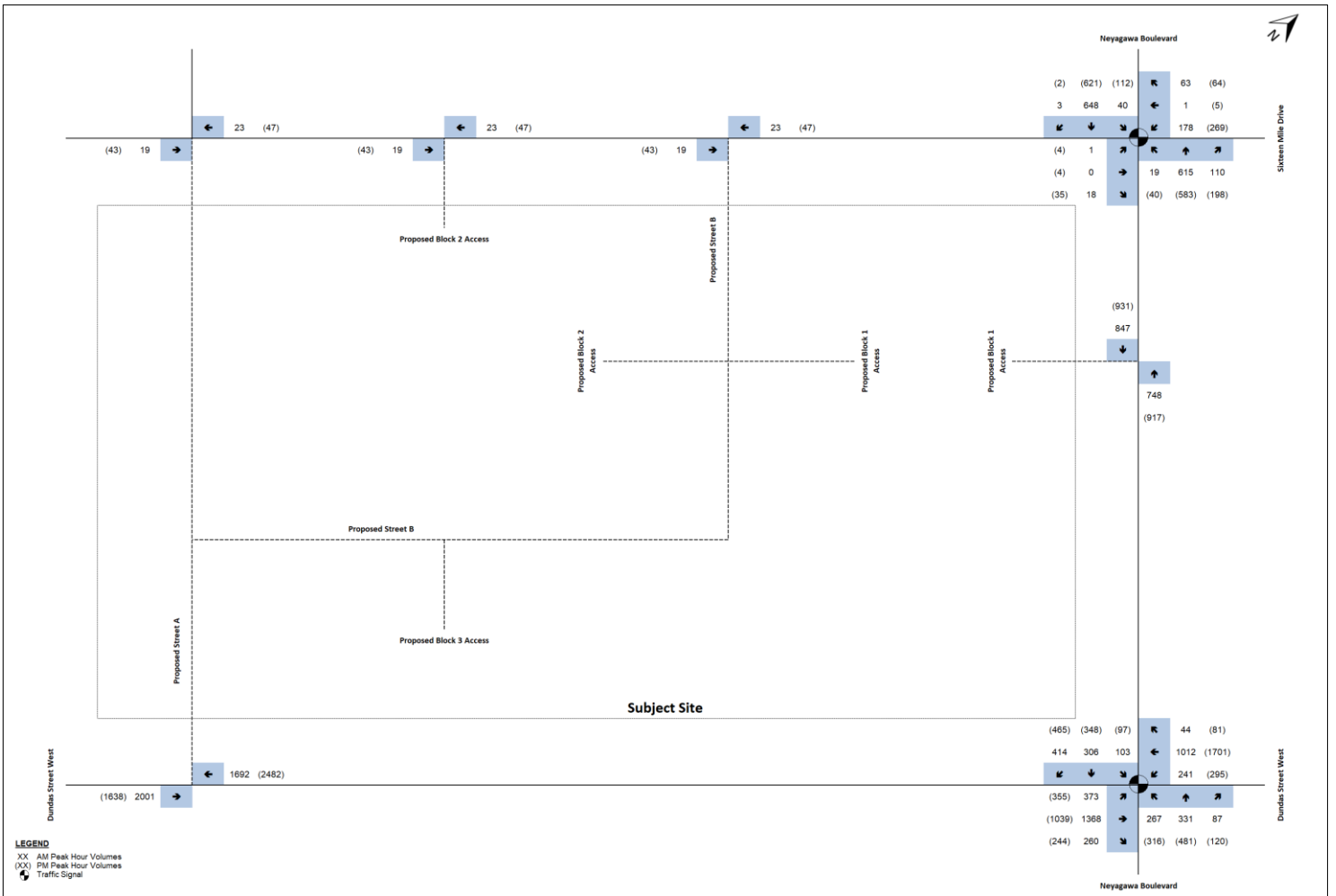


Figure 10 2032 Future Background Traffic Volumes

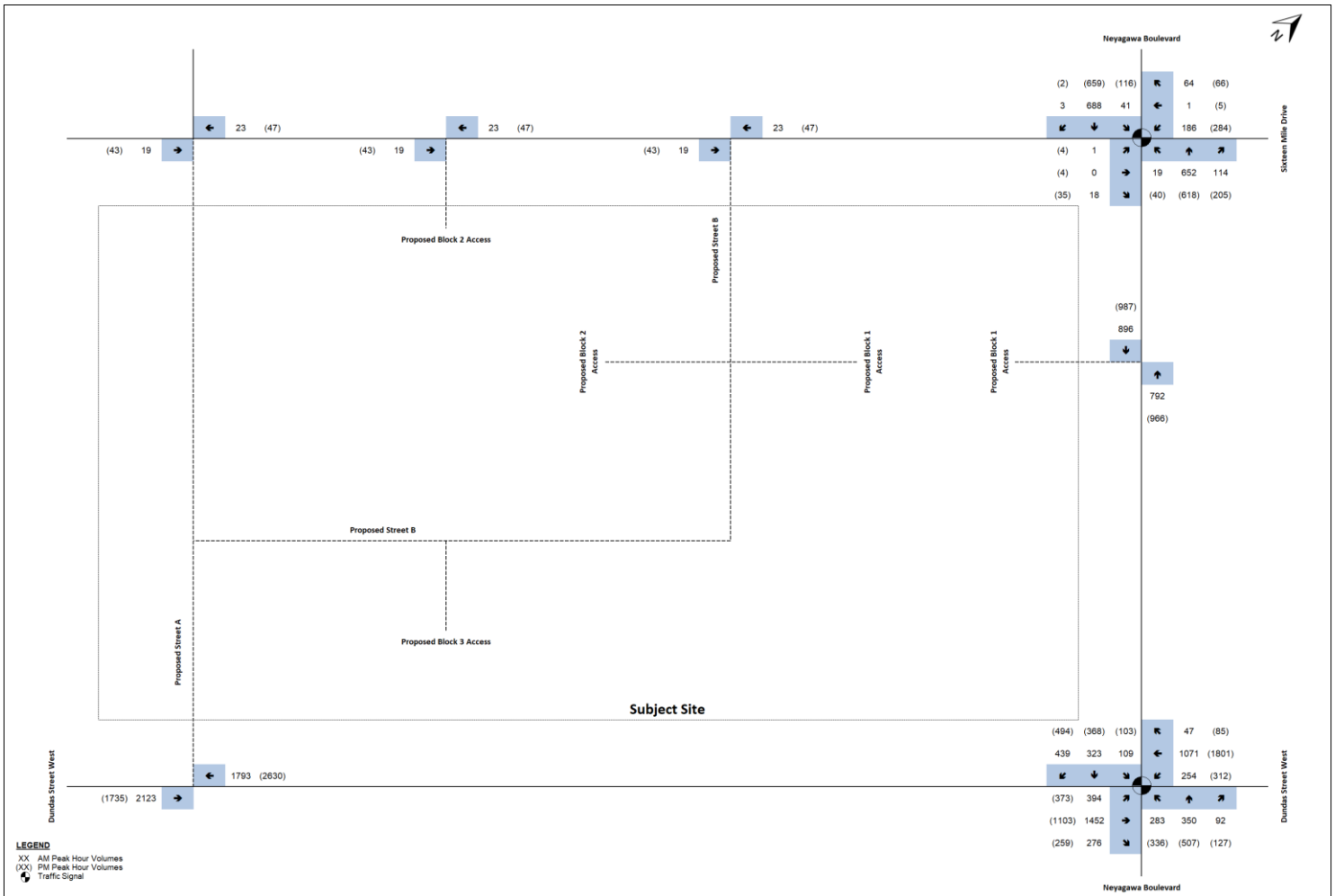


Figure 11 2035 Future Background Traffic Volumes

## 5. Site Generated Traffic

### 5.1 Modal Split

Region staff have identified the transit mode splits from the Halton Region’s 2011 Transportation Master Plan, which used transit mode splits of 10% for 2021, 15% for 2026 and 20% for 2031 and requested that transit mode splits be adjusted from the 2011 TMP assumptions to reasonable percentages based on current year and planned horizon years proposed mode splits, established on existing facilities and service in the area to date, and planned/proposed facilities and service.

GHD reviewed the 2016 Transportation Tomorrow Survey (TTS) data to establish the existing mode splits for the subject site and surrounding zones. The TTS data was compiled separately for inbound trips towards home and outbound trips from home during both peak hours. The ITE Trip Generation rates also include a 5% non-auto mode split built into its trip generation rates that will be factored into the non-auto driver mode split reductions. The 2016 data for the subject site and the surrounding area is summarized in the table below.

**Table 2 Existing Mode Split**

Mode	AM Peak Hour		PM Peak Hour	
	Inbound	Outbound	Inbound	Outbound
Auto Driver	84%	61%	73%	62%
Auto Passenger	2%	16%	11%	30%
Transit	0%	11%	13%	5%
Active Transportation	13%	12%	3%	3%
Non-Auto Split	13%	23%	16%	8%
<b>Non-Auto Split with 5% reduction</b>	<b>0%*</b>	<b>18%</b>	<b>11%</b>	<b>3%</b>

\*Due to the low sample size of the 2016 TTS data, GHD did not apply a modal split reduction

Based on the 2016 TTS data, the subject site is expected to have non-auto mode splits of 0% for inbound trips and 23% for outbound trips during the a.m. peak hour and a mode split of 16% for inbound trips and 8% for outbound trips during the p.m. peak hour.

## 5.2 Site Trip Generation

The proposed development consists of a total 2,278 dwelling units and 1,551 m<sup>2</sup> of retail GFA within 7 high-rise residential buildings located within three blocks. The breakdown between the three blocks is provided in **Section 2.2**, however the phases of construction are as follows:

- Phase 1
  - Building 1: 395 dwelling units, 1,079 m<sup>2</sup> of retail GFA
  - Building 2: 258 dwelling units
- Phase 2
  - Building 3: 266 dwelling units, 472 m<sup>2</sup> of retail GFA
  - Building 4: 341 dwelling units
- Phase 3
  - Building 5: 389 dwelling units
  - Building 6: 216 dwelling units
  - Building 7: 413 dwelling units

Site traffic generated by the proposed development for the weekday a.m. and p.m. peak hours was estimated by applying the trip rates for Land Use Code 222 Multifamily Housing (High-Rise) - Not Close to Rail Transit and LUC 922 Strip Retail Plaza in the 11th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE).

GHD used the methodology from the ITE Trip Generation Handbook 3<sup>rd</sup> for selecting the average rate or equation in Trip Generation Manual data (Figure 4.2 of the handbook) to determine if the average rate or fitted curve equation is to be used to estimate the trip generation for the subject site. When using the methodology based on the trip generation being completed for the three block individually, the fitted curve equation was selected to estimate the trip generation for the subject site.

**Table 3** summarizes the estimated trip generation for the subject site. Individual trips for passenger vehicles and trucks were calculated for the site.

**Table 3 Total Site Trip Generation**

Land Use	Phase	Unit Count/GFA	Parameters	Peak Hour Trip Generation					
				Weekday AM			Weekday PM		
				In	Out	Total	In	Out	Total
Multi-Family Housing High-rise – Not Close to Transit (222)	1	653 units	Trip Ratio	26%	74%	100%	62%	38%	100%
			Gross Trips	42	121	163	120	73	193
			Non-Auto Reduction	0	-22	-22	-13	-2	-15
			<b>Primary Trips</b>	<b>42</b>	<b>99</b>	<b>141</b>	<b>107</b>	<b>71</b>	<b>178</b>
	2	607 units	Trip Ratio	26%	74%	100%	62%	38%	100%
			Gross Trips	40	112	152	112	69	181
			Non-Auto Reduction	0	-20	-20	-12	-2	-14
			<b>Primary Trips</b>	<b>40</b>	<b>92</b>	<b>132</b>	<b>100</b>	<b>67</b>	<b>167</b>
	3	1,018 units	Trip Ratio	26%	74%	100%	62%	38%	100%
			Gross Trips	63	180	243	179	109	288
			Non-Auto Reduction	0	-32	-32	-19	-4	-23
			<b>Primary Trips</b>	<b>63</b>	<b>148</b>	<b>211</b>	<b>160</b>	<b>105</b>	<b>265</b>
Strip Retail Plaza (<40k) (822)	1	11,614 ft <sup>2</sup>	Trip Ratio	60%	40%	100%	50%	50%	100%
			Gross Trips	19	13	32	44	43	87
			Internal Capture	-10	-6	-16	-22	-22	-44
			<b>Primary Trips</b>	<b>9</b>	<b>7</b>	<b>16</b>	<b>22</b>	<b>21</b>	<b>43</b>
	2	5,081ft <sup>2</sup>	Trip Ratio	60%	40%	100%	50%	50%	100%
			Gross Trips	11	7	18	24	24	48
			Internal Capture	-6	-4	-10	-12	-12	-24
			<b>Primary Trips</b>	<b>5</b>	<b>3</b>	<b>8</b>	<b>12</b>	<b>12</b>	<b>24</b>
<b>Total New Primary Trips</b>				<b>159</b>	<b>349</b>	<b>508</b>	<b>401</b>	<b>276</b>	<b>677</b>

The proposed development is expected to generate a total of 508 two-way vehicle trips during the a.m. peak hour consisting of 159 inbound and 349 outbound trips. During the p.m. peak hour, it is expected to generate 677 new two-way vehicle trips consisting of 401 inbound and 276 outbound trips.

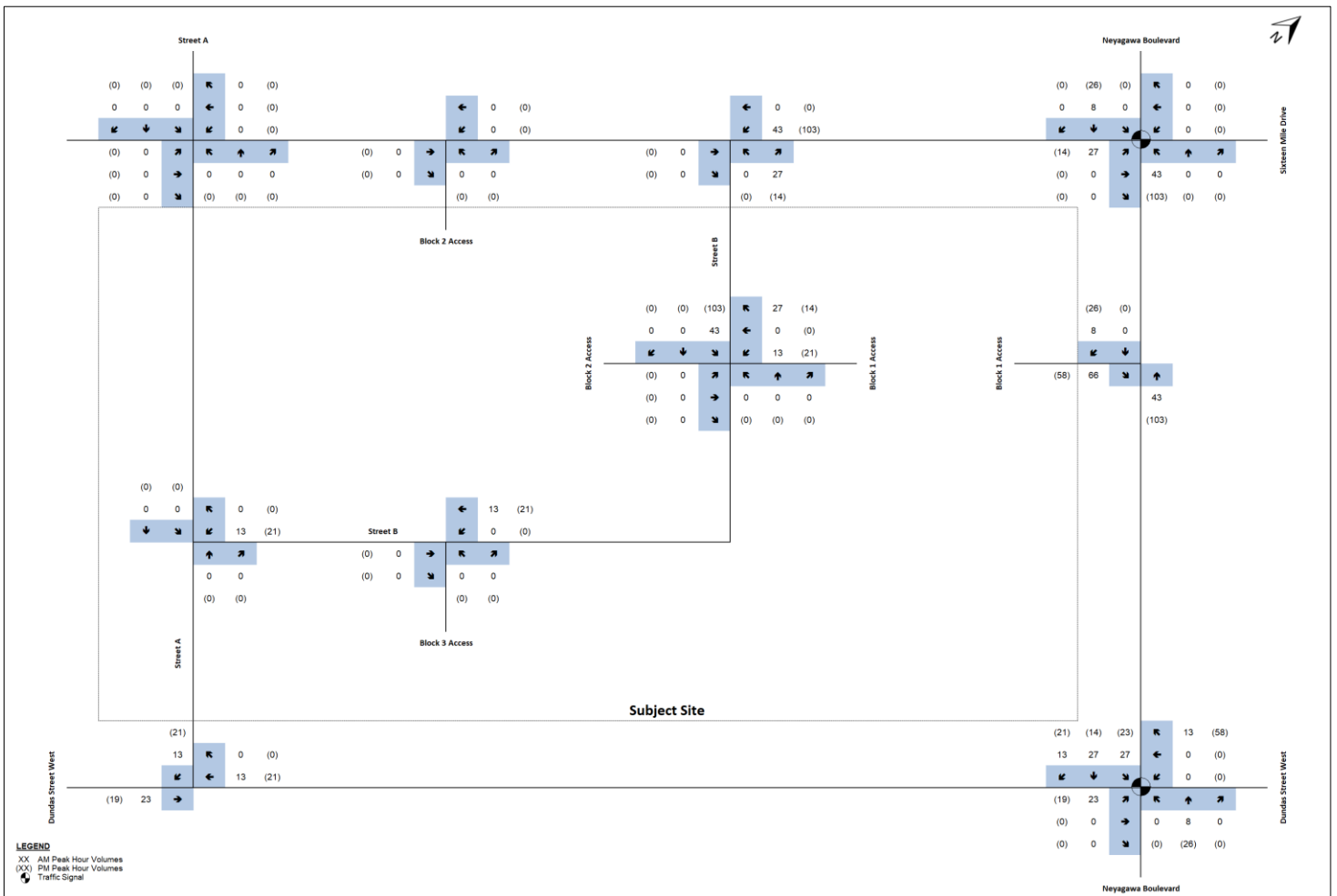
### 5.3 Site Traffic Distribution and Assignment

The site generated traffic for the subject site was distributed based on the existing travel patterns and a review of the 2016 Transportation Tomorrow Survey (TTS) data.

The directional distribution is provided in **Table 4** with the site generated traffic assignment to the study area road network for the weekday a.m. and p.m. peak hours provided in **Figure 12** for Block 1, **Figure 13** for Block 2 and **Figure 14** for Block 3. The total site trips for the proposed development is summarized in **Figure 15**.

**Table 4 Site Traffic Distribution**

Peak Period	Direction	North (Neyagawa)	South (Neyagawa)	East (Dundas)	West (Dundas)
AM	Inbound	15%	15%	25%	45%
	Outbound	25%	25%	25%	25%
PM	Inbound	20%	20%	45%	15%
	Outbound	15%	15%	25%	45%



**Figure 12 Phase 1 Site Trips**



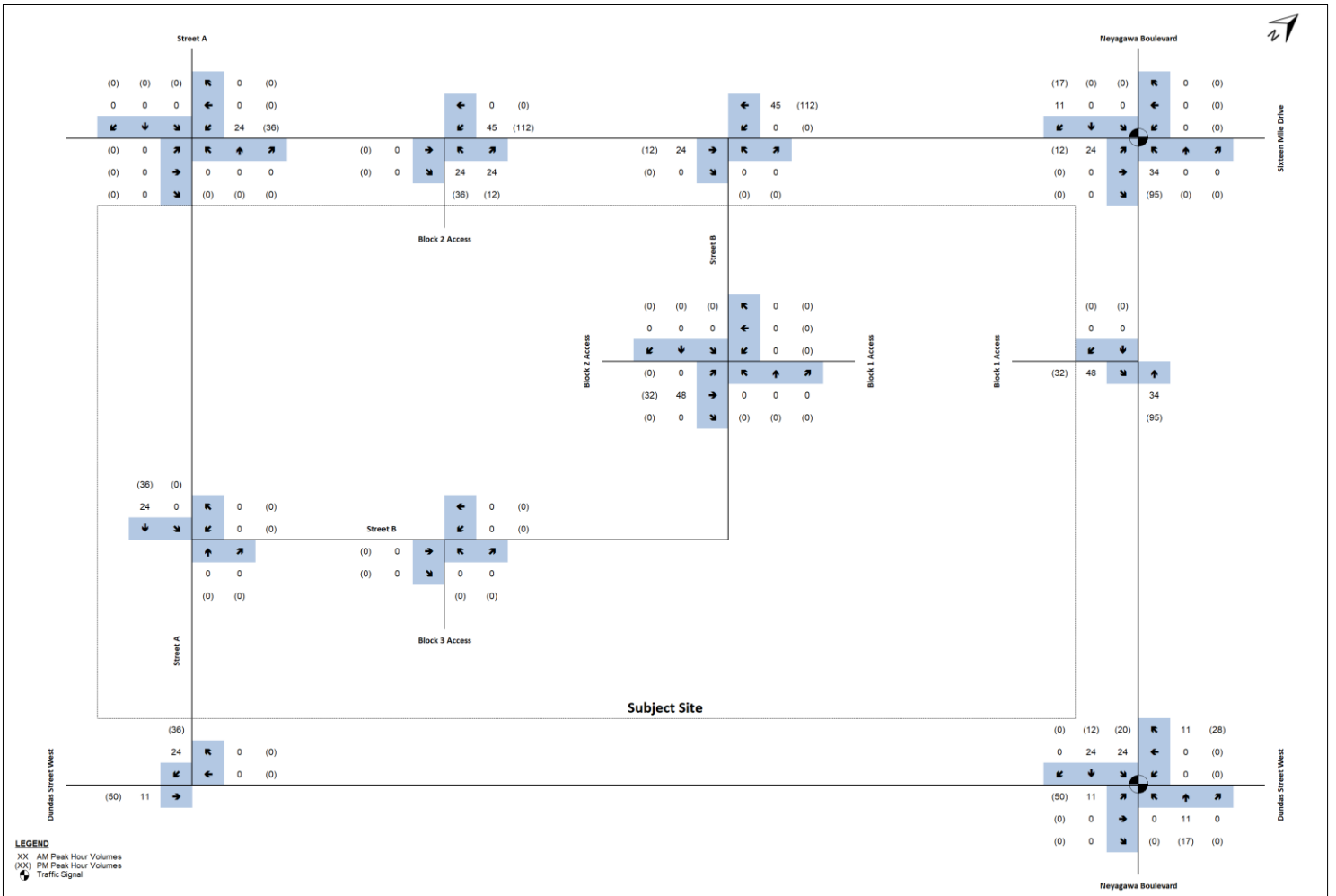


Figure 13 Phase 2 Site Trips

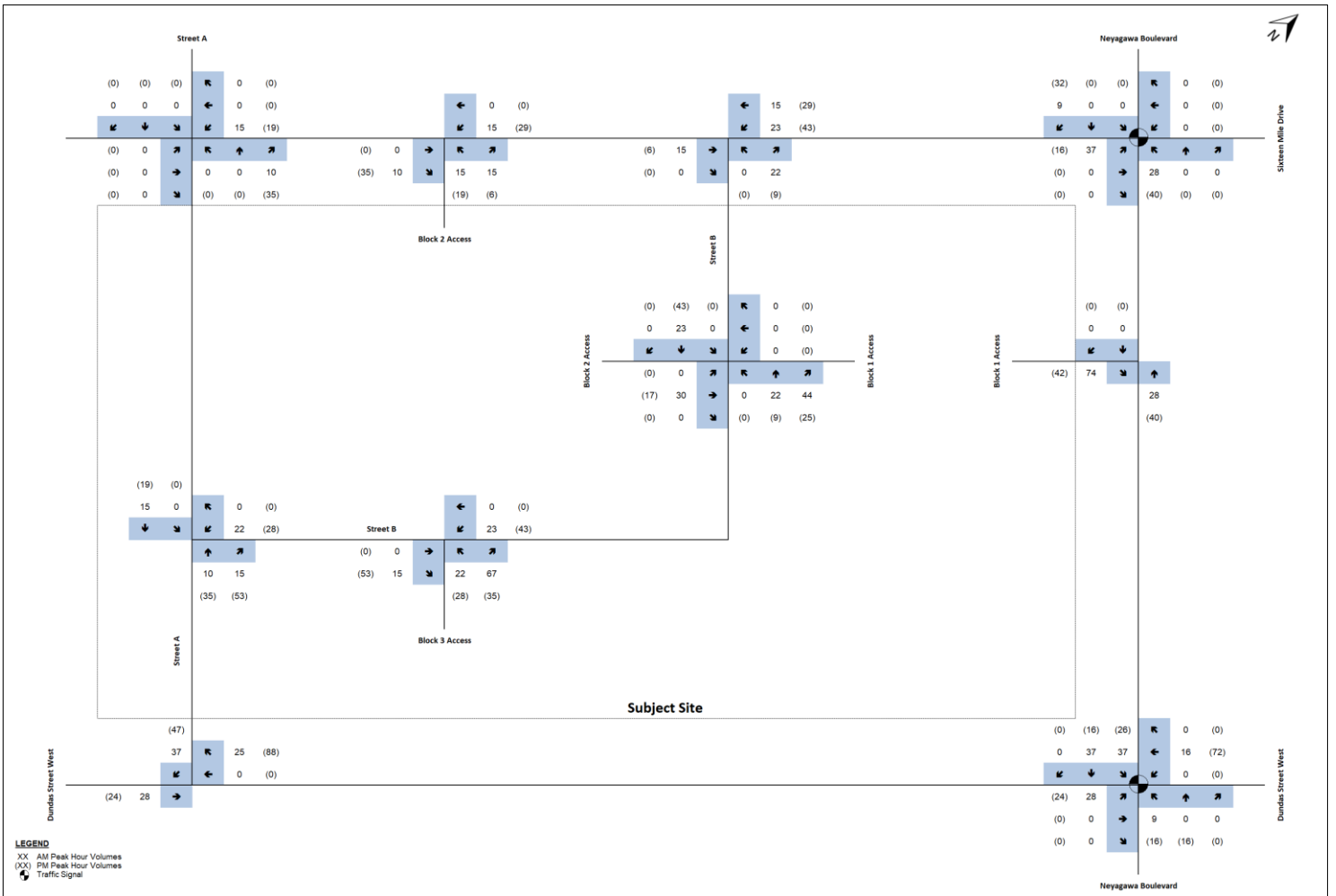


Figure 14 Phase 3 Site Trips

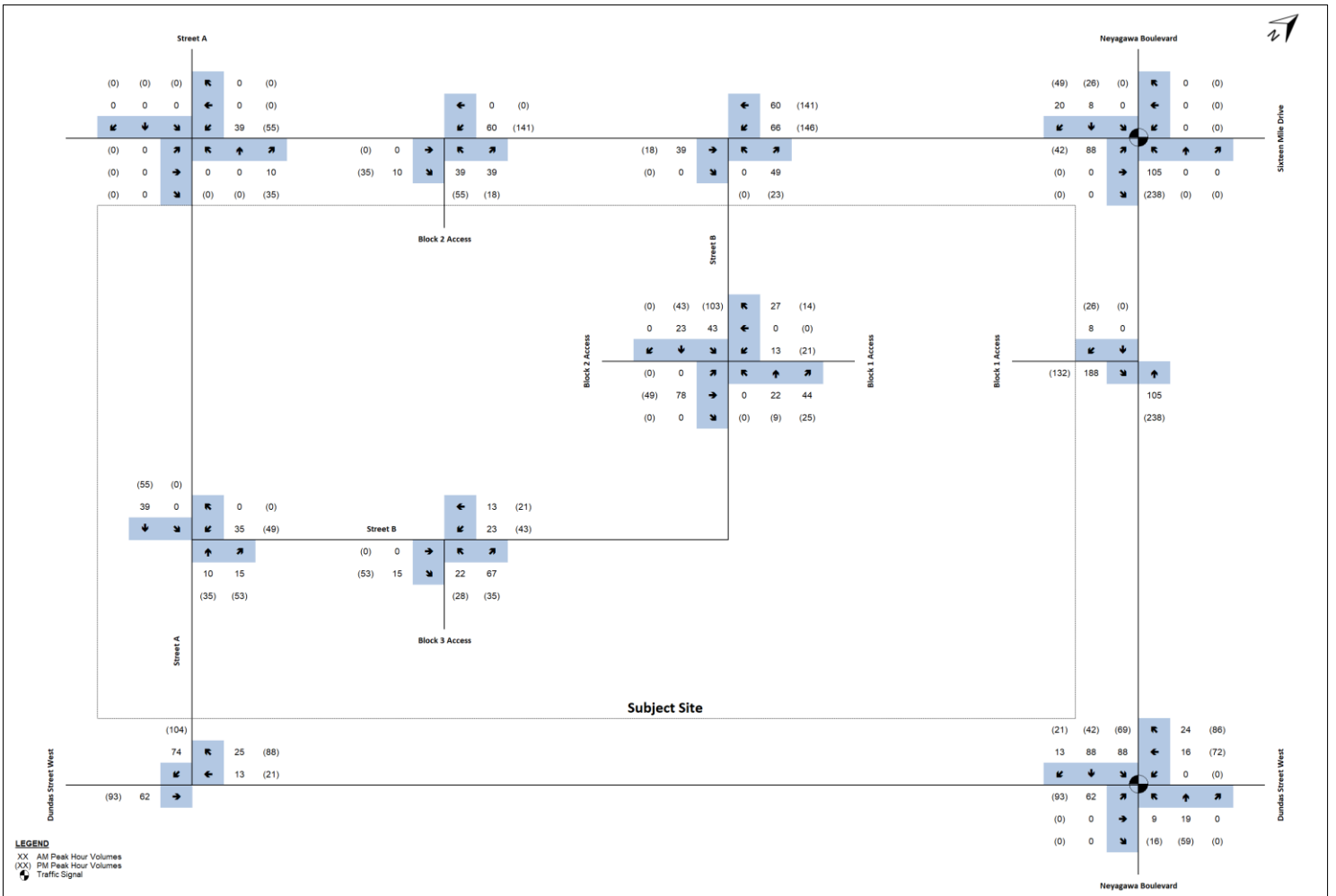


Figure 15 Total Site Trips

## 5.4 Traffic Redistribution

The provision of a new north/south road (Street A) between Dundas Street West and Sixteen Mile Drive provides a new connection for drivers that use the Sixteen Mile Sports Complex to access Dundas Street West. With its intersection with Dundas Street West restricted to right-in/right-out, Street A could potentially be used by drivers arriving from the east and/or departing towards the west on Dundas Street that currently use Neyagawa Boulevard between Dundas Street and Sixteen Mile Drive.

Based on existing travel patterns at the two existing intersections of Dundas Street West at Neyagawa Boulevard and Sixteen Mile Drive at Neyagawa Boulevard, GHD redistributed some existing traffic onto the proposed Street A. The projected redistribution of traffic is summarized in **Figure 16**.

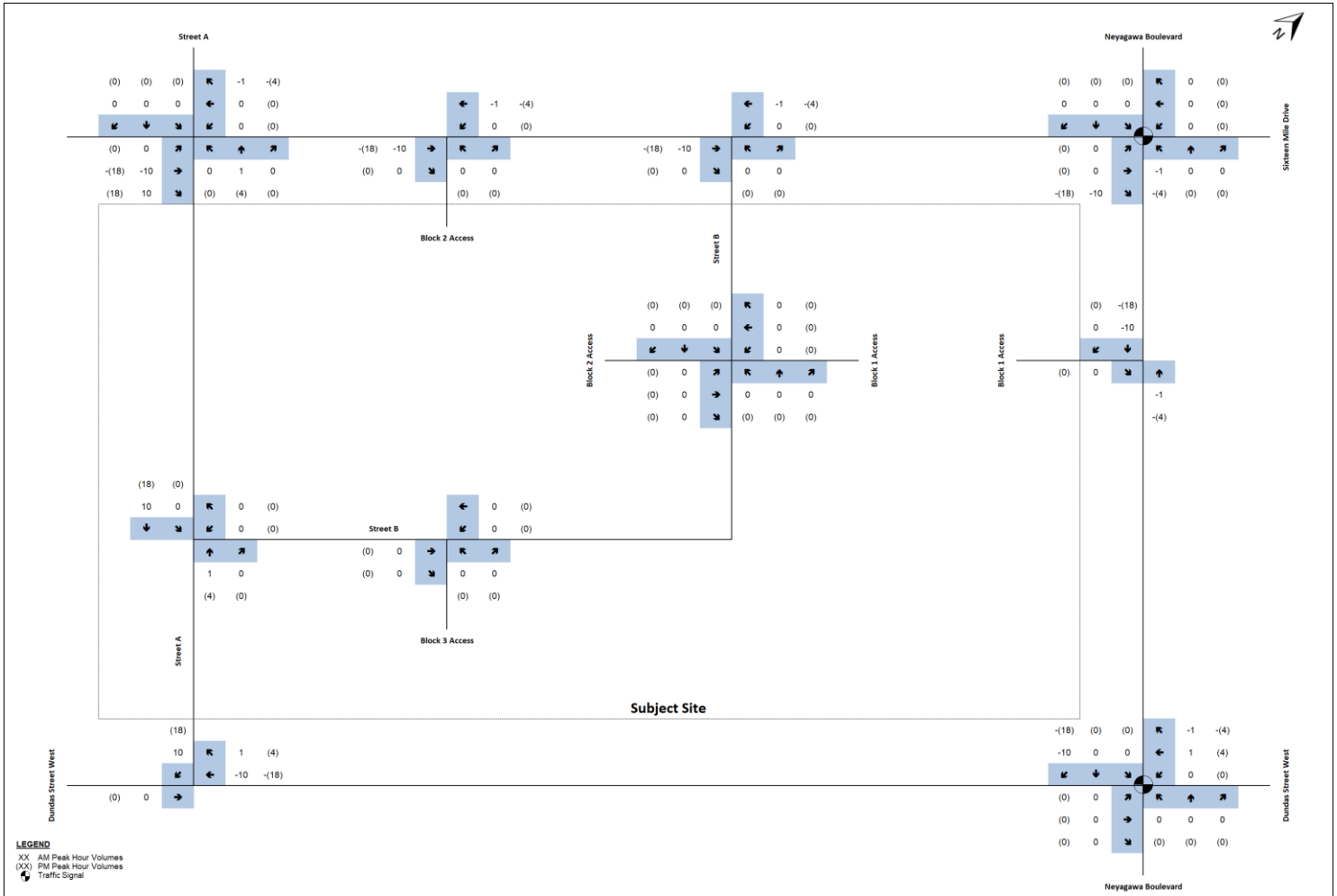
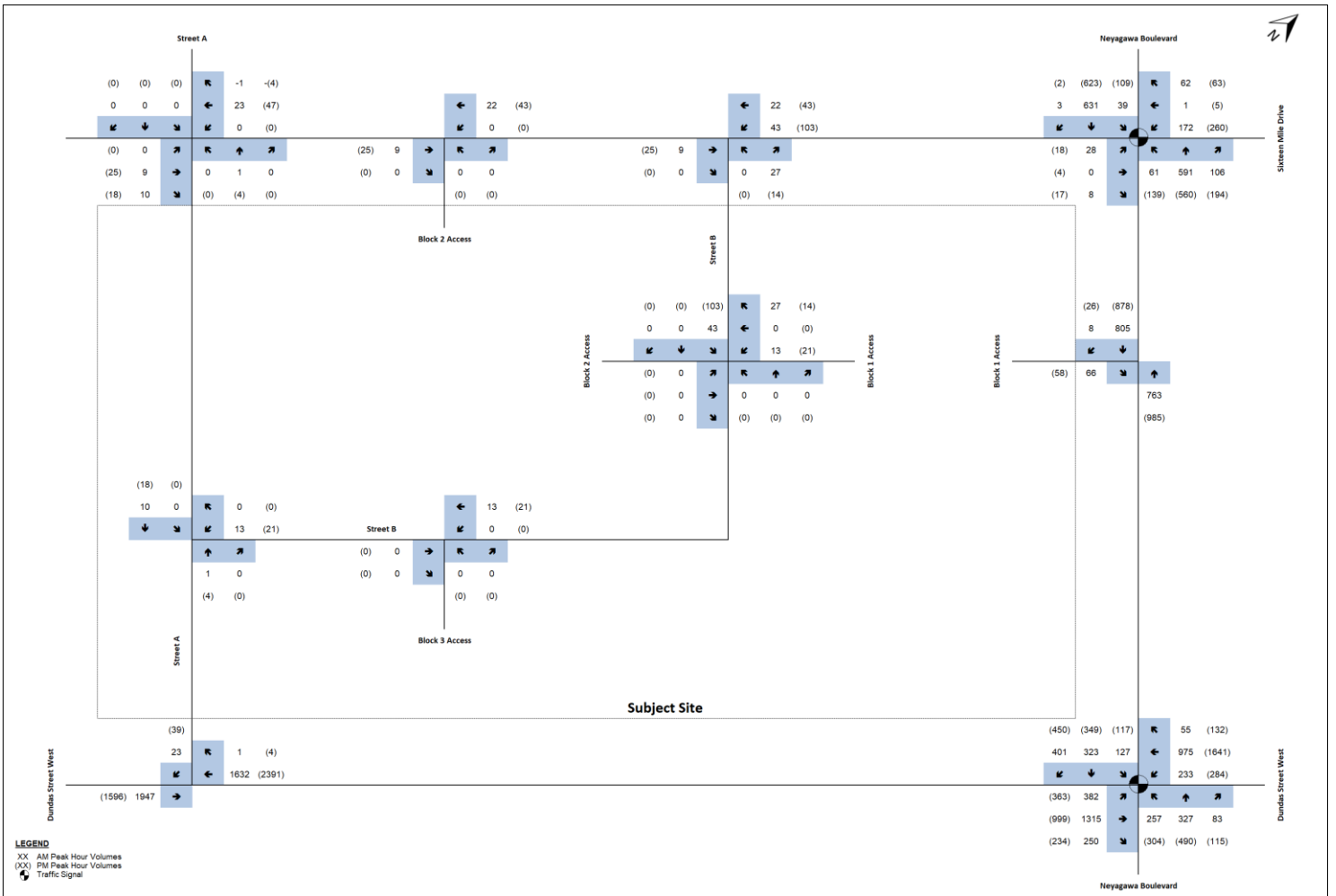
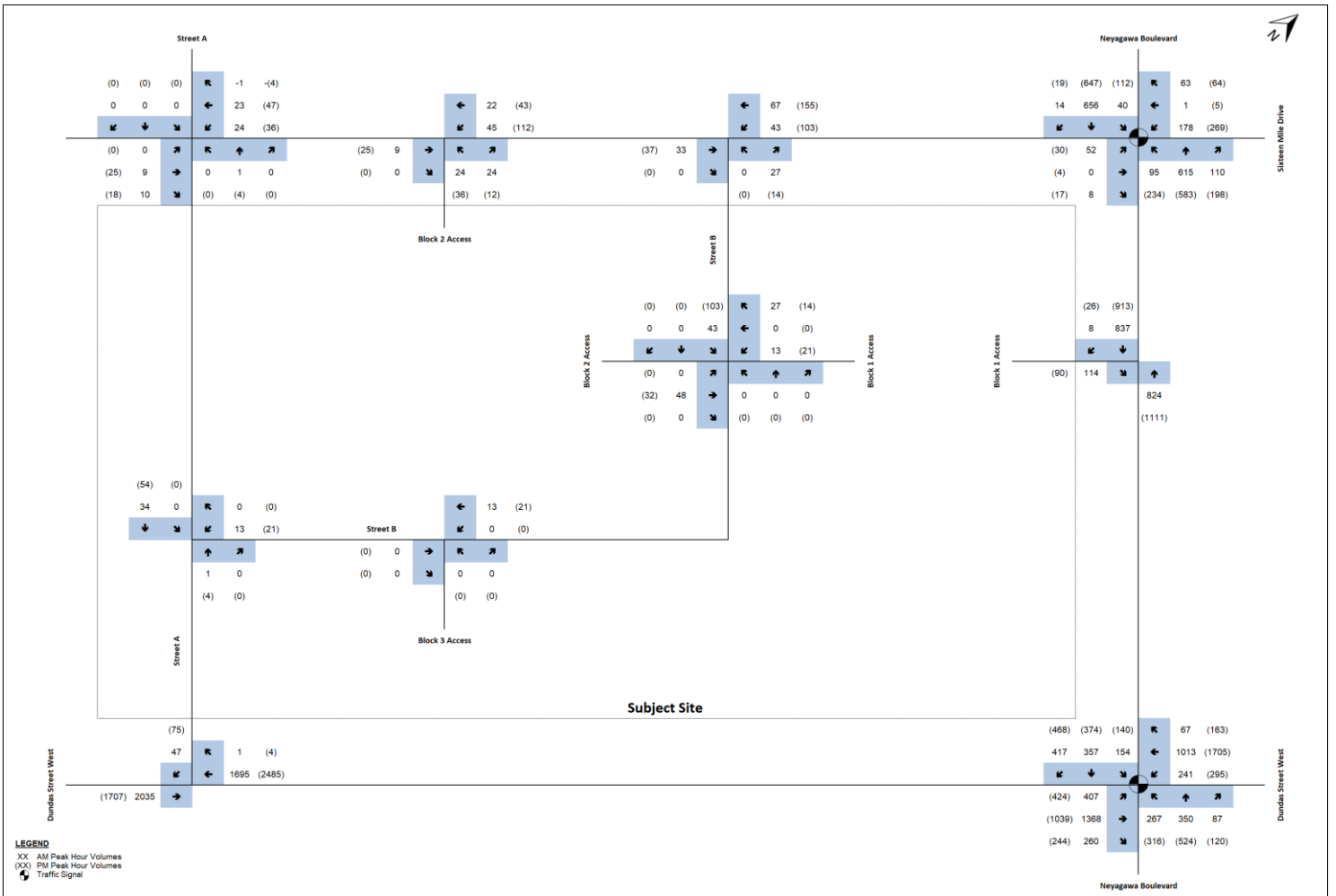


Figure 16 Street A Projected Traffic Redistribution

## 6. Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2030, 2032, and 2035 planning horizon was derived by combining the projected future background traffic with the corresponding estimated site generated traffic in addition to the traffic redistribution. The resulting traffic volumes are presented in **Figure 17** for the 2030 horizon year, **Figure 18** for the 2032 horizon year, and **Figure 19** for the 2035 horizon year.





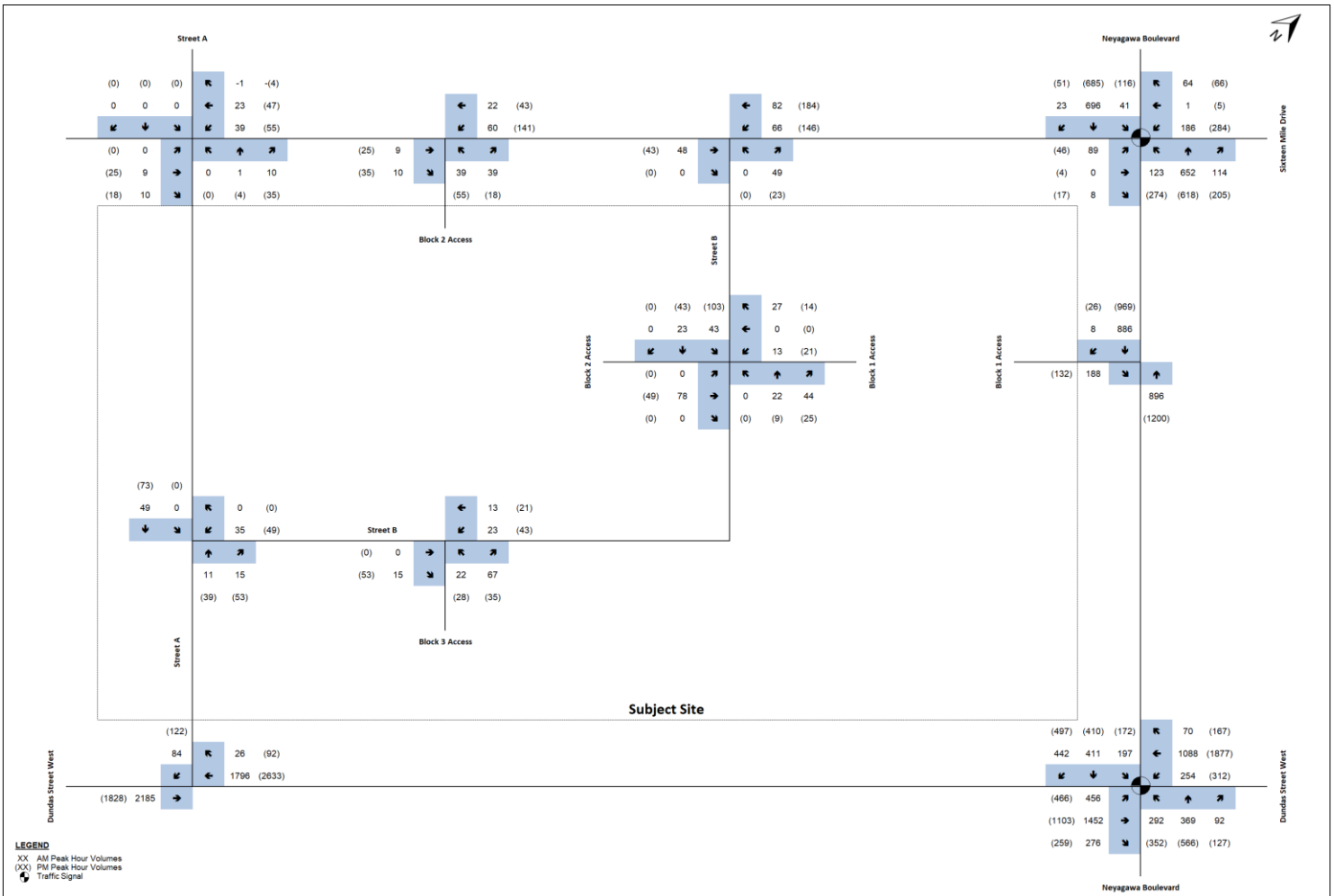


Figure 19 2035 Future Total Traffic Volumes

## 7. Capacity Analysis

The capacity analysis identifies how well the intersections and driveways are operating. The analysis contained within this report utilized the Highway Capacity Manual (HCM) 2000 procedure within the Synchro Version 11 Software package. The reported intersection volume-to-capacity ratios (v/c) are a measure of the saturation volume for each turning movement, while the levels-of-service (LOS) are a measure of the average delay for each turning movement. Queuing characteristics are reported as the predicted 95th percentile queue for each turning movement. Both pedestrian crossing volumes and heavy vehicle proportions are included in the analyses. The peak hour factors from the counts were used to analyze existing traffic conditions.

Existing peak hour factors were also used for future traffic conditions.

The analysis includes identification and required modifications and improvements (if any) at intersections where the addition of background growth or background growth plus site-generated traffic volumes causes the following:

'Critical' intersections and movements for a signalized intersection include:

- V/C ratios for overall intersections operations increase to 0.85 or above;
- V/C ratios for individual movements increase to 0.85 or above; or
- 95<sup>th</sup> percentile queue length for individual movements that are projected to, or exceed, the storage length.

'Critical' intersections and movements for an unsignalized intersection include:

- Level of Services (LOS), based on average delay per vehicle, on individual movements exceeds LOS "E",
- Queue length for individual movements exceed the available queue storage.

The following tables summarize the HCM capacity results for the study intersections during the weekday a.m. and p.m. peak hours under existing (2024), future background (2027 and 2032) and future total (2027 and 2032) traffic conditions. The detailed calculation sheets are provided in **Appendix F**.

## 7.1 Dundas Street West and Neyagawa Boulevard

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

**Table 5 Capacity analysis of Dundas Street West and Neyagawa Boulevard**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Existing 2024	<u>Overall: 0.72 (C) 27</u> EBL = 0.68 (B) 18 EBT = 0.66 (C) 25 EBR = 0.16 (B) 20 WBL = 0.61 (C) 21 WBT = 0.57 (C) 27 WBR = 0.03 (C) 22 NBL = 0.65 (C) 30 NBTR = 0.46 (C) 32 SBL = 0.28 (C) 28 SBT = 0.39 (C) 33 SBR = 0.51 (D) 35	EBL = 60 m EBT = 95 m EBR = 15 m WBL = 35 m WBT = 70 m WBR = 0 m NBL = 65 m NBTR = 50 m SBL = 25 m SBT = 40 m SBR = 50 m	<u>Overall: <b>0.86 (C) 34</b></u> EBL = 0.93 (E) 63 EBT = 0.49 (C) 26 EBR = 0.14 (C) 23 WBL = 0.67 (C) 22 WBT = 0.78 (C) 33 WBR = 0.04 (C) 22 NBL = 0.68 (C) 32 NBTR = 0.51 (C) 34 SBL = 0.3 (C) 33 SBT = 0.41 (D) 38 SBR = 0.69 (D) 46	EBL = 110 m EBT = 80 m EBR = 20 m WBL = 55 m WBT = 140 m WBR = 0 m NBL = 70 m NBTR = 65 m SBL = 25 m SBT = 45 m SBR = 75 m
Future Background 2030	<u>Overall: <b>0.9 (C) 35</b></u> EBL = 0.86 (D) 40 EBT = 0.76 (C) 29 EBR = 0.22 (C) 21 WBL = 0.77 (C) 33 WBT = 0.69 (C) 31 WBR = 0.03 (C) 23 NBL = 0.91 (E) 66 NBTR = 0.62 (D) 41 SBL = 0.41 (C) 32 SBT = 0.47 (D) 39 SBR = 0.59 (D) 42	EBL = 130 m EBT = 140 m EBR = 30 m WBL = 85 m WBT = 105 m WBR = 0 m NBL = 75 m NBTR = 60 m SBL = 30 m SBT = 45 m SBR = 60 m	<u>Overall: <b>1.03 (D) 55</b></u> EBL = <b>0.95 (E) 70</b> EBT = 0.59 (C) 29 EBR = 0.16 (C) 24 WBL = 0.79 (C) 30 WBT = <b>1.05 (E) 75</b> WBR = 0.05 (C) 25 NBL = <b>1.06 (F) 110</b> NBTR = 0.75 (D) 48 SBL = 0.49 (D) 36 SBT = 0.44 (D) 40 SBR = 0.66 (D) 47	EBL = 145 m EBT = 115 m EBR = 20 m WBL = 90 m WBT = 255 m WBR = 10 m NBL = 105 m NBTR = 90 m SBL = 30 m SBT = 50 m SBR = 80 m
Future Total 2030	<u>Overall: <b>0.95 (D) 36</b></u> EBL = 0.92 (D) 51 EBT = 0.77 (C) 29 EBR = 0.22 (C) 21 WBL = 0.77 (C) 34 WBT = 0.69 (C) 31 WBR = 0.04 (C) 23 NBL = 0.93 (E) 73 NBTR = 0.62 (D) 41 SBL = 0.52 (C) 34 SBT = 0.5 (D) 39 SBR = 0.6 (D) 42	EBL = 145 m EBT = 145 m EBR = 30 m WBL = 85 m WBT = 110 m WBR = 0 m NBL = 80 m NBTR = 60 m SBL = 40 m SBT = 50 m SBR = 65 m	<u>Overall: <b>1.05 (E) 57</b></u> EBL = <b>1.01 (F) 88</b> EBT = 0.6 (C) 30 EBR = 0.16 (C) 24 WBL = 0.79 (C) 31 WBT = <b>1.06 (E) 80</b> WBR = 0.14 (C) 26 NBL = <b>1.06 (F) 111</b> NBTR = 0.77 (D) 48 SBL = 0.63 (D) 40 SBT = 0.44 (D) 40 SBR = 0.66 (D) 47	EBL = 160 m EBT = 115 m EBR = 20 m WBL = 95 m WBT = 255 m WBR = 25 m NBL = 105 m NBTR = 90 m SBL = 35 m SBT = 55 m SBR = 80 m



Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Future Background 2032	<u>Overall: <b>0.96</b> (D) 38</u> EBL = 0.92 (D) 54 EBT = 0.78 (C) 30 EBR = 0.24 (C) 21 WBL = 0.82 (D) 42 WBT = 0.7 (C) 32 WBR = 0.03 (C) 23 NBL = <b>0.95</b> (E) 78 NBTR = 0.62 (D) 42 SBL = 0.44 (C) 33 SBT = 0.47 (D) 39 SBR = 0.64 (D) 45	EBL = 145 m EBT = 155 m EBR = 35 m WBL = 95 m WBT = 115 m WBR = 0 m NBL = 80 m NBTR = 60 m SBL = 30 m SBT = 50 m SBR = 70 m	<u>Overall: <b>1.07</b> (E) 63</u> EBL = <b>0.99</b> (F) 83 EBT = 0.65 (C) 32 EBR = 0.18 (C) 26 WBL = 0.81 (D) 37 WBT = <b>1.1</b> (F) 94 WBR = 0.05 (C) 25 NBL = <b>1.09</b> (F) 121 NBTR = 0.75 (D) 48 SBL = 0.52 (D) 36 SBT = 0.44 (D) 40 SBR = 0.67 (D) 47	EBL = 160 m EBT = 125 m EBR = 25 m WBL = 110 m WBT = 280 m WBR = 10 m NBL = 110 m NBTR = 90 m SBL = 30 m SBT = 55 m SBR = 80 m
Future Total 2032	<u>Overall: <b>1.05</b> (D) 42</u> EBL = <b>1.01</b> (E) 78 EBT = 0.79 (C) 31 EBR = 0.24 (C) 22 WBL = 0.83 (D) 43 WBT = 0.7 (C) 32 WBR = 0.05 (C) 23 NBL = <b>1.02</b> (F) 98 NBTR = 0.64 (D) 42 SBL = 0.66 (D) 40 SBT = 0.53 (D) 40 SBR = 0.65 (D) 45	EBL = 170 m EBT = 160 m EBR = 35 m WBL = 95 m WBT = 115 m WBR = 5 m NBL = 90 m NBTR = 65 m SBL = 45 m SBT = 55 m SBR = 70 m	<u>Overall: <b>1.19</b> (E) 71</u> EBL = <b>1.21</b> (F) 155 EBT = 0.66 (C) 33 EBR = 0.18 (C) 26 WBL = 0.82 (D) 40 WBT = <b>1.12</b> (F) 102 WBR = 0.2 (C) 28 NBL = <b>1.1</b> (F) 125 NBTR = 0.77 (D) 48 SBL = 0.78 (D) 53 SBT = 0.45 (D) 40 SBR = 0.66 (D) 46	EBL = 205 m EBT = 125 m EBR = 25 m WBL = 110 m WBT = 280 m WBR = 35 m NBL = 115 m NBTR = 100 m SBL = 45 m SBT = 60 m SBR = 85 m
Future Background 2035	<u>Overall: <b>1.06</b> (D) 44</u> EBL = <b>1.04</b> (F) 89 EBT = 0.82 (C) 33 EBR = 0.26 (C) 22 WBL = 0.91 (E) 62 WBT = 0.72 (C) 33 WBR = 0.03 (C) 23 NBL = <b>1.01</b> (F) 97 NBTR = 0.62 (D) 43 SBL = 0.47 (C) 34 SBT = 0.46 (D) 40 SBR = 0.7 (D) 49	EBL = 175 m EBT = 180 m EBR = 40 m WBL = 115 m WBT = 130 m WBR = 0 m NBL = 90 m NBTR = 65 m SBL = 35 m SBT = 50 m SBR = 80 m	<u>Overall: <b>1.15</b> (E) 79</u> EBL = <b>1.07</b> (F) 106 EBT = 0.69 (C) 34 EBR = 0.21 (C) 26 WBL = 0.94 (E) 66 WBT = <b>1.19</b> (F) 134 WBR = 0.06 (C) 27 NBL = <b>1.14</b> (F) 136 NBTR = 0.74 (D) 46 SBL = 0.54 (D) 36 SBT = 0.43 (D) 40 SBR = 0.75 (D) 51	EBL = 180 m EBT = 140 m EBR = 30 m WBL = 140 m WBT = 315 m WBR = 15 m NBL = 120 m NBTR = 95 m SBL = 30 m SBT = 55 m SBR = 100 m
Future Total 2035	<u>Overall: <b>1.25</b> (E) 55</u> EBL = <b>1.24</b> (F) 162 EBT = 0.83 (C) 34 EBR = 0.26 (C) 23 WBL = 0.93 (E) 66 WBT = 0.74 (C) 34 WBR = 0.05 (C) 24 NBL = <b>1.17</b> (F) 152 NBTR = 0.62 (D) 42 SBL = 0.85 (E) 61 SBT = 0.56 (D) 41 SBR = 0.71 (D) 49	EBL = 220 m EBT = 185 m EBR = 40 m WBL = 115 m WBT = 135 m WBR = 5 m NBL = 115 m NBTR = 70 m SBL = 55 m SBT = 65 m SBR = 85 m	<u>Overall: <b>1.34</b> (F) 101</u> EBL = <b>1.36</b> (F) 221 EBT = 0.7 (D) 35 EBR = 0.21 (C) 27 WBL = <b>0.96</b> (E) 73 WBT = <b>1.26</b> (F) 165 WBR = 0.22 (C) 29 NBL = <b>1.23</b> (F) 171 NBTR = 0.78 (D) 47 SBL = <b>0.96</b> (F) 94 SBT = 0.46 (D) 40 SBR = 0.73 (D) 49	EBL = 240 m EBT = 140 m EBR = 30 m WBL = 140 m WBT = 335 m WBR = 40 m NBL = 140 m NBTR = 105 m SBL = 65 m SBT = 65 m SBR = 100 m

Under existing traffic conditions, the signalized intersection of Dundas Street West and Neyagawa Boulevard is operating at satisfactory levels with an overall v/c ratio of 0.72 LOS C during the a.m. peak hour and 0.86 LOS C

during the p.m. peak hour. The intersection does not currently operate with a critical movement, however the overall intersection is at a critical level with its overall v/c ratio of 0.86 LOS C during the p.m. peak hour.

With the addition of corridor growth, background development traffic, a lane utilization factor of 0.8 for the HOV lane on Dundas Street West and signal improvements to mitigate delays for the 2030 future background traffic scenario, the overall reported v/c of the intersection is expected to increase to 0.90 LOS C during the a.m. peak hour and 1.03 LOS D during the p.m. peak hour. The intersection continues to operate without any critical movements during the a.m. peak hour, however the overall intersection continues to operate at a critical level during both peak hours in addition to the eastbound and northbound left-turn and westbound through movements during the p.m. peak hour.

Under the 2030 future total traffic scenario, with the addition of site generated traffic from the first phase of construction, the intersection's overall v/c is reported to increase to 0.95 LOS C during the a.m. peak hour and 1.05 LOS E during the p.m. peak hour. The overall intersection continues to operate at a critical level during both peak hours with no additional critical movements as reported under the 2030 future background condition.

With the continued addition of corridor growth, as well as the same background development traffic, HOV lane on Dundas Street West and signal improvements to mitigate delays for the 2032 future background traffic scenario, the overall reported v/c of the intersection is expected to increase to 0.96 LOS D during the a.m. peak hour and 1.07 LOS E during the p.m. peak hour. The overall intersection continues to operate at a critical level during both peak hours in addition to the northbound left-turn movement during both peak hours and the eastbound left-turn and westbound through movements during the p.m. peak hour only.

With the addition of site generated traffic from the first two phases of construction, the intersection's overall v/c is reported to increase to 1.05 LOS D during the a.m. peak hour and 1.19 LOS E during the p.m. peak hour. The intersection continues to operate with the same critical movements reported under the 2032 future background condition with no additional critical movements as a result of the proposed development.

With further corridor growth, as well as the same background development traffic, HOV lane on Dundas Street West and signal improvements to mitigate delays for the 2035 future background traffic scenario, the overall reported v/c of the intersection is expected to increase to 1.06 LOS D during the a.m. peak hour and 1.15 LOS E during the p.m. peak hour. Similar to the 2032 horizon year, the intersection reports multiple critical movements that include the eastbound and northbound left-turn movements during both peak hours and westbound through during the p.m. peak hour.

With the addition of site generated traffic from the full build-out of the site, the intersection's overall v/c is reported to increase to 1.25 LOS E during the a.m. peak hour and 1.34 LOS F during the p.m. peak hour. The intersection is reported to continue to operate with the same critical movements identified under the 2035 future background condition in addition to the westbound left-turn movement during the p.m. peak hour only.

The intersection operates at a critical level during the p.m. peak hour as a result of many factors, including a large volume of eastbound left-turn and westbound through traffic along Dundas Street West. The Halton Region plans on implementing an HOV lane along Dundas Street West, however the timeline on the implementation has not been determined. The Halton Region had also completed an environmental assessment for Dundas Street West within the study area which included a sensitivity analysis with the addition of dual eastbound and southbound left-turn lanes at Dundas Street East and Neyagawa Boulevard.

GHD has completed a sensitivity analysis of the intersection with the implementation of dual left-turn lanes generally consistent with the sensitivity analysis completed in the Dundas Street West EA.

## 7.1.1 Sensitivity Analysis

The Dundas Street West EA, completed a sensitivity analysis of the operation of the intersection of Dundas Street West and Neyagawa Boulevard with dual left-turn lanes in the eastbound and southbound directions. However, a comparison of historic traffic counts identified a high volume of southbound left-turn traffic in a 2014 traffic count while the updated 2024 traffic count (also used to project traffic volumes up to a 2035 horizon year) saw a shift in the volume of turning traffic will a significantly greater volume in the northbound left-turn movement.

As a result, the sensitivity analysis for the intersection of Dundas Street West and Neyagawa Boulevard maintained the dual eastbound left-turn lane while shifting the southbound dual left-turn lane to a northbound dual left-turn lane.

The results of the sensitivity analysis of the intersection is summarised in the table below for all future traffic conditions including dual left-turn lanes in the eastbound and northbound approaches while maintaining the HOV lane.

**Table 6 Capacity analysis of Dundas Street West and Neyagawa Boulevard (Sensitivity Analysis)**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Future Background 2030	<u>Overall: 0.78 (D) 38</u> EBL = 0.76 (D) 54 EBT = 0.81 (C) 34 EBR = 0.24 (C) 24 WBL = 0.82 (D) 45 WBT = 0.65 (C) 31 WBR = 0.03 (C) 23 NBL = 0.74 (E) 57 NBTR = 0.49 (D) 38 SBL = 0.35 (C) 34 SBT = 0.46 (D) 41 SBR = 0.72 (D) 51	EBL = 75 m EBT = 160 m EBR = 35 m WBL = 95 m WBT = 115 m WBR = 0 m NBL = 60 m NBTR = 55 m SBL = 30 m SBT = 45 m SBR = 75 m	<u>Overall: 0.91 (D) 40</u> EBL = 0.85 (E) 66 EBT = 0.61 (C) 30 EBR = 0.16 (B) 18 WBL = 0.79 (C) 32 WBT = 0.86 (C) 33 WBR = 0.05 (B) 20 NBL = 0.88 (E) 72 NBTR = 0.77 (D) 48 SBL = 0.46 (D) 35 SBT = 0.49 (D) 42 SBR = 0.85 (D) 52	EBL = 75 m EBT = 105 m EBR = 15 m WBL = 90 m WBT = 190 m WBR = 10 m NBL = 70 m NBTR = 85 m SBL = 30 m SBT = 55 m SBR = 115 m
Future Total 2030	<u>Overall: 0.79 (D) 39</u> EBL = 0.8 (E) 56 EBT = 0.81 (C) 35 EBR = 0.24 (C) 24 WBL = 0.83 (D) 45 WBT = 0.66 (C) 31 WBR = 0.04 (C) 23 NBL = 0.74 (E) 57 NBTR = 0.49 (D) 38 SBL = 0.45 (C) 35 SBT = 0.49 (D) 41 SBR = 0.72 (D) 51	EBL = 85 m EBT = 165 m EBR = 35 m WBL = 95 m WBT = 115 m WBR = 0 m NBL = 60 m NBTR = 60 m SBL = 35 m SBT = 50 m SBR = 80 m	<u>Overall: 0.93 (D) 41</u> EBL = 0.91 (E) 75 EBT = 0.62 (C) 30 EBR = 0.16 (B) 18 WBL = 0.8 (C) 34 WBT = 0.87 (C) 34 WBR = 0.13 (C) 21 NBL = 0.89 (E) 74 NBTR = 0.78 (D) 48 SBL = 0.58 (D) 38 SBT = 0.49 (D) 42 SBR = 0.84 (D) 50	EBL = 80 m EBT = 110 m EBR = 15 m WBL = 90 m WBT = 205 m WBR = 20 m NBL = 70 m NBTR = 90 m SBL = 35 m SBT = 55 m SBR = 115 m
Future Background 2032	<u>Overall: 0.84 (D) 41</u> EBL = 0.78 (E) 56 EBT = 0.83 (D) 35 EBR = 0.25 (C) 24 WBL = 0.92 (E) 65 WBT = 0.69 (C) 33 WBR = 0.03 (C) 24 NBL = 0.85 (E) 70 NBTR = 0.52 (D) 39 SBL = 0.36 (C) 32 SBT = 0.43 (D) 40 SBR = 0.76 (D) 53	EBL = 85 m EBT = 180 m EBR = 40 m WBL = 110 m WBT = 125 m WBR = 5 m NBL = 70 m NBTR = 60 m SBL = 30 m SBT = 50 m SBR = 85 m	<u>Overall: 0.94 (D) 50</u> EBL = 0.77 (E) 63 EBT = 0.68 (D) 37 EBR = 0.21 (C) 30 WBL = 0.82 (D) 46 WBT = 0.96 (D) 52 WBR = 0.05 (C) 25 NBL = 0.89 (F) 81 NBTR = 0.69 (D) 48 SBL = 0.44 (D) 37 SBT = 0.44 (D) 45 SBR = 0.82 (E) 62	EBL = 80 m EBT = 150 m EBR = 35 m WBL = 110 m WBT = 280 m WBR = 10 m NBL = 85 m NBTR = 95 m SBL = 30 m SBT = 60 m SBR = 110 m

Future Total 2032	<u>Overall: <b>0.85</b> (D) 42</u> EBL = 0.85 (E) 62 EBT = 0.83 (D) 36 EBR = 0.25 (C) 24 WBL = 0.93 (E) 68 WBT = 0.7 (C) 34 WBR = 0.05 (C) 25 NBL = 0.87 (E) 73 NBTR = 0.54 (D) 40 SBL = 0.53 (C) 34 SBT = 0.49 (D) 40 SBR = 0.75 (D) 51	EBL = 95 m EBT = 180 m EBR = 40 m WBL = 110 m WBT = 125 m WBR = 10 m NBL = 70 m NBTR = 65 m SBL = 40 m SBT = 55 m SBR = 90 m	<u>Overall: <b>0.96</b> (D) 52</u> EBL = 0.91 (E) 77 EBT = 0.68 (D) 38 EBR = 0.21 (C) 30 WBL = 0.83 (D) 48 WBT = <b>0.98</b> (E) 57 WBR = 0.19 (C) 27 NBL = 0.9 (F) 85 NBTR = 0.73 (D) 49 SBL = 0.67 (D) 45 SBT = 0.46 (D) 45 SBR = 0.81 (E) 62	EBL = 105 m EBT = 150 m EBR = 35 m WBL = 110 m WBT = 285 m WBR = 35 m NBL = 85 m NBTR = 105 m SBL = 45 m SBT = 65 m SBR = 110 m
Future Background 2035	<u>Overall: <b>0.86</b> (D) 45</u> EBL = 0.79 (E) 57 EBT = <b>0.91</b> (D) 44 EBR = 0.29 (C) 27 WBL = 0.91 (E) 65 WBT = 0.71 (C) 34 WBR = 0.03 (C) 24 NBL = 0.87 (E) 73 NBTR = 0.54 (D) 41 SBL = 0.37 (C) 32 SBT = 0.44 (D) 41 SBR = 0.78 (D) 55	EBL = 85 m EBT = 220 m EBR = 45 m WBL = 115 m WBT = 140 m WBR = 5 m NBL = 75 m NBTR = 65 m SBL = 30 m SBT = 50 m SBR = 90 m	<u>Overall: <b>0.99</b> (D) 55</u> EBL = 0.76 (E) 60 EBT = 0.74 (D) 39 EBR = 0.23 (C) 22 WBL = 0.86 (D) 54 WBT = <b>1.04</b> (E) 70 WBR = 0.06 (C) 25 NBL = 0.87 (E) 74 NBTR = 0.8 (D) 53 SBL = 0.47 (D) 37 SBT = 0.5 (D) 46 SBR = 0.85 (D) 51	EBL = 75 m EBT = 145 m EBR = 35 m WBL = 130 m WBT = 290 m WBR = 15 m NBL = 85 m NBTR = 110 m SBL = 30 m SBT = 65 m SBR = 140 m
Future Total 2035	<u>Overall: <b>0.89</b> (D) 48</u> EBL = 0.92 (E) 72 EBT = <b>0.93</b> (D) 46 EBR = 0.29 (C) 28 WBL = 0.92 (E) 68 WBT = 0.74 (D) 36 WBR = 0.05 (C) 25 NBL = 0.91 (F) 81 NBTR = 0.56 (D) 41 SBL = 0.66 (D) 37 SBT = 0.53 (D) 42 SBR = 0.76 (D) 52	EBL = 110 m EBT = 225 m EBR = 50 m WBL = 120 m WBT = 145 m WBR = 10 m NBL = 75 m NBTR = 70 m SBL = 50 m SBT = 65 m SBR = 95 m	<u>Overall: <b>1.04</b> (E) 71</u> EBL = <b>0.95</b> (F) 86 EBT = 0.77 (D) 43 EBR = 0.26 (C) 25 WBL = 0.9 (E) 66 WBT = <b>1.14</b> (F) 111 WBR = 0.21 (C) 30 NBL = <b>0.96</b> (F) 96 NBTR = 0.82 (D) 54 SBL = 0.76 (D) 48 SBT = 0.49 (D) 45 SBR = 0.79 (D) 44	EBL = 115 m EBT = 155 m EBR = 40 m WBL = 140 m WBT = 325 m WBR = 40 m NBL = 90 m NBTR = 120 m SBL = 55 m SBT = 70 m SBR = 140 m

The results of the sensitivity analysis revealed that the provision of dual left-turn lanes in the eastbound and northbound approaches significantly reduced the capacity constraints of the intersection of Dundas Street West and Neyagawa Boulevard. The sensitivity analysis included lost time adjustments of 2 seconds for the eastbound left-turn movement during the a.m. peak hour only under the 2035 horizon year while a 2 second lost time adjustment was applied to the eastbound left-turn, westbound through, and northbound left-turn movement during the p.m. peak hour under all three horizon years. The sensitivity analysis also included an increase to the cycle length from 140 to 150 seconds during the p.m. peak hour beginning in the 2032 horizon year.

## 7.2 Neyagawa Boulevard and Sixteen Mile Drive

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

**Table 7 Capacity analysis of Neyagawa Boulevard and Sixteen Mile Drive**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Existing 2024	Overall: 0.42 (B) 10 EBTLR = 0.01 (B) 16 WBTLR = 0.55 (C) 20 NBL = 0.05 (A) 7 NBTR = 0.38 (A) 9 SBL = 0.06 (A) 7 SBTR = 0.36 (A) 9	EBTLR = 0 m WBTLR = 25 m NBL = 5 m NBTR = 40 m SBL = 5 m SBTR = 40 m	Overall: 0.53 (B) 16 EBTLR = 0.04 (B) 16 WBTLR = 0.68 (C) 24 NBL = 0.11 (B) 11 NBTR = 0.48 (B) 15 SBL = 0.16 (A) 10 SBTR = 0.41 (B) 13	EBTLR = 10 m WBTLR = 55 m NBL = 10 m NBTR = 55 m SBL = 10 m SBTR = 50 m
Future Background 2030	Overall: 0.53 (B) 14 EBTLR = 0.01 (B) 16 WBTLR = 0.62 (C) 22 NBL = 0.06 (B) 10 NBTR = 0.51 (B) 14 SBL = 0.14 (A) 9 SBTR = 0.43 (B) 12	EBTLR = 0 m WBTLR = 45 m NBL = 5 m NBTR = 60 m SBL = 10 m SBTR = 55 m	Overall: 0.67 (C) 20 EBTLR = 0.04 (B) 17 WBTLR = 0.79 (C) 32 NBL = 0.12 (B) 13 NBTR = 0.62 (B) 20 SBL = 0.37 (B) 12 SBTR = 0.46 (B) 16	EBTLR = 10 m WBTLR = 80 m NBL = 10 m NBTR = 80 m SBL = 20 m SBTR = 65 m
Future Total 2030	Overall: 0.53 (B) 15 EBTLR = 0.03 (B) 16 WBTLR = 0.63 (C) 23 NBL = 0.17 (A) 9 NBTR = 0.5 (B) 14 SBL = 0.13 (B) 10 SBTR = 0.47 (B) 14	EBTLR = 5 m WBTLR = 50 m NBL = 10 m NBTR = 60 m SBL = 10 m SBTR = 55 m	Overall: 0.67 (C) 21 EBTLR = 0.06 (B) 18 WBTLR = 0.8 (C) 33 NBL = 0.36 (B) 12 NBTR = 0.61 (B) 19 SBL = 0.36 (B) 14 SBTR = 0.55 (C) 20	EBTLR = 10 m WBTLR = 80 m NBL = 25 m NBTR = 80 m SBL = 20 m SBTR = 70 m
Future Background 2032	Overall: 0.55 (B) 14 EBTLR = 0.01 (B) 16 WBTLR = 0.63 (C) 22 NBL = 0.06 (B) 10 NBTR = 0.53 (B) 14 SBL = 0.15 (A) 9 SBTR = 0.45 (B) 12	EBTLR = 0 m WBTLR = 50 m NBL = 5 m NBTR = 65 m SBL = 10 m SBTR = 55 m	Overall: 0.69 (C) 21 EBTLR = 0.04 (B) 17 WBTLR = 0.79 (C) 32 NBL = 0.13 (B) 13 NBTR = 0.66 (C) 21 SBL = 0.4 (B) 13 SBTR = 0.49 (B) 17	EBTLR = 10 m WBTLR = 85 m NBL = 10 m NBTR = 85 m SBL = 20 m SBTR = 65 m
Future Total 2032	Overall: 0.56 (B) 16 EBTLR = 0.05 (B) 18 WBTLR = 0.67 (C) 26 NBL = 0.26 (A) 9 NBTR = 0.49 (B) 13 SBL = 0.14 (B) 11 SBTR = 0.5 (B) 15	EBTLR = 5 m WBTLR = 50 m NBL = 15 m NBTR = 65 m SBL = 10 m SBTR = 60 m	Overall: 0.73 (C) 23 EBTLR = 0.1 (B) 18 WBTLR = 0.83 (D) 36 NBL = 0.6 (B) 14 NBTR = 0.62 (B) 20 SBL = 0.38 (B) 16 SBTR = 0.63 (C) 23	EBTLR = 15 m WBTLR = 85 m NBL = 40 m NBTR = 85 m SBL = 20 m SBTR = 75 m
Future Background 2035	Overall: 0.56 (B) 15 EBTLR = 0.01 (B) 17 WBTLR = 0.67 (C) 25 NBL = 0.06 (B) 11 NBTR = 0.55 (B) 15 SBL = 0.15 (A) 9 SBTR = 0.45 (B) 12	EBTLR = 0 m WBTLR = 55 m NBL = 5 m NBTR = 70 m SBL = 10 m SBTR = 60 m	Overall: 0.72 (C) 22 EBTLR = 0.04 (B) 17 WBTLR = 0.82 (C) 34 NBL = 0.13 (B) 14 NBTR = 0.68 (C) 22 SBL = 0.45 (B) 14 SBTR = 0.51 (B) 18	EBTLR = 10 m WBTLR = 100 m NBL = 10 m NBTR = 90 m SBL = 20 m SBTR = 70 m
Future Total 2035	Overall: 0.6 (B) 17 EBTLR = 0.1 (B) 18 WBTLR = 0.69 (C) 27 NBL = 0.36 (B) 10 NBTR = 0.55 (B) 15 SBL = 0.15 (B) 11 SBTR = 0.55 (B) 16	EBTLR = 15 m WBTLR = 55 m NBL = 20 m NBTR = 70 m SBL = 10 m SBTR = 65 m	Overall: 0.82 (C) 26 EBTLR = 0.14 (B) 19 WBTLR = 0.86 (D) 41 NBL = 0.74 (C) 21 NBTR = 0.64 (C) 21 SBL = 0.43 (B) 18 SBTR = 0.72 (C) 27	EBTLR = 15 m WBTLR = 100 m NBL = 65 m NBTR = 90 m SBL = 20 m SBTR = 85 m

Under existing traffic conditions, the signalized intersection of Neyagawa Boulevard and Sixteen Mile Drive is operating at satisfactory levels with an overall v/c ratio of 0.42 LOS B during the a.m. peak hour and 0.53 LOS B during the p.m. peak hour. The intersection currently operates without a critical movement during both peak hours.

With the addition of corridor growth, background development traffic, and signal improvements to mitigate delays for the 2030 future background traffic scenario, the overall reported v/c of the intersection is expected to increase to 0.53 LOS B during the a.m. peak hour and 0.67 LOS C during the p.m. peak hour. The intersection is reported to continue to operate without any critical movements.

Under the 2030 future total traffic scenario, with the addition of site generated traffic from the first phase of construction, the intersection’s overall v/c is reported to remain at 0.53 LOS B during the a.m. peak hour and 0.67 LOS C during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the continued addition of corridor growth, as well as the same background development traffic and signal improvements to mitigate delays for the 2032 future background traffic scenario, the overall reported v/c of the intersection is expected to increase to 0.55 LOS B during the a.m. peak hour and 0.69 LOS C during the p.m. peak hour. The intersection continues to operate without any critical movements.

With the addition of site generated traffic from the first two phases of construction, the intersection’s overall v/c is reported to remain at 0.56 LOS B during the a.m. peak hour and increase to 0.73 LOS C during the p.m. peak hour. The intersection continues to operate without any critical movements.

With further corridor growth, as well as the same background development traffic and signal improvements to mitigate delays for the 2035 future background traffic scenario, the overall reported v/c of the intersection is expected to increase to 0.56 LOS B during the a.m. peak hour and 0.72 LOS C during the p.m. peak hour. The intersection continues to operate without any critical movements.

With the addition of site generated traffic from the full build-out of the site, the intersection’s overall v/c is reported to increase to 0.60 LOS B during the a.m. peak hour and 0.82 LOS C during the p.m. peak hour. The intersection has begun to report a critical movement with the westbound approach reported to operate with a v/c ratio of 0.86 LOS D, however it operates below the theoretical threshold of 1.00.

There are no geometric improvements recommended for the intersection as a result of the proposed development.

### 7.3 Dundas Street West and Street A

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

**Table 8 Capacity analysis of Dundas Street West and Street A**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Future Total 2030	WBR = 0 ( ) 0 SBR = 0.03 (A) 9	WBR = 0 m SBR = 5 m	WBR = 0 ( ) 0 SBR = 0.06 (B) 10	WBR = 0 m SBR = 5 m
Future Total 2032	WBR = 0 ( ) 0 SBR = 0.06 (A) 9	WBR = 0 m SBR = 5 m	WBR = 0 ( ) 0 SBR = 0.11 (B) 11	WBR = 0 m SBR = 5 m
Future Total 2035	WBR = 0.02 ( ) 0 SBR = 0.11 (A) 10	WBR = 0 m SBR = 5 m	WBR = 0.06 ( ) 0 SBR = 0.18 (B) 11	WBR = 0 m SBR = 5 m

Under future total traffic conditions, the proposed right-in/right-out access at Dundas Street West and Street is reported to operate at satisfactory levels with no delays or queueing reported along Dundas Street West. The

southbound approach is reported to operate at satisfactory levels with a delay of 10 and 11 seconds during the a.m. and p.m. peak hours respectively and a 95<sup>th</sup> percentile queue of 5 metres during both peak hours.

## 7.4 Sixteen Mile Drive and Street A

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

**Table 9 Capacity analysis of Sixteen Mile Drive and Street A**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Future Total 2030	EBTLR = 0 ( ) 0 WBTLR = 0 ( ) 0 NBTLR = 0 (A) 9 SBTLR = 0 (A) 0	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m	EBTLR = 0 ( ) 0 WBTLR = 0 ( ) 0 NBTLR = 0 (A) 10 SBTLR = 0 (A) 0	EBTLR = 0 m WBTLR = 0 m NBTLR = 5 m SBTLR = 0 m
Future Total 2032	EBTLR = 0 ( ) 0 WBTLR = 0.02 ( ) 4 NBTLR = 0 (A) 10 SBTLR = 0 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 0 m SBTLR = 0 m	EBTLR = 0 ( ) 0 WBTLR = 0.02 ( ) 3 NBTLR = 0.01 (B) 10 SBTLR = 0 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m
Future Total 2035	EBTLR = 0 ( ) 0 WBTLR = 0.03 ( ) 5 NBTLR = 0.01 (A) 8 SBTLR = 0 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0 ( ) 0 WBTLR = 0.04 ( ) 4 NBTLR = 0.04 (A) 9 SBTLR = 0 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m

Under future total traffic conditions, the proposed intersection of Sixteen Mile Drive and Street A is operating at satisfactory levels with low levels of delay and queuing. Under the ultimate horizon year, the westbound and northbound approaches are reporting 95<sup>th</sup> percentile queue lengths of 5 metres during both peak hours with the greatest delay occurring in the northbound approach (8 and 9 second delays during the a.m. and p.m. peak hours, respectively).

## 7.5 Sixteen Mile Drive and Street B

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

**Table 10 Capacity analysis of Sixteen Mile Drive and Street B**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Future Total 2030	EBTR = 0.01 ( ) 0 WBTL = 0.03 ( ) 5 NBLR = 0.03 (A) 8	EBTR = 0 m WBTL = 5 m NBLR = 5 m	EBTR = 0.02 ( ) 0 WBTL = 0.07 ( ) 5 NBLR = 0.01 (A) 8	EBTR = 0 m WBTL = 5 m NBLR = 5 m
Future Total 2032	EBTR = 0.02 ( ) 0 WBTL = 0.03 ( ) 3 NBLR = 0.03 (A) 9	EBTR = 0 m WBTL = 5 m NBLR = 5 m	EBTR = 0.02 ( ) 0 WBTL = 0.07 ( ) 3 NBLR = 0.01 (A) 8	EBTR = 0 m WBTL = 5 m NBLR = 5 m
Future Total 2035	EBTR = 0.03 ( ) 0 WBTL = 0.05 ( ) 4 NBLR = 0.05 (A) 9	EBTR = 0 m WBTL = 5 m NBLR = 5 m	EBTR = 0.03 ( ) 0 WBTL = 0.1 ( ) 4 NBLR = 0.02 (A) 9	EBTR = 0 m WBTL = 5 m NBLR = 5 m

Under future total traffic conditions, the proposed intersection of Sixteen Mile Drive and Street B is operating at satisfactory levels with low levels of delay and queuing. Under the ultimate horizon year, the westbound and

northbound approaches are reporting 95<sup>th</sup> percentile queue lengths of 5 metres during both peak hours with the greatest delay occurring in the northbound approach (9 second delays during both peak hours).

## 7.6 Street A and Street B

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

**Table 11 Capacity analysis of Street A and Street B**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Future Total 2030	WBLR = 0.01 (A) 9 NBTR = 0 () 0 SBTL = 0 () 0	WBLR = 5 m NBTR = 0 m SBTL = 0 m	WBLR = 0.02 (A) 9 NBTR = 0 () 0 SBTL = 0 () 0	WBLR = 5 m NBTR = 0 m SBTL = 0 m
Future Total 2032	WBLR = 0.01 (A) 9 NBTR = 0 () 0 SBTL = 0 () 0	WBLR = 5 m NBTR = 0 m SBTL = 0 m	WBLR = 0.02 (A) 9 NBTR = 0 () 0 SBTL = 0 () 0	WBLR = 5 m NBTR = 0 m SBTL = 0 m
Future Total 2035	WBLR = 0.04 (A) 9 NBTR = 0.02 () 0 SBTL = 0 () 0	WBLR = 5 m NBTR = 0 m SBTL = 0 m	WBLR = 0.06 (A) 10 NBTR = 0.06 () 0 SBTL = 0 () 0	WBLR = 5 m NBTR = 0 m SBTL = 0 m

Under future total traffic conditions, the proposed intersection of Street A and Street B is operating at satisfactory levels with low levels of delay and queuing. Under the ultimate horizon year, the westbound approach is reporting 95<sup>th</sup> percentile queue lengths of 5 metres during both peak hours with the greatest delay occurring in the westbound approach (9 and 10 second delays during the a.m. and p.m. peak hours, respectively).

## 7.7 Neyagawa Boulevard and Block 1 Access

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

**Table 12 Capacity analysis of Neyagawa Boulevard and Block 1 Access**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Future Total 2030	EBR = 0.08 (A) 10 SBTR = 0.18 () 0	EBR = 5 m SBTR = 0 m	EBR = 0.07 (A) 10 SBTR = 0.2 () 0	EBR = 5 m SBTR = 0 m
Future Total 2032	EBR = 0.14 (A) 10 SBTR = 0.18 () 0	EBR = 5 m SBTR = 0 m	EBR = 0.11 (A) 10 SBTR = 0.21 () 0	EBR = 5 m SBTR = 0 m
Future Total 2035	EBR = 0.23 (B) 10 SBTR = 0.19 () 0	EBR = 10 m SBTR = 0 m	EBR = 0.16 (A) 10 SBTR = 0.22 () 0	EBR = 5 m SBTR = 0 m

Under future total traffic conditions, the proposed right-in/right-out access to Block 1 on Neyagawa Boulevard is operating at satisfactory levels with low levels of delay and queuing. The southbound approach along Neyagawa Boulevard is reported to operate without any delays or queuing. The approach from Block 1 is reported to operate at satisfactory levels with delays of 10 seconds during both peak hours and 95<sup>th</sup> percentile queues of 10 metres and 5 metres during the a.m. and p.m. peak hours respectively under the ultimate horizon year.



## 7.8 Street B and Block 1 Access/Block 2 Access

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

**Table 13 Capacity analysis of Street B and Block 1 Access/Block 2 Access**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Future Total 2030	EBTLR = 0 (A) 0 WBTLR = 0.04 (A) 9 NBTLR = 0 ( ) 0 SBTLR = 0.03 ( ) 7	EBTLR = 0 m WBTLR = 5 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0 (A) 0 WBTLR = 0.05 (A) 10 NBTLR = 0 ( ) 0 SBTLR = 0.07 ( ) 7	EBTLR = 0 m WBTLR = 5 m NBTLR = 0 m SBTLR = 5 m
Future Total 2032	EBTLR = 0.07 (A) 10 WBTLR = 0.04 (A) 9 NBTLR = 0 ( ) 0 SBTLR = 0.03 ( ) 7	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.06 (B) 11 WBTLR = 0.05 (A) 10 NBTLR = 0 ( ) 0 SBTLR = 0.07 ( ) 7	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 5 m
Future Total 2035	EBTLR = 0.13 (B) 11 WBTLR = 0.05 (A) 9 NBTLR = 0 ( ) 0 SBTLR = 0.03 ( ) 5	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.09 (B) 12 WBTLR = 0.06 (B) 11 NBTLR = 0 ( ) 0 SBTLR = 0.07 ( ) 5	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 5 m

Under future total traffic conditions, the proposed accesses to Street B from Blocks 1 and 2 is reported to operate at satisfactory levels with low levels of delay and queuing.

The greatest delays are reported to occur in the eastbound approach during the ultimate horizon year with an 11 second delay during the a.m. peak hour and 12 seconds during the p.m. peak hour. In addition, the eastbound, westbound, and northbound approaches are all operating with 95<sup>th</sup> percentile queue lengths of 5 metres during both peak hours.

## 7.9 Sixteen Mile Drive and Block 2 Access

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

**Table 14 Capacity analysis of Sixteen Mile Drive and Block 2 Access**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Future Total 2032	EBTR = 0.01 ( ) 0 WBTL = 0.03 ( ) 5 NBLR = 0.06 (A) 9	EBTR = 0 m WBTL = 5 m NBLR = 5 m	EBTR = 0.02 ( ) 0 WBTL = 0.08 ( ) 6 NBLR = 0.08 (B) 11	EBTR = 0 m WBTL = 5 m NBLR = 5 m
Future Total 2035	EBTR = 0.01 ( ) 0 WBTL = 0.04 ( ) 6 NBLR = 0.09 (A) 9	EBTR = 0 m WBTL = 5 m NBLR = 5 m	EBTR = 0.04 ( ) 0 WBTL = 0.1 ( ) 6 NBLR = 0.13 (B) 12	EBTR = 0 m WBTL = 5 m NBLR = 5 m

Under future total traffic conditions, the proposed access to Sixteen Mile Drive from Block 2 is reported to operate at satisfactory levels. The proposed access to Sixteen Mile Drive is reported to operate with a 9 second delay during the a.m. peak hour and 12 second delay during the p.m. peak hour.

## 7.10 Street B and Block 3 Access

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

**Table 15 Capacity analysis of Street B and Block 3 Access**

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 <sup>th</sup> % Que.	V/C (LOS) seconds	95 <sup>th</sup> % Que
Future Total 2035	EBTR = 0.01 ( ) 0 WBTL = 0.02 ( ) 5 NBLR = 0.09 (A) 9	EBTR = 0 m WBTL = 5 m NBLR = 5 m	EBTR = 0.03 ( ) 0 WBTL = 0.03 ( ) 5 NBLR = 0.07 (A) 9	EBTR = 0 m WBTL = 5 m NBLR = 5 m

Under future total traffic conditions, the proposed accesses to Street B from Block 3 is reported to operate at satisfactory levels with low levels of delay and queuing. The access is reported to operate with a 9 second delay and 95<sup>th</sup> percentile queue of 5 metres during both peak hours.

## 8. Parking Review

GHD reviewed the Town's current Zoning By-Law parking and loading requirements for the subject site.

### 8.1 Town of Oakville By-Law 2009-189

#### 8.1.1 Vehicular Parking

The current Town of Oakville Zoning By-Law 2009-189 minimum parking requirements are found in Section 5.1.2.1, Table 5.1A for residential uses. The minimum By-Law requirement for the subject site is as follows:

- Apartment – More than 4 storey
  - Up to 1.25 parking spaces per unit, plus
  - 0.20 parking spaces per unit for visitors
- Retail
  - 1 parking space per 30 m<sup>2</sup> of leasable floor area, minimum
  - 1 parking space per 20 m<sup>2</sup> of leasable floor area, maximum

The minimum parking required for the subject site with 2,278 dwelling units is as follows:

- Block 1
  - 1.25 parking spaces per unit x 653 units = 816 spaces
  - 0.20 parking spaces per unit x 653 units = 131 spaces for visitors
  - 1 parking space per 30 m<sup>2</sup> of leasable floor area x 1,079 m<sup>2</sup> of retail = 36 spaces, minimum
  - 1 parking space per 20 m<sup>2</sup> of leasable floor area x 1,079 m<sup>2</sup> of retail = 54 spaces, maximum
- Block 2
  - 1.25 parking spaces per unit x 996 units = 1,245 spaces
  - 0.20 parking spaces per unit x 996 units = 199 spaces for visitors
  - 1 parking space per 30 m<sup>2</sup> of leasable floor area x 472 m<sup>2</sup> of retail = 16 spaces, minimum

- 1 parking space per 20 m<sup>2</sup> of leasable floor area x 472 m<sup>2</sup> of retail = 24 spaces, maximum
- Block 3
  - 1.25 parking spaces per unit x 629 units = 787 spaces
  - 0.20 parking spaces per unit x 629 units = 126 spaces for visitors

In total, the subject site is required to provide up to 2,848 resident spaces, a minimum of 456 visitor parking spaces, and the retail component is required to provide a minimum of 52 spaces and a maximum of 78 spaces.

## 8.1.2 Accessible Parking

The minimum requirement for accessible parking spaces can also be found in the Town of Oakville Zoning By-Law 2009-189, Section 5.2.1, Table 5.2. The minimum By-Law requirement accessible parking for the subject site is based on the number of parking spaces provided on the lot, as follows:

- Number of parking spaces provided on the lot:
  - Less than 10 spaces: 0 accessible parking spaces
  - 11 to 25 spaces: 1 accessible parking spaces
  - 26 to 50 spaces: 2 accessible parking spaces
  - 51 to 75 spaces: 3 accessible parking spaces
  - 76 to 100 spaces: 4 accessible parking spaces
  - 101 to 150 spaces: 5 accessible parking spaces
  - 151 to 200 spaces: 6 accessible parking spaces
  - 201 to 300 spaces: 7 accessible parking spaces
  - 301 to 400 spaces: 8 accessible parking spaces
  - 401 to 500 spaces: 9 accessible parking spaces
  - 501 to 1,000 spaces: 2% of the total
  - 1,001 spaces and over: 20 spaces plus 1 for each 100 over 1,000

The minimum number of accessible parking spaces required for the subject site is as follow, based on the number of parking spaces provided for each block:

- Block 1
  - Number of parking spaces provided: 789 spaces
  - 2% of 789 spaces = 16 barrier-free spaces
- Block 2
  - Number of parking spaces provided: 1,218 spaces
  - 20 spaces, plus 1 space for each 100 over 1,000 = 23 barrier-free spaces
- Block 3
  - Number of parking spaces provided: 792 spaces
  - 2% of 792 spaces = 16 barrier-free spaces

In total, 55 barrier-free parking spaces are required under the Town's current By-Law.

### 8.1.3 Bicycle Parking

Under the Town's Zoning By-Law 2009-189, the bicycle parking requirements are found in Section 5.7.1, Table 5.7A. The minimum By-Law requirement for bicycle parking for the subject site is as follows:

- Residential uses
  - Bicycle parking spaces – Occupant
    - 0.75 spaces per dwelling unit
  - Bicycle parking spaces – Visitor
    - 0.25 spaces per dwelling unit
- Non-residential uses
  - Bicycle parking spaces required at a rate of 7% of automobile parking spaces, as required by the Zoning By-law, including a minimum of 5 bicycle parking spaces for visitors

Additionally, as per Section 5.7. iv, a maximum of 200 bicycle parking spaces shall be required.

The minimum number of bicycle parking spaces required for the subject site is as follows:

- Block 1
  - 0.75 spaces per dwelling unit x 653 units = 494 spaces
  - 0.25 spaces per dwelling unit x 653 units = 163 spaces
  - 7% of 36 minimum parking spaces required for the non-residential component, with a minimum of 5 spaces required = 5 spaces
- Block 2
  - 0.75 spaces per dwelling unit x 996 units = 747 spaces
  - 0.25 spaces per dwelling unit x 996 units = 249 spaces
  - 7% of 16 minimum parking spaces required for the non-residential component, with a minimum of 5 spaces required = 5 spaces
- Block 3
  - 0.75 spaces per dwelling unit x 629 units = 472 spaces
  - 0.25 spaces per dwelling unit x 629 units = 157 spaces

However, due to the stipulation that a maximum of 200 bicycle parking spaces can be required, it is assumed that each block is required to provide a minimum of 200 bicycle parking spaces. Maintaining the 0.75 and 0.25 bicycle space requirement for occupants and visitors, respectively, for each block, a total of 600 bicycle parking spaces is required for the site, consisting of 450 spaces for occupants and 150 spaces for visitors.

### 8.1.4 Loading Spaces

Loading spaces are not required under the Town's North Oakville Zoning By-law

## 8.2 Proposed Site Parking

The following table summarizes the minimum By-law requirements and the proposed parking/loading supply for the subject site.

**Table 16 Parking Requirements and Provisions**

Type	GFA	By-Law 2009-189 Requirement	Provided
<b>Vehicle Parking</b>	2,278 dwelling units and 1,551 m <sup>2</sup> of retail GFA • Block 1: 653 dwelling units • Block 2: 996 dwelling units • Block 3: 629 dwelling units	Up to 2,848 resident spaces, a minimum of 456 visitor parking spaces, and the retail component is required to provide a minimum of 52 spaces and a maximum of 78 spaces	2,799 vehicle spaces, including 456 visitor spaces
<b>Barrier Free Parking</b>		55 barrier free spaces	86 barrier free spaces
<b>Bicycle Parking</b>		A minimum of 600 bicycle parking spaces • 450 spaces for occupants • 150 spaces for visitors, shared between residential and retail uses	2,173 bicycle parking spaces • 2,023 spaces for occupants (provided in lockers) • 150 spaces for visitors, shared between residential and retail uses
<b>Loading Spaces</b>		No minimum requirement	7 loading areas

The subject site meets or exceeds the Town’s Zoning By-Law requirement for vehicle parking, barrier free spaces, bicycle parking and loading spaces.

## 9. Site Plan Review

### 9.1 Access Width and Radii

Site access design standards for the Town of Oakville are established under their Department of Public Works Standard Drawings, STD. 10-2 (Driveway Entrance Criteria). Site accesses for multiple residential land uses on major roadways are required to have a minimum width of 7.5 metres and a maximum width of 9.0 metres with its minimum curb return radii required to be a minimum of 6.0 metres and a maximum of 7.5 metres.

Site access design standards for the Region of Halton are established under their Access Management Guideline, Section 5.2. Site accesses for residential land uses on urban roadways are required to have a minimum width of 3.5 metres and a maximum width of 7.5 metres with its minimum curb return radii required to be a minimum of 1.5 metres and a maximum of 4.5 metres.

The subject site proposes to include one access onto Regional roads and four accesses onto existing or proposed Town roads.

The right-in/right-out access onto Neyagawa Boulevard is located on a Regional road and is subject to their design standards. The access is proposed to be design with a width of 9.8 metres, including a 2.8 metre wide median, and a 7.5 metre curb return radius, satisfying the Region’s design standards.

The four accesses onto existing or proposed Town roads and their respective specifications are as follows:

- Street B and Block 1 Access: width of 7.5 metres, and inbound/outbound curb return radius of 7.5 metres

- Street B and Block 2 Access: width of 7.5 metres, and inbound/outbound curb return radius of 7.5 metres
- Street B and Block 3 Access: width of 8.0 metres, and inbound/outbound curb return radius of 7.5 metres
- Block 2 Access and Sixteen Mile Drive: width of 7.6 metres, and inbound/outbound curb return radius of 7.5 metres

The proposed site accesses meet the Region and Town’s design requirements for multi residential land uses.

## 10. Travel Demand Management

### 10.1 Travel Demand Management

Travel Demand Management (TDM) refers to a variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system. TDM strategies have multiple benefits including the following:

- Reduced auto-related emissions to improve air quality;
- Decreased traffic congestion to reduce travel time;
- Increased travel options for businesses and commuters;
- Reduced personal transportation costs and energy consumptions; and
- Support Provincial smart growth objectives.

The combined benefits listed above will assist in creating a more active and livable community through improvements to overall active transportation standards for the local businesses and surrounding community.

### 10.2 Existing TDM Opportunities

### 10.3 Recommended TDM Measures

**Table 17** Recommended TDM Strategies

TDM Measure	Responsibility	Cost	Note
<b>Hard Measures</b>			
Pedestrian connections	Applicant	Integrated into the overall development cost	Site plan includes a walkway system providing a connection to the municipal and regional right-of-ways
Bicycle Parking	Applicant	Integrated into the overall development cost. Short term bike parking costs are estimated at \$300 per rack that can accommodate 2 bikes. Values to be confirmed through detailed design.	Bicycle parking will be provided matching and exceeding the requirements of the Town’s Bylaw for long and short term bicycle parking.  Short-term bicycle parking will be provided within well-lit and visible areas.

Soft Measures			
Provide Individualized Marketing Programs & Travel Plans	Applicant	To be determined.	Information packages distributed to residents (Oakville Transit, GO Transit, cycling maps)
Communication strategy	Applicant	To be determined.	Providing information promoting sustainable travel options to employees.

## 11. Pedestrian Circulation Plan

GHD has prepared a pedestrian circulation plan, provided in **Figure 20**, identifying the existing pedestrian active transportation facilities, the future active transportation facilities along the regional/municipal right-of-way, and the internal pedestrian circulation.

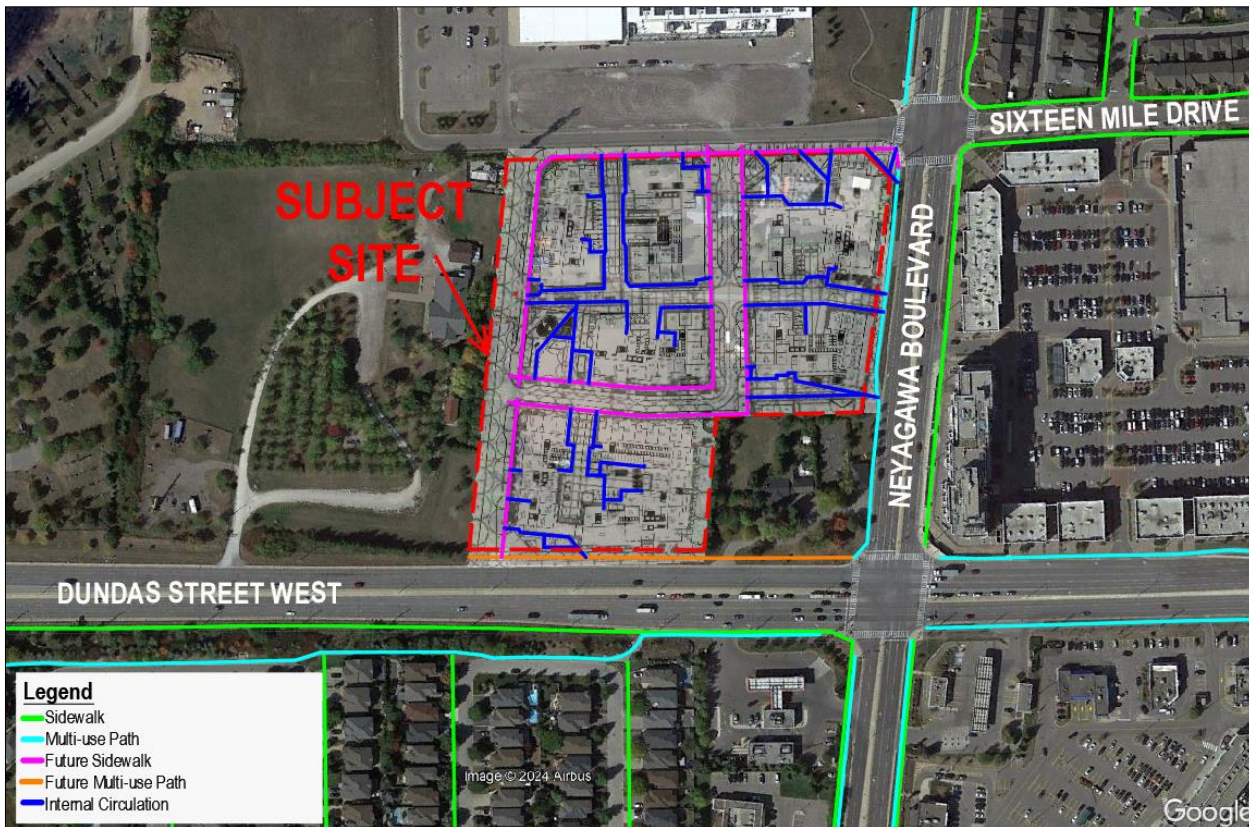


Figure 20 Pedestrian Circulation Plan

## 12. Vehicle Swept Path Analysis

GHD undertook a vehicle swept path analysis to assess the site plan circulation for an emergency vehicle, MSU vehicles, waste collection vehicle, and passenger vehicle within the site. The results of the analysis are provided in **Appendix G** and illustrate that the site can sufficiently accommodate the aforementioned design vehicles with no issues.

## 13. Pavement Marking and Signage Plan

A pavement marking and signage plan has been prepared for each block of the subject site and is provided in **Appendix H**.

## 14. Conclusion

The proposed site plan prepared by Core Architects consists of a residential development within 3 blocks containing 7 high-rise buildings with a total of 2,278 dwelling units and 1,551 m<sup>2</sup> of retail GFA.

Access to the subject site is proposed via two new roads (Street A and Street B) and a proposed right-in/right-out access to Block 1 on Neyagawa Boulevard. Additional accesses are provided to the three blocks from Sixteen Mile Drive and Street B.

Based on ITE Trip Generation rates, the subject site is expected to generate a total of 508 two-way vehicle trips during the a.m. peak hour consisting of 159 inbound and 349 outbound trips. During the p.m. peak hour, it is expected to generate 677 new two-way vehicle trips consisting of 401 inbound and 276 outbound trips.

Under existing traffic conditions, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under future traffic conditions, with the addition of corridor growth, background development traffic, and the conversion of one through lane in each direction to an HOV lane on Dundas Street West, and site generated traffic, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the intersection of Dundas Street West and Neyagawa Boulevard.

A sensitivity analysis was completed for the intersection of Dundas Street West and Neyagawa Boulevard to include a dual left-turn lane in the eastbound and northbound approaches. The provision of the dual left-turn lane mitigates the over-capacity operation of all movements with the exception of the westbound through movement during the p.m. peak hour under the 2035 horizon year.

Application of the Town of Oakville By-Law 2009-189 parking rates to the subject site results in a requirement of up to 2,860 vehicle parking spaces for residents, a minimum of 459 parking spaces for visitors, a minimum of 54 barrier free spaces, and a minimum of 600 bicycle parking spaces (450 resident spaces and 150 visitor spaces).

The subject site provides a total of 2,765 vehicle parking spaces, including 459 visitor spaces, 91 barrier free spaces, and 2,090 bicycle parking spaces (1,940 lockers that can store a bicycle and 150 short-term spaces). The Town's minimum By-Law requirements are satisfied.

The Town's design standards require accesses to be designed with a minimum width of 7.5 metres and a maximum width of 9.0 metres with its minimum curb return radii required to be a minimum of 6.0 metres and a maximum of 7.5 metres. The Region's design standards require accesses to be designed with a minimum width of 3.5 metres and a maximum width of 7.5 metres with its minimum curb return radii required to be a minimum of 1.5 metres and a maximum of 4.5 metres. The subject site proposes to include two accesses onto Regional roads and four accesses onto existing or proposed Town roads that satisfy the Town and Region guidelines.

TDM measures are proposed for the subject site to encourage employees to explore various modes of transportation in order to reduce their dependency on single occupancy vehicle trips. These measures include bicycle parking and education material.

GHD assessed the site circulation for emergency vehicles, MSU trucks, waste collection vehicles, and passenger vehicles and confirmed no issues with the site circulation.

The traffic study confirms that the proposed residential development can be accommodated on the existing/planned road network.



# **Appendix A**

## **Terms of Reference**

## Raf Andrenacci

---

**From:** Will Maria  
**Sent:** Tuesday, March 5, 2024 10:17 AM  
**To:** Raf Andrenacci  
**Subject:** FW: Neyagawa Blvd

**DISABLEFILINGSTATUS:** 0

Will

**William C. Maria, P.Eng.**  
Transportation Planning Lead

### GHD Ltd.

T: 905 814 4397 | C: 647 229 8541 | F: 905 890 8499 | E: [will.maria@ghd.com](mailto:will.maria@ghd.com)  
100 Milverton Drive Suite 404, Mississauga, ON L5R 4H1 | [www.ghd.com](http://www.ghd.com)

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**From:** Syed Rizvi <[syed.rizvi@oakville.ca](mailto:syed.rizvi@oakville.ca)>  
**Sent:** Thursday, February 22, 2024 12:13 AM  
**To:** Will Maria <[William.Maria@ghd.com](mailto:William.Maria@ghd.com)>  
**Subject:** RE: Neyagawa Blvd

Hi Will,

Thanks for providing the TOR's for review. Please see comments that are added in red below.

Thanks,  
Syed

---

**From:** Will Maria <[William.Maria@ghd.com](mailto:William.Maria@ghd.com)>  
**Sent:** Tuesday, February 20, 2024 11:54 AM  
**To:** Syed Rizvi <[syed.rizvi@oakville.ca](mailto:syed.rizvi@oakville.ca)>  
**Subject:** FW: Neyagawa Blvd

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

Friendly reminder to please provide the Town's response to the ToR for this Project as we discussed last week.  
Thanks Syed.

Will

**William C. Maria, P.Eng.**

## Transportation Planning Lead

### GHD Ltd.

T: 905 814 4397 | C: 647 229 8541 | F: 905 890 8499 | E: [will.maria@ghd.com](mailto:will.maria@ghd.com)  
100 Milverton Drive Suite 404, Mississauga, ON L5R 4H1 | [www.ghd.com](http://www.ghd.com)

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**From:** Will Maria <[William.Maria@ghd.com](mailto:William.Maria@ghd.com)>  
**Sent:** Friday, February 9, 2024 12:13 PM  
**To:** Syed Rizvi <[syed.rizvi@oakville.ca](mailto:syed.rizvi@oakville.ca)>  
**Subject:** RE: Neyagawa Blvd

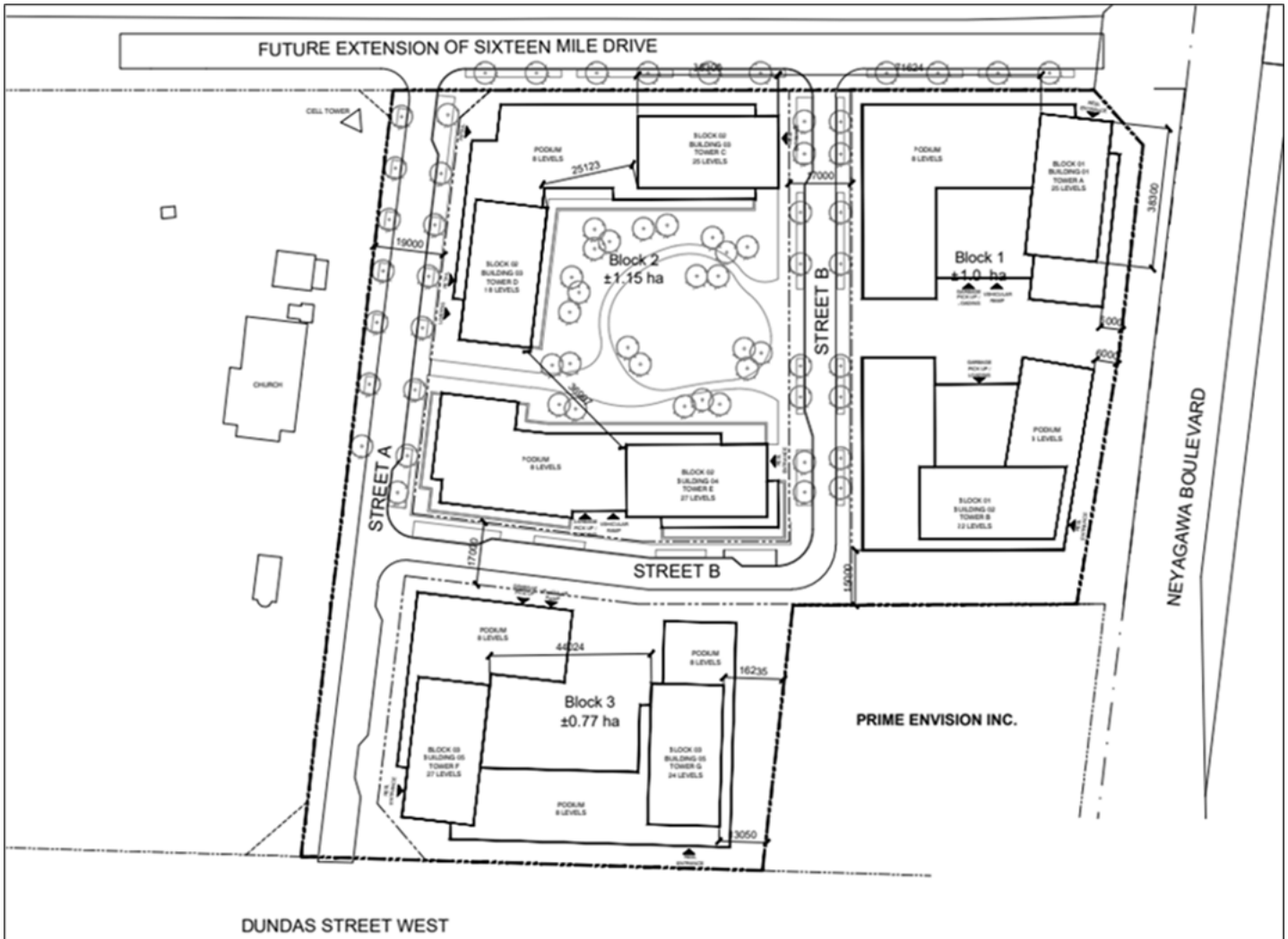
Hi Syed, I was asking about the ToR below that Aquisha forwarded to you.

GHD Inc. has been retained to prepare a Transportation Impact Study for a proposed development on lands located on the northwest corner of Dundas Street West and Neyagawa Boulevard in the Town of Oakville.



The subject site consists of five high-rise buildings within three blocks with a total of 2,491 dwelling units. **Confirm 5 building are planned to be build and open simultaneously or phased construction is planned.**

Access to the subject site is proposed via two driveways: one driveway along the future extension of Sixteen Mile Drive and one driveway along Street A (a north/south road that will intersect Dundas Street West and the future extension of Sixteen Mile Drive. Both driveways provide connections to Street B, a future roadway in the shape of a backwards “L”. All three blocks will have access onto Street B.



In order to properly scope this project, we ask that the Region and Town review and provide comments on the following scope and provide any additional items required as part of the study.

**Study intersections**

- Existing
  - Dundas Street West and Neyagawa Boulevard
  - Neyagawa Boulevard and Sixteen Mile Drive
- New
  - Dundas Street West and Street A (Right-in/out)
  - Sixteen Mile Drive and Street A (Full moves)
  - Sixteen Mile Drive and site access (Right-in/out)
  - Street A and site access

**Traffic Data**

Updated traffic counts at the existing study intersections will be undertaken during the a.m. and p.m. peak hours.

## **Study Peak Hours**

Weekday a.m. and p.m. peak hours

## **Study Horizon Year**

2024 (existing) and 2029 (five years from the date of the study), as per the Region's TIS Guidelines. **Include existing, buildout year/ phase years (in case phased development is planned) as analysis period (see region and town TIS guidelines).**

## **Background Growth Rate**

GHD will consult with Town and Region staff to determine the growth rates to be used.

## **Background Development Traffic**

GHD has identified the following developments within the surrounding area that would generate additional traffic along the study area roadway:

- 393 Dundas Street West
- 407 Dundas Street
- 509 Dundas Street West
- 3009 Gladeside

Please confirm if there are any additional developments that should be included.

## **Trip Generation**

Will be completed using rates published by the ITE Trip Generation 11<sup>th</sup> Edition, LUC 222 Multifamily Housing (High-Rise).

The directional distribution of traffic approaching and departing the site will be determined based on the TTS 2016 data, existing local patterns, and first principles.

The analysis will identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements.

TAC, Region, and Town guidelines will be reviewed in order to complete an access management.

Review for the site access that reviews corner clearance, driveway spacing, auxiliary lanes, corner radii, and clear throat distance.

GHD will review and assess the appropriateness of the proposed accesses and layby areas and potential queuing concerns onto adjacent roads.

Complete AutoTurn assessment of the proposed loading and parking areas.

Existing TDM opportunities will be identified and future TDM opportunities will be recommended for the site.

The parking supply will be reviewed in accordance with the Town's Zoning By-law

If the above scope is acceptable to the Town and Region, it will form the basis of our scope of work.

Will

**William C. Maria, P.Eng.**

## Raf Andrenacci

---

**From:** Khan, Ayesha <Ayesha.Khan@halton.ca>  
**Sent:** Monday, February 5, 2024 9:28 AM  
**To:** Raf Andrenacci  
**Subject:** RE: Terms of Reference - 3056 Neyagawa

You don't often get email from ayesha.khan@halton.ca. [Learn why this is important](#)

Hello Raf,  
Thank you for circulating to us.

The TOR is generally acceptable. Please find some additional notes below:

### **Mode Splits:**

Halton's 2011 Transportation Master Plan utilizes a transit mode split of 10% for 2021, 15% for 2026 and 20% for 2031. Transit mode splits must be adjusted from the 2011 TMP assumptions to reasonable percentages based on current year and planned horizon years proposed mode splits, established on existing facilities and service in the area to date, and planned/proposed facilities and service. Reasonable assumptions and rationale must be clearly outlined in the Study.

### **Traffic Data:**

Any Regional information (traffic counts, signal timing) if needed, can be obtained from Halton through a request to our Road Operations staff at [trafficdatarequets@halton.ca](mailto:trafficdatarequets@halton.ca)

### **Growth Rate & HOV Analysis:**

Dundas Street is already widened to 6 lanes along this section.

A growth rate of 2% would be acceptable to use.

Dundas Street can be analyzed as six general purpose lanes for year 2024 (based on existing conditions), and four lanes plus HOV lane (with assumption that 20% of the lane capacity is assigned to HOV usage by using a 0.8 lane utilization factor) for year 2029 (build-out).

### **Background Developments:**

Town staff will provide/approve all background developments to consider as part of the study.

### **Access:**

The proposed development must conform to Halton Region's Access By-Law NO. 32-17, a By-Law to prohibit, restrict and regulate access to the Regional Road System to maintain a high level of service for through traffic. The Access By-Law NO. 32-17 is available online at: <https://www.halton.ca/Repository/By-law-32-17-Regional-Roads>. Section 6.1 (a) of the Access By-law states that *"access to a Regional Road from private property shall be permitted only where such access is necessary because access to a local road is not feasible."*

Access to a Regional Road must conform to Halton Region's Access Management Guideline (2015). The Access Management Guideline document is available online at: <https://www.halton.ca/Repository/Access-Management-Guideline>.

## General

The TIS report will include:

- Site Plan and Map,
- Size & Number of Development Phases,
- Existing Conditions (Study Area Intersections, Road Network, Pedestrian Routes, Cycling Routes, Transit Services),
- Existing Traffic Conditions (Site Operating Characteristics, Data Collection/Traffic Counts, Analysis Periods (5 years Ahead),
- Future Background Conditions (Horizon Years, Horizon Year Volumes)
- Background Traffic Demand (with TMC's < 2 years old),
- Background Traffic Demand Forecast (with acceptable growth rates)
- Site Generated Traffic (Transit Modal Split, Trip Generation/Distribution/Assignment)
- Future Total Traffic Demand,
- Capacity Analysis (by Intersection, with LOS, Avg. Delay, V/C ratios),
- Traffic Impacts (Tables – Total Traffic with/without Mitigation)
- Access Considerations – Existing, Proposed, Geometrics (turn lanes, sight lines),
- Recommendations - Identify required/recommended road improvements either as a result of the development impacts, or general non-development improvements.
- TDM recommendations (Transit, Pedestrian & Cycling Facilities Analysis)
- Conclusions
- Appendices with Terms of Reference correspondence from all agencies

The above is also subject to the review and approval by the Town of Oakville.

Thanks,  
Ayesha

### **Ayesha Khan**

**Transportation Planning Coordination PM1**

Infrastructure Planning & Policy

Public Works

**Halton Region**

905-825-6000, ext. | 1-866-442-5866



halton.ca 311

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**From:** Raf Andrenacci <[Raf.Andrenacci@ghd.com](mailto:Raf.Andrenacci@ghd.com)>

**Sent:** Tuesday, January 30, 2024 3:29 PM

**To:** Khan, Ayesha <[Ayesha.Khan@halton.ca](mailto:Ayesha.Khan@halton.ca)>; Aquisha Khan <[aquisha.khan@oakville.ca](mailto:aquisha.khan@oakville.ca)>

**Cc:** Will Maria <[William.Maria@ghd.com](mailto:William.Maria@ghd.com)>

**Subject:** Terms of Reference - 3056 Neyagawa

**CAUTION:** This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. If you are unsure or need assistance please contact the IT Service Desk.

Hello,

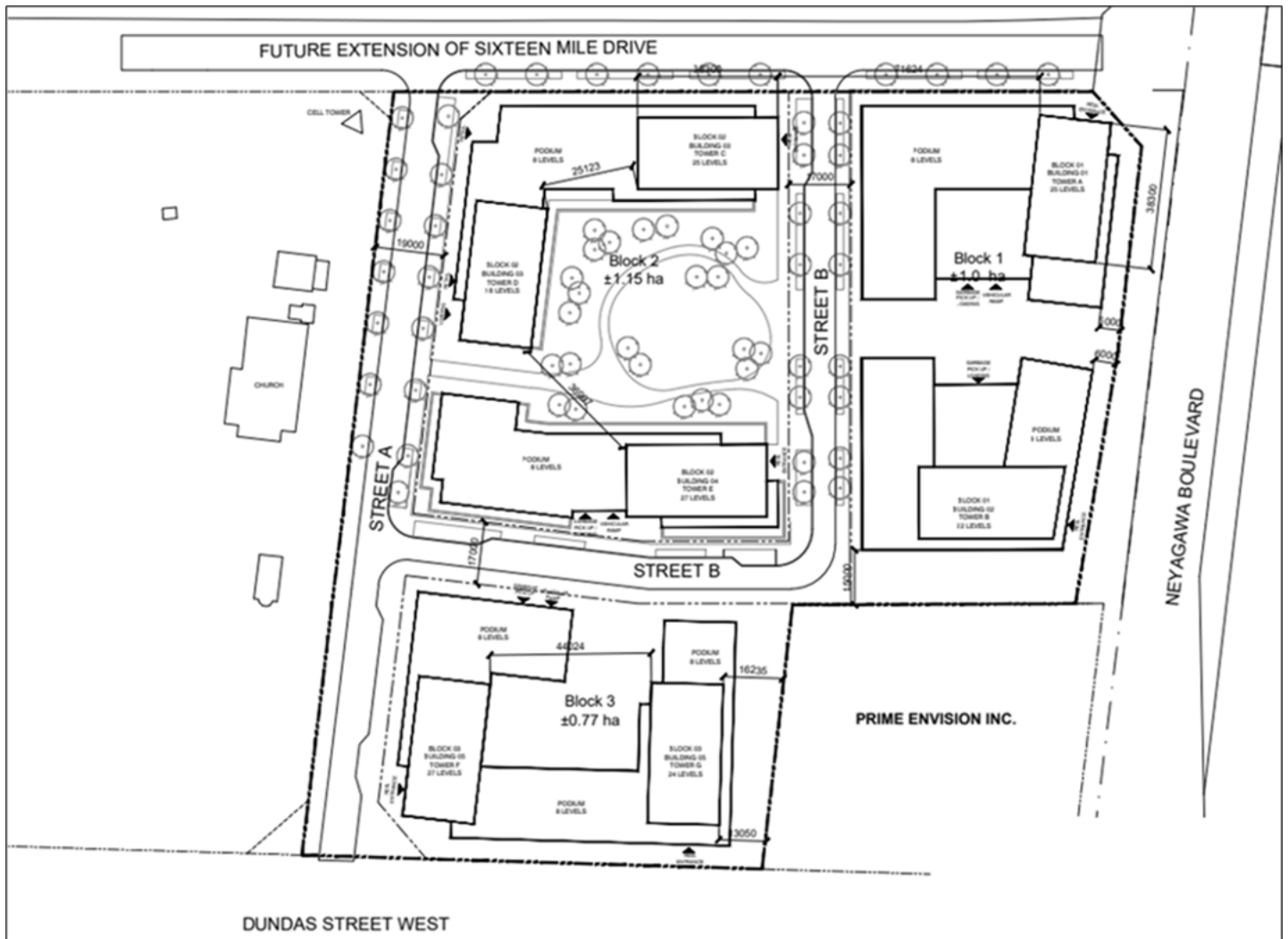
GHD Inc. has been retained to prepare a Transportation Impact Study for a proposed development on lands located on the northwest corner of Dundas Street West and Neyagawa Boulevard in the Town of Oakville.



The subject site consists of five high-rise buildings within three blocks with a total of 2,491 dwelling units.

Access to the subject site is proposed via two driveways: one driveway along the future extension of Sixteen Mile Drive and one driveway along Street A (a north/south road that will intersect Dundas Street West and the future extension of Sixteen Mile Drive). Both driveways provide connections to Street B, a future roadway in the shape of a backwards "L". All three blocks will have access onto Street B.





In order to properly scope this project, we ask that the Region and Town review and provide comments on the following scope and provide any additional items required as part of the study.

**Study intersections**

- Existing
  - Dundas Street West and Neyagawa Boulevard
  - Neyagawa Boulevard and Sixteen Mile Drive
- New
  - Dundas Street West and Street A (Right-in/out)
  - Sixteen Mile Drive and Street A (Full moves)
  - Sixteen Mile Drive and site access (Right-in/out)
  - Street A and site access

**Traffic Data**

Updated traffic counts at the existing study intersections will be undertaken during the a.m. and p.m. peak hours.

**Study Peak Hours**

Weekday a.m. and p.m. peak hours

**Study Horizon Year**

2024 (existing) and 2029 (five years from the date of the study), as per the Region’s TIS Guidelines

**Background Growth Rate**

GHD will consult with Town and Region staff to determine the growth rates to be used.

**Background Development Traffic**

GHD has identified the following developments within the surrounding area that would generate additional traffic along the study area roadway:

- 393 Dundas Street West
- 407 Dundas Street
- 509 Dundas Street West
- 3009 Gladeside

Please confirm if there are any additional developments that should be included.

### **Trip Generation**

Will be completed using rates published by the ITE Trip Generation 11<sup>th</sup> Edition, LUC 222 Multifamily Housing (High-Rise).

The directional distribution of traffic approaching and departing the site will be determined based on the TTS 2016 data, existing local patterns, and first principles.

The analysis will identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements.

TAC, Region, and Town guidelines will be reviewed in order to complete an access management.

Review for the site access that reviews corner clearance, driveway spacing, auxiliary lanes, corner radii, and clear throat distance.

GHD will review and assess the appropriateness of the proposed accesses and layby areas and potential queuing concerns onto adjacent roads.

Complete AutoTurn assessment of the proposed loading and parking areas.

Existing TDM opportunities will be identified and future TDM opportunities will be recommended for the site.

The parking supply will be reviewed in accordance with the Town's Zoning By-law

If the above scope is acceptable to the Town and Region, it will form the basis of our scope of work.

Thank you,

Raf

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# Appendix B

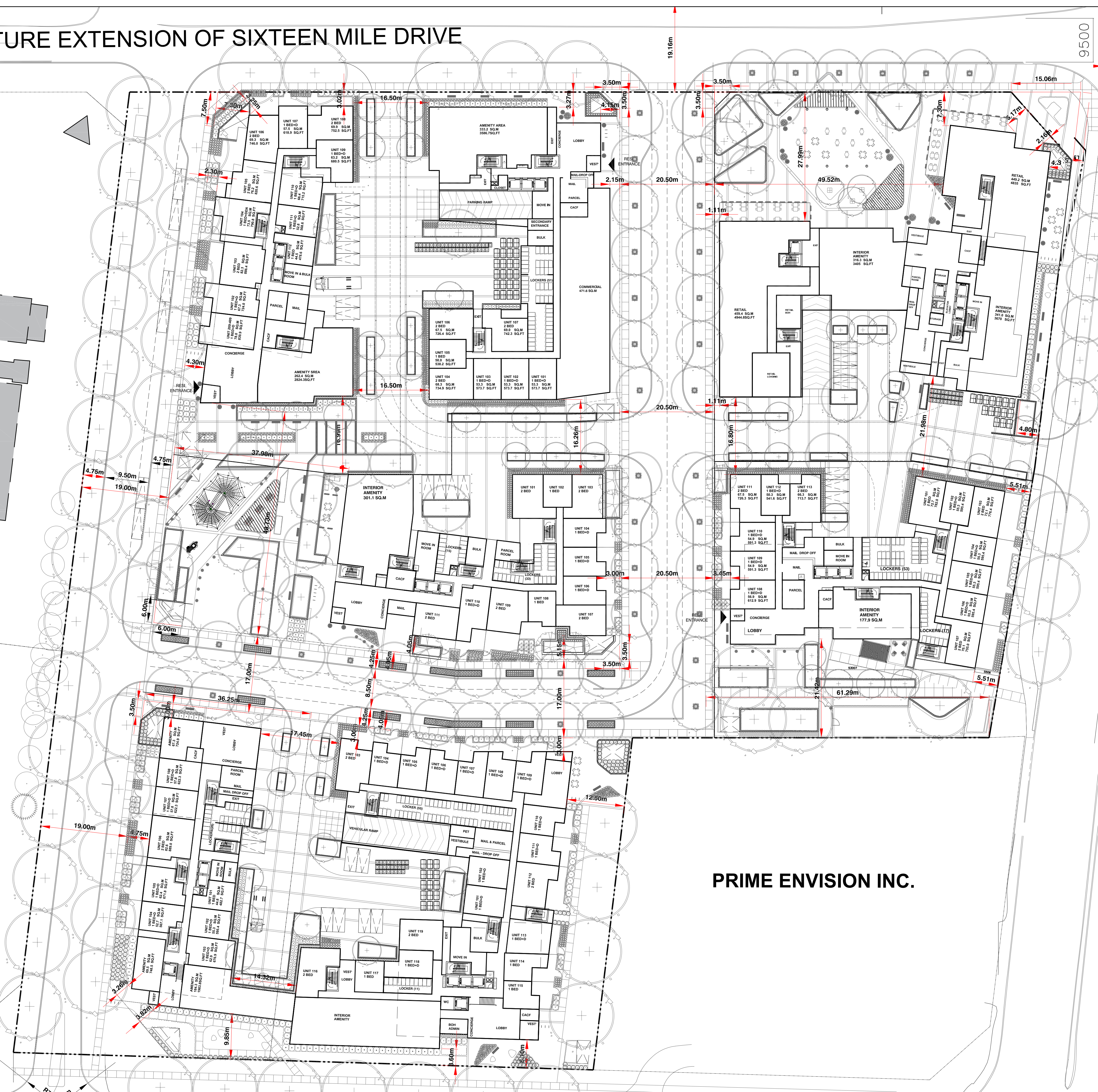
Site Plan

FUTURE EXTENSION OF SIXTEEN MILE DRIVE

9500

Block 4  
8 ha

Block 5  
5 ha



NE'YAGAWA BOULEVARD

PRIME ENVISION INC.

**COREARCHITECTS**  
 180 QUEENS QUAY EAST, SUITE 700, WEST TOWER  
 TORONTO, ON CANADA M5A 0P6  
 T +1 416 343 0400 • F +1 416 343 0401  
 INFO@COREARCHITECTS.COM  
 WWW.COREARCHITECTS.COM

# Appendix C

Traffic Data



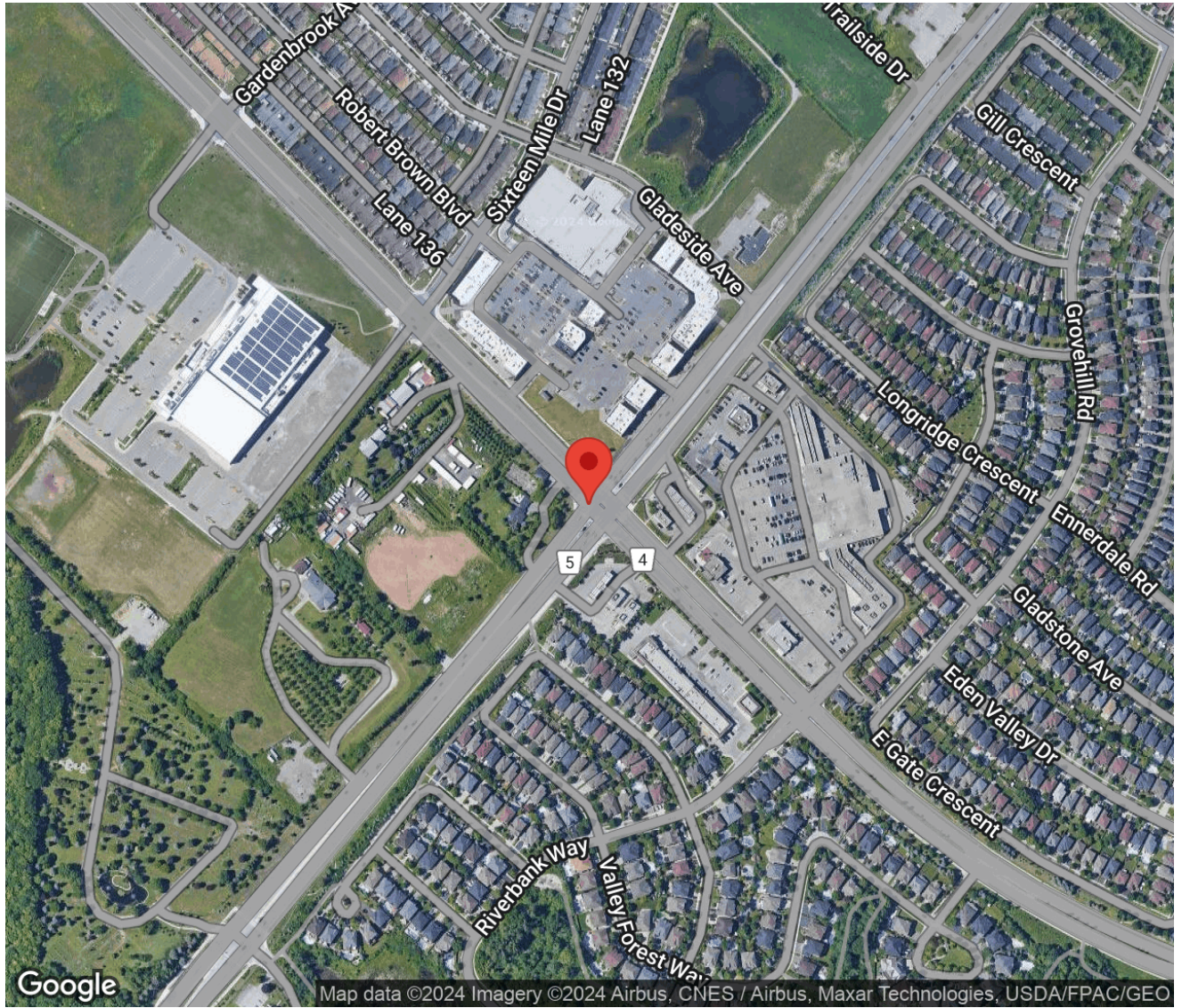
## Project #24-098 - GHD

### Intersection Count Report

**Intersection:** Dundas St W & Neyagawa Blvd  
**Municipality:** Oakville  
**Count Date:** Tuesday, Mar 19, 2024  
**Site Code:** 2409800001  
**Count Categories:** Cars, Trucks, Bicycles, Pedestrians  
**Count Period:** 07:00-09:00, 16:00-18:00  
**Weather:** Clear  
**Comments:**

## Traffic Count Map

Intersection: Dundas St W & Neyagawa Blvd  
Site Code: 2409800001  
Municipality: Oakville  
Count Date: Mar 19, 2024





## Traffic Count Summary

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### Neyagawa Blvd - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
<b>07:00 - 08:00</b>	50	153	257	0	460	17	152	176	36	1	365	3	825
<b>08:00 - 09:00</b>	76	235	353	1	665	2	223	269	74	5	571	7	1236
BREAK													
<b>16:00 - 17:00</b>	78	283	397	0	758	1	265	367	102	5	739	6	1497
<b>17:00 - 18:00</b>	98	282	400	0	780	7	222	403	84	7	716	4	1496
<b>GRAND TOTAL</b>	<b>302</b>	<b>953</b>	<b>1407</b>	<b>1</b>	<b>2663</b>	<b>27</b>	<b>862</b>	<b>1215</b>	<b>296</b>	<b>18</b>	<b>2391</b>	<b>20</b>	<b>5054</b>



## Traffic Count Summary

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### Dundas St W - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
<b>07:00 - 08:00</b>	101	615	19	23	758	6	315	920	152	1	1388	2	2146
<b>08:00 - 09:00</b>	154	820	37	28	1039	6	302	1168	222	0	1692	2	2731
BREAK													
<b>16:00 - 17:00</b>	209	1396	63	28	1696	22	252	887	208	0	1347	3	3043
<b>17:00 - 18:00</b>	195	1183	48	29	1455	19	255	891	218	0	1364	3	2819
<b>GRAND TOTAL</b>	<b>659</b>	<b>4014</b>	<b>167</b>	<b>108</b>	<b>4948</b>	<b>53</b>	<b>1124</b>	<b>3866</b>	<b>800</b>	<b>1</b>	<b>5791</b>	<b>10</b>	<b>10739</b>



## Traffic Count Data

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### North Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	7	20	35	0	62	2	2	3	0	7	0	0	0	0	0	17
07:15	12	24	66	0	102	1	1	5	0	7	0	0	0	0	0	0
07:30	7	36	52	0	95	0	6	1	0	7	0	0	0	0	0	0
07:45	21	62	92	0	175	0	2	3	0	5	0	0	0	0	0	0
08:00	17	72	87	1	177	1	3	2	0	6	0	0	0	0	0	1
08:15	15	47	90	0	152	0	3	3	0	6	0	0	0	0	0	0
08:30	26	55	83	0	164	1	5	5	0	11	0	0	0	0	0	0
08:45	15	49	81	0	145	1	1	2	0	4	0	0	0	0	0	1
<b>SUBTOTAL</b>	120	365	586	1	1072	6	23	24	0	53	0	0	0	0	0	19



## Traffic Count Data

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### North Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	17	63	100	0	180	0	3	5	0	8	0	0	0	0	0	1
16:15	22	77	90	0	189	0	1	5	0	6	0	0	0	0	0	0
16:30	21	66	96	0	183	1	0	0	0	1	0	0	0	0	0	0
16:45	17	71	100	0	188	0	1	1	0	2	0	1	0	0	1	0
17:00	27	67	95	0	189	0	0	0	0	0	0	0	0	0	0	0
17:15	32	71	118	0	221	0	1	1	0	2	0	0	0	0	0	2
17:30	22	70	98	0	190	0	2	0	0	2	0	0	0	0	0	4
17:45	16	71	87	0	174	1	0	1	0	2	0	0	0	0	0	1
<b>SUBTOTAL</b>	174	556	784	0	1514	2	8	13	0	23	0	1	0	0	1	8
<b>GRAND TOTAL</b>	<b>294</b>	<b>921</b>	<b>1370</b>	<b>1</b>	<b>2586</b>	<b>8</b>	<b>31</b>	<b>37</b>	<b>0</b>	<b>76</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>27</b>



## Traffic Count Data

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### South Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds	
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total		
07:00	27	27	7	1	62	0	0	0	0	0	0	0	0	0	0	0	0
07:15	32	43	10	0	85	1	4	0	0	5	0	0	0	0	0	0	0
07:30	38	40	9	0	87	1	2	0	0	3	0	0	0	0	0	0	2
07:45	53	58	8	0	119	0	2	2	0	4	0	0	0	0	0	0	1
08:00	44	64	14	2	124	3	1	0	0	4	0	0	0	0	0	0	4
08:15	43	81	18	1	143	3	2	0	0	5	0	0	0	0	0	0	1
08:30	48	68	25	1	142	3	2	0	0	5	0	0	0	0	0	0	1
08:45	76	46	17	1	140	3	5	0	0	8	0	0	0	0	0	0	1
<b>SUBTOTAL</b>	361	427	108	6	902	14	18	2	0	34	0	0	0	0	0	0	10



## Traffic Count Data

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### South Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	63	79	29	1	172	2	0	1	0	3	0	0	0	0	0	2
16:15	71	87	19	2	179	2	3	0	0	5	0	0	0	0	0	2
16:30	64	85	21	1	171	1	1	0	0	2	0	0	0	0	0	2
16:45	62	112	31	1	206	0	0	1	0	1	0	0	0	0	0	0
17:00	62	106	15	2	185	0	0	0	0	0	0	0	0	0	0	2
17:15	53	108	29	2	192	1	1	0	0	2	0	0	0	0	0	1
17:30	50	91	19	2	162	0	0	0	0	0	0	0	0	0	0	0
17:45	56	97	21	1	175	0	0	0	0	0	0	0	0	0	0	1
<b>SUBTOTAL</b>	481	765	184	12	1442	6	5	2	0	13	0	0	0	0	0	10
<b>GRAND TOTAL</b>	842	1192	292	18	2344	20	23	4	0	47	0	0	0	0	0	20



## Traffic Count Data

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### East Approach - Dundas St W

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	13	110	4	6	133	2	13	0	0	15	0	0	0	0	0	2
07:15	16	122	5	5	148	4	16	2	0	22	0	0	0	0	0	3
07:30	34	152	4	6	196	2	13	0	0	15	0	0	0	0	0	1
07:45	28	174	3	6	211	2	15	1	0	18	0	0	0	0	0	0
08:00	36	148	7	9	200	1	14	1	0	16	0	0	0	0	0	1
08:15	40	187	15	5	247	0	19	0	0	19	0	0	0	0	0	2
08:30	30	221	8	5	264	0	17	0	0	17	0	0	0	0	0	2
08:45	47	199	5	9	260	0	15	1	0	16	0	0	0	0	0	1
<b>SUBTOTAL</b>	244	1313	51	51	1659	11	122	5	0	138	0	0	0	0	0	12



## Traffic Count Data

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### East Approach - Dundas St W

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	57	384	18	6	465	0	17	1	0	18	0	0	0	0	0	6
16:15	38	288	12	6	344	0	11	0	0	11	0	0	0	0	0	9
16:30	70	362	15	5	452	0	8	1	0	9	0	0	0	0	0	3
16:45	44	323	14	11	392	0	3	2	0	5	0	0	0	0	0	4
17:00	56	310	13	5	384	1	7	0	0	8	0	0	0	0	0	4
17:15	43	317	12	6	378	0	3	0	0	3	0	0	0	0	0	7
17:30	47	284	8	9	348	0	4	0	0	4	0	0	0	0	0	3
17:45	48	256	15	9	328	0	2	0	0	2	0	0	0	0	0	5
<b>SUBTOTAL</b>	403	2524	107	57	3091	1	55	4	0	60	0	0	0	0	0	41
<b>GRAND TOTAL</b>	647	3837	158	108	4750	12	177	9	0	198	0	0	0	0	0	53



## Traffic Count Data

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### West Approach - Dundas St W

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	52	174	0	0	226	3	10	2	0	15	0	0	0	0	0	0
07:15	81	201	39	0	321	4	13	2	0	19	0	0	0	0	0	0
07:30	85	265	41	1	392	3	6	6	0	15	0	0	0	0	0	1
07:45	86	246	57	0	389	1	5	5	0	11	0	0	0	0	0	1
08:00	81	275	51	0	407	0	11	0	0	11	0	0	0	0	0	1
08:15	75	312	56	0	443	3	8	2	0	13	0	0	0	0	0	0
08:30	67	270	58	0	395	4	12	1	0	17	0	0	0	0	0	0
08:45	72	263	52	0	387	0	17	2	0	19	0	0	0	0	0	1
<b>SUBTOTAL</b>	599	2006	354	1	2960	18	82	20	0	120	0	0	0	0	0	4





## Traffic Count Data

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### West Approach - Dundas St W

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	56	225	47	0	328	3	4	1	0	8	0	0	0	0	0	1
16:15	54	210	53	0	317	1	14	1	0	16	0	0	0	0	0	0
16:30	67	224	52	0	343	0	7	0	0	7	0	0	0	0	0	0
16:45	69	196	54	0	319	2	7	0	0	9	0	0	0	0	0	2
17:00	55	200	46	0	301	3	4	1	0	8	0	0	0	0	0	1
17:15	55	219	58	0	332	1	14	1	0	16	0	0	0	0	0	0
17:30	68	246	57	0	371	0	6	0	0	6	0	0	0	0	0	0
17:45	71	197	55	0	323	2	5	0	0	7	0	0	0	0	0	2
<b>SUBTOTAL</b>	495	1717	422	0	2634	12	61	4	0	77	0	0	0	0	0	6
<b>GRAND TOTAL</b>	1094	3723	776	1	5594	30	143	24	0	197	0	0	0	0	0	10

## Peak Hour Diagram

### Specified Period

From: 07:00:00  
To: 09:00:00

### One Hour Peak

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

**Intersection:** Dundas St W & Neyagawa Blvd  
**Site Code:** 2409800001  
**Count Date:** Mar 19, 2024

**Weather conditions:** Clear

**\*\* Signalized Intersection \*\***

**Major Road:** Dundas St W runs E/W

### North Approach

	Out	In	Total
	638	590	1228
	27	19	46
	0	0	0
<b>Totals</b>	<b>665</b>	<b>609</b>	<b>1274</b>

### Neyagawa Blvd

	0	0	0	0
	12	12	3	0
	341	223	73	1
<b>Totals</b>	<b>353</b>	<b>235</b>	<b>76</b>	<b>1</b>

### East Approach

	Out	In	Total
	971	1295	2266
	68	51	119
	0	0	0
<b>Totals</b>	<b>1039</b>	<b>1346</b>	<b>2385</b>

### Dundas St W

				Totals
	0	0	0	<b>0</b>
	0	7	295	<b>302</b>
	0	48	1120	<b>1168</b>
	0	5	217	<b>222</b>

Peds: 2

Peds: 2



Peds: 6

### Dundas St W

Totals			
<b>28</b>	28	0	0
<b>37</b>	35	2	0
<b>820</b>	755	65	0
<b>154</b>	153	1	0

Peds: 7

### West Approach

	Out	In	Total
	1632	1307	2939
	60	89	149
	0	0	0
<b>Totals</b>	<b>1692</b>	<b>1396</b>	<b>3088</b>

Totals				
<b>223</b>	211	259	74	5
<b>12</b>	12	10	0	0
<b>0</b>	0	0	0	0

Neyagawa Blvd

### South Approach

	Out	In	Total
	549	598	1147
	22	18	40
	0	0	0
<b>Totals</b>	<b>571</b>	<b>616</b>	<b>1187</b>

- Cars

- Trucks

- Bicycles

### Comments



## Peak Hour Summary

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Count Date: Mar 19, 2024  
 Period: 07:00 - 09:00

### Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Neyagawa Blvd						South Approach Neyagawa Blvd						East Approach Dundas St W						West Approach Dundas St W						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
08:00	18	75	89	1	1	183	47	65	14	2	4	128	37	162	8	9	1	216	81	286	51	0	1	418	945
08:15	15	50	93	0	0	158	46	83	18	1	1	148	40	206	15	5	2	266	78	320	58	0	0	456	1028
08:30	27	60	88	0	0	175	51	70	25	1	1	147	30	238	8	5	2	281	71	282	59	0	0	412	1015
08:45	16	50	83	0	1	149	79	51	17	1	1	148	47	214	6	9	1	276	72	280	54	0	1	406	979
<b>Grand Total</b>	<b>76</b>	<b>235</b>	<b>353</b>	<b>1</b>	<b>2</b>	<b>665</b>	<b>223</b>	<b>269</b>	<b>74</b>	<b>5</b>	<b>7</b>	<b>571</b>	<b>154</b>	<b>820</b>	<b>37</b>	<b>28</b>	<b>6</b>	<b>1039</b>	<b>302</b>	<b>1168</b>	<b>222</b>	<b>0</b>	<b>2</b>	<b>1692</b>	<b>3967</b>
<b>Approach %</b>	11.4	35.3	53.1	0.2	-	-	39.1	47.1	13	0.9	-	-	14.8	78.9	3.6	2.7	-	-	17.8	69	13.1	0	-	-	-
<b>Totals %</b>	1.9	5.9	8.9	0	16.8	-	5.6	6.8	1.9	0.1	14.4	-	3.9	20.7	0.9	0.7	26.2	-	7.6	29.4	5.6	0	42.7	-	-
<b>PHF</b>	<b>0.7</b>	<b>0.78</b>	<b>0.95</b>	<b>0.25</b>	<b>0.91</b>	-	<b>0.71</b>	<b>0.81</b>	<b>0.74</b>	<b>0.63</b>	<b>0.96</b>	-	<b>0.82</b>	<b>0.86</b>	<b>0.62</b>	<b>0.78</b>	<b>0.92</b>	-	<b>0.93</b>	<b>0.91</b>	<b>0.94</b>	<b>0</b>	<b>0.93</b>	<b>0.96</b>	-
<b>Cars</b>	73	223	341	1	638	549	211	259	74	5	549	549	153	755	35	28	971	971	295	1120	217	0	1632	3790	
<b>% Cars</b>	96.1	94.9	96.6	100	95.9	96.1	94.6	96.3	100	100	96.1	96.1	99.4	92.1	94.6	100	93.5	93.5	97.7	95.9	97.7	0	96.5	95.5	
<b>Trucks</b>	3	12	12	0	27	22	12	10	0	0	22	22	1	65	2	0	68	68	7	48	5	0	60	177	
<b>% Trucks</b>	3.9	5.1	3.4	0	4.1	3.9	5.4	3.7	0	0	3.9	3.9	0.6	7.9	5.4	0	6.5	6.5	2.3	4.1	2.3	0	3.5	4.5	
<b>Bicycles</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>% Bicycles</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Peds</b>					2	-					7	-					6	-					2	-	17
<b>% Peds</b>					11.8	-					41.2	-					35.3	-					11.8	-	-

## Peak Hour Diagram

### Specified Period

From: 16:00:00  
To: 18:00:00

### One Hour Peak

From: 16:00:00  
To: 17:00:00

**Intersection:** Dundas St W & Neyagawa Blvd  
**Site Code:** 240980001  
**Count Date:** Mar 19, 2024

**Weather conditions:** Clear

**\*\* Signalized Intersection \*\***

**Major Road:** Dundas St W runs E/W

### North Approach

	Out	In	Total
	740	668	1408
	17	14	31
	1	0	1
<b>Totals</b>	<b>758</b>	<b>682</b>	<b>1440</b>

### Neyagawa Blvd

	0	1	0	0
	11	5	1	0
	386	277	77	0
<b>Totals</b>	<b>397</b>	<b>283</b>	<b>78</b>	<b>0</b>

### East Approach

	Out	In	Total
	1653	1060	2713
	43	35	78
	0	0	0
<b>Totals</b>	<b>1696</b>	<b>1095</b>	<b>2791</b>

### Dundas St W

				Totals
	0	0	0	<b>0</b>
	0	6	246	<b>252</b>
	0	32	855	<b>887</b>
	0	2	206	<b>208</b>

Peds: 1

Peds: 3



Peds: 22

Peds: 6

### Dundas St W

Totals			
<b>28</b>	28	0	0
<b>63</b>	59	4	0
<b>1396</b>	1357	39	0
<b>209</b>	209	0	0

### West Approach

	Out	In	Total
	1307	2003	3310
	40	55	95
	0	0	0
<b>Totals</b>	<b>1347</b>	<b>2058</b>	<b>3405</b>

Totals				
<b>265</b>	260	363	100	5
<b>5</b>	5	4	2	0
<b>0</b>	0	0	0	0

Neyagawa Blvd

### South Approach

	Out	In	Total
	728	697	1425
	11	7	18
	0	1	1
<b>Totals</b>	<b>739</b>	<b>705</b>	<b>1444</b>

- Cars

- Trucks

- Bicycles

### Comments



## Peak Hour Summary

Intersection: Dundas St W & Neyagawa Blvd  
 Site Code: 2409800001  
 Count Date: Mar 19, 2024  
 Period: 16:00 - 18:00

### Peak Hour Data (16:00 - 17:00)

Start Time	North Approach Neyagawa Blvd						South Approach Neyagawa Blvd						East Approach Dundas St W						West Approach Dundas St W						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
16:00	17	66	105	0	1	188	65	79	30	1	2	175	57	401	19	6	6	483	59	229	48	0	1	336	1182
16:15	22	78	95	0	0	195	73	90	19	2	2	184	38	299	12	6	9	355	55	224	54	0	0	333	1067
16:30	22	66	96	0	0	184	65	86	21	1	2	173	70	370	16	5	3	461	67	231	52	0	0	350	1168
16:45	17	73	101	0	0	191	62	112	32	1	0	207	44	326	16	11	4	397	71	203	54	0	2	328	1123
<b>Grand Total</b>	<b>78</b>	<b>283</b>	<b>397</b>	<b>0</b>	<b>1</b>	<b>758</b>	<b>265</b>	<b>367</b>	<b>102</b>	<b>5</b>	<b>6</b>	<b>739</b>	<b>209</b>	<b>1396</b>	<b>63</b>	<b>28</b>	<b>22</b>	<b>1696</b>	<b>252</b>	<b>887</b>	<b>208</b>	<b>0</b>	<b>3</b>	<b>1347</b>	<b>4540</b>
Approach %	10.3	37.3	52.4	0	-	-	35.9	49.7	13.8	0.7	-	-	12.3	82.3	3.7	1.7	-	-	18.7	65.9	15.4	0	-	-	-
Totals %	1.7	6.2	8.7	0	16.7	16.7	5.8	8.1	2.2	0.1	16.3	16.3	4.6	30.7	1.4	0.6	37.4	37.4	5.6	19.5	4.6	0	29.7	29.7	29.7
<b>PHF</b>	<b>0.89</b>	<b>0.91</b>	<b>0.95</b>	<b>0</b>	<b>0.97</b>	<b>0.97</b>	<b>0.91</b>	<b>0.82</b>	<b>0.8</b>	<b>0.63</b>	<b>0.89</b>	<b>0.89</b>	<b>0.75</b>	<b>0.87</b>	<b>0.83</b>	<b>0.64</b>	<b>0.88</b>	<b>0.88</b>	<b>0.89</b>	<b>0.96</b>	<b>0.96</b>	<b>0</b>	<b>0.96</b>	<b>0.96</b>	<b>0.96</b>
Cars	77	277	386	0	740	740	260	363	100	5	728	728	209	1357	59	28	1653	1653	246	855	206	0	1307	4428	
% Cars	98.7	97.9	97.2	0	97.6	97.6	98.1	98.9	98	100	98.5	98.5	100	97.2	93.7	100	97.5	97.5	97.6	96.4	99	0	97	97.5	
Trucks	1	5	11	0	17	17	5	4	2	0	11	11	0	39	4	0	43	43	6	32	2	0	40	111	
% Trucks	1.3	1.8	2.8	0	2.2	2.2	1.9	1.1	2	0	1.5	1.5	0	2.8	6.3	0	2.5	2.5	2.4	3.6	1	0	3	2.4	
Bicycles	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bicycles	0	0.4	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peds					1	1					6	6					22	22					3	3	32
% Peds					3.1	3.1					18.8	18.8					68.8	68.8					9.4	9.4	



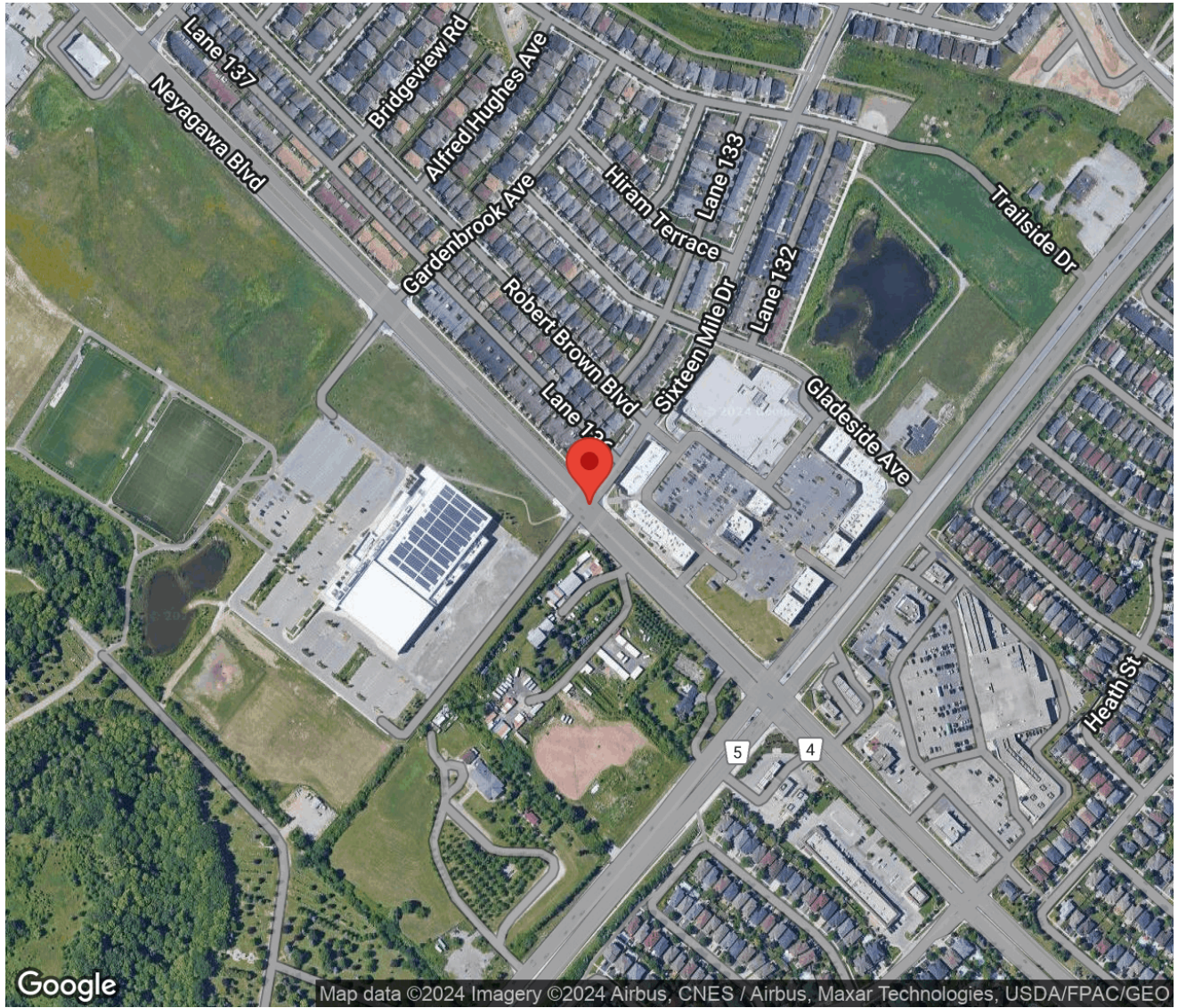
## Project #24-098 - GHD

### Intersection Count Report

**Intersection:** Neyagawa Blvd & Sixteen Mile Dr  
**Municipality:** Oakville  
**Count Date:** Tuesday, Mar 19, 2024  
**Site Code:** 2409800002  
**Count Categories:** Cars, Trucks, Bicycles, Pedestrians  
**Count Period:** 07:00-09:00, 16:00-18:00  
**Weather:** Clear  
**Comments:**

## Traffic Count Map

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
Site Code: 2409800002  
Municipality: Oakville  
Count Date: Mar 19, 2024





## Traffic Count Summary

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### Neyagawa Blvd - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
<b>07:00 - 08:00</b>	7	362	3	0	372	0	19	445	35	1	500	0	872
<b>08:00 - 09:00</b>	27	537	2	0	566	1	16	480	73	3	572	1	1138
BREAK													
<b>16:00 - 17:00</b>	47	500	2	0	549	1	44	422	96	13	575	0	1124
<b>17:00 - 18:00</b>	51	531	2	0	584	0	33	483	102	11	629	1	1213
<b>GRAND TOTAL</b>	<b>132</b>	<b>1930</b>	<b>9</b>	<b>0</b>	<b>2071</b>	<b>2</b>	<b>112</b>	<b>1830</b>	<b>306</b>	<b>28</b>	<b>2276</b>	<b>2</b>	<b>4347</b>





## Traffic Count Summary

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### Sixteen Mile Dr - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
<b>07:00 - 08:00</b>	82	1	18	0	101	3	0	0	9	0	9	0	110
<b>08:00 - 09:00</b>	102	1	20	0	123	2	1	1	18	0	20	0	143
BREAK													
<b>16:00 - 17:00</b>	219	2	30	0	251	4	1	4	24	0	29	0	280
<b>17:00 - 18:00</b>	200	9	27	0	236	6	3	6	35	0	44	0	280
<b>GRAND TOTAL</b>	<b>603</b>	<b>13</b>	<b>95</b>	<b>0</b>	<b>711</b>	<b>15</b>	<b>5</b>	<b>11</b>	<b>86</b>	<b>0</b>	<b>102</b>	<b>0</b>	<b>813</b>



## Traffic Count Data

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### North Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	1	46	1	0	48	0	4	0	0	4	0	0	0	0	0	0
07:15	1	81	1	0	83	0	5	0	0	5	0	0	0	0	0	0
07:30	1	82	0	0	83	1	4	0	0	5	0	0	0	0	0	0
07:45	3	139	1	0	143	0	1	0	0	1	0	0	0	0	0	0
08:00	3	131	0	0	134	1	5	0	0	6	0	0	0	0	0	0
08:15	10	126	1	0	137	0	5	0	0	5	0	0	0	0	0	1
08:30	3	139	1	0	143	2	7	0	0	9	0	0	0	0	0	0
08:45	8	122	0	0	130	0	2	0	0	2	0	0	0	0	0	0
<b>SUBTOTAL</b>	30	866	5	0	901	4	33	0	0	37	0	0	0	0	0	1



## Traffic Count Data

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### North Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	13	114	0	0	127	0	7	0	0	7	0	0	0	0	0	1
16:15	7	124	0	0	131	1	4	0	0	5	0	0	0	0	0	0
16:30	8	128	0	0	136	0	1	0	0	1	0	0	0	0	0	0
16:45	18	120	2	0	140	0	1	0	0	1	0	1	0	0	1	0
17:00	11	113	0	0	124	0	0	0	0	0	0	0	0	0	0	0
17:15	17	161	0	0	178	1	0	0	0	1	0	0	0	0	0	0
17:30	10	133	0	0	143	0	1	0	0	1	0	0	0	0	0	0
17:45	12	122	2	0	136	0	1	0	0	1	0	0	0	0	0	0
<b>SUBTOTAL</b>	96	1015	4	0	1115	2	15	0	0	17	0	1	0	0	1	1
<b>GRAND TOTAL</b>	126	1881	9	0	2016	6	48	0	0	54	0	1	0	0	1	2



## Traffic Count Data

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### South Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	8	74	6	0	88	0	2	0	1	3	0	0	0	0	0	0
07:15	5	104	7	0	116	1	7	1	0	9	0	0	0	0	0	0
07:30	2	123	7	0	132	0	5	2	0	7	0	0	0	0	0	0
07:45	3	127	11	0	141	0	3	1	0	4	0	0	0	0	0	0
08:00	7	133	11	1	152	0	3	1	0	4	0	0	0	0	0	1
08:15	2	125	31	2	160	1	4	1	0	6	0	0	0	0	0	0
08:30	3	119	11	0	133	0	4	0	0	4	0	0	0	0	0	0
08:45	3	88	16	0	107	0	4	2	0	6	0	0	0	0	0	0
<b>SUBTOTAL</b>	33	893	100	3	1029	2	32	8	1	43	0	0	0	0	0	1



## Traffic Count Data

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### South Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	10	87	21	4	122	0	4	0	0	4	0	0	0	0	0	0
16:15	11	93	29	3	136	0	2	1	0	3	0	0	0	0	0	0
16:30	12	102	20	4	138	0	1	0	0	1	0	0	0	0	0	0
16:45	11	130	24	2	167	0	3	1	0	4	0	0	0	0	0	0
17:00	12	116	19	3	150	0	3	1	0	4	0	0	0	0	0	0
17:15	4	131	18	4	157	0	0	1	0	1	0	0	0	0	0	1
17:30	2	111	31	2	146	0	0	1	0	1	0	0	0	0	0	0
17:45	15	121	31	2	169	0	1	0	0	1	0	0	0	0	0	0
<b>SUBTOTAL</b>	77	891	193	24	1185	0	14	5	0	19	0	0	0	0	0	1
<b>GRAND TOTAL</b>	110	1784	293	27	2214	2	46	13	1	62	0	0	0	0	0	2



## Traffic Count Data

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### East Approach - Sixteen Mile Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	14	1	3	0	18	1	0	1	0	2	0	0	0	0	0	0
07:15	20	0	3	0	23	2	0	0	0	2	0	0	0	0	0	1
07:30	11	0	4	0	15	2	0	0	0	2	0	0	0	0	0	0
07:45	28	0	7	0	35	4	0	0	0	4	0	0	0	0	0	2
08:00	32	0	5	0	37	1	0	0	0	1	0	0	0	0	0	0
08:15	20	0	6	0	26	1	1	0	0	2	0	0	0	0	0	0
08:30	24	0	4	0	28	4	0	0	0	4	0	0	0	0	0	1
08:45	19	0	4	0	23	1	0	1	0	2	0	0	0	0	0	1
<b>SUBTOTAL</b>	168	1	36	0	205	16	1	2	0	19	0	0	0	0	0	5





## Traffic Count Data

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### West Approach - Commerical Entrance

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
07:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
07:45	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	9	0	9	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0
08:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
08:45	0	1	6	0	7	0	0	0	0	0	0	0	0	0	0	0
<b>SUBTOTAL</b>	1	1	25	0	27	0	0	2	0	2	0	0	0	0	0	0





## Traffic Count Data

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Municipality: Oakville  
 Count Date: Mar 19, 2024

### West Approach - Commerical Entrance

Start Time	Cars					Trucks					Bicycles					Total Peds	
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total		
16:00	0	1	5	0	6	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	11	0	11	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	3	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0
16:45	1	0	6	0	7	0	0	0	0	0	0	0	0	0	0	0	0
17:00	1	1	11	0	13	0	0	0	0	0	0	0	0	0	0	0	0
17:15	2	1	14	0	17	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	2	4	0	6	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	2	6	0	8	0	0	0	0	0	0	0	0	0	0	0	0
<b>SUBTOTAL</b>	4	10	59	0	73	0	0	0	0	0	0	0	0	0	0	0	0
<b>GRAND TOTAL</b>	5	11	84	0	100	0	0	2	0	2	0	0	0	0	0	0	0

## Peak Hour Diagram

### Specified Period

From: 07:00:00  
To: 09:00:00

### One Hour Peak

From: 07:45:00  
To: 08:45:00

**Intersection:** Neyagawa Blvd & Sixteen Mile Dr  
**Site Code:** 2409800002  
**Count Date:** Mar 19, 2024

**Weather conditions:** Clear

**\*\* Signalized Intersection \*\***

**Major Road:** Neyagawa Blvd runs N/S

### North Approach

	Out	In	Total
	557	527	1084
	21	14	35
	0	0	0
<b>Totals</b>	<b>578</b>	<b>541</b>	<b>1119</b>

### Neyagawa Blvd

	0	0	0	0
	0	18	3	0
	3	535	19	0
<b>Totals</b>	<b>3</b>	<b>553</b>	<b>22</b>	<b>0</b>

### East Approach

	Out	In	Total
	126	83	209
	11	6	17
	0	0	0
<b>Totals</b>	<b>137</b>	<b>89</b>	<b>226</b>

### Commerical Entrance

			Totals	
0	0	0	0	
0	0	1	1	
0	0	0	0	
0	0	18	18	

Peds: 1

### Sixteen Mile Dr

Totals			
0	0	0	0
22	22	0	0
1	0	1	0
114	104	10	0

Peds: 1

### West Approach

	Out	In	Total
	19	18	37
	0	2	2
	0	0	0
<b>Totals</b>	<b>19</b>	<b>20</b>	<b>39</b>

Totals				
<b>16</b>	<b>518</b>	<b>67</b>	<b>3</b>	
	15	504	64	3
	1	14	3	0
	0	0	0	0

### Neyagawa Blvd

### South Approach

	Out	In	Total
	586	660	1246
	18	28	46
	0	0	0
<b>Totals</b>	<b>604</b>	<b>688</b>	<b>1292</b>

- Cars

- Trucks

- Bicycles

### Comments



## Peak Hour Summary

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Count Date: Mar 19, 2024  
 Period: 07:00 - 09:00

### Peak Hour Data (07:45 - 08:45)

Start Time	North Approach Neyagawa Blvd						South Approach Neyagawa Blvd						East Approach Sixteen Mile Dr						West Approach Commerical Entrance						Total Vehi es
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:45	3	140	1	0	0	144	3	130	12	0	0	145	32	0	7	0	2	39	0	0	6	0	0	6	334
08:00	4	136	0	0	0	140	7	136	12	1	1	156	33	0	5	0	0	38	0	0	9	0	0	9	343
08:15	10	131	1	0	1	142	3	129	32	2	0	166	21	1	6	0	0	28	0	0	3	0	0	3	339
08:30	5	146	1	0	0	152	3	123	11	0	0	137	28	0	4	0	1	32	1	0	0	0	0	1	322
<b>Grand Total</b>	<b>22</b>	<b>553</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>578</b>	<b>16</b>	<b>518</b>	<b>67</b>	<b>3</b>	<b>1</b>	<b>604</b>	<b>114</b>	<b>1</b>	<b>22</b>	<b>0</b>	<b>3</b>	<b>137</b>	<b>1</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>1338</b>
Approach %	3.8	95.7	0.5	0	-	-	2.6	85.8	11.1	0.5	-	-	83.2	0.7	16.1	0	-	-	5.3	0	94.7	0	-	-	
Totals %	1.6	41.3	0.2	0		43.2	1.2	38.7	5	0.2		45.1	8.5	0.1	1.6	0		10.2	0.1	0	1.3	0		1.4	
<b>PHF</b>	<b>0.55</b>	<b>0.95</b>	<b>0.75</b>	<b>0</b>		<b>0.95</b>	<b>0.57</b>	<b>0.95</b>	<b>0.52</b>	<b>0.38</b>		<b>0.91</b>	<b>0.86</b>	<b>0.25</b>	<b>0.79</b>	<b>0</b>		<b>0.88</b>	<b>0.25</b>	<b>0</b>	<b>0.5</b>	<b>0</b>		<b>0.53</b>	<b>0.98</b>
<b>Cars</b>	19	535	3	0		557	15	504	64	3		586	104	0	22	0		126	1	0	18	0		19	1288
<b>% Cars</b>	86.4	96.7	100	0		96.4	93.8	97.3	95.5	100		97	91.2	0	100	0		92	100	0	100	0		100	96.3
<b>Trucks</b>	3	18	0	0		21	1	14	3	0		18	10	1	0	0		11	0	0	0	0		0	50
<b>% Trucks</b>	13.6	3.3	0	0		3.6	6.3	2.7	4.5	0		3	8.8	100	0	0		8	0	0	0	0		0	3.7
<b>Bicycles</b>	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
<b>% Bicycles</b>	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
<b>Peds</b>					1	-					1	-					3	-					0	-	5
<b>% Peds</b>					20	-					20	-					60	-					0	-	

## Peak Hour Diagram

### Specified Period

From: 16:00:00  
To: 18:00:00

### One Hour Peak

From: 16:45:00  
To: 17:45:00

**Intersection:** Neyagawa Blvd & Sixteen Mile Dr  
**Site Code:** 2409800002  
**Count Date:** Mar 19, 2024

**Weather conditions:** Clear

**\*\* Signalized Intersection \*\***

**Major Road:** Neyagawa Blvd runs N/S

### North Approach

	Out	In	Total
	585	521	1106
	3	6	9
	1	0	1
<b>Totals</b>	<b>589</b>	<b>527</b>	<b>1116</b>

### Neyagawa Blvd

	0	1	0	0
	0	2	1	0
	2	527	56	0
<b>Totals</b>	<b>2</b>	<b>530</b>	<b>57</b>	<b>0</b>

### East Approach

	Out	In	Total
	241	152	393
	4	5	9
	0	0	0
<b>Totals</b>	<b>245</b>	<b>157</b>	<b>402</b>

### Commerical Entrance

			Totals	
0	0	0	0	
0	0	4	4	
0	0	4	4	
0	0	35	35	

Peds: 0

Peds: 0



Peds: 6

### Sixteen Mile Dr

Totals			
0	0	0	0
29	29	0	0
5	5	0	0
211	207	4	0

Peds: 1

### West Approach

	Out	In	Total
	43	36	79
	0	0	0
	0	0	0
<b>Totals</b>	<b>43</b>	<b>36</b>	<b>79</b>

Totals				
29	494	96	11	
	29	488	92	11
	0	6	4	0
	0	0	0	0

### Neyagawa Blvd

### South Approach

	Out	In	Total
	620	780	1400
	10	6	16
	0	1	1
<b>Totals</b>	<b>630</b>	<b>787</b>	<b>1417</b>

- Cars

- Trucks

- Bicycles

### Comments



## Peak Hour Summary

Intersection: Neyagawa Blvd & Sixteen Mile Dr  
 Site Code: 2409800002  
 Count Date: Mar 19, 2024  
 Period: 16:00 - 18:00

### Peak Hour Data (16:45 - 17:45)

Start Time	North Approach Neyagawa Blvd						South Approach Neyagawa Blvd						East Approach Sixteen Mile Dr						West Approach Commerical Entrance						Total Vehic es
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
16:45	18	122	2	0	0	142	11	133	25	2	0	171	58	0	6	0	0	64	1	0	6	0	0	7	384
17:00	11	113	0	0	0	124	12	119	20	3	0	154	60	3	7	0	1	70	1	1	11	0	0	13	361
17:15	18	161	0	0	0	179	4	131	19	4	1	158	40	2	10	0	4	52	2	1	14	0	0	17	406
17:30	10	134	0	0	0	144	2	111	32	2	0	147	53	0	6	0	1	59	0	2	4	0	0	6	356
<b>Grand Total</b>	<b>57</b>	<b>530</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>589</b>	<b>29</b>	<b>494</b>	<b>96</b>	<b>11</b>	<b>1</b>	<b>630</b>	<b>211</b>	<b>5</b>	<b>29</b>	<b>0</b>	<b>6</b>	<b>245</b>	<b>4</b>	<b>4</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>1507</b>
<b>Approach %</b>	9.7	90	0.3	0	-	-	4.6	78.4	15.2	1.7	-	-	86.1	2	11.8	0	-	-	9.3	9.3	81.4	0	-	-	-
<b>Totals %</b>	3.8	35.2	0.1	0	39.1	-	1.9	32.8	6.4	0.7	41.8	-	14	0.3	1.9	0	16.3	-	0.3	0.3	2.3	0	-	2.9	-
<b>PHF</b>	<b>0.79</b>	<b>0.82</b>	<b>0.25</b>	<b>0</b>	<b>0.82</b>	-	<b>0.6</b>	<b>0.93</b>	<b>0.75</b>	<b>0.69</b>	<b>0.92</b>	-	<b>0.88</b>	<b>0.42</b>	<b>0.73</b>	<b>0</b>	<b>0.88</b>	-	<b>0.5</b>	<b>0.5</b>	<b>0.63</b>	<b>0</b>	-	<b>0.63</b>	<b>0.93</b>
<b>Cars</b>	56	527	2	0	585	29	488	92	11	620	207	5	29	0	241	4	4	35	0	43	1489				
<b>% Cars</b>	98.2	99.4	100	0	99.3	100	98.8	95.8	100	98.4	98.1	100	100	0	98.4	100	100	100	0	100	100	0	100	100	98.8
<b>Trucks</b>	1	2	0	0	3	0	6	4	0	10	4	0	0	0	4	0	0	0	0	0	0	0	0	0	17
<b>% Trucks</b>	1.8	0.4	0	0	0.5	0	1.2	4.2	0	1.6	1.9	0	0	0	1.6	0	0	0	0	0	0	0	0	0	1.1
<b>Bicycles</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>% Bicycles</b>	0	0.2	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
<b>Peds</b>					0	-				1	-				6	-				0	-		0	-	7
<b>% Peds</b>					0	-				14.3	-				85.7	-				0	-		0	-	7



Date: 21-Nov-24

Intersection: Dundas & Neyagawa

**8 Phase Basic Timing Sheet**

	1	2	3	4	5	6	7	8	2 Ped	4 Ped	6 Ped	8 Ped
Phases in use	X	X	X	X	X	X	X	X	X	X	X	X
Direction	WBL	EB	NBL	SB	EBL	WB	SBL	NB				
Min Green	7	20	7	10	7	20	7	10				
Veh Ext.	3.0		3.0	3.0	3.0		3.0	3.0				
Yellow	3	4.2	3	3.7	3	4.2	3	3.7				
Red	1	2.5	1	3.2	1	2.5	1	3.2				
Walk		7		7		7		7				
Don't Walk		36		40		36		40				
Max 1												
Max 2												
Max 3												
Veh Recall												
Ped Recall												
<b>Notes:</b>	Check Sync Reference Point											

<p><b>Pattern 1</b>      SSMTWTF  <b>Time:</b>            6:00-15:00  <b>Cycle Length:</b>    140  <b>Offset (%):</b>        97%</p> <table border="0"> <tr> <td><b>Direction</b></td> <td><b>WBL</b></td> <td><b>EB</b></td> <td><b>NBL</b></td> <td><b>SB</b></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td>12</td> <td>40</td> <td>9</td> <td>39</td> </tr> <tr> <td><b>Direction</b></td> <td><b>EBL</b></td> <td><b>WB</b></td> <td><b>SBL</b></td> <td><b>NB</b></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td>15</td> <td>37</td> <td>8</td> <td>40</td> </tr> </table>	<b>Direction</b>	<b>WBL</b>	<b>EB</b>	<b>NBL</b>	<b>SB</b>	<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>	12	40	9	39	<b>Direction</b>	<b>EBL</b>	<b>WB</b>	<b>SBL</b>	<b>NB</b>	<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>	15	37	8	40	<p><b>Pattern 2</b>      N/A  <b>Time:</b>  <b>Cycle Length:</b>  <b>Offset (%):</b></p> <table border="0"> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	<b>Direction</b>					<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>					<b>Direction</b>					<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>				
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<p><b>Pattern 3</b>      SSMTWTF  <b>Time:</b>            15:00-21:00  <b>Cycle Length:</b>    140  <b>Offset (%):</b>        1%</p> <table border="0"> <tr> <td><b>Direction</b></td> <td><b>WBL</b></td> <td><b>EB</b></td> <td><b>NBL</b></td> <td><b>SB</b></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td>12</td> <td>37</td> <td>12</td> <td>39</td> </tr> <tr> <td><b>Direction</b></td> <td><b>EBL</b></td> <td><b>WB</b></td> <td><b>SBL</b></td> <td><b>NB</b></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td>12</td> <td>37</td> <td>8</td> <td>43</td> </tr> </table>	<b>Direction</b>	<b>WBL</b>	<b>EB</b>	<b>NBL</b>	<b>SB</b>	<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>	12	37	12	39	<b>Direction</b>	<b>EBL</b>	<b>WB</b>	<b>SBL</b>	<b>NB</b>	<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>	12	37	8	43	<p><b>Pattern 4</b>      N/A  <b>Time:</b>  <b>Cycle Length:</b>  <b>Offset (%):</b></p> <table border="0"> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	<b>Direction</b>					<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>					<b>Direction</b>					<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>				
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<p><b>Pattern 5</b>      SSMTWTF  <b>Time:</b>            21:00-06:00  <b>Cycle Length:</b>    Local  <b>Offset (%):</b></p> <table border="0"> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	<b>Direction</b>					<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>					<b>Direction</b>					<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>					<p><b>Pattern 6</b>  <b>Time:</b>  <b>Cycle Length:</b>  <b>Offset (%):</b></p> <table border="0"> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	<b>Direction</b>					<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>					<b>Direction</b>					<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>				
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Date: 21-Nov-24

Intersection: Neyagawa & Sixteen Mile

**8 Phase Basic Timing Sheet**

	1	2	3	4	5	6	7	8	2 Ped	4 Ped	6 Ped	8 Ped
Phases in use		X		X	X	X		X	X	X	X	X
Direction		NB		EB	NBL	SB		WB				
Min Green		20		10	7	20		10				
Veh Ext.				3.0	3.0			3.0				
Yellow		3.7		3.3	3	3.7		3.3				
Red		2.6		3.5	1	2.6		3.5				
Walk		7		7		7		7				
Don't Walk		17		25		17		25				
Max 1												
Max 2												
Max 3												
Veh Recall												
Ped Recall												
<b>Notes:</b>	Check Sync Reference Point											



<p><b>Pattern 1</b>      SSMTWTF  <b>Time:</b>            6:00-21:00  <b>Cycle Length:</b>    90  <b>Offset (%):</b>        3%</p> <table border="1"> <tbody> <tr> <td><b>Direction</b></td> <td><b>SBL</b></td> <td><b>NB</b></td> <td></td> <td><b>EB</b></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td>13</td> <td>41</td> <td></td> <td>46</td> </tr> <tr> <td><b>Direction</b></td> <td><b>NBL</b></td> <td><b>SB</b></td> <td></td> <td><b>WB</b></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td>13</td> <td>41</td> <td></td> <td>46</td> </tr> </tbody> </table>	<b>Direction</b>	<b>SBL</b>	<b>NB</b>		<b>EB</b>	<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>	13	41		46	<b>Direction</b>	<b>NBL</b>	<b>SB</b>		<b>WB</b>	<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>	13	41		46	<p><b>Pattern 2</b>      N/A  <b>Time:</b>  <b>Cycle Length:</b>  <b>Offset (%):</b></p> <table border="1"> <tbody> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	<b>Direction</b>					<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>					<b>Direction</b>					<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>				
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<b>%</b>	13	41		46																																																									
<b>Direction</b>																																																													
<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>																																																									
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<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>																																																									
<b>%</b>																																																													
<p><b>Pattern 3</b>      N/A  <b>Time:</b>  <b>Cycle Length:</b>  <b>Offset (%):</b></p> <table border="1"> <tbody> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	<b>Direction</b>					<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>					<b>Direction</b>					<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>					<p><b>Pattern 4</b>      N/A  <b>Time:</b>  <b>Cycle Length:</b>  <b>Offset (%):</b></p> <table border="1"> <tbody> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	<b>Direction</b>					<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>					<b>Direction</b>					<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>				
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<b>%</b>																																																													
<p><b>Pattern 5</b>      SSMTWTF  <b>Time:</b>            21:00-06:00  <b>Cycle Length:</b>    Local  <b>Offset (%):</b></p> <table border="1"> <tbody> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	<b>Direction</b>					<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>					<b>Direction</b>					<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>					<p><b>Pattern 6</b>  <b>Time:</b>  <b>Cycle Length:</b>  <b>Offset (%):</b></p> <table border="1"> <tbody> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>1</b></td> <td><b>2</b></td> <td><b>3</b></td> <td><b>4</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Direction</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Phase</b></td> <td><b>5</b></td> <td><b>6</b></td> <td><b>7</b></td> <td><b>8</b></td> </tr> <tr> <td><b>%</b></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	<b>Direction</b>					<b>Phase</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>%</b>					<b>Direction</b>					<b>Phase</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>%</b>				
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# **Appendix D**

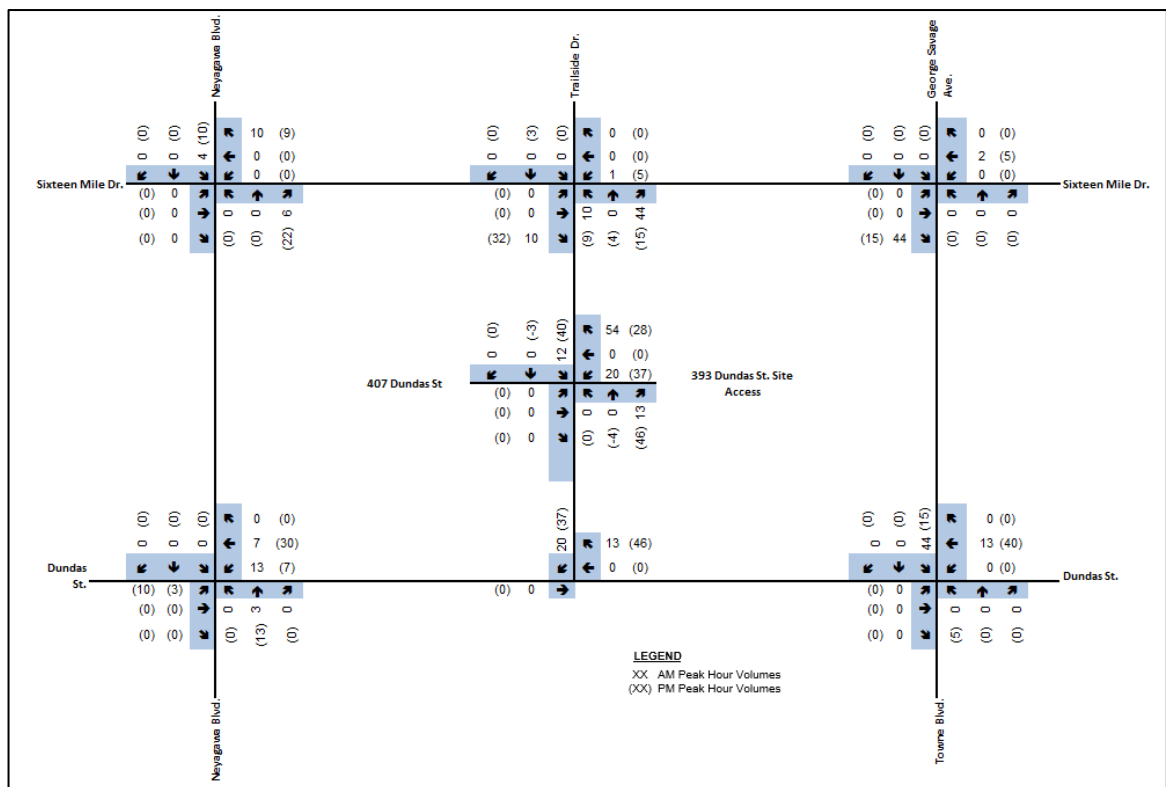
**Background Development Excerpts**



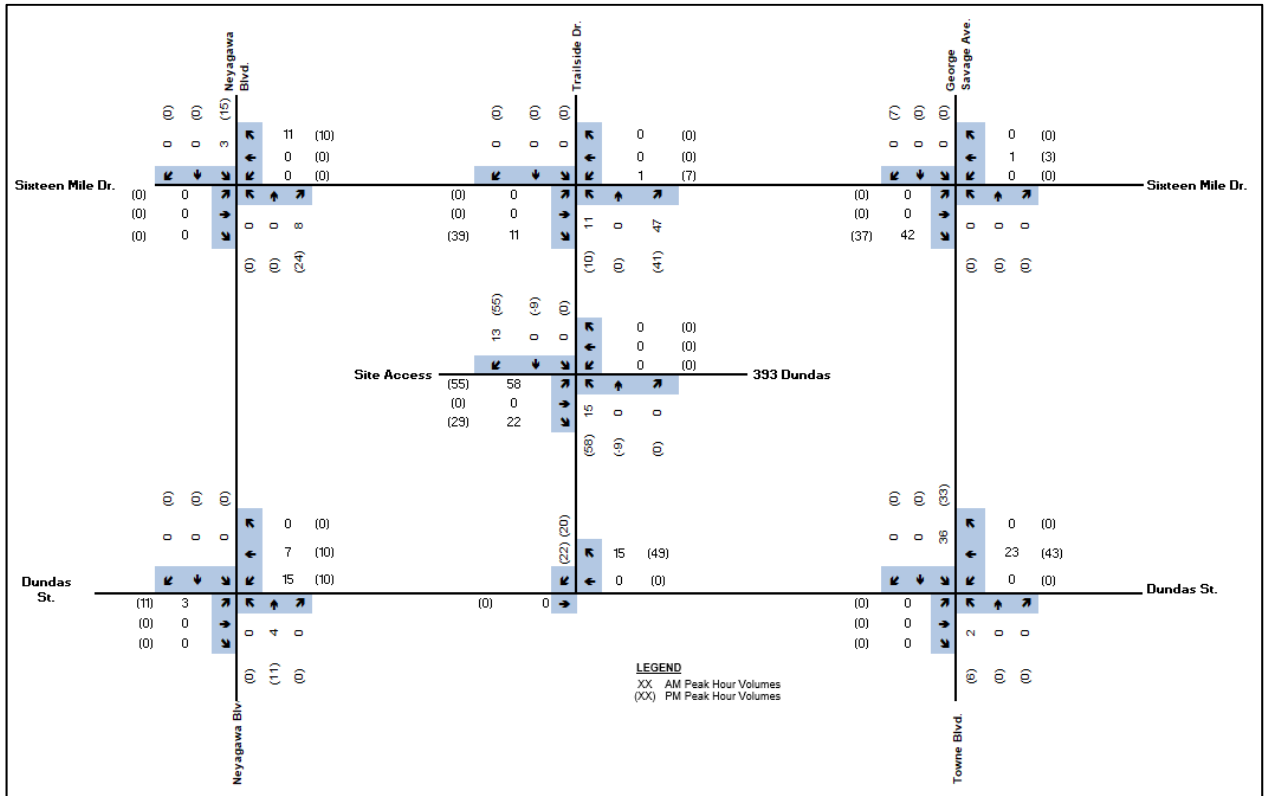
**Table 2 Site Trip Distribution**

Trip Orientation	Period	
	AM	PM
North on Neyagawa Blvd.	14%	18%
South on Neyagawa Blvd.	18%	14%
East on Dundas St.	46%	46%
West on Dundas St.	9%	9%
North on Towne Blvd./George Savage Ave.	6%	7%
South on Towne Blvd./George Savage Ave.	7%	6%
Total	100%	100%

The estimated total site trips generated by the proposed development, as assigned to the nearby road network for the weekday AM and PM peak hours, is shown in **Figure 6**. These intersection volumes are a sum of the primary site trips for each component of the site, as well as the pass-by trips from the commercial component of the site, all of which are provided in **Appendix D**.



**Figure 6 Estimated Site Trips**

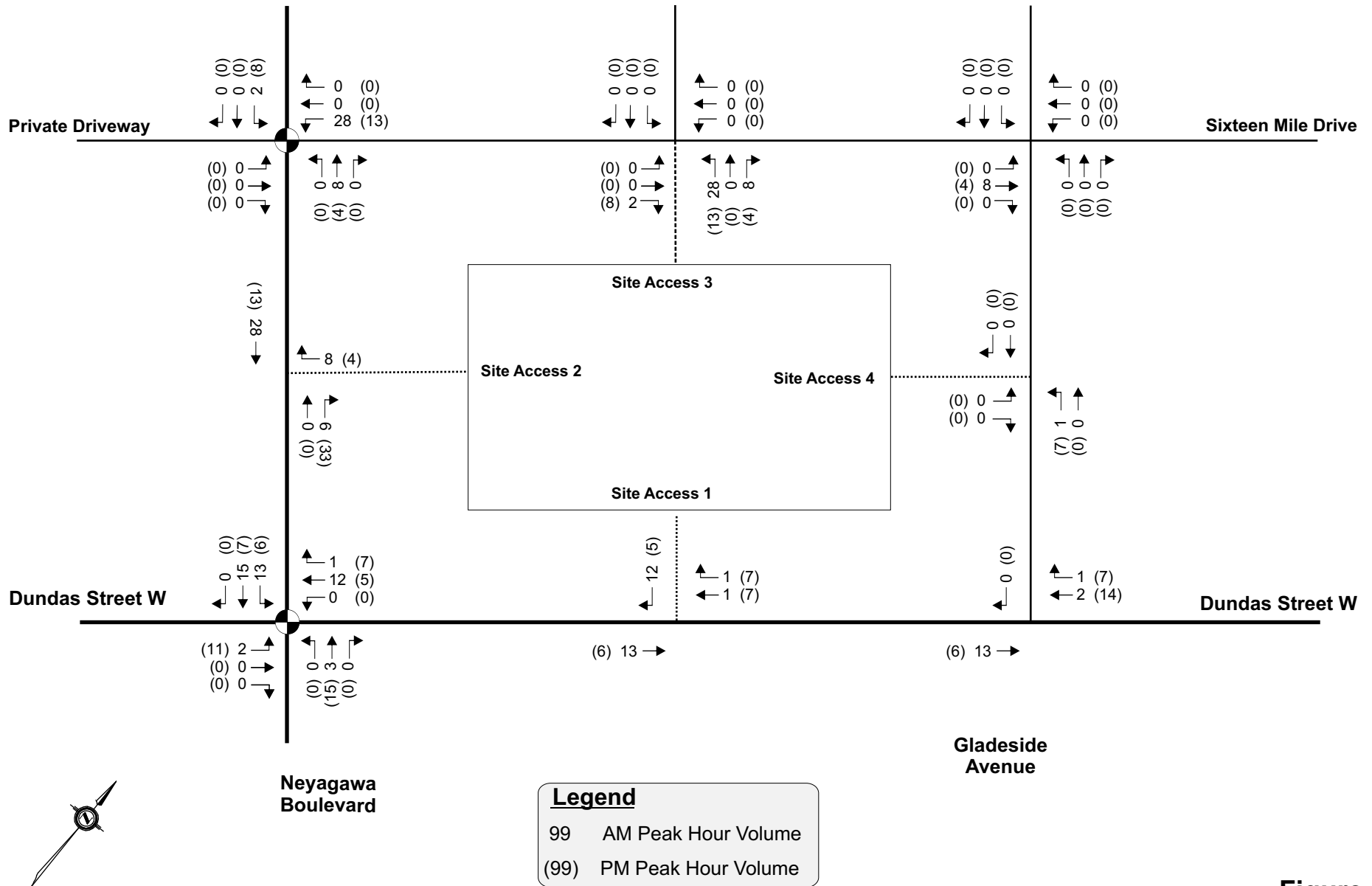


**Figure 6: Site Generated Trips**

## 6. Future Total Traffic

The future total traffic conditions for the peak study hours was derived by combining the projected future background traffic with the corresponding estimate of the total site generated traffic.

**Figure 7** and **Figure 8** summarize the future total traffic volumes at the 2021 and 2026 planning horizons, respectively, during the weekday a.m. and p.m. peak hours.



N.T.S

**Figure 5-1  
Site Traffic**

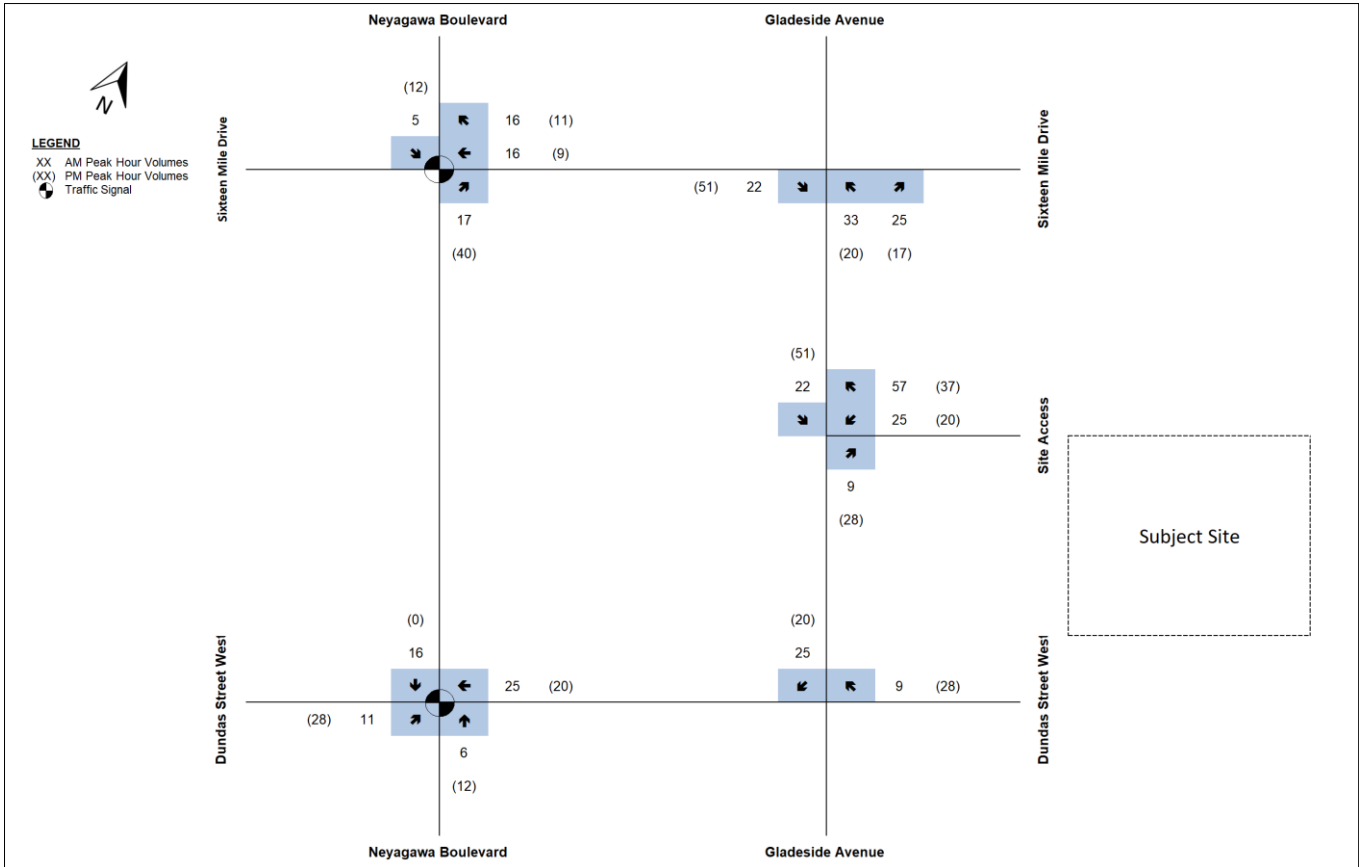


Figure 8 Full Build-out Total Site Trips - 2027

## 6. Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2027 planning horizon was derived by combining the projected future background traffic with the corresponding estimated site generated traffic. The resulting traffic volumes are presented in **Figure 9**.

# **Appendix E**

**Transportation Tomorrow Survey 2016**

AM Inbound  
Thu Jun 27 2024 12:16:00 GMT-0400 (Eastern Daylight Time) - Run Time: 2515ms

Cross Tabulation Query Form - Trip - 2016

Row: Primary travel mode of trip - mode\_prime  
Column: 2006 GTA zone of destination - gta06\_dest

RowG:  
ColG:(4035,4037,4039,4186)  
TblG:

Filters:  
Start time of trip - start\_time In 600-900  
and  
Trip purpose of destination - purp\_dest In H.

Trip 2016

Table:

.1		
Cycle	38	2%
Auto driver	1600	84%
Auto passenger	46	2%
Walk	214	11%

Sum 1898

Auto Driver	84%
Auto Passenger	2%
Transit	0%
Active Transportation	13%
Total	100%

Transit + AT	13%
5% reduction	8%
However low sample size	0%

Auto Drive	84%	61%	73%	62%
Auto Passenger	2%	16%	11%	30%
Transit	0%	11%	13%	5%
Active Transportation	13%	12%	3%	3%
Total	100%	100%	100%	100%
Transit + AT	13%	23%	16%	8%
5% reduction	8%	18%	11%	3%

AM Outbound  
Thu Jun 27 2024 12:17:01 GMT-0400 (Eastern Daylight Time) - Run Time: 2757ms

Cross Tabulation Query Form - Trip - 2016

Row: Primary travel mode of trip - mode\_prime  
Column: 2006 GTA zone of origin - gta06\_orig

RowG:  
ColG:(4035,4037,4039,4186)  
TblG:

Filters:  
Start time of trip - start\_time In 600-900  
and  
Trip purpose of origin - purp\_orig In H.

Trip 2016

Table:

.1			
Transit excluding GO	531	3%	
Cycle	175	1%	
Auto driver	12186	61%	
GO rail only	1058	5%	
Joint GO rail and loca	503	3%	
Auto passenger	3088	16%	
School bus		0%	
Walk	2303	12%	

Sum 19844

Auto Driver	61%
Auto Passenger	16%
Transit	11%
Active Transportation	12%
Total	100%

Transit + AT	23%
5% reduction	18%

PM Inbound  
Thu Jun 27 2024 12:16:19 GMT-0400 (Eastern Daylight Time) - Run Time: 2571ms

Cross Tabulation Query Form - Trip - 2016

Row: Primary travel mode of trip - mode\_prime  
Column: 2006 GTA zone of destination - gta06\_dest

RowG:  
ColG:(4035,4037,4039,4186)  
TblG:

Filters:  
Start time of trip - start\_time In 1600-1900  
and  
Trip purpose of destination - purp\_dest In H.

Trip 2016

Table:

.1			
Transit excluding GO	430	3%	
Cycle	184	1%	
Auto driver	11189	73%	
GO rail only	1000	7%	
Joint GO rail and loca	524	3%	
Auto passenger	1718	11%	
School bus		0%	
Walk	274	2%	

Sum 15319

Auto Driver	73%
Auto Passenger	11%
Transit	13%
Active Transportation	3%
Total	100%

Transit + AT	16%
5% reduction	11%

PM Outbound  
Thu Jun 27 2024 12:16:51 GMT-0400 (Eastern Daylight Time) - Run Time: 2450ms

Cross Tabulation Query Form - Trip - 2016

Row: Primary travel mode of trip - mode\_prime  
Column: 2006 GTA zone of origin - gta06\_orig

RowG:  
ColG:(4035,4037,4039,4186)  
TblG:

Filters:  
Start time of trip - start\_time In 1600-1900  
and  
Trip purpose of origin - purp\_orig In H.

Trip 2016

Table:

.1			
Transit excluding GO	100	2%	
Cycle	124	3%	
Auto driver	2847	62%	
GO rail only	68	1%	
Joint GO rail and loca	79	2%	
Other		0%	
Auto passenger	1390	30%	
Paid rideshare		0%	
Walk	10	0%	

Sum 4618

Auto Driver	62%
Auto Passenger	30%
Transit	5%
Active Transportation	3%
Total	100%

Transit + AT	8%
5% reduction	3%



AM Inbound  
Thu Jun 27 2024 12:12:57 GMT-0400 (Eastern Daylight Time) - Run Time: 2451ms

AM Outbound  
Thu Jun 27 2024 12:14:17 GMT-0400 (Eastern Daylight Time) - Run Time: 2638ms

PM Inbound  
Thu Jun 27 2024 12:13:38 GMT-0400 (Eastern Daylight Time) - Run Time: 2905ms

PM Outbound  
Thu Jun 27 2024 12:14:07 GMT-0400 (Eastern Daylight Time) - Run Time: 2905ms

Cross Tabulation Query Form - Trip - 2016

Cross Tabulation Query Form - Trip - 2016

Cross Tabulation Query Form - Trip - 2016

Cross Tabulation Query Form - Trip - 2016

Row: Planning district of origin - pd\_orig  
Column: 2006 GTA zone of destination - gta06\_dest

Row: Planning district of destination - pd\_dest  
Column: 2006 GTA zone of origin - gta06\_orig

Row: Planning district of origin - pd\_orig  
Column: 2006 GTA zone of destination - gta06\_dest

Row: Planning district of destination - pd\_dest  
Column: 2006 GTA zone of origin - gta06\_orig

RowG:  
ColG:(4035,4037,4039,4186)  
TblG:

RowG:  
ColG:(4035,4037,4039,4186)  
TblG:

RowG:  
ColG:(4035,4037,4039,4186)  
TblG:

RowG:  
ColG:(4035,4037,4039,4186)  
TblG:

Filters:  
Start time of trip - start\_time In 600-900  
and  
Trip purpose of destination - purp\_dest In H.

Filters:  
Start time of trip - start\_time In 600-900  
and  
Trip purpose of origin - purp\_orig In H.

Filters:  
Start time of trip - start\_time In 1600-1900  
and  
Trip purpose of destination - purp\_dest In H.

Filters:  
Start time of trip - start\_time In 1600-1900  
and  
Trip purpose of origin - purp\_orig In H.

Trip 2016  
Table:

Trip 2016  
Table:

Trip 2016  
Table:

Trip 2016  
Table:

.1	N	S	E	W	N Trips	S Trips	E Trips	W Trips	
Brampton,18	1957	0.25	0.75		489.25	1467.75	0	0	
Mississauga,44	161	0.25	0.75		40.25	120.75	0	0	
Milton,12	31	0.25	0.75		7.75	23.25	0	0	
Oakville,1747	103	0.25	0.75		25.75	77.25	0	0	
Burlington,59	16	0.25	0.75		4	12	0	0	
Cambridge,16	12	0.25	0.75		3	9	0	0	
	29	0.25	0.75		7.25	21.75	0	0	
	192	0.25	0.75		48	144	0	0	
	188	1			188	0	0	0	
	131	1			131	0	0	0	
	61	1			61	0	0	0	
	38	1			38	0	0	0	
	52	0.25	0.75		13	39	0	0	
	17	1			17	0	0	0	
	19	1			19	0	0	0	
	27	1			27	0	0	0	
	113	1			113	0	0	0	
	46	1			46	0	0	0	
	60	1			60	0	0	0	
	118	1			118	0	0	0	
	37	1			37	0	0	0	
	470	1			470	0	0	0	
	3620	0.333333	0.333333	0.333333	1206.667	1206.667	1206.667	0	
	63	0.5	0.5		31.5	0	31.5	0	
	261				1	0	0	261	
	11116	0.15	0.15	0.35	0.35	1667.4	1667.4	3890.6	3890.6
	795				1	0	0	795	
	21				1	0	0	21	
	35				1	0	0	35	
	15				1	0	0	15	
	36				1	0	0	36	
	504				1	0	0	504	
	29				1	0	0	29	
	48	0.5			0.5	24	0	24	
	32	0.333333			0.333333	0.333333	10.666667	10.666667	
	77	0.333333			0.333333	0.333333	25.666667	25.666667	
	36				1	0	0	36	
<b>Sum</b>	<b>20506</b>				<b>4929.15</b>	<b>4788.8167</b>	<b>8185.1</b>	<b>5682.8333</b>	

24% 23% 25% 28%

TTS Data

	N	S	E	W	Existing Patterns	N	S	E	W	
AM Inbound						17%	14%	26%	43%	100%
AM Outbound	24%	23%	25%	28%		15%	16%	33%	35%	100%
PM Inbound	34%	27%	22%	17%		17%	16%	37%	30%	100%
PM Outbound						15%	16%	24%	45%	100%

Trip Distribution

	N	S	E	W	
AM Inbound	15%	15%	25%	45%	100%
AM Outbound	25%	25%	25%	25%	100%
PM Inbound	20%	20%	45%	15%	100%
PM Outbound	15%	15%	25%	45%	100%

# Appendix F

## Synchro Outputs

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Existing 2024  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑		↘	↑↑	↗
Traffic Volume (vph)	302	1168	222	182	820	37	228	269	74	77	235	353
Future Volume (vph)	302	1168	222	182	820	37	228	269	74	77	235	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Frt			0.850			0.850		0.968				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	5043	1601	1807	4856	1555	1738	3413	0	1755	3476	1585
Flt Permitted	0.213			0.166			0.503			0.538		
Satd. Flow (perm)	401	5043	1571	315	4856	1534	919	3413	0	991	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			223			124			27			274
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	315	1217	231	190	854	39	238	280	77	80	245	368
Shared Lane Traffic (%)												
Lane Group Flow (vph)	315	1217	231	190	854	39	238	357	0	80	245	368
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Existing 2024  
AM Peak Hour

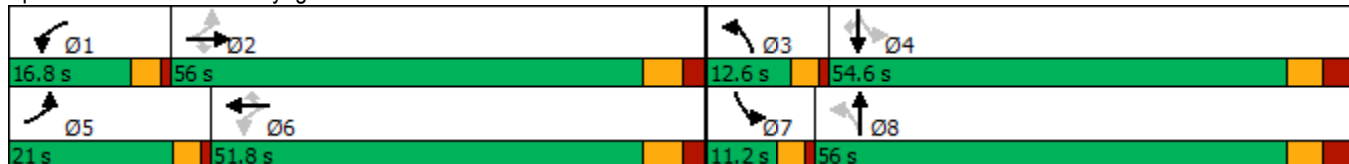


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	21.0	56.0	56.0	16.8	51.8	51.8	12.6	56.0		11.2	54.6	54.6
Total Split (%)	15.0%	40.0%	40.0%	12.0%	37.0%	37.0%	9.0%	40.0%		8.0%	39.0%	39.0%
Maximum Green (s)	17.0	49.3	49.3	12.8	45.1	45.1	8.6	49.1		7.2	47.7	47.7
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	51.3	33.7	33.7	41.6	28.1	28.1	29.4	19.8		25.9	15.5	15.5
Actuated g/C Ratio	0.56	0.37	0.37	0.46	0.31	0.31	0.32	0.22		0.28	0.17	0.17
v/c Ratio	0.66	0.65	0.32	0.59	0.57	0.07	0.63	0.47		0.23	0.41	0.74
Control Delay	19.3	26.0	4.6	20.6	28.1	0.2	33.8	32.9		24.5	36.7	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	19.3	26.0	4.6	20.6	28.1	0.2	33.8	32.9		24.5	36.7	20.6
LOS	B	C	A	C	C	A	C	C		C	D	C
Approach Delay		22.0			25.7			33.3			26.8	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	91
Natural Cycle:	130
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	25.4
Intersection LOS:	C
Intersection Capacity Utilization:	76.4%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues

1: Neyagawa Boulevard & Dundas Street West

Existing 2024

AM Peak Hour
































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	315	1217	231	190	854	39	238	357	80	245	368
v/c Ratio	0.66	0.65	0.32	0.59	0.57	0.07	0.63	0.47	0.23	0.41	0.74
Control Delay	19.3	26.0	4.6	20.6	28.1	0.2	33.8	32.9	24.5	36.7	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	26.0	4.6	20.6	28.1	0.2	33.8	32.9	24.5	36.7	20.6
Queue Length 50th (m)	25.0	59.8	0.8	13.9	43.8	0.0	30.1	26.7	9.1	19.6	14.2
Queue Length 95th (m)	56.2	93.2	15.8	33.3	66.5	0.0	61.7	48.0	23.1	36.3	50.7
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	492	2806	972	367	2471	841	376	1903	344	1871	968
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.43	0.24	0.52	0.35	0.05	0.63	0.19	0.23	0.13	0.38

Intersection Summary

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Existing 2024  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	302	1168	222	182	820	37	228	269	74	77	235	353
Future Volume (vph)	302	1168	222	182	820	37	228	269	74	77	235	353
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	5043	1575	1807	4856	1535	1737	3413		1753	3476	1565
Flt Permitted	0.21	1.00	1.00	0.17	1.00	1.00	0.50	1.00		0.54	1.00	1.00
Satd. Flow (perm)	402	5043	1575	316	4856	1535	920	3413		993	3476	1565
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)	315	1217	231	190	854	39	238	280	77	80	245	368
RTOR Reduction (vph)	0	0	141	0	0	27	0	21	0	0	0	224
Lane Group Flow (vph)	315	1217	90	190	854	12	238	336	0	80	245	144
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	48.5	33.7	33.7	38.9	28.1	28.1	28.6	19.8		22.2	16.6	16.6
Effective Green, g (s)	48.5	33.7	33.7	38.9	28.1	28.1	28.6	19.8		22.2	16.6	16.6
Actuated g/C Ratio	0.53	0.37	0.37	0.43	0.31	0.31	0.31	0.22		0.24	0.18	0.18
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	461	1857	580	310	1491	471	366	738		287	630	283
v/s Ratio Prot	c0.12	0.24		0.07	0.18		c0.06	0.10		0.02	0.07	
v/s Ratio Perm	c0.24		0.06	0.19		0.01	c0.14			0.05		0.09
v/c Ratio	0.68	0.66	0.16	0.61	0.57	0.03	0.65	0.46		0.28	0.39	0.51
Uniform Delay, d1	13.6	24.1	19.4	17.4	26.7	22.1	25.5	31.2		27.5	33.0	33.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.2	0.8	0.1	3.6	0.5	0.0	4.1	0.4		0.5	0.4	1.4
Delay (s)	17.7	24.9	19.5	20.9	27.2	22.2	29.6	31.6		28.0	33.4	35.2
Level of Service	B	C	B	C	C	C	C	C		C	C	D
Approach Delay (s)		22.9			25.9			30.8			33.7	
Approach LOS		C			C			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			26.6									C
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			91.5							21.6		
Intersection Capacity Utilization			76.4%									D
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Existing 2024  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	4	4	35	211	5	29	40	494	96	57	530	2
Future Volume (vph)	4	4	35	211	5	29	40	494	96	57	530	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			0.99		1.00		
Frt		0.888			0.984			0.976			0.999	
Flt Protected		0.996			0.959		0.950			0.950		
Satd. Flow (prot)	0	1681	0	0	1782	0	1825	3493	0	1825	3575	0
Flt Permitted		0.964			0.723		0.437			0.346		
Satd. Flow (perm)	0	1627	0	0	1343	0	840	3493	0	662	3575	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			9			27				
Link Speed (k/h)		50			50			60				60
Link Distance (m)		111.6			260.3			94.8				72.4
Travel Time (s)		8.0			18.7			5.7				4.3
Confl. Peds. (#/hr)			1	1					6	6		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Adj. Flow (vph)	4	4	38	227	5	31	43	531	103	61	570	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	263	0	43	634	0	61	572	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Existing 2024  
AM Peak Hour

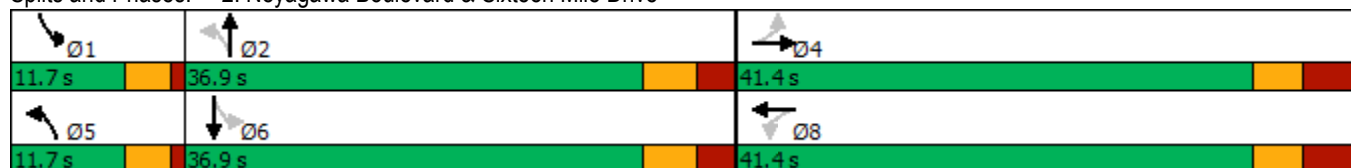


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.5	30.3		11.5	30.3	
Total Split (s)	41.4	41.4		41.4	41.4		11.7	36.9		11.7	36.9	
Total Split (%)	46.0%	46.0%		46.0%	46.0%		13.0%	41.0%		13.0%	41.0%	
Maximum Green (s)	34.6	34.6		34.6	34.6		7.7	30.6		7.7	30.6	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		17.1			17.1		27.8	21.6		28.6	23.7	
Actuated g/C Ratio		0.29			0.29		0.48	0.37		0.49	0.41	
v/c Ratio		0.09			0.66		0.08	0.48		0.13	0.39	
Control Delay		0.1			10.0		3.0	10.0		2.4	10.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		0.1			10.0		3.0	10.0		2.4	10.7	
LOS		A			A		A	A		A	B	
Approach Delay		0.1			10.0			9.5			9.9	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	58.3
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	9.5
Intersection LOS:	A
Intersection Capacity Utilization:	57.9%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Existing 2024  
AM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	263	43	634	61	572
v/c Ratio	0.09	0.66	0.08	0.48	0.13	0.39
Control Delay	0.1	10.0	3.0	10.0	2.4	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.1	10.0	3.0	10.0	2.4	10.7
Queue Length 50th (m)	0.7	25.3	2.0	28.2	2.8	17.8
Queue Length 95th (m)	6.9	51.1	7.5	53.2	9.8	49.1
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	1023	836	539	1927	486	1965
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.31	0.08	0.33	0.13	0.29
Intersection Summary						

HCM Signalized Intersection Capacity Analysis  
2: Neyagawa Boulevard & Sixteen Mile Drive

Existing 2024  
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	4	4	35	211	5	29	40	494	96	57	530	2
Future Volume (vph)	4	4	35	211	5	29	40	494	96	57	530	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.98		1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1682			1781		1825	3493		1823	3577	
Flt Permitted		0.96			0.72		0.44	1.00		0.35	1.00	
Satd. Flow (perm)		1629			1342		839	3493		665	3577	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	4	4	38	227	5	31	43	531	103	61	570	2
RTOR Reduction (vph)	0	27	0	0	6	0	0	17	0	0	0	0
Lane Group Flow (vph)	0	19	0	0	257	0	43	617	0	61	572	0
Confl. Peds. (#/hr)			1	1					6	6		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.1			17.1		24.8	22.4		27.6	23.8	
Effective Green, g (s)		17.1			17.1		24.8	22.4		27.6	23.8	
Actuated g/C Ratio		0.28			0.28		0.41	0.37		0.46	0.39	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		461			379		383	1295		376	1409	
v/s Ratio Prot							0.00	c0.18		c0.01	0.16	
v/s Ratio Perm		0.01			c0.19		0.04			0.06		
v/c Ratio		0.04			0.68		0.11	0.48		0.16	0.41	
Uniform Delay, d1		15.7			19.2		10.7	14.5		9.3	13.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			4.7		0.1	0.3		0.2	0.2	
Delay (s)		15.7			23.9		10.9	14.8		9.5	13.4	
Level of Service		B			C		B	B		A	B	
Approach Delay (s)		15.7			23.9			14.5			13.0	
Approach LOS		B			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			15.5				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			60.4				Sum of lost time (s)				17.1	
Intersection Capacity Utilization			57.9%				ICU Level of Service				B	
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Existing 2024  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	252	887	208	237	1396	63	270	367	102	78	283	397
Future Volume (vph)	252	887	208	237	1396	63	270	367	102	78	283	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	0.99		0.99		0.99
Frt			0.850			0.850		0.967				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	5043	1617	1825	5092	1541	1789	3464	0	1807	3579	1585
Flt Permitted	0.099			0.235			0.454			0.474		
Satd. Flow (perm)	186	5043	1588	451	5092	1521	854	3464	0	893	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			217			124			29			249
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	263	924	217	247	1454	66	281	382	106	81	295	414
Shared Lane Traffic (%)												
Lane Group Flow (vph)	263	924	217	247	1454	66	281	488	0	81	295	414
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Existing 2024  
PM Peak Hour

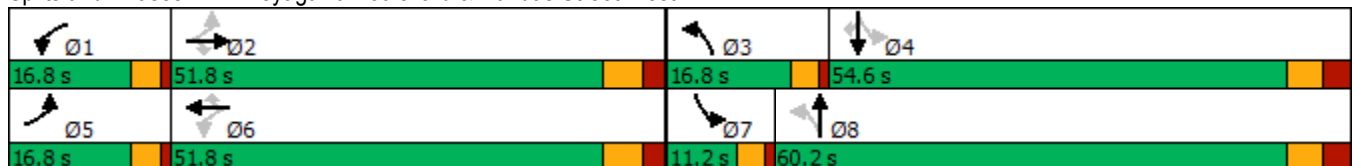


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	16.8	51.8	51.8	16.8	51.8	51.8	16.8	60.2		11.2	54.6	54.6
Total Split (%)	12.0%	37.0%	37.0%	12.0%	37.0%	37.0%	12.0%	43.0%		8.0%	39.0%	39.0%
Maximum Green (s)	12.8	45.1	45.1	12.8	45.1	45.1	12.8	53.3		7.2	47.7	47.7
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	56.3	40.4	40.4	54.6	39.6	39.6	40.5	29.0		31.0	20.8	20.8
Actuated g/C Ratio	0.52	0.37	0.37	0.50	0.37	0.37	0.37	0.27		0.29	0.19	0.19
v/c Ratio	0.91	0.49	0.30	0.64	0.78	0.10	0.66	0.51		0.26	0.43	0.83
Control Delay	62.7	28.0	4.7	23.5	34.6	0.3	33.7	34.5		25.0	40.2	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	62.7	28.0	4.7	23.5	34.6	0.3	33.7	34.5		25.0	40.2	31.0
LOS	E	C	A	C	C	A	C	C		C	D	C
Approach Delay		30.9			31.8			34.2			33.9	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 108.2  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 32.2  
 Intersection LOS: C  
 Intersection Capacity Utilization 92.1%  
 ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues

1: Neyagawa Boulevard & Dundas Street West

Existing 2024

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	263	924	217	247	1454	66	281	488	81	295	414
v/c Ratio	0.91	0.49	0.30	0.64	0.78	0.10	0.66	0.51	0.26	0.43	0.83
Control Delay	62.7	28.0	4.7	23.5	34.6	0.3	33.7	34.5	25.0	40.2	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.7	28.0	4.7	23.5	34.6	0.3	33.7	34.5	25.0	40.2	31.0
Queue Length 50th (m)	38.8	54.2	0.0	25.6	97.4	0.0	44.9	45.9	11.4	29.7	35.3
Queue Length 95th (m)	#108.0	80.8	16.3	51.9	140.0	0.0	68.8	63.3	21.8	43.3	73.4
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	290	2143	799	397	2164	717	432	1754	318	1609	839
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.43	0.27	0.62	0.67	0.09	0.65	0.28	0.25	0.18	0.49

Intersection Summary






























# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 1: Neyagawa Boulevard & Dundas Street West

Existing 2024  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	252	887	208	237	1396	63	270	367	102	78	283	397
Future Volume (vph)	252	887	208	237	1396	63	270	367	102	78	283	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	5043	1590	1825	5092	1521	1788	3468		1801	3579	1563
Flt Permitted	0.10	1.00	1.00	0.24	1.00	1.00	0.45	1.00		0.47	1.00	1.00
Satd. Flow (perm)	186	5043	1590	452	5092	1521	854	3468		899	3579	1563
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)	262	924	217	247	1454	66	281	382	106	81	295	414
RTOR Reduction (vph)	0	0	136	0	0	42	0	21	0	0	0	199
Lane Group Flow (vph)	263	924	81	247	1454	24	281	467	0	81	295	215
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	53.6	40.5	40.5	51.8	39.6	39.6	38.5	29.0		27.3	21.8	21.8
Effective Green, g (s)	53.6	40.5	40.5	51.8	39.6	39.6	38.5	29.0		27.3	21.8	21.8
Actuated g/C Ratio	0.49	0.37	0.37	0.48	0.36	0.36	0.35	0.27		0.25	0.20	0.20
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	284	1877	591	369	1853	553	411	924		271	717	313
v/s Ratio Prot	c0.11	0.18		0.08	0.29		c0.08	0.13		0.02	0.08	
v/s Ratio Perm	c0.34		0.05	0.24		0.02	c0.16			0.06		0.14
v/c Ratio	0.93	0.49	0.14	0.67	0.78	0.04	0.68	0.51		0.30	0.41	0.69
Uniform Delay, d1	28.8	26.2	22.6	17.8	30.8	22.4	27.3	33.8		32.0	37.9	40.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	34.2	0.2	0.1	4.6	2.3	0.0	4.7	0.4		0.6	0.4	6.1
Delay (s)	63.0	26.5	22.7	22.4	33.1	22.4	31.9	34.3		32.6	38.3	46.5
Level of Service	E	C	C	C	C	C	C	C		C	D	D
Approach Delay (s)		32.7			31.2			33.4			42.0	
Approach LOS		C			C			C			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			33.8									C
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			108.8							21.6		
Intersection Capacity Utilization			92.1%									F
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Existing 2024  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	4	4	35	211	5	29	40	494	96	57	530	2
Future Volume (vph)	4	4	35	211	5	29	40	494	96	57	530	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			0.99		1.00		
Frt		0.888			0.984			0.976			0.999	
Flt Protected		0.996			0.959		0.950			0.950		
Satd. Flow (prot)	0	1681	0	0	1782	0	1825	3493	0	1825	3575	0
Flt Permitted		0.964			0.723		0.437			0.346		
Satd. Flow (perm)	0	1627	0	0	1343	0	840	3493	0	662	3575	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			9			27				
Link Speed (k/h)		50			50			60				60
Link Distance (m)		111.6			260.3			94.8				72.4
Travel Time (s)		8.0			18.7			5.7				4.3
Confl. Peds. (#/hr)			1	1					6	6		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Adj. Flow (vph)	4	4	38	227	5	31	43	531	103	61	570	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	263	0	43	634	0	61	572	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Existing 2024  
PM Peak Hour

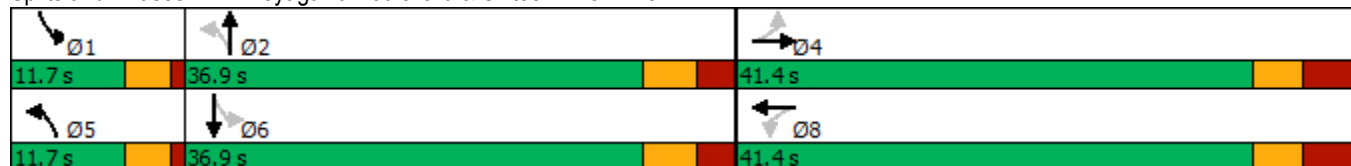


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.5	30.3		11.5	30.3	
Total Split (s)	41.4	41.4		41.4	41.4		11.7	36.9		11.7	36.9	
Total Split (%)	46.0%	46.0%		46.0%	46.0%		13.0%	41.0%		13.0%	41.0%	
Maximum Green (s)	34.6	34.6		34.6	34.6		7.7	30.6		7.7	30.6	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		17.1			17.1		27.8	21.6		28.6	23.7	
Actuated g/C Ratio		0.29			0.29		0.48	0.37		0.49	0.41	
v/c Ratio		0.09			0.66		0.08	0.48		0.13	0.39	
Control Delay		7.9			27.0		8.8	17.3		9.1	15.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		7.9			27.0		8.8	17.3		9.1	15.6	
LOS		A			C		A	B		A	B	
Approach Delay		7.9			27.0			16.8			15.0	
Approach LOS		A			C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	58.3
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	17.5
Intersection LOS:	B
Intersection Capacity Utilization:	57.9%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Existing 2024  
PM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	263	43	634	61	572
v/c Ratio	0.09	0.66	0.08	0.48	0.13	0.39
Control Delay	7.9	27.0	8.8	17.3	9.1	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.9	27.0	8.8	17.3	9.1	15.6
Queue Length 50th (m)	0.7	25.3	2.0	28.2	2.8	17.8
Queue Length 95th (m)	6.9	51.1	7.5	53.2	9.8	49.1
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	1023	836	539	1927	486	1965
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.31	0.08	0.33	0.13	0.29
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 2: Neyagawa Boulevard & Sixteen Mile Drive

Existing 2024  
PM Peak Hour

































Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕		↗	↕		↗	↕		
Traffic Volume (vph)	4	4	35	211	5	29	40	494	96	57	530	2	
Future Volume (vph)	4	4	35	211	5	29	40	494	96	57	530	2	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3		
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95		
Frbp, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00		
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00		
Frt		0.89			0.98		1.00	0.98		1.00	1.00		
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1682			1781		1825	3493		1823	3577		
Flt Permitted		0.96			0.72		0.44	1.00		0.35	1.00		
Satd. Flow (perm)		1629			1342		839	3493		665	3577		
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Adj. Flow (vph)	4	4	38	227	5	31	43	531	103	61	570	2	
RTOR Reduction (vph)	0	27	0	0	6	0	0	17	0	0	0	0	
Lane Group Flow (vph)	0	19	0	0	257	0	43	617	0	61	572	0	
Confl. Peds. (#/hr)			1	1					6	6			
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		4			8		5	2		1	6		
Permitted Phases	4			8			2			6			
Actuated Green, G (s)		17.1			17.1		24.8	22.4		27.6	23.8		
Effective Green, g (s)		17.1			17.1		24.8	22.4		27.6	23.8		
Actuated g/C Ratio		0.28			0.28		0.41	0.37		0.46	0.39		
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3		
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		461			379		383	1295		376	1409		
v/s Ratio Prot							0.00	c0.18		c0.01	0.16		
v/s Ratio Perm		0.01			c0.19		0.04			0.06			
v/c Ratio		0.04			0.68		0.11	0.48		0.16	0.41		
Uniform Delay, d1		15.7			19.2		10.7	14.5		9.3	13.2		
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		0.0			4.7		0.1	0.3		0.2	0.2		
Delay (s)		15.7			23.9		10.9	14.8		9.5	13.4		
Level of Service		B			C		B	B		A	B		
Approach Delay (s)		15.7			23.9			14.5			13.0		
Approach LOS		B			C			B			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			15.5									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.53										
Actuated Cycle Length (s)			60.4									Sum of lost time (s)	17.1
Intersection Capacity Utilization			57.9%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	359	1315	250	232	974	42	256	318	83	99	295	397
Future Volume (vph)	359	1315	250	232	974	42	256	318	83	99	295	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Frt			0.850			0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1601	1807	4269	1555	1738	3416	0	1755	3476	1585
Flt Permitted	0.127			0.110			0.521			0.380		
Satd. Flow (perm)	239	4433	1571	209	4269	1534	952	3416	0	700	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			198			124			25			296
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	374	1370	260	242	1015	44	267	331	86	103	307	414
Shared Lane Traffic (%)												
Lane Group Flow (vph)	374	1370	260	242	1015	44	267	417	0	103	307	414
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030  
AM Peak Hour

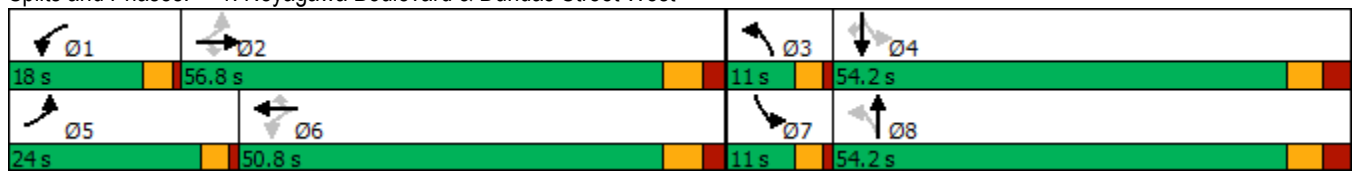


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	24.0	56.8	56.8	18.0	50.8	50.8	11.0	54.2		11.0	54.2	54.2
Total Split (%)	17.1%	40.6%	40.6%	12.9%	36.3%	36.3%	7.9%	38.7%		7.9%	38.7%	38.7%
Maximum Green (s)	20.0	50.1	50.1	14.0	44.1	44.1	7.0	47.3		7.0	47.3	47.3
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	63.7	42.6	42.6	53.5	36.5	36.5	29.7	19.7		29.7	19.7	19.7
Actuated g/C Ratio	0.60	0.40	0.40	0.51	0.35	0.35	0.28	0.19		0.28	0.19	0.19
v/c Ratio	0.85	0.77	0.35	0.75	0.69	0.07	0.83	0.63		0.38	0.47	0.78
Control Delay	42.5	30.8	7.4	40.5	32.6	0.2	55.8	42.1		31.7	41.2	23.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	42.5	30.8	7.4	40.5	32.6	0.2	55.8	42.1		31.7	41.2	23.2
LOS	D	C	A	D	C	A	E	D		C	D	C
Approach Delay		30.0			33.0			47.5			31.0	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 105.6  
 Natural Cycle: 140  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay: 33.4  
 Intersection LOS: C  
 Intersection Capacity Utilization 82.9%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 \* User Entered Value

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues

Future Background 2030

1: Neyagawa Boulevard & Dundas Street West

AM Peak Hour
































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	374	1370	260	242	1015	44	267	417	103	307	414
v/c Ratio	0.85	0.77	0.35	0.75	0.69	0.07	0.83	0.63	0.38	0.47	0.78
Control Delay	42.5	30.8	7.4	40.5	32.6	0.2	55.8	42.1	31.7	41.2	23.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	30.8	7.4	40.5	32.6	0.2	55.8	42.1	31.7	41.2	23.2
Queue Length 50th (m)	49.8	95.0	7.4	29.1	70.9	0.0	44.4	39.7	15.4	30.1	22.2
Queue Length 95th (m)	#127.0	140.1	27.7	#82.1	105.0	0.0	#75.1	58.4	29.7	45.5	60.8
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	442	2137	859	321	1811	722	321	1568	268	1581	873
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.64	0.30	0.75	0.56	0.06	0.83	0.27	0.38	0.19	0.47

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	359	1315	250	232	974	42	256	318	83	99	295	397
Future Volume (vph)	359	1315	250	232	974	42	256	318	83	99	295	397
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1574	1807	4269	1534	1737	3417		1754	3476	1564
Flt Permitted	0.13	1.00	1.00	0.11	1.00	1.00	0.52	1.00		0.38	1.00	1.00
Satd. Flow (perm)	240	4433	1574	208	4269	1534	953	3417		701	3476	1564
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)	374	1370	260	242	1015	44	267	331	86	103	307	414
RTOR Reduction (vph)	0	0	118	0	0	29	0	20	0	0	0	241
Lane Group Flow (vph)	374	1370	142	242	1015	15	267	397	0	103	307	173
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	60.8	42.6	42.6	50.7	36.5	36.5	26.8	19.7		26.8	19.7	19.7
Effective Green, g (s)	60.8	42.6	42.6	50.7	36.5	36.5	26.8	19.7		26.8	19.7	19.7
Actuated g/C Ratio	0.58	0.40	0.40	0.48	0.35	0.35	0.25	0.19		0.25	0.19	0.19
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	437	1795	637	316	1481	532	295	639		249	650	292
v/s Ratio Prot	c0.16	0.31		0.10	0.24		c0.06	0.12		0.03	0.09	
v/s Ratio Perm	c0.33		0.09	0.27		0.01	c0.17			0.08		0.11
v/c Ratio	0.86	0.76	0.22	0.77	0.69	0.03	0.91	0.62		0.41	0.47	0.59
Uniform Delay, d1	24.9	27.0	20.5	22.7	29.4	22.7	36.5	39.3		31.2	38.1	39.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.1	2.0	0.2	10.6	1.3	0.0	29.1	1.9		1.1	0.5	3.2
Delay (s)	40.0	28.9	20.7	33.2	30.8	22.7	65.6	41.2		32.3	38.7	42.3
Level of Service	D	C	C	C	C	C	E	D		C	D	D
Approach Delay (s)		29.9			30.9			50.7			39.7	
Approach LOS		C			C			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			34.8	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			105.2	Sum of lost time (s)				21.6				
Intersection Capacity Utilization			82.9%	ICU Level of Service				E				
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2030  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	1	0	18	172	1	61	19	591	106	38	622	3
Future Volume (vph)	1	0	18	172	1	61	19	591	106	38	622	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.872			0.965			0.977			0.999	
Flt Protected		0.997			0.964		0.950			0.950		
Satd. Flow (prot)	0	1650	0	0	1670	0	1722	3439	0	1601	3541	0
Flt Permitted		0.981			0.771		0.406			0.317		
Satd. Flow (perm)	0	1623	0	0	1335	0	736	3439	0	533	3541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			23			25			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		111.6			260.3			94.8			72.4	
Travel Time (s)		8.0			18.7			5.7			4.3	
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Adj. Flow (vph)	1	0	18	176	1	62	19	603	108	39	635	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	239	0	19	711	0	39	638	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2030  
AM Peak Hour

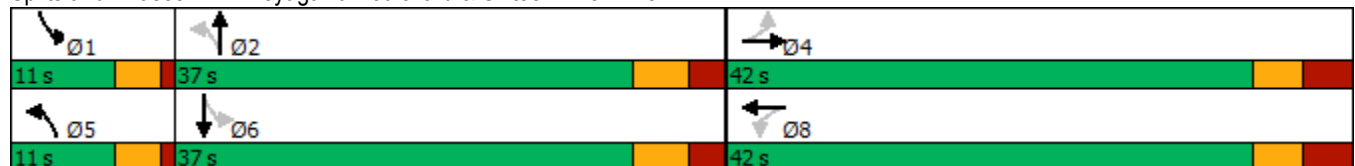


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		6.5	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.0	30.3		11.0	30.3	
Total Split (s)	42.0	42.0		42.0	42.0		11.0	37.0		11.0	37.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		12.2%	41.1%		12.2%	41.1%	
Maximum Green (s)	35.2	35.2		35.2	35.2		7.0	30.7		7.0	30.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		15.6			15.6		26.9	22.3		27.6	24.1	
Actuated g/C Ratio		0.28			0.28		0.49	0.40		0.50	0.44	
v/c Ratio		0.04			0.61		0.04	0.51		0.10	0.41	
Control Delay		0.1			23.7		8.2	15.4		8.5	13.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		0.1			23.7		8.2	15.4		8.5	13.1	
LOS		A			C		A	B		A	B	
Approach Delay		0.1			23.7			15.2			12.9	
Approach LOS		A			C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	55.1
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.61
Intersection Signal Delay:	15.3
Intersection LOS:	B
Intersection Capacity Utilization:	59.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2030  
AM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	239	19	711	39	638
v/c Ratio	0.04	0.61	0.04	0.51	0.10	0.41
Control Delay	0.1	23.7	8.2	15.4	8.5	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.1	23.7	8.2	15.4	8.5	13.1
Queue Length 50th (m)	0.0	14.8	0.8	21.1	1.7	19.1
Queue Length 95th (m)	0.0	45.9	4.1	58.1	6.7	52.4
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	1120	905	491	2027	409	2090
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.26	0.04	0.35	0.10	0.31
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2030  
AM Peak Hour



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	1	0	18	172	1	61	19	591	106	38	622	3
Future Volume (vph)	1	0	18	172	1	61	19	591	106	38	622	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.87			0.96		1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1651			1670		1722	3441		1600	3542	
Flt Permitted		0.98			0.77		0.41	1.00		0.32	1.00	
Satd. Flow (perm)		1623			1335		735	3441		535	3542	
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)	1	0	18	176	1	62	19	603	108	39	635	3
RTOR Reduction (vph)	0	14	0	0	17	0	0	15	0	0	1	0
Lane Group Flow (vph)	0	5	0	0	222	0	19	696	0	39	637	0
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.6			15.6		24.0	23.0		26.4	24.2	
Effective Green, g (s)		15.6			15.6		24.0	23.0		26.4	24.2	
Actuated g/C Ratio		0.27			0.27		0.41	0.40		0.46	0.42	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		437			359		321	1366		284	1480	
v/s Ratio Prot							0.00	c0.20		c0.01	0.18	
v/s Ratio Perm		0.00			c0.17		0.02			0.06		
v/c Ratio		0.01			0.62		0.06	0.51		0.14	0.43	
Uniform Delay, d1		15.5			18.5		10.0	13.2		8.9	12.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			3.2		0.1	0.3		0.2	0.2	
Delay (s)		15.5			21.7		10.1	13.5		9.2	12.2	
Level of Service		B			C		B	B		A	B	
Approach Delay (s)		15.5			21.7			13.4			12.0	
Approach LOS		B			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.0				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			57.9			Sum of lost time (s)				17.1		
Intersection Capacity Utilization			59.7%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

















Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

Future Background 2030  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	19	0	0	23	0	0	0	0	0	0	0
Future Volume (vph)	0	19	0	0	23	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			48			48	
Link Distance (m)		202.5			50.4			139.0			40.1	
Travel Time (s)		14.6			3.6			10.4			3.0	
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
Adj. Flow (vph)	0	21	0	0	25	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	25	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 6.7%	ICU Level of Service A											
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
3: Street A & Sixteen Mile Drive

Future Background 2030  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	19	0	0	23	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	19	0	0	23	0	0	0	0	0	0	0
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)	0	21	0	0	25	0	0	0	0	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	25			21			46	46	21	46	46	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			21			46	46	21	46	46	25
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 %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1589			1595			955	846	1056	955	846	1051
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	25	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1589	1595	1700	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			6.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Background 2030  
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	1924	1628	0	0	0
Future Volume (vph)	0	1924	1628	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1883	0	1883
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1883	0	1883
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2091	1770	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2091	1770	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.5%
	ICU Level of Service A
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
4: Dundas Street West & Street A

Future Background 2030  
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	1924	1628	0	0	0		
Future Volume (Veh/h)	0	1924	1628	0	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)	0	2091	1770	0	0	0		
<b>Pedestrians</b>								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None	None					
Median storage (veh)								
Upstream signal (m)	206							
pX, platoon unblocked	0.82				0.82	0.82		
vC, conflicting volume	1770				2467	590		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1164				2016	0		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)								
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				100	100		
cM capacity (veh/h)	488				42	887		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	697	697	697	590	590	590	0	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.41	0.41	0.41	0.35	0.35	0.35	0.02	0.11
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS								A
Approach Delay (s)	0.0				0.0			0.0
Approach LOS								A
<b>Intersection Summary</b>								
Average Delay	0.0							
Intersection Capacity Utilization	40.5%			ICU Level of Service				A
Analysis Period (min)	15							

Lanes, Volumes, Timings  
5: Neyagawa Boulevard & Block 1 Access














Future Background 2030  
AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	720	815	0
Future Volume (vph)	0	0	0	720	815	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	1883	0	3579	3579	0
Flt Permitted						
Satd. Flow (perm)	0	1883	0	3579	3579	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	783	886	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	783	886	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
5: Neyagawa Boulevard & Block 1 Access

















Future Background 2030  
AM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	 
Traffic Volume (veh/h)	0	0	0	720	815	0
Future Volume (Veh/h)	0	0	0	720	815	0
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	783	886	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.92	0.88	0.88			
vC, conflicting volume	1278	443	886			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	707	81	587			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	340	843	862			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	0	392	392	591	295	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.23	0.23	0.23	0.35	0.17	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	25.9%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2030  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	0.0% ICU Level of Service A											
Analysis Period (min)	15											











HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2030  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
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)	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	100	100	100	100	100	100			100		
cM capacity (veh/h)	1023	896	1085	1023	896	1085	1623			1623		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.12	0.05	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			0.0%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Background 2030  
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	19	0	0	23	0	0
Future Volume (vph)	19	0	0	23	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1883	0	0	1883	1883	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	0	0	25	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	21	0	0	25	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis  
 7: Street B & Sixteen Mile Drive

Future Background 2030  
 AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (veh/h)	19	0	0	23	0	0
Future Volume (Veh/h)	19	0	0	23	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)	21	0	0	25	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	112					
pX, platoon unblocked						
vC, conflicting volume			21		46	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		46	21
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)			1595		964	1056
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	21	25	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1595	1700			
Volume to Capacity	0.01	0.00	0.05			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				6.7%	ICU Level of Service	A
Analysis Period (min)				15		










Lanes, Volumes, Timings  
8: Street A & Street B

Future Background 2030  
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	0	0	1883
Link Speed (k/h)	48		48			48
Link Distance (m)	58.5		100.7			139.0
Travel Time (s)	4.4		7.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%		ICU Level of Service A			
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
8: Street A & Street B

Future Background 2030  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
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	0	0	0
<b>Pedestrians</b>						
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	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
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)	1023	1085	1623			
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.04	0.02	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	0.0%		ICU Level of Service		A	
Analysis Period (min)	15					

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive











Future Background 2030  
 AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	19	0	0	23	0	0
Future Volume (vph)	19	0	0	23	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	0	0	25	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	25	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Background 2030  
 AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	19	0	0	23	0	0
Future Volume (Veh/h)	19	0	0	23	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)	21	0	0	25	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			21	46	21	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21	46	21	
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)			1595	964	1056	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	21	25	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1595	1700			
Volume to Capacity	0.01	0.00	0.09			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			












Lanes, Volumes, Timings  
10: Block 3 Access & Street B

Future Background 2030  
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					






























HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B

Future Background 2030  
 AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	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)	0	0	0	0	0	0
<b>Pedestrians</b>						
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			0		0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		0	0
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)			1623		1023	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.01	0.00	0.09			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				0.0%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	343	998	234	283	1637	77	304	464	114	93	334	447
Future Volume (vph)	343	998	234	283	1637	77	304	464	114	93	334	447
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98	1.00		0.99	1.00	0.99		0.99		0.99
Frt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1617	1825	4476	1541	1789	3477	0	1807	3579	1585
Flt Permitted	0.085			0.161			0.469			0.218		
Satd. Flow (perm)	160	4433	1588	309	4476	1521	882	3477	0	412	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			236			93			23			305
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	357	1040	244	295	1705	80	317	483	119	97	348	466
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	1040	244	295	1705	80	317	602	0	97	348	466
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030  
PM Peak Hour

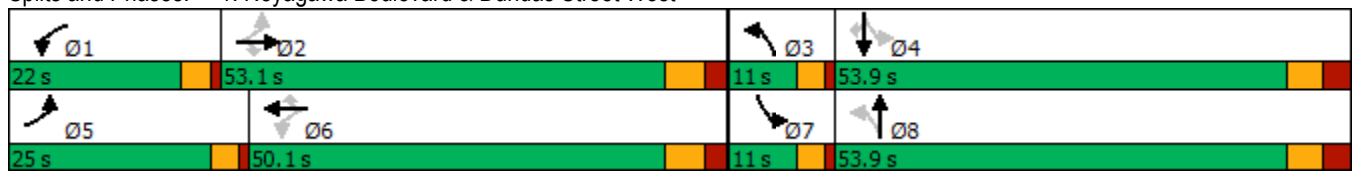


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	25.0	53.1	53.1	22.0	50.1	50.1	11.0	53.9		11.0	53.9	53.9
Total Split (%)	17.9%	37.9%	37.9%	15.7%	35.8%	35.8%	7.9%	38.5%		7.9%	38.5%	38.5%
Maximum Green (s)	21.0	46.4	46.4	18.0	43.4	43.4	7.0	47.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	70.5	47.3	47.3	63.6	43.5	43.5	36.6	26.7		36.6	26.7	26.7
Actuated g/C Ratio	0.59	0.39	0.39	0.53	0.36	0.36	0.30	0.22		0.30	0.22	0.22
v/c Ratio	0.94	0.60	0.32	0.77	1.05	0.13	0.98	0.76		0.47	0.44	0.80
Control Delay	67.8	31.6	5.1	34.7	74.4	4.9	84.5	48.4		34.9	41.4	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	67.8	31.6	5.1	34.7	74.4	4.9	84.5	48.4		34.9	41.4	25.4
LOS	E	C	A	C	E	A	F	D		C	D	C
Approach Delay		35.5			66.1			60.8			32.5	
Approach LOS		D			E			E			C	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	120
Natural Cycle:	150
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.05
Intersection Signal Delay:	50.7
Intersection LOS:	D
Intersection Capacity Utilization:	103.1%
ICU Level of Service:	G
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



## 1: Neyagawa Boulevard &amp; Dundas Street West

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	357	1040	244	295	1705	80	317	602	97	348	466
v/c Ratio	0.94	0.60	0.32	0.77	1.05	0.13	0.98	0.76	0.47	0.44	0.80
Control Delay	67.8	31.6	5.1	34.7	74.4	4.9	84.5	48.4	34.9	41.4	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	31.6	5.1	34.7	74.4	4.9	84.5	48.4	34.9	41.4	25.4
Queue Length 50th (m)	65.6	79.2	1.1	34.1	~179.0	0.0	59.5	67.5	15.8	37.3	36.7
Queue Length 95th (m)	#144.5	113.6	18.8	#89.5	#252.6	8.7	#101.4	86.6	27.9	50.6	76.5
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	380	1745	768	393	1624	611	322	1380	207	1406	798
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.60	0.32	0.75	1.05	0.13	0.98	0.44	0.47	0.25	0.58

## Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030  
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	343	998	234	283	1637	77	304	464	114	93	334	447
Future Volume (vph)	343	998	234	283	1637	77	304	464	114	93	334	447
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1589	1825	4476	1521	1788	3480		1805	3579	1563
Flt Permitted	0.08	1.00	1.00	0.16	1.00	1.00	0.47	1.00		0.22	1.00	1.00
Satd. Flow (perm)	159	4433	1589	310	4476	1521	882	3480		413	3579	1563
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)	357	1040	244	295	1705	80	317	483	119	97	348	466
RTOR Reduction (vph)	0	0	143	0	0	51	0	18	0	0	0	237
Lane Group Flow (vph)	357	1040	101	295	1705	29	317	584	0	97	348	229
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	68.4	47.3	47.3	60.8	43.5	43.5	33.7	26.7		33.7	26.7	26.7
Effective Green, g (s)	68.4	47.3	47.3	60.8	43.5	43.5	33.7	26.7		33.7	26.7	26.7
Actuated g/C Ratio	0.57	0.39	0.39	0.51	0.36	0.36	0.28	0.22		0.28	0.22	0.22
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	377	1748	626	375	1623	551	300	774		197	796	348
v/s Ratio Prot	c0.17	0.23		0.11	c0.38		c0.06	0.17		0.03	0.10	
v/s Ratio Perm	0.37		0.06	0.28		0.02	c0.23			0.11		0.15
v/c Ratio	0.95	0.59	0.16	0.79	1.05	0.05	1.06	0.75		0.49	0.44	0.66
Uniform Delay, d1	37.6	28.7	23.5	19.4	38.2	24.8	41.9	43.5		33.5	40.1	42.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	32.6	0.5	0.1	10.4	36.9	0.0	67.7	4.2		1.9	0.4	4.4
Delay (s)	70.1	29.3	23.6	29.8	75.1	24.9	109.6	47.7		35.5	40.5	46.9
Level of Service	E	C	C	C	E	C	F	D		D	D	D
Approach Delay (s)		37.3			66.8			69.1			43.2	
Approach LOS		D			E			E			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			54.6									D
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			119.9							21.6		
Intersection Capacity Utilization			103.1%									G
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2030  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	4	4	35	259	5	62	40	560	194	109	596	2
Future Volume (vph)	4	4	35	259	5	62	40	560	194	109	596	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			0.99		1.00		
Frt		0.888			0.974			0.961				
Flt Protected		0.996			0.962		0.950			0.950		
Satd. Flow (prot)	0	1681	0	0	1772	0	1825	3419	0	1825	3579	0
Flt Permitted		0.964			0.739		0.379			0.225		
Satd. Flow (perm)	0	1627	0	0	1360	0	728	3419	0	431	3579	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			15			58				
Link Speed (k/h)		50			50			60				60
Link Distance (m)		111.6			260.3			94.8				72.4
Travel Time (s)		8.0			18.7			5.7				4.3
Confl. Peds. (#/hr)			1	1					6	6		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Adj. Flow (vph)	4	4	38	278	5	67	43	602	209	117	641	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	350	0	43	811	0	117	643	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2030  
PM Peak Hour

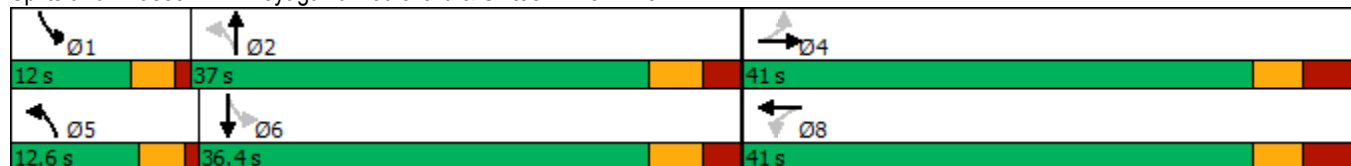


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.5	30.3		11.5	30.3	
Total Split (s)	41.0	41.0		41.0	41.0		12.6	37.0		12.0	36.4	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		14.0%	41.1%		13.3%	40.4%	
Maximum Green (s)	34.2	34.2		34.2	34.2		8.6	30.7		8.0	30.1	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		22.4			22.4		32.6	24.8		34.3	27.6	
Actuated g/C Ratio		0.32			0.32		0.47	0.35		0.49	0.39	
v/c Ratio		0.08			0.78		0.09	0.65		0.32	0.45	
Control Delay		8.0			34.9		10.8	22.4		12.8	19.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.0			34.9		10.8	22.4		12.8	19.5	
LOS		A			C		B	C		B	B	
Approach Delay		8.0			34.9			21.8			18.5	
Approach LOS		A			C			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	69.9
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	22.5
Intersection LOS:	C
Intersection Capacity Utilization:	67.2%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2030  
PM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	350	43	811	117	643
v/c Ratio	0.08	0.78	0.09	0.65	0.32	0.45
Control Delay	8.0	34.9	10.8	22.4	12.8	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	34.9	10.8	22.4	12.8	19.5
Queue Length 50th (m)	0.7	39.3	2.6	45.6	7.4	35.8
Queue Length 95th (m)	7.4	78.1	8.7	77.7	19.3	62.5
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	865	715	494	1628	381	1655
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.49	0.09	0.50	0.31	0.39
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2030  
PM Peak Hour



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	4	4	35	259	5	62	40	560	194	109	596	2
Future Volume (vph)	4	4	35	259	5	62	40	560	194	109	596	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.97		1.00	0.96		1.00	1.00	
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1682			1771		1825	3422		1824	3577	
Flt Permitted		0.96			0.74		0.38	1.00		0.22	1.00	
Satd. Flow (perm)		1628			1361		727	3422		432	3577	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	4	4	38	278	5	67	43	602	209	117	641	2
RTOR Reduction (vph)	0	26	0	0	10	0	0	37	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	340	0	43	774	0	117	643	0
Confl. Peds. (#/hr)			1	1					6	6		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		22.4			22.4		29.5	25.7		33.3	27.6	
Effective Green, g (s)		22.4			22.4		29.5	25.7		33.3	27.6	
Actuated g/C Ratio		0.32			0.32		0.42	0.36		0.47	0.39	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		514			429		361	1240		314	1392	
v/s Ratio Prot							0.01	c0.23		c0.03	0.18	
v/s Ratio Perm		0.01			c0.25		0.04			0.14		
v/c Ratio		0.04			0.79		0.12	0.62		0.37	0.46	
Uniform Delay, d1		16.8			22.1		12.4	18.6		11.5	16.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			9.6		0.1	1.0		0.7	0.2	
Delay (s)		16.8			31.8		12.6	19.6		12.2	16.4	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		16.8			31.8			19.3			15.7	
Approach LOS		B			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			20.0								HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			70.9								Sum of lost time (s)	17.1
Intersection Capacity Utilization			67.2%								ICU Level of Service	C
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

















Future Background 2030  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	43	0	0	47	0	0	0	0	0	0	0
Future Volume (vph)	0	43	0	0	47	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			48			48	
Link Distance (m)		202.5			50.4			139.0			40.1	
Travel Time (s)		14.6			3.6			10.4			3.0	
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
Adj. Flow (vph)	0	47	0	0	51	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	51	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 6.7%	ICU Level of Service A											
Analysis Period (min)	15											

# HCM Unsignalized Intersection Capacity Analysis

## 3: Street A & Sixteen Mile Drive

Future Background 2030  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	43	0	0	47	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	43	0	0	47	0	0	0	0	0	0	0
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)	0	47	0	0	51	0	0	0	0	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	51			47			98	98	47	98	98	51
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	51			47			98	98	47	98	98	51
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 %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1555			1560			884	792	1022	884	792	1017
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	47	51	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1555	1560	1700	1700								
Volume to Capacity	0.00	0.00	0.04	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			6.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Background 2030  
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	1576	2388	0	0	0
Future Volume (vph)	0	1576	2388	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1883	0	1883
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1883	0	1883
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1713	2596	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1713	2596	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.5%
	ICU Level of Service A
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
4: Dundas Street West & Street A

Future Background 2030  
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	1576	2388	0	0	0		
Future Volume (Veh/h)	0	1576	2388	0	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)	0	1713	2596	0	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)			206					
pX, platoon unblocked	0.66				0.66	0.66		
vC, conflicting volume	2596				3167	865		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1599				2469	0		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)								
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				100	100		
cM capacity (veh/h)	266				16	712		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	571	571	571	865	865	865	0	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.34	0.34	0.34	0.51	0.51	0.51	0.06	0.18
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS								A
Approach Delay (s)	0.0			0.0				0.0
Approach LOS								A
Intersection Summary								
Average Delay			0.0					
Intersection Capacity Utilization			49.5%		ICU Level of Service			A
Analysis Period (min)			15					

Lanes, Volumes, Timings  
5: Neyagawa Boulevard & Block 1 Access

Future Background 2030  
PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	886	895	0
Future Volume (vph)	0	0	0	886	895	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	1883	0	3579	3579	0
Flt Permitted						
Satd. Flow (perm)	0	1883	0	3579	3579	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	963	973	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	963	973	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
5: Neyagawa Boulevard & Block 1 Access

Future Background 2030  
PM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↓	
Traffic Volume (veh/h)	0	0	0	886	895	0
Future Volume (Veh/h)	0	0	0	886	895	0
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	963	973	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.92	0.87	0.87			
vC, conflicting volume	1454	486	973			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	684	104	665			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	353	807	799			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	0	482	482	649	324	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.16	0.28	0.28	0.38	0.19	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	28.1%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2030  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	0.0%						ICU Level of Service A					
Analysis Period (min)	15											










HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2030  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
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)	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	100	100	100	100	100	100			100		
cM capacity (veh/h)	1023	896	1085	1023	896	1085	1623			1623		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.09	0.06	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			0.0%		ICU Level of Service					A		
Analysis Period (min)			15									










Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Background 2030  
PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	43	0	0	47	0	0
Future Volume (vph)	43	0	0	47	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	0	0	51	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	51	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis  
7: Street B & Sixteen Mile Drive

Future Background 2030  
PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	43	0	0	47	0	0
Future Volume (Veh/h)	43	0	0	47	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)	47	0	0	51	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	112					
pX, platoon unblocked						
vC, conflicting volume			47		98	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		98	47
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)			1560		901	1022
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	47	51	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1560	1700			
Volume to Capacity	0.03	0.00	0.02			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Background 2030  
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	0	0	1883
Link Speed (k/h)	48		48			48
Link Distance (m)	58.5		100.7			139.0
Travel Time (s)	4.4		7.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
8: Street A & Street B

Future Background 2030  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
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	0	0	0
<b>Pedestrians</b>						
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	0	0				0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0				0
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)	1023	1085				1623
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.06	0.06	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	0.0%		ICU Level of Service		A	
Analysis Period (min)	15					

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive

Future Background 2030  
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	43	0	0	47	0	0
Future Volume (vph)	43	0	0	47	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	0	0	51	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	51	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Background 2030  
 PM Peak Hour












Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	43	0	0	47	0	0
Future Volume (Veh/h)	43	0	0	47	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)	47	0	0	51	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			47		98	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		98	47
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)			1560		901	1022
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	47	51	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1560	1700			
Volume to Capacity	0.03	0.00	0.13			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			












Lanes, Volumes, Timings  
 10: Block 3 Access & Street B

Future Background 2030  
 PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1883	0	0	1883	1883	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					
































HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B

Future Background 2030  
 PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	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)	0	0	0	0	0	0
<b>Pedestrians</b>						
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			0		0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		0	0
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)			1623		1023	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.03	0.00	0.07			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			0.0%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2030  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 		 	 	
Traffic Volume (vph)	382	1315	250	232	975	54	256	326	83	126	322	400
Future Volume (vph)	382	1315	250	232	975	54	256	326	83	126	322	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Frt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1601	1807	4269	1555	1738	3419	0	1755	3476	1585
Flt Permitted	0.126			0.109			0.485			0.372		
Satd. Flow (perm)	237	4433	1571	207	4269	1534	886	3419	0	685	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			198			124		24				294
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	398	1370	260	242	1016	56	267	340	86	131	335	417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	398	1370	260	242	1016	56	267	426	0	131	335	417
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2030  
 AM Peak Hour

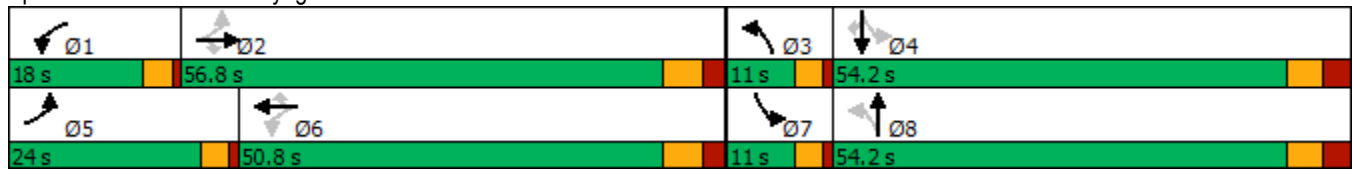


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	24.0	56.8	56.8	18.0	50.8	50.8	11.0	54.2		11.0	54.2	54.2
Total Split (%)	17.1%	40.6%	40.6%	12.9%	36.3%	36.3%	7.9%	38.7%		7.9%	38.7%	38.7%
Maximum Green (s)	20.0	50.1	50.1	14.0	44.1	44.1	7.0	47.3		7.0	47.3	47.3
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	63.7	42.7	42.7	53.6	36.6	36.6	30.3	20.2		30.3	20.2	20.2
Actuated g/C Ratio	0.60	0.40	0.40	0.50	0.34	0.34	0.29	0.19		0.29	0.19	0.19
v/c Ratio	0.91	0.77	0.35	0.76	0.69	0.09	0.86	0.64		0.49	0.51	0.78
Control Delay	51.3	31.3	7.6	41.5	33.0	0.3	60.4	42.2		34.7	41.6	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	51.3	31.3	7.6	41.5	33.0	0.3	60.4	42.2		34.7	41.6	23.5
LOS	D	C	A	D	C	A	E	D		C	D	C
Approach Delay		32.2			33.2			49.2			32.0	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	106.2
Natural Cycle:	140
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	34.8
Intersection LOS:	C
Intersection Capacity Utilization:	84.1%
ICU Level of Service:	E
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues

Future Total 2030

1: Neyagawa Boulevard & Dundas Street West

AM Peak Hour
































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	398	1370	260	242	1016	56	267	426	131	335	417
v/c Ratio	0.91	0.77	0.35	0.76	0.69	0.09	0.86	0.64	0.49	0.51	0.78
Control Delay	51.3	31.3	7.6	41.5	33.0	0.3	60.4	42.2	34.7	41.6	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	31.3	7.6	41.5	33.0	0.3	60.4	42.2	34.7	41.6	23.5
Queue Length 50th (m)	56.4	95.5	7.5	29.5	71.3	0.0	44.5	41.0	19.9	33.2	23.5
Queue Length 95th (m)	#143.9	143.1	28.2	#84.3	107.1	0.0	#78.2	59.6	36.5	49.2	62.1
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	439	2126	856	318	1802	719	309	1561	267	1573	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.64	0.30	0.76	0.56	0.08	0.86	0.27	0.49	0.21	0.48

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2030  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	382	1315	250	232	975	54	256	326	83	126	322	400
Future Volume (vph)	382	1315	250	232	975	54	256	326	83	126	322	400
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1574	1807	4269	1534	1737	3419		1754	3476	1564
Flt Permitted	0.13	1.00	1.00	0.11	1.00	1.00	0.48	1.00		0.37	1.00	1.00
Satd. Flow (perm)	238	4433	1574	208	4269	1534	886	3419		687	3476	1564
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)	398	1370	260	242	1016	56	267	340	86	131	335	417
RTOR Reduction (vph)	0	0	118	0	0	37	0	19	0	0	0	238
Lane Group Flow (vph)	398	1370	142	242	1016	19	267	407	0	131	335	179
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	60.9	42.7	42.7	50.8	36.6	36.6	27.3	20.2		27.3	20.2	20.2
Effective Green, g (s)	60.9	42.7	42.7	50.8	36.6	36.6	27.3	20.2		27.3	20.2	20.2
Actuated g/C Ratio	0.58	0.40	0.40	0.48	0.35	0.35	0.26	0.19		0.26	0.19	0.19
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	434	1789	635	314	1476	530	285	652		248	663	298
v/s Ratio Prot	c0.18	0.31		0.10	0.24		c0.06	0.12		0.04	0.10	
v/s Ratio Perm	c0.35		0.09	0.27		0.01	c0.18			0.10		0.11
v/c Ratio	0.92	0.77	0.22	0.77	0.69	0.04	0.94	0.62		0.53	0.51	0.60
Uniform Delay, d1	26.8	27.2	20.7	23.0	29.7	22.9	37.0	39.3		31.6	38.3	39.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	23.9	2.0	0.2	11.1	1.4	0.0	36.4	1.9		2.0	0.6	3.4
Delay (s)	50.7	29.2	20.9	34.1	31.1	22.9	73.4	41.2		33.7	38.9	42.5
Level of Service	D	C	C	C	C	C	E	D		C	D	D
Approach Delay (s)		32.4			31.3			53.6			39.8	
Approach LOS		C			C			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			36.4									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			105.8								21.6	
Intersection Capacity Utilization			84.1%									ICU Level of Service E
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2030  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	28	0	8	172	1	61	61	591	106	38	630	3
Future Volume (vph)	28	0	8	172	1	61	61	591	106	38	630	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00			1.00		1.00		
Frt		0.971			0.965			0.977			0.999	
Flt Protected		0.962			0.964		0.950			0.950		
Satd. Flow (prot)	0	1790	0	0	1670	0	1722	3439	0	1601	3541	0
Flt Permitted		0.728			0.759		0.345			0.355		
Satd. Flow (perm)	0	1354	0	0	1314	0	625	3439	0	597	3541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			23			25			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		111.6			260.3			94.8			72.4	
Travel Time (s)		8.0			18.7			5.7			4.3	
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Adj. Flow (vph)	29	0	8	176	1	62	62	603	108	39	643	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	239	0	62	711	0	39	646	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2030  
AM Peak Hour

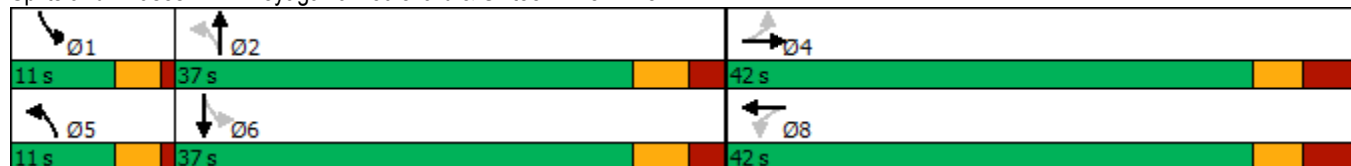


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		6.5	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.0	30.3		11.0	30.3	
Total Split (s)	42.0	42.0		42.0	42.0		11.0	37.0		11.0	37.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		12.2%	41.1%		12.2%	41.1%	
Maximum Green (s)	35.2	35.2		35.2	35.2		7.0	30.7		7.0	30.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		16.1			16.1		29.2	24.4		28.2	22.2	
Actuated g/C Ratio		0.28			0.28		0.50	0.42		0.49	0.38	
v/c Ratio		0.08			0.63		0.14	0.48		0.10	0.47	
Control Delay		0.6			25.5		8.6	15.1		8.4	16.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		0.6			25.5		8.6	15.1		8.4	16.9	
LOS		A			C		A	B		A	B	
Approach Delay		0.6			25.5			14.6			16.5	
Approach LOS		A			C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	57.9
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	16.5
Intersection LOS:	B
Intersection Capacity Utilization:	54.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2030  
AM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	239	62	711	39	646
v/c Ratio	0.08	0.63	0.14	0.48	0.10	0.47
Control Delay	0.6	25.5	8.6	15.1	8.4	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.6	25.5	8.6	15.1	8.4	16.9
Queue Length 50th (m)	0.0	20.9	2.7	21.3	1.7	29.2
Queue Length 95th (m)	0.7	46.1	9.5	58.6	6.8	53.7
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	895	846	453	1926	419	1969
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.28	0.14	0.37	0.09	0.33
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2030  
AM Peak Hour



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	28	0	8	172	1	61	61	591	106	38	630	3
Future Volume (vph)	28	0	8	172	1	61	61	591	106	38	630	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.96		1.00	0.98		1.00	1.00	
Flt Protected		0.96			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1789			1670		1722	3440		1600	3542	
Flt Permitted		0.73			0.76		0.34	1.00		0.35	1.00	
Satd. Flow (perm)		1355			1315		625	3440		597	3542	
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)	29	0	8	176	1	62	62	603	108	39	643	3
RTOR Reduction (vph)	0	27	0	0	17	0	0	15	0	0	1	0
Lane Group Flow (vph)	0	10	0	0	222	0	62	696	0	39	645	0
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.1			16.1		28.1	24.4		25.3	23.0	
Effective Green, g (s)		16.1			16.1		28.1	24.4		25.3	23.0	
Actuated g/C Ratio		0.27			0.27		0.47	0.41		0.42	0.38	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		364			353		360	1401		290	1360	
v/s Ratio Prot							c0.01	c0.20		0.01	0.18	
v/s Ratio Perm		0.01			c0.17		0.07			0.05		
v/c Ratio		0.03			0.63		0.17	0.50		0.13	0.47	
Uniform Delay, d1		16.1			19.3		8.9	13.2		10.3	13.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			3.5		0.2	0.3		0.2	0.3	
Delay (s)		16.2			22.8		9.1	13.5		10.5	14.2	
Level of Service		B			C		A	B		B	B	
Approach Delay (s)		16.2			22.8			13.1			14.0	
Approach LOS		B			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.8				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			59.9				Sum of lost time (s)				17.1	
Intersection Capacity Utilization			54.2%				ICU Level of Service				A	
Analysis Period (min)			15									

c Critical Lane Group

















Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

Future Total 2030  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	9	10	0	23	0	0	1	0	0	0	0
Future Volume (vph)	0	9	10	0	23	0	0	1	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.929											
Fl <sub>t</sub> Protected												
Satd. Flow (prot)	0	1750	0	0	1883	0	0	1883	0	0	1883	0
Fl <sub>t</sub> Permitted												
Satd. Flow (perm)	0	1750	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)	50				50				48		48	
Link Distance (m)	202.5				50.4				139.0		40.1	
Travel Time (s)	14.6				3.6				10.4		3.0	
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
Adj. Flow (vph)	0	10	11	0	25	0	0	1	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	25	0	0	1	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0				0.0				0.0		0.0	
Link Offset(m)	0.0				0.0				0.0		0.0	
Crosswalk Width(m)	1.6				1.6				1.6		1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14		24		14		24		14	
Sign Control	Free				Free				Stop		Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	13.3%					ICU Level of Service A						
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
 3: Street A & Sixteen Mile Drive

Future Total 2030  
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	9	10	0	23	0	0	1	0	0	0	0
Future Volume (Veh/h)	0	9	10	0	23	0	0	1	0	0	0	0
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)	0	10	11	0	25	0	0	1	0	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	25			21			40	40	16	41	46	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			21			40	40	16	41	46	25
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 %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1589			1595			963	852	1064	962	846	1051
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	25	1	0								
Volume Left	0	0	0	0								
Volume Right	11	0	0	0								
cSH	1589	1595	852	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	9.2	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	9.2	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			13.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Total 2030  
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↘
Traffic Volume (vph)	0	1947	1631	1	0	23
Future Volume (vph)	0	1947	1631	1	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1601	0	1629
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1601	0	1629
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2116	1773	1	0	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2116	1773	1	0	25
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

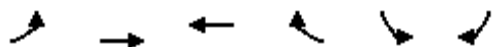
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.5%
	ICU Level of Service A
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
 4: Dundas Street West & Street A

Future Total 2030  
 AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	1947	1631	1	0	23		
Future Volume (Veh/h)	0	1947	1631	1	0	23		
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)	0	2116	1773	1	0	25		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None	None					
Median storage (veh)								
Upstream signal (m)			206					
pX, platoon unblocked	0.82				0.82	0.82		
vC, conflicting volume	1774				2478	591		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1166				2028	0		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)								
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				100	97		
cM capacity (veh/h)	486				41	887		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	705	705	705	591	591	591	1	25
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1	25
cSH	1700	1700	1700	1700	1700	1700	1700	887
Volume to Capacity	0.41	0.41	0.41	0.35	0.35	0.35	0.00	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2
Lane LOS								A
Approach Delay (s)	0.0			0.0				9.2
Approach LOS								A
Intersection Summary								
Average Delay			0.1					
Intersection Capacity Utilization			41.5%		ICU Level of Service			A
Analysis Period (min)			15					

Lanes, Volumes, Timings  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2030  
 AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	66	0	762	805	8
Future Volume (vph)	0	66	0	762	805	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr <sub>t</sub>		0.865			0.998	
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	0	1629	0	3579	3571	0
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	0	1629	0	3579	3571	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	72	0	828	875	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	72	0	828	884	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2030  
 AM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕	↕	↘
Traffic Volume (veh/h)	0	66	0	762	805	8
Future Volume (Veh/h)	0	66	0	762	805	8
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	72	0	828	875	9
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.91	0.87	0.87			
vC, conflicting volume	1294	442	884			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	688	46	556			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	100			
cM capacity (veh/h)	346	878	875			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	72	414	414	583	301	
Volume Left	0	0	0	0	0	
Volume Right	72	0	0	0	9	
cSH	878	1700	1700	1700	1700	
Volume to Capacity	0.08	0.24	0.24	0.34	0.18	
Queue Length 95th (m)	2.0	0.0	0.0	0.0	0.0	
Control Delay (s)	9.5	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	9.5	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.4					
Intersection Capacity Utilization	33.3%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2030  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	13	0	27	0	0	0	43	0	0
Future Volume (vph)	0	0	0	13	0	27	0	0	0	43	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.909							
Fl <sub>t</sub> Protected					0.984						0.950	
Satd. Flow (prot)	0	1883	0	0	1685	0	0	1883	0	0	1789	0
Fl <sub>t</sub> Permitted					0.984						0.950	
Satd. Flow (perm)	0	1883	0	0	1685	0	0	1883	0	0	1789	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	14	0	29	0	0	0	47	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	43	0	0	0	0	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	13.3%					ICU Level of Service A						
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2030  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	13	0	27	0	0	0	43	0	0
Future Volume (Veh/h)	0	0	0	13	0	27	0	0	0	43	0	0
Sign Control		Stop			Stop			Free			Free	
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)	0	0	0	14	0	29	0	0	0	47	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	123	94	0	94	94	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	123	94	0	94	94	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	100	100	98	100	97	100			97		
cM capacity (veh/h)	810	773	1085	870	773	1085	1623			1623		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	43	0	47								
Volume Left	0	14	0	47								
Volume Right	0	29	0	0								
cSH	1700	1004	1700	1623								
Volume to Capacity	0.12	0.04	0.00	0.03								
Queue Length 95th (m)	0.0	1.0	0.0	0.7								
Control Delay (s)	0.0	8.7	0.0	7.3								
Lane LOS	A	A		A								
Approach Delay (s)	0.0	8.7	0.0	7.3								
Approach LOS	A	A										
Intersection Summary												
Average Delay			8.0									
Intersection Capacity Utilization			13.3%		ICU Level of Service					A		
Analysis Period (min)			15									










Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Total 2030  
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	9	0	43	22	0	27
Future Volume (vph)	9	0	43	22	0	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.865	
Fl <sub>t</sub> Protected				0.968		
Satd. Flow (prot)	1883	0	0	1823	1629	0
Fl <sub>t</sub> Permitted				0.968		
Satd. Flow (perm)	1883	0	0	1823	1629	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	0	47	24	0	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	71	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	20.2%			ICU Level of Service A		
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis  
7: Street B & Sixteen Mile Drive

Future Total 2030  
AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	9	0	43	22	0	27
Future Volume (Veh/h)	9	0	43	22	0	27
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	47	24	0	29
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	112					
pX, platoon unblocked						
vC, conflicting volume			10		128	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			10		128	10
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		100	97
cM capacity (veh/h)			1610		841	1071
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	10	71	29			
Volume Left	0	47	0			
Volume Right	0	0	29			
cSH	1700	1610	1071			
Volume to Capacity	0.01	0.03	0.03			
Queue Length 95th (m)	0.0	0.7	0.6			
Control Delay (s)	0.0	4.9	8.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.9	8.5			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			5.4			
Intersection Capacity Utilization			20.2%	ICU Level of Service		A
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Total 2030  
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	0	1	0	0	10
Future Volume (vph)	13	0	1	0	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	1883	0	0	1883
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	1883	0	0	1883
Link Speed (k/h)	48		48			48
Link Distance (m)	58.5		100.7			139.0
Travel Time (s)	4.4		7.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	0	1	0	0	11
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	14	0	1	0	0	11
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%		ICU Level of Service A			
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 8: Street A & Street B

Future Total 2030  
 AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	0	1	0	0	10
Future Volume (Veh/h)	13	0	1	0	0	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)	14	0	1	0	0	11
<b>Pedestrians</b>						
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	12	1			1	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	12	1			1	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	1008	1084			1622	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	14	1	11			
Volume Left	14	0	0			
Volume Right	0	0	0			
cSH	1008	1700	1622			
Volume to Capacity	0.01	0.00	0.00			
Queue Length 95th (m)	0.3	0.0	0.0			
Control Delay (s)	8.6	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.6	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.6			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive

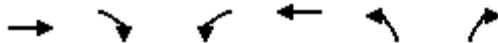
Future Total 2030  
 AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	9	0	0	22	0	0
Future Volume (vph)	9	0	0	22	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	0	0	24	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	24	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2030  
 AM Peak Hour













Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	9	0	0	22	0	0
Future Volume (Veh/h)	9	0	0	22	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)	10	0	0	24	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			10		34	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			10		34	10
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)			1610		979	1071
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	10	24	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1610	1700			
Volume to Capacity	0.01	0.00	0.09			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				6.7%	ICU Level of Service	A
Analysis Period (min)				15		












Lanes, Volumes, Timings  
10: Block 3 Access & Street B

Future Total 2030  
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	13	0	0
Future Volume (vph)	0	0	0	13	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1883	0	0	1883	1883	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	14	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	14	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					






























HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B

Future Total 2030  
 AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	13	0	0
Future Volume (Veh/h)	0	0	0	13	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)	0	0	0	14	0	0
<b>Pedestrians</b>						
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			0	14	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	14	0	
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)			1623	1005	1085	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	0	14	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1623	1700			
Volume to Capacity	0.01	0.00	0.09			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				6.7%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2030  
 PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	362	998	234	283	1641	131	304	490	114	116	348	450
Future Volume (vph)	362	998	234	283	1641	131	304	490	114	116	348	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98	1.00		0.99	1.00	0.99		0.99		0.99
Frt			0.850			0.850		0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1617	1825	4476	1541	1789	3485	0	1807	3579	1585
Flt Permitted	0.085			0.159			0.455			0.203		
Satd. Flow (perm)	160	4433	1588	305	4476	1521	856	3485	0	383	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			236			93			22			304
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	377	1040	244	295	1709	136	317	510	119	121	363	469
Shared Lane Traffic (%)												
Lane Group Flow (vph)	377	1040	244	295	1709	136	317	629	0	121	363	469
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2030  
 PM Peak Hour

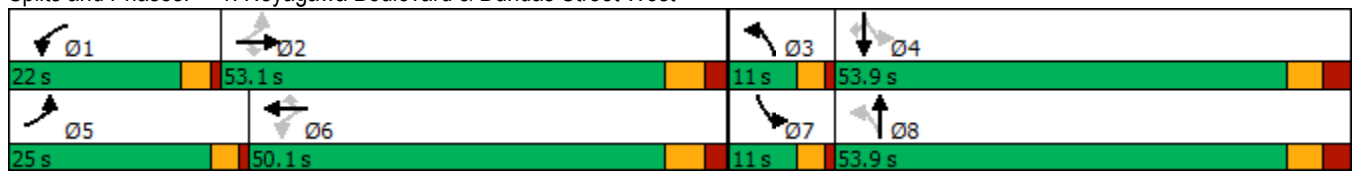


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	25.0	53.1	53.1	22.0	50.1	50.1	11.0	53.9		11.0	53.9	53.9
Total Split (%)	17.9%	37.9%	37.9%	15.7%	35.8%	35.8%	7.9%	38.5%		7.9%	38.5%	38.5%
Maximum Green (s)	21.0	46.4	46.4	18.0	43.4	43.4	7.0	47.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	70.5	47.2	47.2	63.6	43.5	43.5	37.6	27.6		37.6	27.6	27.6
Actuated g/C Ratio	0.58	0.39	0.39	0.53	0.36	0.36	0.31	0.23		0.31	0.23	0.23
v/c Ratio	1.00	0.60	0.32	0.78	1.06	0.22	0.99	0.77		0.60	0.44	0.79
Control Delay	82.7	32.2	5.1	36.1	78.5	11.7	86.5	48.8		41.1	41.3	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	82.7	32.2	5.1	36.1	78.5	11.7	86.5	48.8		41.1	41.3	25.3
LOS	F	C	A	D	E	B	F	D		D	D	C
Approach Delay		39.7			68.4			61.4			33.4	
Approach LOS		D			E			E			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 120.9  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 53.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 105.1%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 \* User Entered Value

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues

Future Total 2030

1: Neyagawa Boulevard & Dundas Street West

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	377	1040	244	295	1709	136	317	629	121	363	469
v/c Ratio	1.00	0.60	0.32	0.78	1.06	0.22	0.99	0.77	0.60	0.44	0.79
Control Delay	82.7	32.2	5.1	36.1	78.5	11.7	86.5	48.8	41.1	41.3	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.7	32.2	5.1	36.1	78.5	11.7	86.5	48.8	41.1	41.3	25.3
Queue Length 50th (m)	72.4	80.4	1.1	35.2	~182.7	6.6	~59.6	71.4	20.0	39.0	37.8
Queue Length 95th (m)	#157.8	114.4	18.9	#91.3	#255.5	23.0	#102.9	91.0	33.6	52.6	77.9
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	376	1731	764	388	1610	606	320	1371	201	1395	794
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.60	0.32	0.76	1.06	0.22	0.99	0.46	0.60	0.26	0.59

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2030  
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	362	998	234	283	1641	131	304	490	114	116	348	450
Future Volume (vph)	362	998	234	283	1641	131	304	490	114	116	348	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1589	1825	4476	1521	1788	3486		1805	3579	1563
Flt Permitted	0.08	1.00	1.00	0.16	1.00	1.00	0.45	1.00		0.20	1.00	1.00
Satd. Flow (perm)	160	4433	1589	306	4476	1521	856	3486		385	3579	1563
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)	377	1040	244	295	1709	136	317	510	119	121	362	469
RTOR Reduction (vph)	0	0	144	0	0	60	0	17	0	0	0	234
Lane Group Flow (vph)	377	1040	100	295	1709	76	317	612	0	121	363	235
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	68.3	47.2	47.2	60.9	43.5	43.5	34.7	27.7		34.7	27.7	27.7
Effective Green, g (s)	68.3	47.2	47.2	60.9	43.5	43.5	34.7	27.7		34.7	27.7	27.7
Actuated g/C Ratio	0.56	0.39	0.39	0.50	0.36	0.36	0.29	0.23		0.29	0.23	0.23
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	374	1730	620	372	1610	547	299	798		192	820	358
v/s Ratio Prot	c0.18	0.23		0.11	0.38		c0.06	0.18		0.04	0.10	
v/s Ratio Perm	c0.39		0.06	0.29		0.05	c0.24			0.14		0.15
v/c Ratio	1.01	0.60	0.16	0.79	1.06	0.14	1.06	0.77		0.63	0.44	0.66
Uniform Delay, d1	39.0	29.4	24.0	19.9	38.7	26.1	41.9	43.6		33.9	40.0	42.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	48.6	0.6	0.1	11.0	40.8	0.1	68.8	4.4		6.6	0.4	4.3
Delay (s)	87.6	29.9	24.1	31.0	79.5	26.2	110.8	48.0		40.5	40.4	46.6
Level of Service	F	C	C	C	E	C	F	D		D	D	D
Approach Delay (s)		42.2			69.4			69.0			43.4	
Approach LOS		D			E			E			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			57.1									E
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			120.9							21.6		
Intersection Capacity Utilization			105.1%									G
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2030  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	18	4	17	259	5	62	139	560	194	109	622	2
Future Volume (vph)	18	4	17	259	5	62	139	560	194	109	622	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			0.99		1.00		
Frt		0.941			0.974			0.961				
Flt Protected		0.977			0.962		0.950			0.950		
Satd. Flow (prot)	0	1756	0	0	1772	0	1825	3419	0	1825	3579	0
Flt Permitted		0.805			0.742		0.283			0.267		
Satd. Flow (perm)	0	1447	0	0	1366	0	544	3419	0	512	3579	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			15			58				
Link Speed (k/h)		50			50			60				60
Link Distance (m)		111.6			260.3			94.8				72.4
Travel Time (s)		8.0			18.7			5.7				4.3
Confl. Peds. (#/hr)			1	1					6	6		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Adj. Flow (vph)	19	4	18	278	5	67	149	602	209	117	669	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	0	350	0	149	811	0	117	671	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2030  
PM Peak Hour

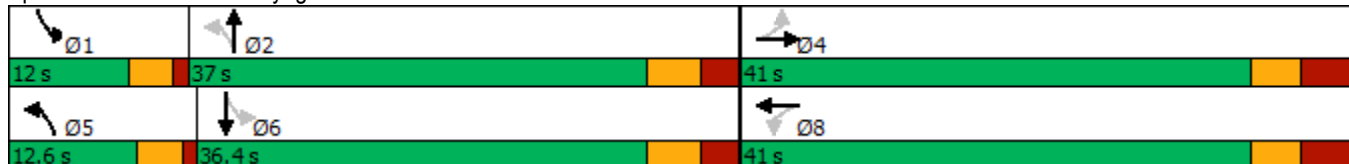


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.5	30.3		11.5	30.3	
Total Split (s)	41.0	41.0		41.0	41.0		12.6	37.0		12.0	36.4	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		14.0%	41.1%		13.3%	40.4%	
Maximum Green (s)	34.2	34.2		34.2	34.2		8.6	30.7		8.0	30.1	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		22.8			22.8		35.9	27.1		33.9	23.9	
Actuated g/C Ratio		0.31			0.31		0.50	0.37		0.47	0.33	
v/c Ratio		0.09			0.80		0.36	0.62		0.31	0.57	
Control Delay		12.3			36.3		12.9	21.7		12.7	23.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		12.3			36.3		12.9	21.7		12.7	23.3	
LOS		B			D		B	C		B	C	
Approach Delay		12.3			36.3			20.3			21.7	
Approach LOS		B			D			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	72.4
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	23.3
Intersection LOS:	C
Intersection Capacity Utilization:	67.2%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2030  
PM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	41	350	149	811	117	671
v/c Ratio	0.09	0.80	0.36	0.62	0.31	0.57
Control Delay	12.3	36.3	12.9	21.7	12.7	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	36.3	12.9	21.7	12.7	23.3
Queue Length 50th (m)	2.1	39.3	9.5	45.5	7.3	39.1
Queue Length 95th (m)	8.8	77.9	23.7	77.7	19.3	66.4
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	712	671	428	1527	392	1530
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.52	0.35	0.53	0.30	0.44
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2030  
PM Peak Hour



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	18	4	17	259	5	62	139	560	194	109	622	2
Future Volume (vph)	18	4	17	259	5	62	139	560	194	109	622	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.97		1.00	0.96		1.00	1.00	
Flt Protected		0.98			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1756			1771		1825	3422		1824	3577	
Flt Permitted		0.81			0.74		0.28	1.00		0.27	1.00	
Satd. Flow (perm)		1447			1367		544	3422		513	3577	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	19	4	18	278	5	67	149	602	209	117	669	2
RTOR Reduction (vph)	0	12	0	0	10	0	0	36	0	0	0	0
Lane Group Flow (vph)	0	29	0	0	340	0	149	775	0	117	671	0
Confl. Peds. (#/hr)			1	1					6	6		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		22.8			22.8		35.3	27.1		30.7	24.8	
Effective Green, g (s)		22.8			22.8		35.3	27.1		30.7	24.8	
Actuated g/C Ratio		0.31			0.31		0.48	0.37		0.42	0.34	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		452			427		407	1272		322	1216	
v/s Ratio Prot							c0.04	c0.23		0.03	0.19	
v/s Ratio Perm		0.02			c0.25		0.14			0.12		
v/c Ratio		0.06			0.80		0.37	0.61		0.36	0.55	
Uniform Delay, d1		17.6			22.9		11.1	18.6		13.3	19.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			9.9		0.6	0.8		0.7	0.5	
Delay (s)		17.6			32.8		11.6	19.4		14.0	20.1	
Level of Service		B			C		B	B		B	C	
Approach Delay (s)		17.6			32.8			18.2			19.2	
Approach LOS		B			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			20.9				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			72.9				Sum of lost time (s)				17.1	
Intersection Capacity Utilization			67.2%				ICU Level of Service				C	
Analysis Period (min)			15									

c Critical Lane Group

















Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

Future Total 2030  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	25	18	0	47	0	0	4	0	0	0	0
Future Volume (vph)	0	25	18	0	47	0	0	4	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.943											
Fl <sub>t</sub> Protected												
Satd. Flow (prot)	0	1776	0	0	1883	0	0	1883	0	0	1883	0
Fl <sub>t</sub> Permitted												
Satd. Flow (perm)	0	1776	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)	50				50				48		48	
Link Distance (m)	202.5				50.4				139.0		40.1	
Travel Time (s)	14.6				3.6				10.4		3.0	
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
Adj. Flow (vph)	0	27	20	0	51	0	0	4	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	51	0	0	4	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0				0.0				0.0		0.0	
Link Offset(m)	0.0				0.0				0.0		0.0	
Crosswalk Width(m)	1.6				1.6				1.6		1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14		24		14		24		14	
Sign Control	Free				Free				Stop		Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	13.3%					ICU Level of Service A						
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
3: Street A & Sixteen Mile Drive

Future Total 2030  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	25	18	0	47	0	0	4	0	0	0	0
Future Volume (Veh/h)	0	25	18	0	47	0	0	4	0	0	0	0
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)	0	27	20	0	51	0	0	4	0	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	51			47			88	88	37	90	98	51
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	51			47			88	88	37	90	98	51
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 %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1555			1560			897	802	1035	891	792	1017
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	47	51	4	0								
Volume Left	0	0	0	0								
Volume Right	20	0	0	0								
cSH	1555	1560	802	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.1	0.0								
Control Delay (s)	0.0	0.0	9.5	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	9.5	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			13.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Total 2030  
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	1595	2391	4	0	39
Future Volume (vph)	0	1595	2391	4	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1601	0	1629
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1601	0	1629
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1734	2599	4	0	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1734	2599	4	0	42
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.2%
	ICU Level of Service B
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
4: Dundas Street West & Street A

Future Total 2030  
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations		↑↑↑	↑↑↑	↗		↗			
Traffic Volume (veh/h)	0	1595	2391	4	0	39			
Future Volume (Veh/h)	0	1595	2391	4	0	39			
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)	0	1734	2599	4	0	42			
Pedestrians									
Lane Width (m)									
Walking Speed (m/s)									
Percent Blockage									
Right turn flare (veh)									
Median type		None	None						
Median storage (veh)									
Upstream signal (m)	206								
pX, platoon unblocked	0.66				0.66	0.66			
vC, conflicting volume	2603				3177	866			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	1622				2493	0			
tC, single (s)	4.1				6.8	6.9			
tC, 2 stage (s)									
tF (s)	2.2				3.5	3.3			
p0 queue free %	100				100	94			
cM capacity (veh/h)	262				16	715			
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1	
Volume Total	578	578	578	866	866	866	4	42	
Volume Left	0	0	0	0	0	0	0	0	
Volume Right	0	0	0	0	0	0	4	42	
cSH	1700	1700	1700	1700	1700	1700	1700	715	
Volume to Capacity	0.34	0.34	0.34	0.51	0.51	0.51	0.00	0.06	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	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				0.1					
Intersection Capacity Utilization				56.2%	ICU Level of Service				B
Analysis Period (min)				15					

Lanes, Volumes, Timings  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2030  
 PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	58	0	985	877	26
Future Volume (vph)	0	58	0	985	877	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr <sub>t</sub>		0.865			0.996	
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	0	1629	0	3579	3564	0
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	0	1629	0	3579	3564	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	63	0	1071	953	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	63	0	1071	981	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2030  
 PM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	↘
Traffic Volume (veh/h)	0	58	0	985	877	26
Future Volume (Veh/h)	0	58	0	985	877	26
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	63	0	1071	953	28
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.92	0.85	0.85			
vC, conflicting volume	1502	490	981			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	646	44	622			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	100			
cM capacity (veh/h)	374	863	811			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	63	536	536	635	346	
Volume Left	0	0	0	0	0	
Volume Right	63	0	0	0	28	
cSH	863	1700	1700	1700	1700	
Volume to Capacity	0.07	0.32	0.32	0.37	0.20	
Queue Length 95th (m)	1.8	0.0	0.0	0.0	0.0	
Control Delay (s)	9.5	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	9.5	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.3					
Intersection Capacity Utilization	35.3%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2030  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	21	0	14	0	0	0	103	0	0
Future Volume (vph)	0	0	0	21	0	14	0	0	0	103	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.947							
Fl <sub>t</sub> Protected					0.971						0.950	
Satd. Flow (prot)	0	1883	0	0	1732	0	0	1883	0	0	1789	0
Fl <sub>t</sub> Permitted					0.971						0.950	
Satd. Flow (perm)	0	1883	0	0	1732	0	0	1883	0	0	1789	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	23	0	15	0	0	0	112	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	38	0	0	0	0	0	112	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	15.7%						ICU Level of Service A					
Analysis Period (min)	15											

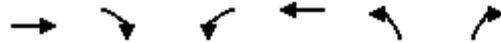
HCM Unsignalized Intersection Capacity Analysis  
 6: Street B & Block 2 Access/Block 1 Access

Future Total 2030  
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	21	0	14	0	0	0	103	0	0
Future Volume (Veh/h)	0	0	0	21	0	14	0	0	0	103	0	0
Sign Control		Stop			Stop			Free			Free	
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)	0	0	0	23	0	15	0	0	0	112	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	239	224	0	224	224	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	239	224	0	224	224	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	100	100	97	100	99	100			93		
cM capacity (veh/h)	668	628	1085	693	628	1085	1623			1623		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	38	0	112								
Volume Left	0	23	0	112								
Volume Right	0	15	0	0								
cSH	1700	808	1700	1623								
Volume to Capacity	0.09	0.05	0.00	0.07								
Queue Length 95th (m)	0.0	1.1	0.0	1.7								
Control Delay (s)	0.0	9.7	0.0	7.4								
Lane LOS	A	A		A								
Approach Delay (s)	0.0	9.7	0.0	7.4								
Approach LOS	A	A										
<b>Intersection Summary</b>												
Average Delay			8.0									
Intersection Capacity Utilization			15.7%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Total 2030  
PM Peak Hour



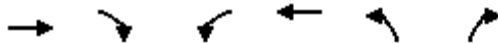
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	25	0	103	43	0	14
Future Volume (vph)	25	0	103	43	0	14
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected						0.966
Satd. Flow (prot)	1883	0	0	1819	1629	0
Fl <sub>t</sub> Permitted						0.966
Satd. Flow (perm)	1883	0	0	1819	1629	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	0	112	47	0	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	0	0	159	15	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.6%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
7: Street B & Sixteen Mile Drive










Future Total 2030  
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	25	0	103	43	0	14
Future Volume (Veh/h)	25	0	103	43	0	14
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)	27	0	112	47	0	15
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	112					
pX, platoon unblocked					0.96	
vC, conflicting volume			27	298	27	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			27	247	27	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			93	100	99	
cM capacity (veh/h)			1587	661	1048	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	27	159	15			
Volume Left	0	112	0			
Volume Right	0	0	15			
cSH	1700	1587	1048			
Volume to Capacity	0.02	0.07	0.01			
Queue Length 95th (m)	0.0	1.7	0.3			
Control Delay (s)	0.0	5.4	8.5			
Lane LOS			A			
Approach Delay (s)	0.0	5.4	8.5			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			4.9			
Intersection Capacity Utilization			24.6%	ICU Level of Service	A	
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Total 2030  
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	0	4	0	0	18
Future Volume (vph)	21	0	4	0	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	1883	0	0	1883
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	1883	0	0	1883
Link Speed (k/h)	48		48			48
Link Distance (m)	58.5		100.7			139.0
Travel Time (s)	4.4		7.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	0	4	0	0	20
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	23	0	4	0	0	20
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%		ICU Level of Service A			
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
8: Street A & Street B

Future Total 2030  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	0	4	0	0	18
Future Volume (Veh/h)	21	0	4	0	0	18
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)	23	0	4	0	0	20
<b>Pedestrians</b>						
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	24	4			4	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	24	4			4	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	992	1080			1618	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	23	4	20			
Volume Left	23	0	0			
Volume Right	0	0	0			
cSH	992	1700	1618			
Volume to Capacity	0.02	0.00	0.00			
Queue Length 95th (m)	0.5	0.0	0.0			
Control Delay (s)	8.7	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.7	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.3			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2030  
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	25	0	0	43	0	0
Future Volume (vph)	25	0	0	43	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	0	0	47	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	0	0	47	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2030  
 PM Peak Hour













Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	25	0	0	43	0	0
Future Volume (Veh/h)	25	0	0	43	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)	27	0	0	47	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			27		74	27
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			27		74	27
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)			1587		930	1048
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	27	47	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1587	1700			
Volume to Capacity	0.02	0.00	0.13			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				6.7%	ICU Level of Service	A
Analysis Period (min)				15		












Lanes, Volumes, Timings  
10: Block 3 Access & Street B

Future Total 2030  
PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	21	0	0
Future Volume (vph)	0	0	0	21	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	23	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	23	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					






























HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B

Future Total 2030  
 PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	21	0	0
Future Volume (Veh/h)	0	0	0	21	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)	0	0	0	23	0	0
<b>Pedestrians</b>						
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			0		23	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		23	0
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)			1623		993	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	0	23	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1623	1700			
Volume to Capacity	0.03	0.00	0.07			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	372	1368	260	241	1011	44	267	331	86	103	306	413
Future Volume (vph)	372	1368	260	241	1011	44	267	331	86	103	306	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Frt			0.850			0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1601	1807	4269	1555	1738	3416	0	1755	3476	1585
Flt Permitted	0.119			0.104			0.503			0.361		
Satd. Flow (perm)	224	4433	1571	198	4269	1534	919	3416	0	665	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			199			124			25			291
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	388	1425	271	251	1053	46	278	345	90	107	319	430
Shared Lane Traffic (%)												
Lane Group Flow (vph)	388	1425	271	251	1053	46	278	435	0	107	319	430
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032  
AM Peak Hour

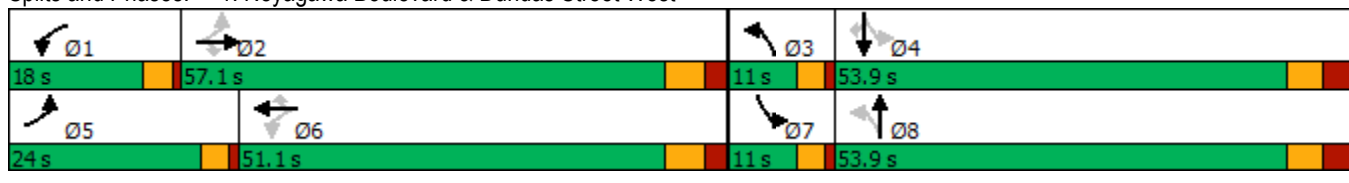


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	24.0	57.1	57.1	18.0	51.1	51.1	11.0	53.9		11.0	53.9	53.9
Total Split (%)	17.1%	40.8%	40.8%	12.9%	36.5%	36.5%	7.9%	38.5%		7.9%	38.5%	38.5%
Maximum Green (s)	20.0	50.4	50.4	14.0	44.4	44.4	7.0	47.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	65.7	44.6	44.6	55.5	38.5	38.5	31.3	21.2		31.3	21.2	21.2
Actuated g/C Ratio	0.60	0.41	0.41	0.51	0.35	0.35	0.29	0.19		0.29	0.19	0.19
v/c Ratio	0.91	0.79	0.36	0.81	0.70	0.07	0.88	0.64		0.41	0.47	0.80
Control Delay	53.7	32.4	8.2	47.9	33.6	0.2	62.8	42.5		32.5	41.5	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	53.7	32.4	8.2	47.9	33.6	0.2	62.8	42.5		32.5	41.5	25.6
LOS	D	C	A	D	C	A	E	D		C	D	C
Approach Delay		33.2			35.2			50.4			32.4	
Approach LOS		C			D			D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	109.1
Natural Cycle:	140
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	36.1
Intersection LOS:	D
Intersection Capacity Utilization:	85.0%
ICU Level of Service:	E
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



## 1: Neyagawa Boulevard &amp; Dundas Street West

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	388	1425	271	251	1053	46	278	435	107	319	430
v/c Ratio	0.91	0.79	0.36	0.81	0.70	0.07	0.88	0.64	0.41	0.47	0.80
Control Delay	53.7	32.4	8.2	47.9	33.6	0.2	62.8	42.5	32.5	41.5	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	32.4	8.2	47.9	33.6	0.2	62.8	42.5	32.5	41.5	25.6
Queue Length 50th (m)	57.9	102.7	8.9	33.4	75.8	0.0	49.2	43.8	16.9	32.8	29.1
Queue Length 95th (m)	#145.4	155.6	31.5	#94.2	115.0	0.0	#79.1	60.9	30.4	47.2	67.7
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	426	2079	842	310	1764	706	316	1508	261	1520	847
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.69	0.32	0.81	0.60	0.07	0.88	0.29	0.41	0.21	0.51






























## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	372	1368	260	241	1011	44	267	331	86	103	306	413
Future Volume (vph)	372	1368	260	241	1011	44	267	331	86	103	306	413
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1573	1807	4269	1534	1737	3417		1754	3476	1564
Flt Permitted	0.12	1.00	1.00	0.10	1.00	1.00	0.50	1.00		0.36	1.00	1.00
Satd. Flow (perm)	224	4433	1573	197	4269	1534	920	3417		666	3476	1564
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)	388	1425	271	251	1053	46	278	345	90	107	319	430
RTOR Reduction (vph)	0	0	117	0	0	30	0	20	0	0	0	234
Lane Group Flow (vph)	388	1425	154	251	1053	16	278	415	0	107	319	196
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	62.9	44.7	44.7	52.8	38.6	38.6	28.3	21.2		28.3	21.2	21.2
Effective Green, g (s)	62.9	44.7	44.7	52.8	38.6	38.6	28.3	21.2		28.3	21.2	21.2
Actuated g/C Ratio	0.58	0.41	0.41	0.49	0.35	0.35	0.26	0.19		0.26	0.19	0.19
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	421	1821	646	305	1514	544	292	665		244	677	304
v/s Ratio Prot	c0.17	0.32		0.11	0.25		c0.06	0.12		0.03	0.09	
v/s Ratio Perm	c0.36		0.10	0.29		0.01	c0.19			0.09		0.13
v/c Ratio	0.92	0.78	0.24	0.82	0.70	0.03	0.95	0.62		0.44	0.47	0.64
Uniform Delay, d1	28.3	27.8	20.9	25.8	30.1	22.9	38.2	40.1		31.9	38.8	40.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	25.5	2.3	0.2	16.2	1.4	0.0	39.7	1.8		1.3	0.5	4.6
Delay (s)	53.7	30.1	21.1	42.1	31.5	22.9	77.9	42.0		33.2	39.4	44.9
Level of Service	D	C	C	D	C	C	E	D		C	D	D
Approach Delay (s)		33.3			33.1			56.0			41.4	
Approach LOS		C			C			E			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			37.9				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			108.8				Sum of lost time (s)			21.6		
Intersection Capacity Utilization			85.0%				ICU Level of Service			E		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2032  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	1	0	18	177	1	62	19	614	109	39	647	3
Future Volume (vph)	1	0	18	177	1	62	19	614	109	39	647	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.872			0.965			0.977				0.999
Flt Protected		0.997			0.964		0.950			0.950		
Satd. Flow (prot)	0	1650	0	0	1670	0	1722	3439	0	1601	3541	0
Flt Permitted		0.981			0.770		0.386			0.304		
Satd. Flow (perm)	0	1623	0	0	1333	0	700	3439	0	511	3541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			22			25				1
Link Speed (k/h)		50			50			60				60
Link Distance (m)		111.6			260.3			94.8				72.4
Travel Time (s)		8.0			18.7			5.7				4.3
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Adj. Flow (vph)	1	0	18	181	1	63	19	627	111	40	660	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	245	0	19	738	0	40	663	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2032  
AM Peak Hour

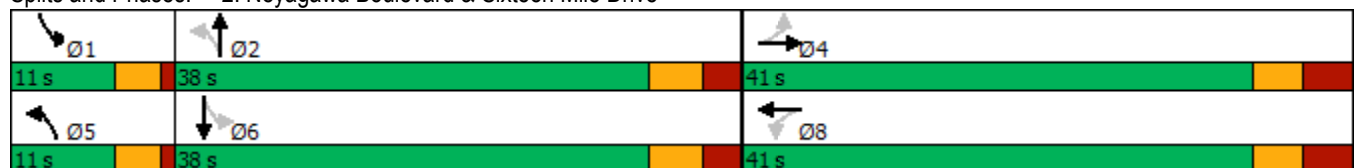


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		6.5	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.0	30.3		11.0	30.3	
Total Split (s)	41.0	41.0		41.0	41.0		11.0	38.0		11.0	38.0	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		12.2%	42.2%		12.2%	42.2%	
Maximum Green (s)	34.2	34.2		34.2	34.2		7.0	31.7		7.0	31.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		16.0			16.0		27.4	22.7		28.0	24.6	
Actuated g/C Ratio		0.29			0.29		0.49	0.41		0.50	0.44	
v/c Ratio		0.04			0.62		0.04	0.52		0.10	0.43	
Control Delay		0.1			24.3		8.4	15.8		8.7	13.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		0.1			24.3		8.4	15.8		8.7	13.4	
LOS		A			C		A	B		A	B	
Approach Delay		0.1			24.3			15.6			13.2	
Approach LOS		A			C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	56
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	15.7
Intersection LOS:	B
Intersection Capacity Utilization:	60.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2032  
AM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	245	19	738	40	663
v/c Ratio	0.04	0.62	0.04	0.52	0.10	0.43
Control Delay	0.1	24.3	8.4	15.8	8.7	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.1	24.3	8.4	15.8	8.7	13.4
Queue Length 50th (m)	0.0	15.3	0.8	22.6	1.8	20.5
Queue Length 95th (m)	0.0	48.4	4.1	61.6	7.0	55.6
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	1079	869	477	2069	399	2133
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.28	0.04	0.36	0.10	0.31
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2032  
AM Peak Hour



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	1	0	18	177	1	62	19	614	109	39	647	3
Future Volume (vph)	1	0	18	177	1	62	19	614	109	39	647	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.87			0.97		1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1651			1670		1722	3442		1600	3542	
Flt Permitted		0.98			0.77		0.39	1.00		0.30	1.00	
Satd. Flow (perm)		1624			1334		700	3442		512	3542	
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)	1	0	18	181	1	63	19	627	111	40	660	3
RTOR Reduction (vph)	0	14	0	0	16	0	0	15	0	0	1	0
Lane Group Flow (vph)	0	5	0	0	229	0	19	723	0	40	662	0
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.0			16.0		24.5	23.5		26.7	24.6	
Effective Green, g (s)		16.0			16.0		24.5	23.5		26.7	24.6	
Actuated g/C Ratio		0.27			0.27		0.42	0.40		0.45	0.42	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		442			363		309	1377		271	1484	
v/s Ratio Prot							0.00	c0.21		c0.01	0.19	
v/s Ratio Perm		0.00			c0.17		0.02			0.06		
v/c Ratio		0.01			0.63		0.06	0.53		0.15	0.45	
Uniform Delay, d1		15.6			18.8		10.1	13.4		9.1	12.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			3.6		0.1	0.4		0.3	0.2	
Delay (s)		15.6			22.3		10.2	13.7		9.4	12.4	
Level of Service		B			C		B	B		A	B	
Approach Delay (s)		15.6			22.3			13.6			12.2	
Approach LOS		B			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.3				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			58.7			Sum of lost time (s)				17.1		
Intersection Capacity Utilization			60.7%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

















Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

Future Background 2032  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	19	0	0	23	0	0	0	0	0	0	0
Future Volume (vph)	0	19	0	0	23	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			48			48	
Link Distance (m)		202.5			50.4			139.0			40.1	
Travel Time (s)		14.6			3.6			10.4			3.0	
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
Adj. Flow (vph)	0	21	0	0	25	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	25	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 6.7%	ICU Level of Service A											
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
3: Street A & Sixteen Mile Drive

Future Background 2032  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	19	0	0	23	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	19	0	0	23	0	0	0	0	0	0	0
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)	0	21	0	0	25	0	0	0	0	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	25			21			46	46	21	46	46	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			21			46	46	21	46	46	25
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 %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1589			1595			955	846	1056	955	846	1051
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	25	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1589	1595	1700	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			6.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Background 2032  
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	2001	1692	0	0	0
Future Volume (vph)	0	2001	1692	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1883	0	1883
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1883	0	1883
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2175	1839	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2175	1839	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.0%
	ICU Level of Service A
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
4: Dundas Street West & Street A

Future Background 2032  
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	2001	1692	0	0	0		
Future Volume (Veh/h)	0	2001	1692	0	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)	0	2175	1839	0	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)			206					
pX, platoon unblocked	0.81				0.81	0.81		
vC, conflicting volume	1839				2564	613		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1214				2109	0		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)								
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				100	100		
cM capacity (veh/h)	462				36	878		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	725	725	725	613	613	613	0	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.43	0.43	0.43	0.36	0.36	0.36	0.02	0.11
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS								A
Approach Delay (s)	0.0			0.0				0.0
Approach LOS								A
Intersection Summary								
Average Delay			0.0					
Intersection Capacity Utilization			42.0%		ICU Level of Service			A
Analysis Period (min)			15					

Lanes, Volumes, Timings  
5: Neyagawa Boulevard & Block 1 Access

Future Background 2032  
AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Volume (vph)	0	0	0	748	846	0
Future Volume (vph)	0	0	0	748	846	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	1883	0	3579	3579	0
Flt Permitted						
Satd. Flow (perm)	0	1883	0	3579	3579	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	813	920	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	813	920	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
5: Neyagawa Boulevard & Block 1 Access

Future Background 2032  
AM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Volume (veh/h)	0	0	0	748	846	0
Future Volume (Veh/h)	0	0	0	748	846	0
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	813	920	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.91	0.87	0.87			
vC, conflicting volume	1326	460	920			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	724	79	608			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	330	840	840			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	0	406	406	613	307	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.23	0.24	0.24	0.36	0.18	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	26.7%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2032  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	0.0% ICU Level of Service A											
Analysis Period (min)	15											










HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2032  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
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)	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	100	100	100	100	100	100			100		
cM capacity (veh/h)	1023	896	1085	1023	896	1085	1623			1623		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.12	0.05	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			0.0%		ICU Level of Service					A		
Analysis Period (min)			15									










Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Background 2032  
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	19	0	0	23	0	0
Future Volume (vph)	19	0	0	23	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1883	0	0	1883	1883	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	0	0	25	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	21	0	0	25	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis  
7: Street B & Sixteen Mile Drive

Future Background 2032  
AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	19	0	0	23	0	0
Future Volume (Veh/h)	19	0	0	23	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)	21	0	0	25	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	112					
pX, platoon unblocked						
vC, conflicting volume			21		46	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		46	21
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)			1595		964	1056
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	21	25	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1595	1700			
Volume to Capacity	0.01	0.00	0.05			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Background 2032  
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	0	0	1883
Link Speed (k/h)	48		48			48
Link Distance (m)	58.5		100.7			139.0
Travel Time (s)	4.4		7.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%		ICU Level of Service A			
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
8: Street A & Street B

Future Background 2032  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
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	0	0	0
<b>Pedestrians</b>						
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	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
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)	1023	1085			1623	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.04	0.02	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			0.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive











Future Background 2032  
 AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	19	0	0	23	0	0
Future Volume (vph)	19	0	0	23	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	0	0	25	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	25	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
9: Block 2 Access & Sixteen Mile Drive

Future Background 2032  
AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	19	0	0	23	0	0
Future Volume (Veh/h)	19	0	0	23	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)	21	0	0	25	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			21		46	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		46	21
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)			1595		964	1056
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	21	25	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1595	1700			
Volume to Capacity	0.01	0.00	0.09			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				6.7%	ICU Level of Service	A
Analysis Period (min)				15		












Lanes, Volumes, Timings  
10: Block 3 Access & Street B

Future Background 2032  
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					






























HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B

Future Background 2032  
 AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	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)	0	0	0	0	0	0
<b>Pedestrians</b>						
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			0		0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		0	0
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)			1623		1023	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.01	0.00	0.09			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				0.0%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	355	1039	243	294	1700	80	316	480	119	97	347	465
Future Volume (vph)	355	1039	243	294	1700	80	316	480	119	97	347	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98	1.00		0.99	1.00	0.99		0.99		0.99
Fr <sub>t</sub>			0.850			0.850		0.970				0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1617	1825	4476	1541	1789	3477	0	1807	3579	1585
Fl <sub>t</sub> Permitted	0.088			0.133			0.458			0.209		
Satd. Flow (perm)	166	4433	1588	255	4476	1521	861	3477	0	395	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			232			93			24			314
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	370	1082	253	306	1771	83	329	500	124	101	361	484
Shared Lane Traffic (%)												
Lane Group Flow (vph)	370	1082	253	306	1771	83	329	624	0	101	361	484
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032  
PM Peak Hour

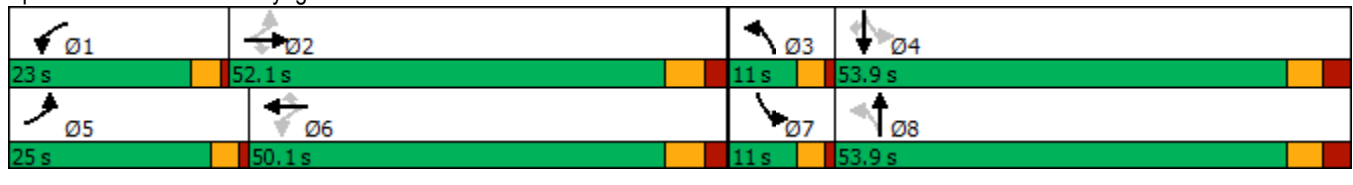


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	25.0	52.1	52.1	23.0	50.1	50.1	11.0	53.9		11.0	53.9	53.9
Total Split (%)	17.9%	37.2%	37.2%	16.4%	35.8%	35.8%	7.9%	38.5%		7.9%	38.5%	38.5%
Maximum Green (s)	21.0	45.4	45.4	19.0	43.4	43.4	7.0	47.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	69.4	45.6	45.6	65.3	43.6	43.6	37.9	28.0		37.9	28.0	28.0
Actuated g/C Ratio	0.57	0.38	0.38	0.54	0.36	0.36	0.31	0.23		0.31	0.23	0.23
v/c Ratio	0.98	0.65	0.34	0.80	1.10	0.14	1.02	0.76		0.49	0.44	0.81
Control Delay	78.0	34.5	6.3	41.5	93.0	5.4	93.6	48.0		35.6	41.1	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	78.0	34.5	6.3	41.5	93.0	5.4	93.6	48.0		35.6	41.1	25.7
LOS	E	C	A	D	F	A	F	D		D	D	C
Approach Delay		39.7			82.3			63.7			32.6	
Approach LOS		D			F			E			C	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	121.3
Natural Cycle:	150
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.10
Intersection Signal Delay:	58.5
Intersection LOS:	E
Intersection Capacity Utilization:	105.2%
ICU Level of Service:	G
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



## 1: Neyagawa Boulevard &amp; Dundas Street West

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	370	1082	253	306	1771	83	329	624	101	361	484
v/c Ratio	0.98	0.65	0.34	0.80	1.10	0.14	1.02	0.76	0.49	0.44	0.81
Control Delay	78.0	34.5	6.3	41.5	93.0	5.4	93.6	48.0	35.6	41.1	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.0	34.5	6.3	41.5	93.0	5.4	93.6	48.0	35.6	41.1	25.7
Queue Length 50th (m)	69.9	85.7	3.1	43.6	~194.7	0.0	~65.8	70.4	16.5	38.7	39.6
Queue Length 95th (m)	#157.0	124.7	22.8	#107.2	#276.2	9.6	#108.0	89.6	28.4	52.3	80.5
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	376	1666	741	384	1607	605	322	1367	205	1391	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.65	0.34	0.80	1.10	0.14	1.02	0.46	0.49	0.26	0.61

## Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	355	1039	243	294	1700	80	316	480	119	97	347	465
Future Volume (vph)	355	1039	243	294	1700	80	316	480	119	97	347	465
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1589	1825	4476	1521	1788	3479		1805	3579	1563
Flt Permitted	0.09	1.00	1.00	0.13	1.00	1.00	0.46	1.00		0.21	1.00	1.00
Satd. Flow (perm)	165	4433	1589	256	4476	1521	861	3479		397	3579	1563
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)	370	1082	253	306	1771	83	329	500	124	101	361	484
RTOR Reduction (vph)	0	0	145	0	0	53	0	18	0	0	0	242
Lane Group Flow (vph)	370	1082	108	306	1771	30	329	606	0	101	361	242
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	66.7	45.6	45.6	62.7	43.6	43.6	35.0	28.0		35.0	28.0	28.0
Effective Green, g (s)	66.7	45.6	45.6	62.7	43.6	43.6	35.0	28.0		35.0	28.0	28.0
Actuated g/C Ratio	0.55	0.38	0.38	0.52	0.36	0.36	0.29	0.23		0.29	0.23	0.23
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	373	1666	597	379	1608	546	301	803		195	826	360
v/s Ratio Prot	c0.17	0.24		0.13	c0.40		c0.06	0.17		0.03	0.10	
v/s Ratio Perm	0.37		0.07	0.29		0.02	c0.25			0.12		0.16
v/c Ratio	0.99	0.65	0.18	0.81	1.10	0.05	1.09	0.75		0.52	0.44	0.67
Uniform Delay, d1	38.7	31.3	25.3	24.9	38.8	25.4	42.0	43.4		33.4	39.9	42.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	44.3	0.9	0.1	11.9	55.6	0.0	79.1	4.0		2.3	0.4	4.9
Delay (s)	83.0	32.1	25.5	36.8	94.4	25.4	121.0	47.5		35.8	40.3	47.4
Level of Service	F	C	C	D	F	C	F	D		D	D	D
Approach Delay (s)		42.2			83.6			72.9			43.4	
Approach LOS		D			F			E			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			63.0			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			121.3			Sum of lost time (s)			21.6			
Intersection Capacity Utilization			105.2%			ICU Level of Service			G			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2032  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↔		↗	↕↔	
Traffic Volume (vph)	4	4	35	269	5	63	40	582	198	111	620	2
Future Volume (vph)	4	4	35	269	5	63	40	582	198	111	620	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			0.99		1.00		
Frt		0.888			0.975			0.962				
Flt Protected		0.996			0.962		0.950			0.950		
Satd. Flow (prot)	0	1681	0	0	1774	0	1825	3423	0	1825	3579	0
Flt Permitted		0.964			0.738		0.358			0.206		
Satd. Flow (perm)	0	1627	0	0	1360	0	688	3423	0	395	3579	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			15			56				
Link Speed (k/h)		50			50			60				60
Link Distance (m)		111.6			260.3			94.8				72.4
Travel Time (s)		8.0			18.7			5.7				4.3
Confl. Peds. (#/hr)			1	1					6	6		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Adj. Flow (vph)	4	4	38	289	5	68	43	626	213	119	667	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	362	0	43	839	0	119	669	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2032  
PM Peak Hour

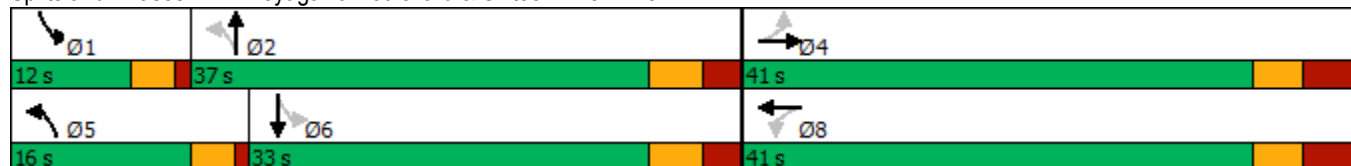


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.5	30.3		11.5	30.3	
Total Split (s)	41.0	41.0		41.0	41.0		16.0	37.0		12.0	33.0	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		17.8%	41.1%		13.3%	36.7%	
Maximum Green (s)	34.2	34.2		34.2	34.2		12.0	30.7		8.0	26.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		23.8			23.8		32.9	25.1		34.6	28.0	
Actuated g/C Ratio		0.33			0.33		0.46	0.35		0.48	0.39	
v/c Ratio		0.08			0.79		0.10	0.68		0.34	0.48	
Control Delay		8.0			34.8		11.1	23.4		13.5	20.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.0			34.8		11.1	23.4		13.5	20.1	
LOS		A			C		B	C		B	C	
Approach Delay		8.0			34.8			22.8			19.1	
Approach LOS		A			C			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	71.5
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	23.2
Intersection LOS:	C
Intersection Capacity Utilization:	68.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2032  
PM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	362	43	839	119	669
v/c Ratio	0.08	0.79	0.10	0.68	0.34	0.48
Control Delay	8.0	34.8	11.1	23.4	13.5	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	34.8	11.1	23.4	13.5	20.1
Queue Length 50th (m)	0.7	42.4	2.7	49.4	7.8	38.6
Queue Length 95th (m)	7.4	81.4	8.7	81.5	19.4	65.3
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	842	695	551	1585	360	1524
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.52	0.08	0.53	0.33	0.44
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 2: Neyagawa Boulevard & Sixteen Mile Drive

















Future Background 2032  
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	4	4	35	269	5	63	40	582	198	111	620	2
Future Volume (vph)	4	4	35	269	5	63	40	582	198	111	620	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.97		1.00	0.96		1.00	1.00	
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1682			1771		1825	3425		1824	3577	
Flt Permitted		0.96			0.74		0.36	1.00		0.21	1.00	
Satd. Flow (perm)		1628			1359		688	3425		395	3577	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	4	4	38	289	5	68	43	626	213	119	667	2
RTOR Reduction (vph)	0	26	0	0	10	0	0	36	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	352	0	43	803	0	119	669	0
Confl. Peds. (#/hr)			1	1					6	6		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.8			23.8		29.8	26.0		33.8	28.0	
Effective Green, g (s)		23.8			23.8		29.8	26.0		33.8	28.0	
Actuated g/C Ratio		0.33			0.33		0.41	0.36		0.46	0.39	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		532			444		341	1224		297	1377	
v/s Ratio Prot							0.01	c0.23		c0.03	0.19	
v/s Ratio Perm		0.01			c0.26		0.05			0.15		
v/c Ratio		0.04			0.79		0.13	0.66		0.40	0.49	
Uniform Delay, d1		16.7			22.2		13.0	19.6		12.1	16.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			9.4		0.2	1.3		0.9	0.3	
Delay (s)		16.7			31.6		13.2	20.9		13.0	17.2	
Level of Service		B			C		B	C		B	B	
Approach Delay (s)		16.7			31.6			20.5			16.5	
Approach LOS		B			C			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			20.8									C
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			72.7							17.1		
Intersection Capacity Utilization			68.7%									C
ICU Level of Service												C
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

















Future Background 2032  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	43	0	0	47	0	0	0	0	0	0	0
Future Volume (vph)	0	43	0	0	47	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			48			48	
Link Distance (m)		202.5			50.4			139.0			40.1	
Travel Time (s)		14.6			3.6			10.4			3.0	
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
Adj. Flow (vph)	0	47	0	0	51	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	51	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 6.7%	ICU Level of Service A											
Analysis Period (min)	15											

# HCM Unsignalized Intersection Capacity Analysis

## 3: Street A & Sixteen Mile Drive

Future Background 2032  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	43	0	0	47	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	43	0	0	47	0	0	0	0	0	0	0
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)	0	47	0	0	51	0	0	0	0	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	51			47			98	98	47	98	98	51
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	51			47			98	98	47	98	98	51
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 %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1555			1560			884	792	1022	884	792	1017
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	47	51	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1555	1560	1700	1700								
Volume to Capacity	0.00	0.00	0.04	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			6.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Background 2032  
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	1638	2482	0	0	0
Future Volume (vph)	0	1638	2482	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1883	0	1883
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1883	0	1883
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1780	2698	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1780	2698	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.3%
	ICU Level of Service A
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
4: Dundas Street West & Street A

Future Background 2032  
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	1638	2482	0	0	0		
Future Volume (Veh/h)	0	1638	2482	0	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)	0	1780	2698	0	0	0		
<b>Pedestrians</b>								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None	None					
Median storage (veh)								
Upstream signal (m)			206					
pX, platoon unblocked	0.66				0.66	0.66		
vC, conflicting volume	2698				3291	899		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1767				2667	0		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)								
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				100	100		
cM capacity (veh/h)	230				12	715		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>EB 3</b>	<b>WB 1</b>	<b>WB 2</b>	<b>WB 3</b>	<b>WB 4</b>	<b>SB 1</b>
Volume Total	593	593	593	899	899	899	0	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.35	0.35	0.35	0.53	0.53	0.53	0.06	0.18
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS								A
Approach Delay (s)	0.0			0.0				0.0
Approach LOS								A
<b>Intersection Summary</b>								
Average Delay			0.0					
Intersection Capacity Utilization			51.3%		ICU Level of Service			A
Analysis Period (min)			15					

Lanes, Volumes, Timings  
5: Neyagawa Boulevard & Block 1 Access

Future Background 2032  
PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↓	
Traffic Volume (vph)	0	0	0	917	931	0
Future Volume (vph)	0	0	0	917	931	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	1883	0	3579	3579	0
Flt Permitted						
Satd. Flow (perm)	0	1883	0	3579	3579	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	997	1012	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	997	1012	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.1%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 5: Neyagawa Boulevard & Block 1 Access

Future Background 2032  
 PM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕	↕	↘
Traffic Volume (veh/h)	0	0	0	917	931	0
Future Volume (Veh/h)	0	0	0	917	931	0
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	997	1012	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.92	0.86	0.86			
vC, conflicting volume	1510	506	1012			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	701	100	688			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	344	805	775			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	0	498	498	675	337	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.16	0.29	0.29	0.40	0.20	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	29.1%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2032  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	0.0% ICU Level of Service A											
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2032  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
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)	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	100	100	100	100	100	100			100		
cM capacity (veh/h)	1023	896	1085	1023	896	1085	1623			1623		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.09	0.06	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			0.0%		ICU Level of Service					A		
Analysis Period (min)			15									










Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Background 2032  
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	43	0	0	47	0	0
Future Volume (vph)	43	0	0	47	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	0	0	51	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	51	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis  
7: Street B & Sixteen Mile Drive

Future Background 2032  
PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	43	0	0	47	0	0
Future Volume (Veh/h)	43	0	0	47	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)	47	0	0	51	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)				112		
pX, platoon unblocked						
vC, conflicting volume			47		98	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		98	47
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)			1560		901	1022
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	47	51	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1560	1700			
Volume to Capacity	0.03	0.00	0.02			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Background 2032  
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	0	0	1883
Link Speed (k/h)	48		48			48
Link Distance (m)	58.5		100.7			139.0
Travel Time (s)	4.4		7.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%		ICU Level of Service A			
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
8: Street A & Street B

Future Background 2032  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
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	0	0	0
<b>Pedestrians</b>						
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	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
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)	1023	1085			1623	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.06	0.06	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			0.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive

Future Background 2032  
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	43	0	0	47	0	0
Future Volume (vph)	43	0	0	47	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	0	0	51	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	51	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Background 2032  
 PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (veh/h)	43	0	0	47	0	0
Future Volume (Veh/h)	43	0	0	47	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)	47	0	0	51	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			47		98	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		98	47
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)			1560		901	1022
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	47	51	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1560	1700			
Volume to Capacity	0.03	0.00	0.13			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				6.7%	ICU Level of Service	A
Analysis Period (min)				15		












Lanes, Volumes, Timings  
10: Block 3 Access & Street B

Future Background 2032  
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					
































HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B

Future Background 2032  
 PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	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)	0	0	0	0	0	0
<b>Pedestrians</b>						
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			0		0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		0	0
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)			1623		1023	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.03	0.00	0.07			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				0.0%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2032  
 AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 		 	 	
Traffic Volume (vph)	406	1368	260	241	1012	67	267	350	86	154	357	416
Future Volume (vph)	406	1368	260	241	1012	67	267	350	86	154	357	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Frt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1601	1807	4269	1555	1738	3419	0	1755	3476	1585
Flt Permitted	0.117			0.103			0.439			0.344		
Satd. Flow (perm)	220	4433	1571	196	4269	1534	802	3419	0	634	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			199			124			23			287
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	423	1425	271	251	1054	70	278	365	90	160	372	433
Shared Lane Traffic (%)												
Lane Group Flow (vph)	423	1425	271	251	1054	70	278	455	0	160	372	433
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2032  
 AM Peak Hour

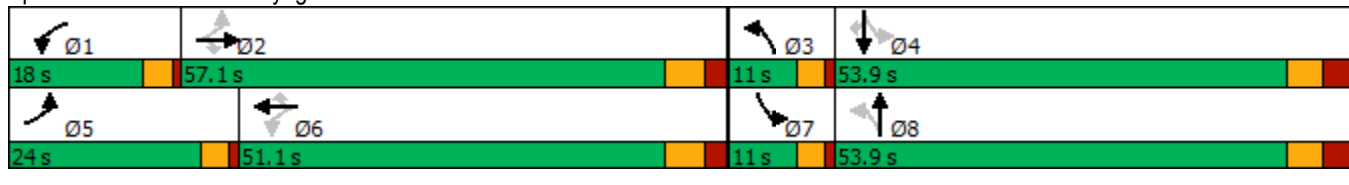


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	24.0	57.1	57.1	18.0	51.1	51.1	11.0	53.9		11.0	53.9	53.9
Total Split (%)	17.1%	40.8%	40.8%	12.9%	36.5%	36.5%	7.9%	38.5%		7.9%	38.5%	38.5%
Maximum Green (s)	20.0	50.4	50.4	14.0	44.4	44.4	7.0	47.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	65.8	44.8	44.8	55.7	38.7	38.7	32.1	22.0		32.1	22.0	22.0
Actuated g/C Ratio	0.60	0.41	0.41	0.51	0.35	0.35	0.29	0.20		0.29	0.20	0.20
v/c Ratio	1.00	0.79	0.36	0.82	0.70	0.11	0.95	0.65		0.62	0.54	0.80
Control Delay	75.2	32.9	8.4	49.4	34.1	0.6	76.6	43.0		41.0	42.5	26.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	75.2	32.9	8.4	49.4	34.1	0.6	76.6	43.0		41.0	42.5	26.0
LOS	E	C	A	D	C	A	E	D		D	D	C
Approach Delay		38.2			35.2			55.7			34.8	
Approach LOS		D			D			E			C	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	110.1
Natural Cycle:	140
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	39.3
Intersection LOS:	D
Intersection Capacity Utilization:	87.6%
ICU Level of Service:	E
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues

Future Total 2032

1: Neyagawa Boulevard & Dundas Street West

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	423	1425	271	251	1054	70	278	455	160	372	433
v/c Ratio	1.00	0.79	0.36	0.82	0.70	0.11	0.95	0.65	0.62	0.54	0.80
Control Delay	75.2	32.9	8.4	49.4	34.1	0.6	76.6	43.0	41.0	42.5	26.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.2	32.9	8.4	49.4	34.1	0.6	76.6	43.0	41.0	42.5	26.0
Queue Length 50th (m)	~68.9	103.7	9.0	34.0	76.5	0.0	~50.4	46.6	26.3	39.1	31.0
Queue Length 95th (m)	#167.9	156.6	31.8	#95.5	115.8	0.8	#89.7	64.1	43.6	54.6	69.9
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	421	2060	836	307	1748	701	294	1495	257	1506	840
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.69	0.32	0.82	0.60	0.10	0.95	0.30	0.62	0.25	0.52

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2032  
 AM Peak Hour

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		  			  			 			 			
Traffic Volume (vph)	406	1368	260	241	1012	67	267	350	86	154	357	416		
Future Volume (vph)	406	1368	260	241	1012	67	267	350	86	154	357	416		
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00		
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		
Satd. Flow (prot)	1789	4433	1573	1807	4269	1534	1738	3421		1754	3476	1564		
Flt Permitted	0.12	1.00	1.00	0.10	1.00	1.00	0.44	1.00		0.34	1.00	1.00		
Satd. Flow (perm)	221	4433	1573	197	4269	1534	803	3421		634	3476	1564		
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)	423	1425	271	251	1054	70	278	365	90	160	372	433		
RTOR Reduction (vph)	0	0	118	0	0	45	0	18	0	0	0	229		
Lane Group Flow (vph)	423	1425	153	251	1054	25	278	437	0	160	372	204		
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2		
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%		
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm		
Protected Phases	5	2		1	6		3	8		7	4			
Permitted Phases	2		2	6		6	8			4		4		
Actuated Green, G (s)	63.0	44.8	44.8	52.9	38.7	38.7	29.1	22.0		29.1	22.0	22.0		
Effective Green, g (s)	63.0	44.8	44.8	52.9	38.7	38.7	29.1	22.0		29.1	22.0	22.0		
Actuated g/C Ratio	0.57	0.41	0.41	0.48	0.35	0.35	0.27	0.20		0.27	0.20	0.20		
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		
Lane Grp Cap (vph)	417	1810	642	303	1506	541	273	686		240	697	313		
v/s Ratio Prot	c0.19	0.32		0.11	0.25		c0.07	0.13		0.04	0.11			
v/s Ratio Perm	c0.39		0.10	0.29		0.02	c0.20			0.13		0.13		
v/c Ratio	1.01	0.79	0.24	0.83	0.70	0.05	1.02	0.64		0.67	0.53	0.65		
Uniform Delay, d1	30.6	28.3	21.3	26.3	30.5	23.4	39.0	40.2		33.6	39.3	40.3		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		
Incremental Delay, d2	47.7	2.3	0.2	16.8	1.4	0.0	59.2	1.9		6.8	0.8	4.8		
Delay (s)	78.4	30.6	21.5	43.1	32.0	23.4	98.2	42.1		40.4	40.0	45.1		
Level of Service	E	C	C	D	C	C	F	D		D	D	D		
Approach Delay (s)		39.0			33.5			63.4			42.4			
Approach LOS		D			C			E			D			
<b>Intersection Summary</b>														
HCM 2000 Control Delay			41.6									HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio			1.05											
Actuated Cycle Length (s)			109.7								21.6			
Intersection Capacity Utilization			87.6%										ICU Level of Service	E
Analysis Period (min)			15											

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2032  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	52	0	8	177	1	62	95	614	109	39	655	14
Future Volume (vph)	52	0	8	177	1	62	95	614	109	39	655	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00			1.00		1.00		
Frt		0.982			0.965			0.977			0.997	
Flt Protected		0.958			0.964		0.950			0.950		
Satd. Flow (prot)	0	1804	0	0	1670	0	1722	3439	0	1601	3535	0
Flt Permitted		0.660			0.743		0.299			0.361		
Satd. Flow (perm)	0	1242	0	0	1286	0	542	3439	0	607	3535	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			22			25			3	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		111.6			260.3			94.8			72.4	
Travel Time (s)		8.0			18.7			5.7			4.3	
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Adj. Flow (vph)	53	0	8	181	1	63	97	627	111	40	668	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	245	0	97	738	0	40	682	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2032  
AM Peak Hour

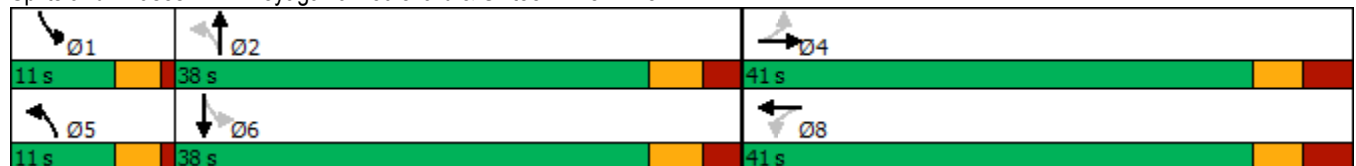


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		6.5	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.0	30.3		11.0	30.3	
Total Split (s)	41.0	41.0		41.0	41.0		11.0	38.0		11.0	38.0	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		12.2%	42.2%		12.2%	42.2%	
Maximum Green (s)	34.2	34.2		34.2	34.2		7.0	31.7		7.0	31.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		16.8			16.8		32.0	27.3		30.0	22.6	
Actuated g/C Ratio		0.27			0.27		0.52	0.44		0.49	0.37	
v/c Ratio		0.15			0.67		0.23	0.48		0.10	0.52	
Control Delay		3.3			28.4		9.5	15.2		8.7	18.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		3.3			28.4		9.5	15.2		8.7	18.6	
LOS		A			C		A	B		A	B	
Approach Delay		3.3			28.4			14.5			18.1	
Approach LOS		A			C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	61.4
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	17.4
Intersection LOS:	B
Intersection Capacity Utilization:	54.3%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2032  
AM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	61	245	97	738	40	682
v/c Ratio	0.15	0.67	0.23	0.48	0.10	0.52
Control Delay	3.3	28.4	9.5	15.2	8.7	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.3	28.4	9.5	15.2	8.7	18.6
Queue Length 50th (m)	0.0	21.8	4.5	23.2	1.8	31.9
Queue Length 95th (m)	4.5	49.1	14.2	63.1	7.2	58.5
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	758	756	423	1863	417	1904
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.32	0.23	0.40	0.10	0.36
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2032  
AM Peak Hour



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	52	0	8	177	1	62	95	614	109	39	655	14
Future Volume (vph)	52	0	8	177	1	62	95	614	109	39	655	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.97		1.00	0.98		1.00	1.00	
Flt Protected		0.96			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805			1670		1722	3441		1600	3535	
Flt Permitted		0.66			0.74		0.30	1.00		0.36	1.00	
Satd. Flow (perm)		1243			1287		543	3441		608	3535	
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)	53	0	8	181	1	63	97	627	111	40	668	14
RTOR Reduction (vph)	0	45	0	0	16	0	0	14	0	0	2	0
Lane Group Flow (vph)	0	16	0	0	229	0	97	724	0	40	680	0
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.8			16.8		32.6	27.3		26.6	24.3	
Effective Green, g (s)		16.8			16.8		32.6	27.3		26.6	24.3	
Actuated g/C Ratio		0.26			0.26		0.51	0.43		0.42	0.38	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		328			340		377	1479		290	1352	
v/s Ratio Prot							c0.02	c0.21		0.00	0.19	
v/s Ratio Perm		0.01			c0.18		0.11			0.05		
v/c Ratio		0.05			0.67		0.26	0.49		0.14	0.50	
Uniform Delay, d1		17.4			20.9		8.3	13.1		11.0	15.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			5.2		0.4	0.3		0.2	0.3	
Delay (s)		17.5			26.1		8.7	13.3		11.2	15.3	
Level of Service		B			C		A	B		B	B	
Approach Delay (s)		17.5			26.1			12.8			15.1	
Approach LOS		B			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			15.6				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			63.5				Sum of lost time (s)				17.1	
Intersection Capacity Utilization			54.3%				ICU Level of Service				A	
Analysis Period (min)			15									

c Critical Lane Group

















Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

Future Total 2032  
AM Peak Hour

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	9	10	24	23	0	0	1	0	0	0	0	
Future Volume (vph)	0	9	10	24	23	0	0	1	0	0	0	0	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>	0.929												
Fl <sub>t</sub> Protected	0.975												
Satd. Flow (prot)	0	1750	0	0	1836	0	0	1883	0	0	1883	0	
Fl <sub>t</sub> Permitted	0.975												
Satd. Flow (perm)	0	1750	0	0	1836	0	0	1883	0	0	1883	0	
Link Speed (k/h)	50		50				48				48		
Link Distance (m)	202.5				50.4				139.0				40.1
Travel Time (s)	14.6				3.6				10.4				3.0
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	
Adj. Flow (vph)	0	10	11	26	25	0	0	1	0	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	21	0	0	51	0	0	1	0	0	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0		0.0				0.0				0.0		
Link Offset(m)	0.0				0.0				0.0				
Crosswalk Width(m)	1.6				1.6				1.6				
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Free				Free				Stop				
<b>Intersection Summary</b>													
Area Type:	Other												
Control Type:	Unsignalized												
Intersection Capacity Utilization	19.2%				ICU Level of Service A								
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis  
 3: Street A & Sixteen Mile Drive

Future Total 2032  
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	9	10	24	23	0	0	1	0	0	0	0
Future Volume (Veh/h)	0	9	10	24	23	0	0	1	0	0	0	0
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)	0	10	11	26	25	0	0	1	0	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	25			21			92	92	16	93	98	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			21			92	92	16	93	98	25
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 %	100			98			100	100	100	100	100	100
cM capacity (veh/h)	1589			1595			880	785	1064	879	779	1051
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	51	1	0								
Volume Left	0	26	0	0								
Volume Right	11	0	0	0								
cSH	1589	1595	785	1700								
Volume to Capacity	0.00	0.02	0.00	0.00								
Queue Length 95th (m)	0.0	0.4	0.0	0.0								
Control Delay (s)	0.0	3.8	9.6	0.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	3.8	9.6	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			19.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Total 2032  
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	2035	1695	1	0	47
Future Volume (vph)	0	2035	1695	1	0	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1601	0	1629
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1601	0	1629
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2212	1842	1	0	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2212	1842	1	0	51
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.7%
	ICU Level of Service A
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
4: Dundas Street West & Street A

Future Total 2032  
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	2035	1695	1	0	47		
Future Volume (Veh/h)	0	2035	1695	1	0	47		
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)	0	2212	1842	1	0	51		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None	None					
Median storage veh								
Upstream signal (m)	206							
pX, platoon unblocked	0.81				0.81	0.81		
vC, conflicting volume	1843				2579	614		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1215				2125	0		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)								
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				100	94		
cM capacity (veh/h)	461				35	877		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	737	737	737	614	614	614	1	51
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1	51
cSH	1700	1700	1700	1700	1700	1700	1700	877
Volume to Capacity	0.43	0.43	0.43	0.36	0.36	0.36	0.00	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4
Lane LOS								A
Approach Delay (s)	0.0				0.0			9.4
Approach LOS								A
Intersection Summary								
Average Delay			0.1					
Intersection Capacity Utilization			42.7%	ICU Level of Service			A	
Analysis Period (min)			15					

Lanes, Volumes, Timings  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2032  
 AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	114	0	824	836	8
Future Volume (vph)	0	114	0	824	836	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr <sub>t</sub>		0.865			0.999	
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	0	1629	0	3579	3575	0
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	0	1629	0	3579	3575	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	124	0	896	909	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	124	0	896	918	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2032  
 AM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕	↕	↘
Traffic Volume (veh/h)	0	114	0	824	836	8
Future Volume (Veh/h)	0	114	0	824	836	8
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	124	0	896	909	9
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.91	0.86	0.86			
vC, conflicting volume	1362	459	918			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	704	33	569			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	86	100			
cM capacity (veh/h)	336	885	856			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	124	448	448	606	312	
Volume Left	0	0	0	0	0	
Volume Right	124	0	0	0	9	
cSH	885	1700	1700	1700	1700	
Volume to Capacity	0.14	0.26	0.26	0.36	0.18	
Queue Length 95th (m)	3.7	0.0	0.0	0.0	0.0	
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	9.7	0.0		0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.6					
Intersection Capacity Utilization	37.1%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2032  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	48	0	13	0	27	0	0	0	43	0	0
Future Volume (vph)	0	48	0	13	0	27	0	0	0	43	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.909							
Fl <sub>t</sub> Protected					0.984						0.950	
Satd. Flow (prot)	0	1883	0	0	1685	0	0	1883	0	0	1789	0
Fl <sub>t</sub> Permitted					0.984						0.950	
Satd. Flow (perm)	0	1883	0	0	1685	0	0	1883	0	0	1789	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	52	0	14	0	29	0	0	0	47	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	52	0	0	43	0	0	0	0	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	19.0%					ICU Level of Service A						
Analysis Period (min)	15											

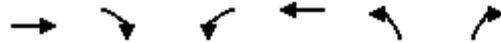
HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2032  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	48	0	13	0	27	0	0	0	43	0	0
Future Volume (Veh/h)	0	48	0	13	0	27	0	0	0	43	0	0
Sign Control		Stop			Stop			Free			Free	
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)	0	52	0	14	0	29	0	0	0	47	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	123	94	0	120	94	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	123	94	0	120	94	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	93	100	98	100	97	100			97		
cM capacity (veh/h)	810	773	1085	794	773	1085	1623			1623		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	52	43	0	47								
Volume Left	0	14	0	47								
Volume Right	0	29	0	0								
cSH	773	969	1700	1623								
Volume to Capacity	0.07	0.04	0.00	0.03								
Queue Length 95th (m)	1.6	1.1	0.0	0.7								
Control Delay (s)	10.0	8.9	0.0	7.3								
Lane LOS	A	A		A								
Approach Delay (s)	10.0	8.9	0.0	7.3								
Approach LOS	A	A										
Intersection Summary												
Average Delay			8.8									
Intersection Capacity Utilization			19.0%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Total 2032  
AM Peak Hour













Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	33	0	43	67	0	27
Future Volume (vph)	33	0	43	67	0	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected						0.981
Satd. Flow (prot)	1883	0	0	1848	1629	0
Fl <sub>t</sub> Permitted						0.981
Satd. Flow (perm)	1883	0	0	1848	1629	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	0	47	73	0	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	0	120	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.6%
Analysis Period (min)	15
	ICU Level of Service A










HCM Unsignalized Intersection Capacity Analysis  
7: Street B & Sixteen Mile Drive

Future Total 2032  
AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	33	0	43	67	0	27
Future Volume (Veh/h)	33	0	43	67	0	27
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	0	47	73	0	29
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	112					
pX, platoon unblocked						
vC, conflicting volume			36		203	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			36		203	36
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		100	97
cM capacity (veh/h)			1575		762	1037
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	36	120	29			
Volume Left	0	47	0			
Volume Right	0	0	29			
cSH	1700	1575	1037			
Volume to Capacity	0.02	0.03	0.03			
Queue Length 95th (m)	0.0	0.7	0.7			
Control Delay (s)	0.0	3.0	8.6			
Lane LOS			A			
Approach Delay (s)	0.0	3.0	8.6			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			3.3			
Intersection Capacity Utilization			22.6%	ICU Level of Service		A
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Total 2032  
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	0	1	0	0	34
Future Volume (vph)	13	0	1	0	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	1883	0	0	1883
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	1883	0	0	1883
Link Speed (k/h)	48		48			48
Link Distance (m)	58.5		100.7			139.0
Travel Time (s)	4.4		7.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	0	1	0	0	37
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	14	0	1	0	0	37
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%		ICU Level of Service A			
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
8: Street A & Street B

Future Total 2032  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	0	1	0	0	34
Future Volume (Veh/h)	13	0	1	0	0	34
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)	14	0	1	0	0	37
<b>Pedestrians</b>						
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	38	1			1	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	38	1			1	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	974	1084			1622	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	14	1	37			
Volume Left	14	0	0			
Volume Right	0	0	0			
cSH	974	1700	1622			
Volume to Capacity	0.01	0.00	0.00			
Queue Length 95th (m)	0.3	0.0	0.0			
Control Delay (s)	8.7	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.7	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			2.4			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2032  
 AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	9	0	45	22	24	24
Future Volume (vph)	9	0	45	22	24	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.932	
Fl <sub>t</sub> Protected				0.968	0.976	
Satd. Flow (prot)	1883	0	0	1823	1713	0
Fl <sub>t</sub> Permitted				0.968	0.976	
Satd. Flow (perm)	1883	0	0	1823	1713	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	0	49	24	26	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	73	52	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2032  
 AM Peak Hour













Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Volume (veh/h)	9	0	45	22	24	24
Future Volume (Veh/h)	9	0	45	22	24	24
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	49	24	26	26
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			10		132	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			10		132	10
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		97	98
cM capacity (veh/h)			1610		836	1071
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	10	73	52			
Volume Left	0	49	26			
Volume Right	0	0	26			
cSH	1700	1610	939			
Volume to Capacity	0.01	0.03	0.06			
Queue Length 95th (m)	0.0	0.7	1.3			
Control Delay (s)	0.0	5.0	9.1			
Lane LOS			A			
Approach Delay (s)	0.0	5.0	9.1			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			6.2			
Intersection Capacity Utilization			20.3%	ICU Level of Service		A
Analysis Period (min)			15			












Lanes, Volumes, Timings  
10: Block 3 Access & Street B

Future Total 2032  
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	13	0	0
Future Volume (vph)	0	0	0	13	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	14	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	14	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					






























HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B

Future Total 2032  
 AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	13	0	0
Future Volume (Veh/h)	0	0	0	13	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)	0	0	0	14	0	0
<b>Pedestrians</b>						
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			0	14	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	14	0	
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)			1623	1005	1085	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	0	14	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1623	1700			
Volume to Capacity	0.01	0.00	0.09			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				6.7%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2032  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	424	1039	243	294	1704	162	316	523	119	140	373	468
Future Volume (vph)	424	1039	243	294	1704	162	316	523	119	140	373	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98	1.00		0.99	1.00	0.99		0.99		0.99
Frt			0.850			0.850		0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1617	1825	4476	1541	1789	3486	0	1807	3579	1585
Flt Permitted	0.088			0.131			0.433			0.186		
Satd. Flow (perm)	166	4433	1588	251	4476	1521	814	3486	0	352	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			232			98		21				313
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	442	1082	253	306	1775	169	329	545	124	146	389	488
Shared Lane Traffic (%)												
Lane Group Flow (vph)	442	1082	253	306	1775	169	329	669	0	146	389	488
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2032  
PM Peak Hour

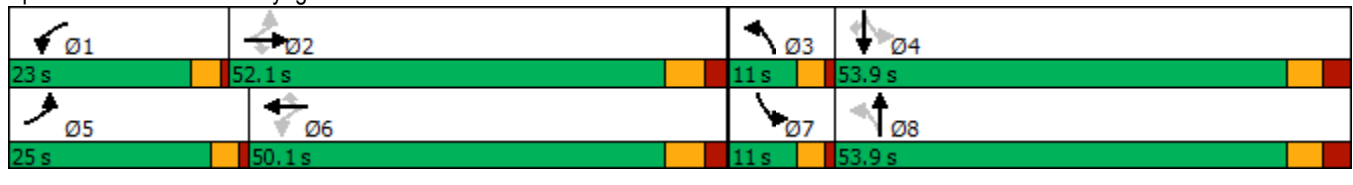


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	25.0	52.1	52.1	23.0	50.1	50.1	11.0	53.9		11.0	53.9	53.9
Total Split (%)	17.9%	37.2%	37.2%	16.4%	35.8%	35.8%	7.9%	38.5%		7.9%	38.5%	38.5%
Maximum Green (s)	21.0	45.4	45.4	19.0	43.4	43.4	7.0	47.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	69.3	45.5	45.5	65.3	43.5	43.5	39.6	29.7		39.6	29.7	29.7
Actuated g/C Ratio	0.56	0.37	0.37	0.53	0.35	0.35	0.32	0.24		0.32	0.24	0.24
v/c Ratio	1.19	0.66	0.34	0.81	1.12	0.28	1.03	0.78		0.74	0.45	0.79
Control Delay	143.0	35.6	6.4	43.9	100.7	14.8	97.4	48.8		52.8	40.9	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	143.0	35.6	6.4	43.9	100.7	14.8	97.4	48.8		52.8	40.9	25.1
LOS	F	D	A	D	F	B	F	D		D	D	C
Approach Delay		58.1			86.5			64.8			35.1	
Approach LOS		E			F			E			D	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	123
Natural Cycle:	150
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.19
Intersection Signal Delay:	65.9
Intersection LOS:	E
Intersection Capacity Utilization:	111.6%
ICU Level of Service:	H
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues

Future Total 2032

1: Neyagawa Boulevard & Dundas Street West

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	442	1082	253	306	1775	169	329	669	146	389	488
v/c Ratio	1.19	0.66	0.34	0.81	1.12	0.28	1.03	0.78	0.74	0.45	0.79
Control Delay	143.0	35.6	6.4	43.9	100.7	14.8	97.4	48.8	52.8	40.9	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	143.0	35.6	6.4	43.9	100.7	14.8	97.4	48.8	52.8	40.9	25.1
Queue Length 50th (m)	~109.9	88.1	3.2	45.5	~201.4	11.3	~66.9	77.3	24.5	42.2	41.0
Queue Length 95th (m)	#202.7	125.8	23.0	#109.4	#279.9	32.0	#112.7	97.4	#42.7	56.2	82.3
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	371	1641	734	377	1584	601	318	1349	196	1372	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.66	0.34	0.81	1.12	0.28	1.03	0.50	0.74	0.28	0.62

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2032  
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	424	1039	243	294	1704	162	316	523	119	140	373	468
Future Volume (vph)	424	1039	243	294	1704	162	316	523	119	140	373	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1589	1825	4476	1521	1788	3488		1806	3579	1563
Flt Permitted	0.09	1.00	1.00	0.13	1.00	1.00	0.43	1.00		0.19	1.00	1.00
Satd. Flow (perm)	165	4433	1589	251	4476	1521	815	3488		354	3579	1563
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)	442	1082	253	306	1775	169	329	545	124	146	389	488
RTOR Reduction (vph)	0	0	146	0	0	63	0	16	0	0	0	237
Lane Group Flow (vph)	442	1082	107	306	1775	106	329	653	0	146	389	251
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	66.7	45.6	45.6	62.7	43.6	43.6	36.7	29.7		36.7	29.7	29.7
Effective Green, g (s)	66.7	45.6	45.6	62.7	43.6	43.6	36.7	29.7		36.7	29.7	29.7
Actuated g/C Ratio	0.54	0.37	0.37	0.51	0.35	0.35	0.30	0.24		0.30	0.24	0.24
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	368	1643	589	372	1586	539	298	842		188	864	377
v/s Ratio Prot	c0.21	0.24		0.13	0.40		c0.06	0.19		0.04	0.11	
v/s Ratio Perm	c0.44		0.07	0.29		0.07	c0.27			0.19		0.16
v/c Ratio	1.20	0.66	0.18	0.82	1.12	0.20	1.10	0.78		0.78	0.45	0.66
Uniform Delay, d1	39.5	32.2	26.1	26.3	39.7	27.5	42.0	43.5		35.3	39.7	42.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	113.7	1.0	0.1	13.6	62.7	0.2	83.0	4.5		18.0	0.4	4.4
Delay (s)	153.2	33.2	26.3	39.9	102.4	27.7	125.0	48.1		53.3	40.1	46.5
Level of Service	F	C	C	D	F	C	F	D		D	D	D
Approach Delay (s)		62.1			88.3			73.4			45.0	
Approach LOS		E			F			E			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			70.8									E
HCM 2000 Volume to Capacity ratio			1.19									
Actuated Cycle Length (s)			123.0							21.6		
Intersection Capacity Utilization			111.6%									H
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2032  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	30	4	17	269	5	63	234	582	198	111	646	19
Future Volume (vph)	30	4	17	269	5	63	234	582	198	111	646	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00			0.99		1.00		
Frt		0.955			0.975			0.962			0.996	
Flt Protected		0.971			0.962		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1774	0	1825	3423	0	1825	3566	0
Flt Permitted		0.751			0.733		0.225			0.280		
Satd. Flow (perm)	0	1372	0	0	1351	0	432	3423	0	536	3566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			15			56			3	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		111.6			260.3			94.8			72.4	
Travel Time (s)		8.0			18.7			5.7			4.3	
Confl. Peds. (#/hr)			1	1					6	6		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Adj. Flow (vph)	32	4	18	289	5	68	252	626	213	119	695	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	362	0	252	839	0	119	715	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
 2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2032  
 PM Peak Hour

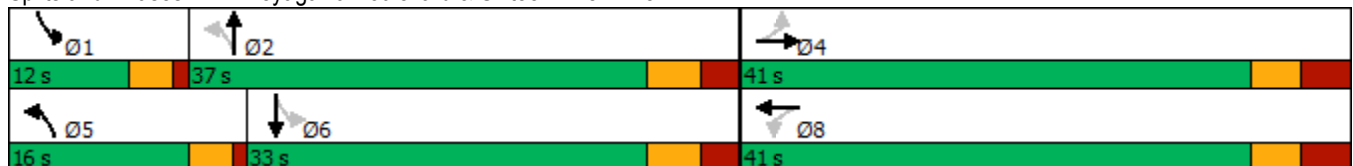


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.5	30.3		11.5	30.3	
Total Split (s)	41.0	41.0		41.0	41.0		16.0	37.0		12.0	33.0	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		17.8%	41.1%		13.3%	36.7%	
Maximum Green (s)	34.2	34.2		34.2	34.2		12.0	30.7		8.0	26.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		24.0			24.0		40.1	29.0		33.1	23.0	
Actuated g/C Ratio		0.32			0.32		0.53	0.38		0.44	0.31	
v/c Ratio		0.12			0.82		0.59	0.62		0.32	0.66	
Control Delay		14.0			39.2		16.8	22.2		13.5	27.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		14.0			39.2		16.8	22.2		13.5	27.4	
LOS		B			D		B	C		B	C	
Approach Delay		14.0			39.2			21.0			25.4	
Approach LOS		B			D			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	75.4
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	25.2
Intersection LOS:	C
Intersection Capacity Utilization:	71.3%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2032  
PM Peak Hour






















Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	362	252	839	119	715
v/c Ratio	0.12	0.82	0.59	0.62	0.32	0.66
Control Delay	14.0	39.2	16.8	22.2	13.5	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	39.2	16.8	22.2	13.5	27.4
Queue Length 50th (m)	3.5	44.7	18.3	50.2	8.0	47.4
Queue Length 95th (m)	11.2	81.7	38.9	81.5	19.4	75.7
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	647	636	458	1479	378	1296
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.57	0.55	0.57	0.31	0.55
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 2: Neyagawa Boulevard & Sixteen Mile Drive

















Future Total 2032  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	4	17	269	5	63	234	582	198	111	646	19
Future Volume (vph)	30	4	17	269	5	63	234	582	198	111	646	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.97		1.00	0.96		1.00	1.00	
Flt Protected		0.97			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1774			1771		1825	3425		1824	3565	
Flt Permitted		0.75			0.73		0.22	1.00		0.28	1.00	
Satd. Flow (perm)		1372			1350		431	3425		538	3565	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	4	18	289	5	68	252	626	213	119	695	20
RTOR Reduction (vph)	0	12	0	0	10	0	0	35	0	0	2	0
Lane Group Flow (vph)	0	42	0	0	352	0	252	804	0	119	713	0
Confl. Peds. (#/hr)			1	1					6	6		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		24.0			24.0		38.9	29.0		29.9	24.0	
Effective Green, g (s)		24.0			24.0		38.9	29.0		29.9	24.0	
Actuated g/C Ratio		0.32			0.32		0.51	0.38		0.39	0.32	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		433			426		420	1306		311	1125	
v/s Ratio Prot							c0.09	c0.23		0.03	0.20	
v/s Ratio Perm		0.03			c0.26		0.22			0.12		
v/c Ratio		0.10			0.83		0.60	0.62		0.38	0.63	
Uniform Delay, d1		18.3			24.1		11.8	19.0		15.1	22.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			12.3		2.3	0.9		0.8	1.2	
Delay (s)		18.4			36.4		14.1	19.9		15.9	23.4	
Level of Service		B			D		B	B		B	C	
Approach Delay (s)		18.4			36.4			18.5			22.3	
Approach LOS		B			D			B			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			22.7				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			76.0				Sum of lost time (s)				17.1	
Intersection Capacity Utilization			71.3%				ICU Level of Service				C	
Analysis Period (min)			15									

c Critical Lane Group

















Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

Future Total 2032  
PM Peak Hour

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	25	18	36	47	0	0	4	0	0	0	0	
Future Volume (vph)	0	25	18	36	47	0	0	4	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>	0.943												
Fl <sub>t</sub> Protected	0.979												
Satd. Flow (prot)	0	1776	0	0	1844	0	0	1883	0	0	1883	0	
Fl <sub>t</sub> Permitted	0.979												
Satd. Flow (perm)	0	1776	0	0	1844	0	0	1883	0	0	1883	0	
Link Speed (k/h)	50		50				48				48		
Link Distance (m)	202.5				50.4				139.0				40.1
Travel Time (s)	14.6				3.6				10.4				3.0
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	
Adj. Flow (vph)	0	27	20	39	51	0	0	4	0	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	47	0	0	90	0	0	4	0	0	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	0.0		0.0				0.0				0.0		
Link Offset(m)	0.0				0.0				0.0				
Crosswalk Width(m)	1.6				1.6				1.6				
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14		24		14		24		14		
Sign Control	Free				Free				Stop				
<b>Intersection Summary</b>													
Area Type:	Other												
Control Type:	Unsignalized												
Intersection Capacity Utilization	21.1%				ICU Level of Service A								
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis  
3: Street A & Sixteen Mile Drive

Future Total 2032  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	25	18	36	47	0	0	4	0	0	0	0
Future Volume (Veh/h)	0	25	18	36	47	0	0	4	0	0	0	0
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)	0	27	20	39	51	0	0	4	0	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	51			47			166	166	37	168	176	51
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	51			47			166	166	37	168	176	51
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 %	100			98			100	99	100	100	100	100
cM capacity (veh/h)	1555			1560			783	709	1035	777	700	1017
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	47	90	4	0								
Volume Left	0	39	0	0								
Volume Right	20	0	0	0								
cSH	1555	1560	709	1700								
Volume to Capacity	0.00	0.02	0.01	0.00								
Queue Length 95th (m)	0.0	0.6	0.1	0.0								
Control Delay (s)	0.0	3.3	10.1	0.0								
Lane LOS		A	B	A								
Approach Delay (s)	0.0	3.3	10.1	0.0								
Approach LOS			B	A								
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			21.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Total 2032  
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	1707	2485	4	0	75
Future Volume (vph)	0	1707	2485	4	0	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1601	0	1629
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1601	0	1629
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1855	2701	4	0	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1855	2701	4	0	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	59.3%
	ICU Level of Service B
Analysis Period (min)	15
* User Entered Value	

# HCM Unsignalized Intersection Capacity Analysis

## 4: Dundas Street West & Street A

Future Total 2032  
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	1707	2485	4	0	75		
Future Volume (Veh/h)	0	1707	2485	4	0	75		
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)	0	1855	2701	4	0	82		
<b>Pedestrians</b>								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None	None					
Median storage (veh)								
Upstream signal (m)	206							
pX, platoon unblocked	0.66				0.66	0.66		
vC, conflicting volume	2705				3319	900		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1797				2722	0		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)								
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				100	89		
cM capacity (veh/h)	226				11	720		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	618	618	618	900	900	900	4	82
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	4	82
cSH	1700	1700	1700	1700	1700	1700	1700	720
Volume to Capacity	0.36	0.36	0.36	0.53	0.53	0.53	0.00	0.11
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6
Lane LOS								B
Approach Delay (s)	0.0				0.0			10.6
Approach LOS								B
<b>Intersection Summary</b>								
Average Delay	0.2							
Intersection Capacity Utilization	59.3%			ICU Level of Service				B
Analysis Period (min)	15							

Lanes, Volumes, Timings  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2032  
 PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↓	
Traffic Volume (vph)	0	90	0	1111	913	26
Future Volume (vph)	0	90	0	1111	913	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr <sub>t</sub>		0.865			0.996	
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	0	1629	0	3579	3564	0
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	0	1629	0	3579	3564	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	98	0	1208	992	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	98	0	1208	1020	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
5: Neyagawa Boulevard & Block 1 Access

Future Total 2032  
PM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕	↕	↘
Traffic Volume (veh/h)	0	90	0	1111	913	26
Future Volume (Veh/h)	0	90	0	1111	913	26
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	98	0	1208	992	28
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.91	0.83	0.83			
vC, conflicting volume	1610	510	1020			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	677	4	618			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	89	100			
cM capacity (veh/h)	353	896	796			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	98	604	604	661	359	
Volume Left	0	0	0	0	0	
Volume Right	98	0	0	0	28	
cSH	896	1700	1700	1700	1700	
Volume to Capacity	0.11	0.36	0.36	0.39	0.21	
Queue Length 95th (m)	2.8	0.0	0.0	0.0	0.0	
Control Delay (s)	9.5	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	9.5	0.0		0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.4					
Intersection Capacity Utilization	38.3%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2032  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	32	0	21	0	14	0	0	0	103	0	0
Future Volume (vph)	0	32	0	21	0	14	0	0	0	103	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.947							
Fl <sub>t</sub> Protected					0.971						0.950	
Satd. Flow (prot)	0	1883	0	0	1732	0	0	1883	0	0	1789	0
Fl <sub>t</sub> Permitted					0.971						0.950	
Satd. Flow (perm)	0	1883	0	0	1732	0	0	1883	0	0	1789	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	35	0	23	0	15	0	0	0	112	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	0	0	38	0	0	0	0	0	112	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	21.1%					ICU Level of Service A						
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2032  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	32	0	21	0	14	0	0	0	103	0	0
Future Volume (Veh/h)	0	32	0	21	0	14	0	0	0	103	0	0
Sign Control		Stop			Stop			Free			Free	
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)	0	35	0	23	0	15	0	0	0	112	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	239	224	0	242	224	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	239	224	0	242	224	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	94	100	96	100	99	100			93		
cM capacity (veh/h)	668	628	1085	647	628	1085	1623			1623		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	35	38	0	112								
Volume Left	0	23	0	112								
Volume Right	0	15	0	0								
cSH	628	769	1700	1623								
Volume to Capacity	0.06	0.05	0.00	0.07								
Queue Length 95th (m)	1.3	1.2	0.0	1.7								
Control Delay (s)	11.1	9.9	0.0	7.4								
Lane LOS	B	A		A								
Approach Delay (s)	11.1	9.9	0.0	7.4								
Approach LOS	B	A										
Intersection Summary												
Average Delay			8.6									
Intersection Capacity Utilization			21.1%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Total 2032  
PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	37	0	103	155	0	14
Future Volume (vph)	37	0	103	155	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected						0.980
Satd. Flow (prot)	1883	0	0	1846	1629	0
Fl <sub>t</sub> Permitted						0.980
Satd. Flow (perm)	1883	0	0	1846	1629	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	0	112	168	0	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	0	280	15	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
 7: Street B & Sixteen Mile Drive










Future Total 2032  
 PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	
Traffic Volume (veh/h)	37	0	103	155	0	14
Future Volume (Veh/h)	37	0	103	155	0	14
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)	40	0	112	168	0	15
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	112					
pX, platoon unblocked					0.91	
vC, conflicting volume			40	432	40	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			40	321	40	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			93	100	99	
cM capacity (veh/h)			1570	566	1031	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	40	280	15			
Volume Left	0	112	0			
Volume Right	0	0	15			
cSH	1700	1570	1031			
Volume to Capacity	0.02	0.07	0.01			
Queue Length 95th (m)	0.0	1.7	0.3			
Control Delay (s)	0.0	3.3	8.5			
Lane LOS			A			
Approach Delay (s)	0.0	3.3	8.5			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			3.2			
Intersection Capacity Utilization			30.5%	ICU Level of Service	A	
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Total 2032  
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	0	4	0	0	54
Future Volume (vph)	21	0	4	0	0	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	1883	0	0	1883
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	1883	0	0	1883
Link Speed (k/h)	48		48			48
Link Distance (m)	58.5		100.7			139.0
Travel Time (s)	4.4		7.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	0	4	0	0	59
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	23	0	4	0	0	59
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%		ICU Level of Service A			
Analysis Period (min)	15					

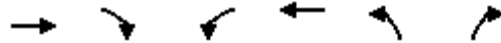
HCM Unsignalized Intersection Capacity Analysis  
8: Street A & Street B

Future Total 2032  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	0	4	0	0	54
Future Volume (Veh/h)	21	0	4	0	0	54
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)	23	0	4	0	0	59
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	63	4			4	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	63	4			4	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	943	1080			1618	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	23	4	59			
Volume Left	23	0	0			
Volume Right	0	0	0			
cSH	943	1700	1618			
Volume to Capacity	0.02	0.00	0.00			
Queue Length 95th (m)	0.6	0.0	0.0			
Control Delay (s)	8.9	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.9	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			13.3%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2032  
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	25	0	112	43	36	12
Future Volume (vph)	25	0	112	43	36	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.966	
Fl <sub>t</sub> Protected				0.965	0.964	
Satd. Flow (prot)	1883	0	0	1818	1754	0
Fl <sub>t</sub> Permitted				0.965	0.964	
Satd. Flow (perm)	1883	0	0	1818	1754	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	0	122	47	39	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	0	0	169	52	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2032  
 PM Peak Hour













Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	25	0	112	43	36	12
Future Volume (Veh/h)	25	0	112	43	36	12
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)	27	0	122	47	39	13
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			27	318		27
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			27	318		27
tC, single (s)			4.1	6.4		6.2
tC, 2 stage (s)						
tF (s)			2.2	3.5		3.3
p0 queue free %			92	94		99
cM capacity (veh/h)			1587	623		1048
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	27	169	52			
Volume Left	0	122	39			
Volume Right	0	0	13			
cSH	1700	1587	694			
Volume to Capacity	0.02	0.08	0.07			
Queue Length 95th (m)	0.0	1.9	1.8			
Control Delay (s)	0.0	5.5	10.6			
Lane LOS			A		B	
Approach Delay (s)	0.0	5.5	10.6			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			6.0			
Intersection Capacity Utilization			25.1%		ICU Level of Service A	
Analysis Period (min)			15			












Lanes, Volumes, Timings  
10: Block 3 Access & Street B

Future Total 2032  
PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	21	0	0
Future Volume (vph)	0	0	0	21	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	23	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	23	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					































HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B

Future Total 2032  
 PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	21	0	0
Future Volume (Veh/h)	0	0	0	21	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)	0	0	0	23	0	0
<b>Pedestrians</b>						
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			0		23	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		23	0
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)			1623		993	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	0	23	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1623	1700			
Volume to Capacity	0.03	0.00	0.07			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	394	1452	276	254	1070	47	283	350	92	108	323	438
Future Volume (vph)	394	1452	276	254	1070	47	283	350	92	108	323	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Fr <sub>t</sub>			0.850			0.850		0.969				0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1601	1807	4269	1555	1738	3416	0	1755	3476	1585
Fl <sub>t</sub> Permitted	0.105			0.096			0.481			0.340		
Satd. Flow (perm)	198	4433	1571	183	4269	1534	879	3416	0	626	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200			124			25			286
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	410	1513	288	265	1115	49	295	365	96	113	336	456
Shared Lane Traffic (%)												
Lane Group Flow (vph)	410	1513	288	265	1115	49	295	461	0	113	336	456
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035  
AM Peak Hour

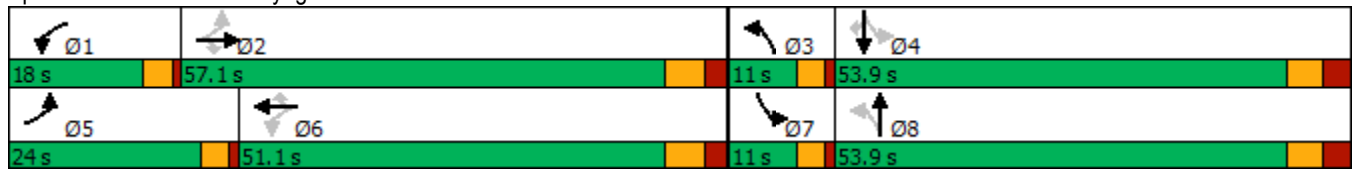


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	24.0	57.1	57.1	18.0	51.1	51.1	11.0	53.9		11.0	53.9	53.9
Total Split (%)	17.1%	40.8%	40.8%	12.9%	36.5%	36.5%	7.9%	38.5%		7.9%	38.5%	38.5%
Maximum Green (s)	20.0	50.4	50.4	14.0	44.4	44.4	7.0	47.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	68.7	47.7	47.7	58.5	41.6	41.6	33.9	23.9		33.9	23.9	23.9
Actuated g/C Ratio	0.60	0.42	0.42	0.51	0.36	0.36	0.30	0.21		0.30	0.21	0.21
v/c Ratio	1.03	0.82	0.37	0.90	0.72	0.08	0.95	0.63		0.44	0.46	0.83
Control Delay	84.1	35.2	9.5	64.1	35.6	0.2	75.3	42.8		33.5	41.6	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	84.1	35.2	9.5	64.1	35.6	0.2	75.3	42.8		33.5	41.6	29.0
LOS	F	D	A	E	D	A	E	D		C	D	C
Approach Delay		40.9			39.6			55.5			34.2	
Approach LOS		D			D			E			C	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	114.7
Natural Cycle:	140
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.03
Intersection Signal Delay:	41.5
Intersection LOS:	D
Intersection Capacity Utilization:	88.3%
ICU Level of Service:	E
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



## 1: Neyagawa Boulevard &amp; Dundas Street West

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	410	1513	288	265	1115	49	295	461	113	336	456
v/c Ratio	1.03	0.82	0.37	0.90	0.72	0.08	0.95	0.63	0.44	0.46	0.83
Control Delay	84.1	35.2	9.5	64.1	35.6	0.2	75.3	42.8	33.5	41.6	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.1	35.2	9.5	64.1	35.6	0.2	75.3	42.8	33.5	41.6	29.0
Queue Length 50th (m)	~77.2	118.2	11.5	40.9	85.6	0.0	54.9	48.5	18.7	35.9	38.9
Queue Length 95th (m)	#171.5	178.3	37.3	#111.1	129.6	0.0	#87.8	64.5	31.7	49.2	78.3
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	399	1971	809	294	1672	676	312	1431	254	1441	815
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.77	0.36	0.90	0.67	0.07	0.95	0.32	0.44	0.23	0.56

## Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	394	1452	276	254	1070	47	283	350	92	108	323	438
Future Volume (vph)	394	1452	276	254	1070	47	283	350	92	108	323	438
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1573	1807	4269	1534	1737	3416		1754	3476	1564
Flt Permitted	0.10	1.00	1.00	0.10	1.00	1.00	0.48	1.00		0.34	1.00	1.00
Satd. Flow (perm)	197	4433	1573	182	4269	1534	880	3416		627	3476	1564
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)	410	1512	288	265	1115	49	295	365	96	112	336	456
RTOR Reduction (vph)	0	0	117	0	0	31	0	20	0	0	0	226
Lane Group Flow (vph)	410	1513	171	265	1115	18	295	441	0	113	336	230
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	65.9	47.7	47.7	55.9	41.7	41.7	31.0	23.9		31.0	23.9	23.9
Effective Green, g (s)	65.9	47.7	47.7	55.9	41.7	41.7	31.0	23.9		31.0	23.9	23.9
Actuated g/C Ratio	0.58	0.42	0.42	0.49	0.36	0.36	0.27	0.21		0.27	0.21	0.21
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	394	1846	655	290	1554	558	291	713		239	725	326
v/s Ratio Prot	c0.18	0.34		0.11	0.26		c0.06	0.13		0.03	0.10	
v/s Ratio Perm	c0.42		0.11	0.33		0.01	c0.21			0.10		0.15
v/c Ratio	1.04	0.82	0.26	0.91	0.72	0.03	1.01	0.62		0.47	0.46	0.70
Uniform Delay, d1	33.1	29.6	21.9	30.8	31.3	23.4	40.5	41.2		32.8	39.7	42.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	56.3	3.0	0.2	31.2	1.6	0.0	56.3	1.6		1.5	0.5	6.8
Delay (s)	89.4	32.6	22.1	62.0	32.9	23.4	96.8	42.8		34.3	40.2	48.8
Level of Service	F	C	C	E	C	C	F	D		C	D	D
Approach Delay (s)		41.7			38.0			63.8			43.8	
Approach LOS		D			D			E			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			44.2				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			114.5			Sum of lost time (s)				21.6		
Intersection Capacity Utilization			88.3%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2035  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	1	0	18	185	1	64	19	652	114	41	687	3
Future Volume (vph)	1	0	18	185	1	64	19	652	114	41	687	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.872			0.966			0.978			0.999	
Flt Protected		0.997			0.964		0.950			0.950		
Satd. Flow (prot)	0	1650	0	0	1671	0	1722	3443	0	1601	3541	0
Flt Permitted		0.981			0.770		0.381			0.263		
Satd. Flow (perm)	0	1623	0	0	1334	0	691	3443	0	443	3541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			22			24			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		111.6			260.3			94.8			72.4	
Travel Time (s)		8.0			18.7			5.7			4.3	
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Adj. Flow (vph)	1	0	18	189	1	65	19	665	116	42	701	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	255	0	19	781	0	42	704	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2035  
AM Peak Hour

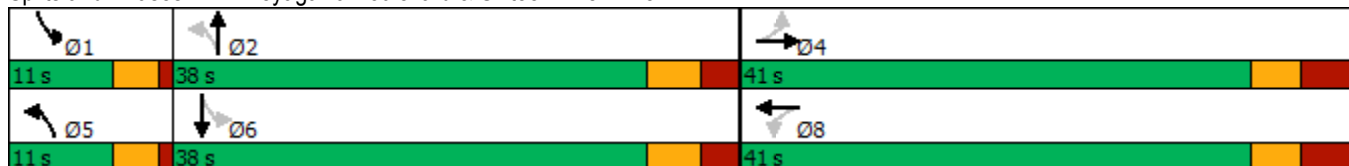


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		6.5	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.0	30.3		11.0	30.3	
Total Split (s)	41.0	41.0		41.0	41.0		11.0	38.0		11.0	38.0	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		12.2%	42.2%		12.2%	42.2%	
Maximum Green (s)	34.2	34.2		34.2	34.2		7.0	31.7		7.0	31.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		16.7			16.7		29.8	23.7		31.2	27.7	
Actuated g/C Ratio		0.28			0.28		0.50	0.40		0.52	0.46	
v/c Ratio		0.04			0.66		0.04	0.57		0.11	0.43	
Control Delay		0.2			27.6		8.4	17.6		8.8	13.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		0.2			27.6		8.4	17.6		8.8	13.3	
LOS		A			C		A	B		A	B	
Approach Delay		0.2			27.6			17.4			13.1	
Approach LOS		A			C			B			B	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 60  
 Natural Cycle: 85  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 16.9  
 Intersection Capacity Utilization 62.5%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2035  
AM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	255	19	781	42	704
v/c Ratio	0.04	0.66	0.04	0.57	0.11	0.43
Control Delay	0.2	27.6	8.4	17.6	8.8	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.2	27.6	8.4	17.6	8.8	13.3
Queue Length 50th (m)	0.0	22.6	0.9	37.0	2.0	23.0
Queue Length 95th (m)	0.0	53.0	4.2	67.3	7.4	60.6
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	1020	819	471	1950	374	2031
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.31	0.04	0.40	0.11	0.35
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2035  
AM Peak Hour



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕		↗	↕		↗	↕		
Traffic Volume (vph)	1	0	18	185	1	64	19	652	114	41	687	3	
Future Volume (vph)	1	0	18	185	1	64	19	652	114	41	687	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3		
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95		
Frbp, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00		
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00		
Frt		0.87			0.97		1.00	0.98		1.00	1.00		
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1651			1670		1722	3443		1601	3542		
Flt Permitted		0.98			0.77		0.38	1.00		0.26	1.00		
Satd. Flow (perm)		1624			1333		690	3443		443	3542		
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)	1	0	18	189	1	65	19	665	116	42	701	3	
RTOR Reduction (vph)	0	14	0	0	16	0	0	14	0	0	1	0	
Lane Group Flow (vph)	0	5	0	0	239	0	19	767	0	42	703	0	
Confl. Peds. (#/hr)	1		1	1		1			3	3			
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		4			8		5	2		1	6		
Permitted Phases	4			8			2			6			
Actuated Green, G (s)		16.7			16.7		26.2	25.2		31.2	27.7		
Effective Green, g (s)		16.7			16.7		26.2	25.2		31.2	27.7		
Actuated g/C Ratio		0.27			0.27		0.42	0.40		0.50	0.44		
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3		
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		433			356		305	1388		285	1569		
v/s Ratio Prot							0.00	c0.22		c0.01	0.20		
v/s Ratio Perm		0.00			c0.18		0.03			0.07			
v/c Ratio		0.01			0.67		0.06	0.55		0.15	0.45		
Uniform Delay, d1		16.8			20.4		10.7	14.3		8.5	12.1		
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		0.0			4.9		0.1	0.5		0.2	0.2		
Delay (s)		16.8			25.4		10.7	14.8		8.7	12.3		
Level of Service		B			C		B	B		A	B		
Approach Delay (s)		16.8			25.4			14.7			12.1		
Approach LOS		B			C			B			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			15.1									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.56										
Actuated Cycle Length (s)			62.5									Sum of lost time (s)	17.1
Intersection Capacity Utilization			62.5%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group

















Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

Future Background 2035  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	19	0	0	23	0	0	0	0	0	0	0
Future Volume (vph)	0	19	0	0	23	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			48			48	
Link Distance (m)		202.5			50.4			139.0			40.1	
Travel Time (s)		14.6			3.6			10.4			3.0	
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
Adj. Flow (vph)	0	21	0	0	25	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	25	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 6.7%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis  
3: Street A & Sixteen Mile Drive

Future Background 2035  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	19	0	0	23	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	19	0	0	23	0	0	0	0	0	0	0
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)	0	21	0	0	25	0	0	0	0	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	25			21			46	46	21	46	46	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			21			46	46	21	46	46	25
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 %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1589			1595			955	846	1056	955	846	1051
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	25	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1589	1595	1700	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			6.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Background 2035  
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	2122	1792	0	0	0
Future Volume (vph)	0	2122	1792	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
<b>Frt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	4520	4520	1883	0	1883
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	4520	4520	1883	0	1883
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2307	1948	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	2307	1948	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.3%
	ICU Level of Service A
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
4: Dundas Street West & Street A

Future Background 2035  
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	2122	1792	0	0	0		
Future Volume (Veh/h)	0	2122	1792	0	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)	0	2307	1948	0	0	0		
<b>Pedestrians</b>								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None	None					
Median storage (veh)								
Upstream signal (m)	206							
pX, platoon unblocked	0.79			0.79	0.79			
vC, conflicting volume	1948			2717	649			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1290			2257	0			
tC, single (s)	4.1			6.8	6.9			
tC, 2 stage (s)								
tF (s)	2.2			3.5	3.3			
p0 queue free %	100			100	100			
cM capacity (veh/h)	424			28	862			
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	769	769	769	649	649	649	0	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.45	0.45	0.45	0.38	0.38	0.38	0.02	0.11
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS								A
Approach Delay (s)	0.0			0.0				0.0
Approach LOS								A
<b>Intersection Summary</b>								
Average Delay			0.0					
Intersection Capacity Utilization			44.3%	ICU Level of Service			A	
Analysis Period (min)			15					

Lanes, Volumes, Timings  
5: Neyagawa Boulevard & Block 1 Access

Future Background 2035  
AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Volume (vph)	0	0	0	791	895	0
Future Volume (vph)	0	0	0	791	895	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	1883	0	3579	3579	0
Flt Permitted						
Satd. Flow (perm)	0	1883	0	3579	3579	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	860	973	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	860	973	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.1%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
5: Neyagawa Boulevard & Block 1 Access

Future Background 2035  
AM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Volume (veh/h)	0	0	0	791	895	0
Future Volume (Veh/h)	0	0	0	791	895	0
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	860	973	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.91	0.86	0.86			
vC, conflicting volume	1403	486	973			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	768	91	654			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	309	819	802			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	0	430	430	649	324	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.23	0.25	0.25	0.38	0.19	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	28.1%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2035  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	0.0% ICU Level of Service A											
Analysis Period (min)	15											










HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2035  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
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)	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	100	100	100	100	100	100			100		
cM capacity (veh/h)	1023	896	1085	1023	896	1085	1623			1623		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.12	0.05	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			0.0%		ICU Level of Service					A		
Analysis Period (min)			15									










Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Background 2035  
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	19	0	0	23	0	0
Future Volume (vph)	19	0	0	23	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	0	0	25	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	25	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis  
7: Street B & Sixteen Mile Drive

Future Background 2035  
AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	19	0	0	23	0	0
Future Volume (Veh/h)	19	0	0	23	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)	21	0	0	25	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)				112		
pX, platoon unblocked						
vC, conflicting volume			21		46	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		46	21
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)			1595		964	1056
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	21	25	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1595	1700			
Volume to Capacity	0.01	0.00	0.05			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Background 2035  
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	0	0	1883
Link Speed (k/h)	48		48			48
Link Distance (m)	58.5		100.7			139.0
Travel Time (s)	4.4		7.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%		ICU Level of Service A			
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
8: Street A & Street B

Future Background 2035  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
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	0	0	0
<b>Pedestrians</b>						
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	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
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)	1023	1085			1623	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.04	0.02	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			0.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive

Future Background 2035  
 AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	19	0	0	23	0	0
Future Volume (vph)	19	0	0	23	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	0	0	25	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	25	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Background 2035  
 AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (veh/h)	19	0	0	23	0	0
Future Volume (Veh/h)	19	0	0	23	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)	21	0	0	25	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			21		46	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		46	21
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)			1595		964	1056
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	21	25	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1595	1700			
Volume to Capacity	0.01	0.00	0.09			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				6.7%	ICU Level of Service	A
Analysis Period (min)				15		



						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1883	0	0	1883	1883	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					






























HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B

Future Background 2035  
 AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	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)	0	0	0	0	0	0
<b>Pedestrians</b>						
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			0		0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		0	0
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)			1623		1023	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.01	0.00	0.09			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			0.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	373	1102	258	311	1800	85	335	507	126	102	367	493
Future Volume (vph)	373	1102	258	311	1800	85	335	507	126	102	367	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98	1.00		0.99	1.00	0.99		0.99		0.99
Frt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1617	1825	4476	1541	1789	3477	0	1807	3579	1585
Flt Permitted	0.086			0.115			0.443			0.201		
Satd. Flow (perm)	162	4433	1588	221	4476	1521	833	3477	0	380	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			235			93			23			300
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	389	1148	269	324	1875	89	349	528	131	106	382	514
Shared Lane Traffic (%)												
Lane Group Flow (vph)	389	1148	269	324	1875	89	349	659	0	106	382	514
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035  
PM Peak Hour

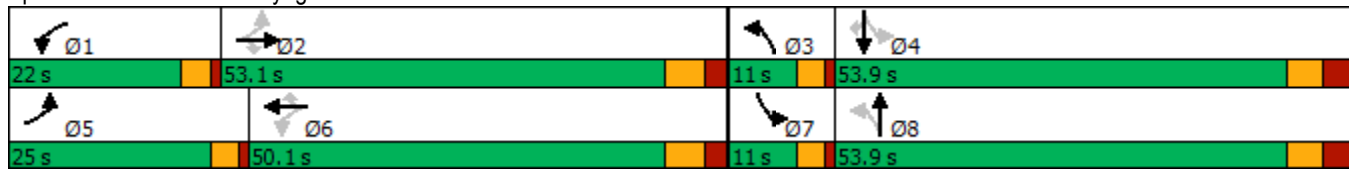


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	25.0	53.1	53.1	22.0	50.1	50.1	11.0	53.9		11.0	53.9	53.9
Total Split (%)	17.9%	37.9%	37.9%	15.7%	35.8%	35.8%	7.9%	38.5%		7.9%	38.5%	38.5%
Maximum Green (s)	21.0	46.4	46.4	18.0	43.4	43.4	7.0	47.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	70.5	46.7	46.7	64.5	43.6	43.6	40.7	30.8		40.7	30.8	30.8
Actuated g/C Ratio	0.57	0.38	0.38	0.52	0.35	0.35	0.33	0.25		0.33	0.25	0.25
v/c Ratio	1.06	0.69	0.36	0.93	1.19	0.15	1.07	0.75		0.52	0.43	0.84
Control Delay	98.6	36.6	7.3	65.5	130.0	6.5	105.6	46.9		35.8	40.2	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	98.6	36.6	7.3	65.5	130.0	6.5	105.6	46.9		35.8	40.2	30.6
LOS	F	D	A	E	F	A	F	D		D	D	C
Approach Delay		45.6			116.0			67.2			34.8	
Approach LOS		D			F			E			C	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	124.3
Natural Cycle:	150
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.19
Intersection Signal Delay:	73.8
Intersection LOS:	E
Intersection Capacity Utilization:	108.5%
ICU Level of Service:	G
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



## 1: Neyagawa Boulevard &amp; Dundas Street West

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	389	1148	269	324	1875	89	349	659	106	382	514
v/c Ratio	1.06	0.69	0.36	0.93	1.19	0.15	1.07	0.75	0.52	0.43	0.84
Control Delay	98.6	36.6	7.3	65.5	130.0	6.5	105.6	46.9	35.8	40.2	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.6	36.6	7.3	65.5	130.0	6.5	105.6	46.9	35.8	40.2	30.6
Queue Length 50th (m)	~82.6	93.4	5.0	54.5	~220.7	0.0	~76.6	75.6	17.4	41.3	52.9
Queue Length 95th (m)	#177.9	140.0	27.4	#136.5	#315.5	11.5	#119.3	95.1	29.5	55.0	96.6
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	368	1664	742	348	1571	594	327	1336	205	1361	779
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.69	0.36	0.93	1.19	0.15	1.07	0.49	0.52	0.28	0.66

## Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	373	1102	258	311	1800	85	335	507	126	102	367	493
Future Volume (vph)	373	1102	258	311	1800	85	335	507	126	102	367	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1589	1825	4476	1521	1788	3479		1805	3579	1563
Flt Permitted	0.09	1.00	1.00	0.12	1.00	1.00	0.44	1.00		0.20	1.00	1.00
Satd. Flow (perm)	162	4433	1589	222	4476	1521	834	3479		382	3579	1563
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)	389	1148	269	324	1875	89	349	528	131	106	382	514
RTOR Reduction (vph)	0	0	147	0	0	58	0	17	0	0	0	226
Lane Group Flow (vph)	389	1148	122	324	1875	31	349	642	0	106	382	288
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	67.7	46.6	46.6	61.7	43.6	43.6	37.8	30.8		37.8	30.8	30.8
Effective Green, g (s)	67.7	46.6	46.6	61.7	43.6	43.6	37.8	30.8		37.8	30.8	30.8
Actuated g/C Ratio	0.55	0.38	0.38	0.50	0.35	0.35	0.30	0.25		0.30	0.25	0.25
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	365	1664	596	344	1572	534	307	863		196	888	387
v/s Ratio Prot	c0.18	0.26		0.14	c0.42		c0.06	0.18		0.03	0.11	
v/s Ratio Perm	0.40		0.08	0.33		0.02	c0.28			0.13		0.18
v/c Ratio	1.07	0.69	0.21	0.94	1.19	0.06	1.14	0.74		0.54	0.43	0.75
Uniform Delay, d1	40.0	32.7	26.2	32.3	40.2	26.7	42.0	43.0		33.0	39.3	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	65.6	1.2	0.2	33.6	93.3	0.0	93.6	3.5		3.0	0.3	7.6
Delay (s)	105.7	33.9	26.4	65.9	133.6	26.7	135.6	46.5		36.0	39.6	50.6
Level of Service	F	C	C	E	F	C	F	D		D	D	D
Approach Delay (s)		48.2			119.8			77.4			44.9	
Approach LOS		D			F			E			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			79.3									E
HCM 2000 Volume to Capacity ratio			1.15									
Actuated Cycle Length (s)			124.1							21.6		
Intersection Capacity Utilization			108.5%									G
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2035  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	4	4	35	284	5	66	40	618	205	115	658	2
Future Volume (vph)	4	4	35	284	5	66	40	618	205	115	658	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			0.99		1.00		
Frt		0.888			0.975			0.963				
Flt Protected		0.996			0.962		0.950			0.950		
Satd. Flow (prot)	0	1681	0	0	1774	0	1825	3428	0	1825	3579	0
Flt Permitted		0.964			0.738		0.329			0.185		
Satd. Flow (perm)	0	1627	0	0	1360	0	632	3428	0	354	3579	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			15			55				
Link Speed (k/h)		50			50			60				60
Link Distance (m)		111.6			260.3			94.8				72.4
Travel Time (s)		8.0			18.7			5.7				4.3
Confl. Peds. (#/hr)			1	1					6	6		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Adj. Flow (vph)	4	4	38	305	5	71	43	665	220	124	708	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	381	0	43	885	0	124	710	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2035  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.5	30.3		11.5	30.3	
Total Split (s)	40.0	40.0		40.0	40.0		17.0	38.0		12.0	33.0	
Total Split (%)	44.4%	44.4%		44.4%	44.4%		18.9%	42.2%		13.3%	36.7%	
Maximum Green (s)	33.2	33.2		33.2	33.2		13.0	31.7		8.0	26.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		25.4			25.4		34.4	26.6		36.1	29.5	
Actuated g/C Ratio		0.34			0.34		0.46	0.36		0.48	0.40	
v/c Ratio		0.08			0.81		0.10	0.70		0.38	0.50	
Control Delay		8.2			37.5		11.2	24.5		14.4	20.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.2			37.5		11.2	24.5		14.4	20.7	
LOS		A			D		B	C		B	C	
Approach Delay		8.2			37.5			23.9			19.7	
Approach LOS		A			D			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	74.6
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.81
Intersection Signal Delay:	24.3
Intersection LOS:	C
Intersection Capacity Utilization:	71.1%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Background 2035  
PM Peak Hour





















Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	381	43	885	124	710
v/c Ratio	0.08	0.81	0.10	0.70	0.38	0.50
Control Delay	8.2	37.5	11.2	24.5	14.4	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	37.5	11.2	24.5	14.4	20.7
Queue Length 50th (m)	0.8	48.9	3.0	56.8	9.0	44.3
Queue Length 95th (m)	7.5	#96.6	8.5	86.0	19.7	68.5
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	786	648	540	1572	338	1515
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.59	0.08	0.56	0.37	0.47

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
2: Neyagawa Boulevard & Sixteen Mile Drive

















Future Background 2035  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	4	35	284	5	66	40	618	205	115	658	2
Future Volume (vph)	4	4	35	284	5	66	40	618	205	115	658	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.97		1.00	0.96		1.00	1.00	
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1682			1771		1825	3429		1825	3577	
Flt Permitted		0.96			0.74		0.33	1.00		0.18	1.00	
Satd. Flow (perm)		1628			1359		632	3429		355	3577	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	4	4	38	305	5	71	43	665	220	124	708	2
RTOR Reduction (vph)	0	25	0	0	10	0	0	35	0	0	0	0
Lane Group Flow (vph)	0	21	0	0	371	0	43	850	0	124	710	0
Confl. Peds. (#/hr)			1	1					6	6		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.3			25.3		31.3	27.5		35.3	29.5	
Effective Green, g (s)		25.3			25.3		31.3	27.5		35.3	29.5	
Actuated g/C Ratio		0.33			0.33		0.41	0.36		0.47	0.39	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		544			454		321	1245		278	1393	
v/s Ratio Prot							0.01	c0.25		c0.03	0.20	
v/s Ratio Perm		0.01			c0.27		0.05			0.17		
v/c Ratio		0.04			0.82		0.13	0.68		0.45	0.51	
Uniform Delay, d1		17.0			23.1		13.4	20.4		12.9	17.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			10.9		0.2	1.6		1.1	0.3	
Delay (s)		17.0			34.0		13.6	22.0		14.0	17.9	
Level of Service		B			C		B	C		B	B	
Approach Delay (s)		17.0			34.0			21.6			17.3	
Approach LOS		B			C			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			22.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			75.7				Sum of lost time (s)			17.1		
Intersection Capacity Utilization			71.1%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

















Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

Future Background 2035  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	43	0	0	47	0	0	0	0	0	0	0
Future Volume (vph)	0	43	0	0	47	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			48			48	
Link Distance (m)		202.5			50.4			139.0			40.1	
Travel Time (s)		14.6			3.6			10.4			3.0	
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
Adj. Flow (vph)	0	47	0	0	51	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	51	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 6.7%	ICU Level of Service A											
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
3: Street A & Sixteen Mile Drive

Future Background 2035  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	43	0	0	47	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	43	0	0	47	0	0	0	0	0	0	0
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)	0	47	0	0	51	0	0	0	0	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	51			47			98	98	47	98	98	51
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	51			47			98	98	47	98	98	51
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 %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1555			1560			884	792	1022	884	792	1017
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	47	51	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1555	1560	1700	1700								
Volume to Capacity	0.00	0.00	0.04	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			6.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Background 2035  
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	1734	2630	0	0	0
Future Volume (vph)	0	1734	2630	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
<b>Frt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	4520	4520	1883	0	1883
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	4520	4520	1883	0	1883
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1885	2859	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	1885	2859	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.1%
	ICU Level of Service A
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
 4: Dundas Street West & Street A

Future Background 2035  
 PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	1734	2630	0	0	0		
Future Volume (Veh/h)	0	1734	2630	0	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)	0	1885	2859	0	0	0		
<b>Pedestrians</b>								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None	None					
Median storage (veh)								
Upstream signal (m)	206							
pX, platoon unblocked	0.67				0.67	0.67		
vC, conflicting volume	2859				3487	953		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	2040				2982	0		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)								
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				100	100		
cM capacity (veh/h)	182				7	723		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	628	628	628	953	953	953	0	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.37	0.37	0.37	0.56	0.56	0.56	0.06	0.18
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS								A
Approach Delay (s)	0.0				0.0			0.0
Approach LOS								A
<b>Intersection Summary</b>								
Average Delay				0.0				
Intersection Capacity Utilization				54.1%	ICU Level of Service			A
Analysis Period (min)				15				

Lanes, Volumes, Timings  
5: Neyagawa Boulevard & Block 1 Access

Future Background 2035  
PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	965	986	0
Future Volume (vph)	0	0	0	965	986	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	1883	0	3579	3579	0
Flt Permitted						
Satd. Flow (perm)	0	1883	0	3579	3579	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1049	1072	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1049	1072	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
5: Neyagawa Boulevard & Block 1 Access

Future Background 2035  
PM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↓	
Traffic Volume (veh/h)	0	0	0	965	986	0
Future Volume (Veh/h)	0	0	0	965	986	0
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	1049	1072	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.92	0.85	0.85			
vC, conflicting volume	1596	536	1072			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	737	100	731			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	325	795	738			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	0	524	524	715	357	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.16	0.31	0.31	0.42	0.21	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	30.6%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2035  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	0.0% ICU Level of Service A											
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Background 2035  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
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)	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	100	100	100	100	100	100			100		
cM capacity (veh/h)	1023	896	1085	1023	896	1085	1623			1623		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.09	0.06	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.0									
Intersection Capacity Utilization			0.0%		ICU Level of Service					A		
Analysis Period (min)			15									










Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Background 2035  
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	43	0	0	47	0	0
Future Volume (vph)	43	0	0	47	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	0	0	51	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	51	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis  
7: Street B & Sixteen Mile Drive

Future Background 2035  
PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	43	0	0	47	0	0
Future Volume (Veh/h)	43	0	0	47	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)	47	0	0	51	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)				112		
pX, platoon unblocked						
vC, conflicting volume			47		98	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		98	47
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)			1560		901	1022
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	47	51	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1560	1700			
Volume to Capacity	0.03	0.00	0.02			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Background 2035  
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	0	0	1883
Link Speed (k/h)	48		48			48
Link Distance (m)	58.5		100.7			139.0
Travel Time (s)	4.4		7.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%		ICU Level of Service A			
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
8: Street A & Street B

Future Background 2035  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
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	0	0	0
<b>Pedestrians</b>						
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	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
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)	1023	1085			1623	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.06	0.06	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			0.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive

Future Background 2035  
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	43	0	0	47	0	0
Future Volume (vph)	43	0	0	47	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	0	0	51	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	51	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Background 2035  
 PM Peak Hour













Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	43	0	0	47	0	0
Future Volume (Veh/h)	43	0	0	47	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)	47	0	0	51	0	0
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			47		98	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		98	47
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)			1560		901	1022
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	47	51	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1560	1700			
Volume to Capacity	0.03	0.00	0.13			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				6.7%	ICU Level of Service	A
Analysis Period (min)				15		












Lanes, Volumes, Timings  
10: Block 3 Access & Street B

Future Background 2035  
PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1883	0	0	1883	1883	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
<b>Two way Left Turn Lane</b>						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					































HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B

Future Background 2035  
 PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	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)	0	0	0	0	0	0
<b>Pedestrians</b>						
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			0		0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		0	0
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)			1623		1023	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	0	0	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.03	0.00	0.07			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				0.0		
Intersection Capacity Utilization				0.0%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2035  
 AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	456	1452	276	254	1087	70	292	369	92	196	411	441
Future Volume (vph)	456	1452	276	254	1087	70	292	369	92	196	411	441
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Flt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1601	1807	4269	1555	1738	3419	0	1755	3476	1585
Flt Permitted	0.098			0.095			0.383			0.329		
Satd. Flow (perm)	185	4433	1571	181	4269	1534	700	3419	0	606	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200			124			24			278
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	475	1513	288	265	1132	73	304	384	96	204	428	459
Shared Lane Traffic (%)												
Lane Group Flow (vph)	475	1513	288	265	1132	73	304	480	0	204	428	459
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2035  
AM Peak Hour

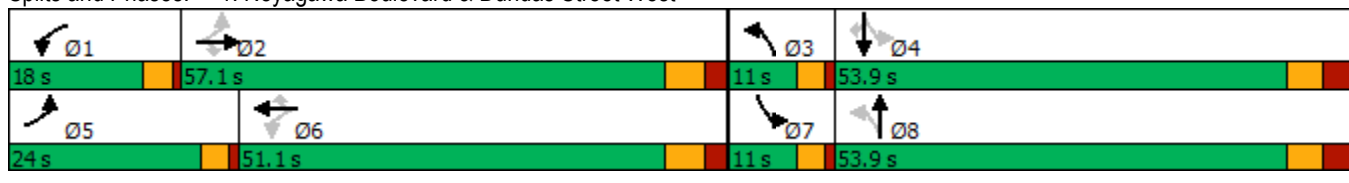


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	24.0	57.1	57.1	18.0	51.1	51.1	11.0	53.9		11.0	53.9	53.9
Total Split (%)	17.1%	40.8%	40.8%	12.9%	36.5%	36.5%	7.9%	38.5%		7.9%	38.5%	38.5%
Maximum Green (s)	20.0	50.4	50.4	14.0	44.4	44.4	7.0	47.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	68.9	47.9	47.9	58.7	41.8	41.8	35.5	25.5		35.5	25.5	25.5
Actuated g/C Ratio	0.59	0.41	0.41	0.50	0.36	0.36	0.30	0.22		0.30	0.22	0.22
v/c Ratio	1.22	0.83	0.38	0.92	0.74	0.12	1.10	0.63		0.80	0.56	0.82
Control Delay	152.5	36.5	9.8	68.0	37.0	0.9	118.9	42.5		56.0	43.1	29.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	152.5	36.5	9.8	68.0	37.0	0.9	118.9	42.5		56.0	43.1	29.3
LOS	F	D	A	E	D	A	F	D		E	D	C
Approach Delay		57.3			40.8			72.1			39.7	
Approach LOS		E			D			E			D	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	116.5
Natural Cycle:	150
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.22
Intersection Signal Delay:	51.6
Intersection LOS:	D
Intersection Capacity Utilization:	94.6%
ICU Level of Service:	F
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



## Queues

Future Total 2035

## 1: Neyagawa Boulevard &amp; Dundas Street West

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	475	1513	288	265	1132	73	304	480	204	428	459
v/c Ratio	1.22	0.83	0.38	0.92	0.74	0.12	1.10	0.63	0.80	0.56	0.82
Control Delay	152.5	36.5	9.8	68.0	37.0	0.9	118.9	42.5	56.0	43.1	29.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.5	36.5	9.8	68.0	37.0	0.9	118.9	42.5	56.0	43.1	29.3
Queue Length 50th (m)	~114.8	122.1	11.9	42.4	89.9	0.0	~67.9	51.1	35.7	47.2	42.1
Queue Length 95th (m)	#217.7	#183.6	38.2	#114.2	135.2	1.3	#111.1	67.1	#54.6	62.3	81.6
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	388	1941	800	288	1647	668	276	1410	254	1419	803
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.78	0.36	0.92	0.69	0.11	1.10	0.34	0.80	0.30	0.57

## Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2035  
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	456	1452	276	254	1087	70	292	369	92	196	411	441
Future Volume (vph)	456	1452	276	254	1087	70	292	369	92	196	411	441
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1573	1807	4269	1534	1738	3420		1754	3476	1564
Flt Permitted	0.10	1.00	1.00	0.10	1.00	1.00	0.38	1.00		0.33	1.00	1.00
Satd. Flow (perm)	185	4433	1573	182	4269	1534	700	3420		608	3476	1564
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)	475	1512	288	265	1132	73	304	384	96	204	428	459
RTOR Reduction (vph)	0	0	118	0	0	47	0	19	0	0	0	217
Lane Group Flow (vph)	475	1513	170	265	1132	26	304	461	0	204	428	242
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	66.1	47.9	47.9	56.1	41.9	41.9	32.6	25.5		32.6	25.5	25.5
Effective Green, g (s)	66.1	47.9	47.9	56.1	41.9	41.9	32.6	25.5		32.6	25.5	25.5
Actuated g/C Ratio	0.57	0.41	0.41	0.48	0.36	0.36	0.28	0.22		0.28	0.22	0.22
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	383	1825	647	286	1538	552	259	749		240	762	342
v/s Ratio Prot	c0.21	0.34		0.11	0.27		c0.07	0.13		0.05	0.12	
v/s Ratio Perm	c0.49		0.11	0.33		0.02	c0.26			0.19		0.15
v/c Ratio	1.24	0.83	0.26	0.93	0.74	0.05	1.17	0.62		0.85	0.56	0.71
Uniform Delay, d1	34.4	30.5	22.6	31.7	32.4	24.2	40.5	41.0		37.7	40.4	42.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	128.5	3.3	0.2	34.1	1.9	0.0	111.2	1.5		23.5	1.0	6.5
Delay (s)	162.9	33.8	22.8	65.8	34.3	24.2	151.7	42.5		61.2	41.4	48.5
Level of Service	F	C	C	E	C	C	F	D		E	D	D
Approach Delay (s)		59.4			39.5			84.8			48.1	
Approach LOS		E			D			F			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			55.5	HCM 2000 Level of Service				E				
HCM 2000 Volume to Capacity ratio			1.25									
Actuated Cycle Length (s)			116.3	Sum of lost time (s)				21.6				
Intersection Capacity Utilization			94.6%	ICU Level of Service				F				
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2035  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	89	0	8	185	1	64	123	652	114	41	695	23
Future Volume (vph)	89	0	8	185	1	64	123	652	114	41	695	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00			1.00		1.00		
Frt		0.989			0.966			0.978			0.995	
Flt Protected		0.956			0.964		0.950			0.950		
Satd. Flow (prot)	0	1814	0	0	1671	0	1722	3443	0	1601	3529	0
Flt Permitted		0.630			0.719		0.282			0.306		
Satd. Flow (perm)	0	1195	0	0	1246	0	511	3443	0	515	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			22			24			4	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		111.6			260.3			94.8			72.4	
Travel Time (s)		8.0			18.7			5.7			4.3	
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Adj. Flow (vph)	91	0	8	189	1	65	126	665	116	42	709	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	99	0	0	255	0	126	781	0	42	732	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2035  
AM Peak Hour

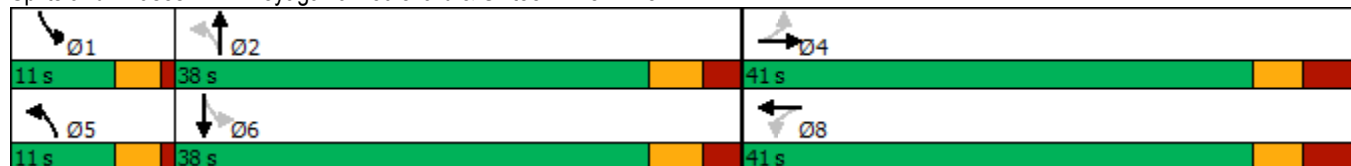


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		6.5	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.0	30.3		11.0	30.3	
Total Split (s)	41.0	41.0		41.0	41.0		11.0	38.0		11.0	38.0	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		12.2%	42.2%		12.2%	42.2%	
Maximum Green (s)	34.2	34.2		34.2	34.2		7.0	31.7		7.0	31.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		18.0			18.0		32.4	26.2		31.2	23.7	
Actuated g/C Ratio		0.28			0.28		0.51	0.41		0.49	0.37	
v/c Ratio		0.25			0.69		0.32	0.55		0.11	0.56	
Control Delay		7.5			30.4		10.9	17.9		9.3	19.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		7.5			30.4		10.9	17.9		9.3	19.6	
LOS		A			C		B	B		A	B	
Approach Delay		7.5			30.4			16.9			19.0	
Approach LOS		A			C			B			B	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 63.8  
 Natural Cycle: 85  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 18.9  
 Intersection Capacity Utilization 55.5%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive



















Future Total 2035  
AM Peak Hour



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	99	255	126	781	42	732
v/c Ratio	0.25	0.69	0.32	0.55	0.11	0.56
Control Delay	7.5	30.4	10.9	17.9	9.3	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	30.4	10.9	17.9	9.3	19.6
Queue Length 50th (m)	0.9	23.2	6.4	37.8	2.0	36.2
Queue Length 95th (m)	11.1	54.5	18.6	70.1	7.8	65.8
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	712	712	399	1813	378	1848
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.36	0.32	0.43	0.11	0.40
Intersection Summary						

HCM Signalized Intersection Capacity Analysis  
 2: Neyagawa Boulevard & Sixteen Mile Drive

















Future Total 2035  
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	0	8	185	1	64	123	652	114	41	695	23
Future Volume (vph)	89	0	8	185	1	64	123	652	114	41	695	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.97		1.00	0.98		1.00	1.00	
Flt Protected		0.96			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1814			1670		1722	3443		1600	3530	
Flt Permitted		0.63			0.72		0.28	1.00		0.31	1.00	
Satd. Flow (perm)		1196			1245		512	3443		515	3530	
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)	91	0	8	189	1	65	126	665	116	42	709	23
RTOR Reduction (vph)	0	64	0	0	16	0	0	14	0	0	2	0
Lane Group Flow (vph)	0	35	0	0	239	0	126	767	0	42	730	0
Confl. Peds. (#/hr)	1		1	1		1			3	3		
Heavy Vehicles (%)	0%	0%	0%	9%	10%	0%	6%	3%	5%	14%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0		31.5	26.2		28.1	24.5	
Effective Green, g (s)		18.0			18.0		31.5	26.2		28.1	24.5	
Actuated g/C Ratio		0.28			0.28		0.49	0.40		0.43	0.38	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		331			345		347	1389		283	1332	
v/s Ratio Prot							c0.03	c0.22		0.01	0.21	
v/s Ratio Perm		0.03			c0.19		0.15			0.06		
v/c Ratio		0.11			0.69		0.36	0.55		0.15	0.55	
Uniform Delay, d1		17.5			21.0		9.7	14.8		10.8	15.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			5.9		0.6	0.5		0.2	0.5	
Delay (s)		17.6			26.9		10.3	15.3		11.1	16.3	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		17.6			26.9			14.6			16.0	
Approach LOS		B			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			16.8				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			64.9				Sum of lost time (s)				17.1	
Intersection Capacity Utilization			55.5%				ICU Level of Service				B	
Analysis Period (min)			15									

c Critical Lane Group

















Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

Future Total 2035  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	9	10	39	23	0	0	1	10	0	0	0
Future Volume (vph)	0	9	10	39	23	0	0	1	10	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.929						0.876				
Fl <sub>t</sub> Protected					0.970							
Satd. Flow (prot)	0	1750	0	0	1827	0	0	1650	0	0	1883	0
Fl <sub>t</sub> Permitted					0.970							
Satd. Flow (perm)	0	1750	0	0	1827	0	0	1650	0	0	1883	0
Link Speed (k/h)		50			50			48			48	
Link Distance (m)		202.5			50.4			139.0			40.1	
Travel Time (s)		14.6			3.6			10.4			3.0	
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
Adj. Flow (vph)	0	10	11	42	25	0	0	1	11	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	67	0	0	12	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	20.0%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
 3: Street A & Sixteen Mile Drive

Future Total 2035  
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	9	10	39	23	0	0	1	10	0	0	0
Future Volume (Veh/h)	0	9	10	39	23	0	0	1	10	0	0	0
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)	0	10	11	42	25	0	0	1	11	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	25			21			124	124	16	136	130	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			21			124	124	16	136	130	25
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 %	100			97			100	100	99	100	100	100
cM capacity (veh/h)	1589			1595			833	746	1064	809	741	1051
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	67	12	0								
Volume Left	0	42	0	0								
Volume Right	11	0	11	0								
cSH	1589	1595	1027	1700								
Volume to Capacity	0.00	0.03	0.01	0.00								
Queue Length 95th (m)	0.0	0.6	0.3	0.0								
Control Delay (s)	0.0	4.7	8.5	0.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	4.7	8.5	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			4.1									
Intersection Capacity Utilization			20.0%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Total 2035  
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	2184	1795	26	0	84
Future Volume (vph)	0	2184	1795	26	0	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1601	0	1629
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1601	0	1629
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2374	1951	28	0	91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2374	1951	28	0	91
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.5%
	ICU Level of Service A
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
4: Dundas Street West & Street A

Future Total 2035  
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	2184	1795	26	0	84		
Future Volume (Veh/h)	0	2184	1795	26	0	84		
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)	0	2374	1951	28	0	91		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None	None					
Median storage (veh)								
Upstream signal (m)	206							
pX, platoon unblocked	0.79				0.79	0.79		
vC, conflicting volume	1979				2742	650		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1309				2275	0		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)								
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				100	89		
cM capacity (veh/h)	414				27	857		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	791	791	791	650	650	650	28	91
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	28	91
cSH	1700	1700	1700	1700	1700	1700	1700	857
Volume to Capacity	0.47	0.47	0.47	0.38	0.38	0.38	0.02	0.11
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.7
Lane LOS								A
Approach Delay (s)	0.0				0.0			9.7
Approach LOS								A
Intersection Summary								
Average Delay			0.2					
Intersection Capacity Utilization			46.5%	ICU Level of Service		A		
Analysis Period (min)			15					

Lanes, Volumes, Timings  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2035  
 AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	188	0	895	885	8
Future Volume (vph)	0	188	0	895	885	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1629	0	3579	3575	0
Flt Permitted						
Satd. Flow (perm)	0	1629	0	3579	3575	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	204	0	973	962	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	204	0	973	971	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	43.0%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2035  
 AM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕	↕	↘
Traffic Volume (veh/h)	0	188	0	895	885	8
Future Volume (Veh/h)	0	188	0	895	885	8
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	204	0	973	962	9
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.89	0.84	0.84			
vC, conflicting volume	1453	486	971			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	745	11	588			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	77	100			
cM capacity (veh/h)	312	897	827			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	204	486	486	641	330	
Volume Left	0	0	0	0	0	
Volume Right	204	0	0	0	9	
cSH	897	1700	1700	1700	1700	
Volume to Capacity	0.23	0.29	0.29	0.38	0.19	
Queue Length 95th (m)	6.6	0.0	0.0	0.0	0.0	
Control Delay (s)	10.2	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	10.2	0.0		0.0		
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay	1.0					
Intersection Capacity Utilization	43.0%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2035  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	78	0	13	0	27	0	22	44	43	23	0
Future Volume (vph)	0	78	0	13	0	27	0	22	44	43	23	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.909			0.910				
Fl <sub>t</sub> Protected					0.984						0.968	
Satd. Flow (prot)	0	1883	0	0	1685	0	0	1714	0	0	1823	0
Fl <sub>t</sub> Permitted					0.984						0.968	
Satd. Flow (perm)	0	1883	0	0	1685	0	0	1714	0	0	1823	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	85	0	14	0	29	0	24	48	47	25	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	43	0	0	72	0	0	72	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	26.0%					ICU Level of Service A						
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2035  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	78	0	13	0	27	0	22	44	43	23	0
Future Volume (Veh/h)	0	78	0	13	0	27	0	22	44	43	23	0
Sign Control		Stop			Stop			Free			Free	
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)	0	85	0	14	0	29	0	24	48	47	25	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	196	191	25	210	167	48	25			72		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	196	191	25	210	167	48	25			72		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	88	100	98	100	97	100			97		
cM capacity (veh/h)	724	682	1051	661	703	1021	1589			1528		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	85	43	72	72								
Volume Left	0	14	0	47								
Volume Right	0	29	48	0								
cSH	682	867	1589	1528								
Volume to Capacity	0.12	0.05	0.00	0.03								
Queue Length 95th (m)	3.2	1.2	0.0	0.7								
Control Delay (s)	11.0	9.4	0.0	4.9								
Lane LOS	B	A		A								
Approach Delay (s)	11.0	9.4	0.0	4.9								
Approach LOS	B	A										
Intersection Summary												
Average Delay			6.2									
Intersection Capacity Utilization			26.0%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Total 2035  
AM Peak Hour



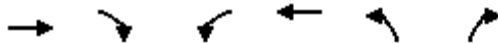
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	48	0	66	82	0	49
Future Volume (vph)	48	0	66	82	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.865	
Fl <sub>t</sub> Protected				0.978		
Satd. Flow (prot)	1883	0	0	1842	1629	0
Fl <sub>t</sub> Permitted				0.978		
Satd. Flow (perm)	1883	0	0	1842	1629	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	0	72	89	0	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	0	0	161	53	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.6%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
7: Street B & Sixteen Mile Drive










Future Total 2035  
AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	
Traffic Volume (veh/h)	48	0	66	82	0	49
Future Volume (Veh/h)	48	0	66	82	0	49
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)	52	0	72	89	0	53
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	112					
pX, platoon unblocked					0.98	
vC, conflicting volume			52	285	52	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			52	264	52	
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	100	95	
cM capacity (veh/h)			1554	680	1016	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	52	161	53			
Volume Left	0	72	0			
Volume Right	0	0	53			
cSH	1700	1554	1016			
Volume to Capacity	0.03	0.05	0.05			
Queue Length 95th (m)	0.0	1.1	1.3			
Control Delay (s)	0.0	3.5	8.7			
Lane LOS			A			
Approach Delay (s)	0.0	3.5	8.7			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			3.9			
Intersection Capacity Utilization			24.6%	ICU Level of Service	A	
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Total 2035  
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	0	11	15	0	49
Future Volume (vph)	35	0	11	15	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.923					
Fl <sub>t</sub> Protected	0.950					
Satd. Flow (prot)	1789	0	1738	0	0	1883
Fl <sub>t</sub> Permitted	0.950					
Satd. Flow (perm)	1789	0	1738	0	0	1883
Link Speed (k/h)	48		48		48	
Link Distance (m)	58.5		100.7		139.0	
Travel Time (s)	4.4		7.6		10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	0	12	16	0	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	28	0	0	53
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0		0.0	
Link Offset(m)	0.0		0.0		0.0	
Crosswalk Width(m)	1.6		1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free		Free	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
8: Street A & Street B

Future Total 2035  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	35	0	11	15	0	49
Future Volume (Veh/h)	35	0	11	15	0	49
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	0	12	16	0	53
<b>Pedestrians</b>						
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	73	20			28	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	73	20			28	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	931	1058			1585	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	38	28	53			
Volume Left	38	0	0			
Volume Right	0	16	0			
cSH	931	1700	1585			
Volume to Capacity	0.04	0.02	0.00			
Queue Length 95th (m)	1.0	0.0	0.0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			2.9			
Intersection Capacity Utilization			13.3%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2035  
 AM Peak Hour



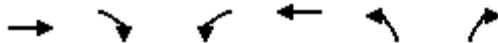
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	9	10	60	22	39	39
Future Volume (vph)	9	10	60	22	39	39
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.929				0.932	
Flt Protected				0.965	0.976	
Satd. Flow (prot)	1750	0	0	1818	1713	0
Flt Permitted				0.965	0.976	
Satd. Flow (perm)	1750	0	0	1818	1713	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	11	65	24	42	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	89	84	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2035  
 AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	9	10	60	22	39	39
Future Volume (Veh/h)	9	10	60	22	39	39
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)	10	11	65	24	42	42
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			21		170	16
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		170	16
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		95	96
cM capacity (veh/h)			1595		787	1064
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	21	89	84			
Volume Left	0	65	42			
Volume Right	11	0	42			
cSH	1700	1595	905			
Volume to Capacity	0.01	0.04	0.09			
Queue Length 95th (m)	0.0	1.0	2.3			
Control Delay (s)	0.0	5.5	9.4			
Lane LOS		A	A			
Approach Delay (s)	0.0	5.5	9.4			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			6.6			
Intersection Capacity Utilization			22.4%	ICU Level of Service	A	
Analysis Period (min)			15			



Lanes, Volumes, Timings  
 10: Block 3 Access & Street B

Future Total 2035  
 AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	15	23	13	22	67
Future Volume (vph)	0	15	23	13	22	67
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.865				0.898	
Fl <sub>t</sub> Protected				0.969	0.988	
Satd. Flow (prot)	1629	0	0	1825	1671	0
Fl <sub>t</sub> Permitted				0.969	0.988	
Satd. Flow (perm)	1629	0	0	1825	1671	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	16	25	14	24	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	39	97	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.6%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B






























Future Total 2035  
 AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	0	15	23	13	22	67
Future Volume (Veh/h)	0	15	23	13	22	67
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)	0	16	25	14	24	73
<b>Pedestrians</b>						
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			16		72	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			16		72	8
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		97	93
cM capacity (veh/h)			1602		917	1074
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	16	39	97			
Volume Left	0	25	24			
Volume Right	16	0	73			
cSH	1700	1602	1031			
Volume to Capacity	0.01	0.02	0.09			
Queue Length 95th (m)	0.0	0.4	2.4			
Control Delay (s)	0.0	4.7	8.9			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.7	8.9			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			6.9			
Intersection Capacity Utilization			20.6%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2035  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	466	1102	258	311	1876	167	351	566	126	171	409	496
Future Volume (vph)	466	1102	258	311	1876	167	351	566	126	171	409	496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98	1.00		0.99	1.00	0.99		0.99		0.99
Frt			0.850			0.850		0.973				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	4433	1617	1825	4476	1541	1789	3490	0	1807	3579	1585
Flt Permitted	0.086			0.112			0.406			0.171		
Satd. Flow (perm)	162	4433	1588	215	4476	1521	764	3490	0	323	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			235			93			20			297
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	485	1148	269	324	1954	174	366	590	131	178	426	517
Shared Lane Traffic (%)												
Lane Group Flow (vph)	485	1148	269	324	1954	174	366	721	0	178	426	517
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2035  
PM Peak Hour

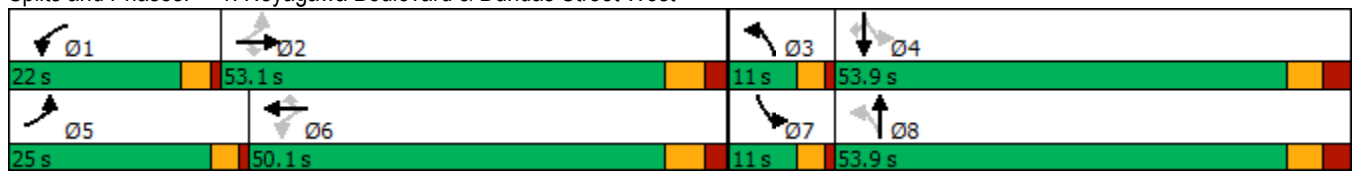


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	25.0	53.1	53.1	22.0	50.1	50.1	11.0	53.9		11.0	53.9	53.9
Total Split (%)	17.9%	37.9%	37.9%	15.7%	35.8%	35.8%	7.9%	38.5%		7.9%	38.5%	38.5%
Maximum Green (s)	21.0	46.4	46.4	18.0	43.4	43.4	7.0	47.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	70.4	46.6	46.6	64.3	43.6	43.6	42.8	32.9		42.8	32.9	32.9
Actuated g/C Ratio	0.56	0.37	0.37	0.51	0.35	0.35	0.34	0.26		0.34	0.26	0.26
v/c Ratio	1.34	0.70	0.37	0.95	1.26	0.30	1.16	0.78		0.93	0.46	0.83
Control Delay	202.9	37.8	7.4	71.5	160.2	16.8	135.7	48.2		81.7	40.3	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	202.9	37.8	7.4	71.5	160.2	16.8	135.7	48.2		81.7	40.3	29.8
LOS	F	D	A	E	F	B	F	D		F	D	C
Approach Delay		75.6			138.3			77.7			42.0	
Approach LOS		E			F			E			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 126.2  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.34  
 Intersection Signal Delay: 93.6  
 Intersection LOS: F  
 Intersection Capacity Utilization 119.5%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 \* User Entered Value

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues

Future Total 2035

1: Neyagawa Boulevard & Dundas Street West

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	485	1148	269	324	1954	174	366	721	178	426	517
v/c Ratio	1.34	0.70	0.37	0.95	1.26	0.30	1.16	0.78	0.93	0.46	0.83
Control Delay	202.9	37.8	7.4	71.5	160.2	16.8	135.7	48.2	81.7	40.3	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	202.9	37.8	7.4	71.5	160.2	16.8	135.7	48.2	81.7	40.3	29.8
Queue Length 50th (m)	~138.2	98.4	5.3	58.3	~249.2	13.6	~87.5	85.3	30.5	46.7	54.8
Queue Length 95th (m)	#237.9	140.0	27.4	#137.7	#334.4	36.1	#140.6	106.0	#64.3	61.2	98.7
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	362	1635	734	340	1545	585	316	1316	191	1337	769
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.34	0.70	0.37	0.95	1.26	0.30	1.16	0.55	0.93	0.32	0.67

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2035  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	466	1102	258	311	1876	167	351	566	126	171	409	496
Future Volume (vph)	466	1102	258	311	1876	167	351	566	126	171	409	496
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	1.00	*0.80	1.00	1.00	*0.80	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	4433	1589	1825	4476	1521	1788	3490		1806	3579	1563
Flt Permitted	0.09	1.00	1.00	0.11	1.00	1.00	0.41	1.00		0.17	1.00	1.00
Satd. Flow (perm)	162	4433	1589	215	4476	1521	764	3490		325	3579	1563
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)	485	1148	269	324	1954	174	366	590	131	178	426	517
RTOR Reduction (vph)	0	0	148	0	0	61	0	15	0	0	0	220
Lane Group Flow (vph)	485	1148	121	324	1954	113	366	706	0	178	426	297
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	67.7	46.6	46.6	61.7	43.6	43.6	39.9	32.9		39.9	32.9	32.9
Effective Green, g (s)	67.7	46.6	46.6	61.7	43.6	43.6	39.9	32.9		39.9	32.9	32.9
Actuated g/C Ratio	0.54	0.37	0.37	0.49	0.35	0.35	0.32	0.26		0.32	0.26	0.26
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	358	1636	586	336	1546	525	298	909		184	933	407
v/s Ratio Prot	c0.23	0.26		0.14	0.44		c0.07	0.20		0.05	0.12	
v/s Ratio Perm	c0.50		0.08	0.33		0.07	c0.32			0.25		0.19
v/c Ratio	1.35	0.70	0.21	0.96	1.26	0.22	1.23	0.78		0.97	0.46	0.73
Uniform Delay, d1	40.7	33.9	27.2	34.1	41.3	29.2	42.1	43.2		39.1	39.1	42.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	177.0	1.4	0.2	39.3	124.1	0.2	128.6	4.2		56.2	0.4	6.6
Delay (s)	217.6	35.3	27.3	73.4	165.4	29.4	170.8	47.5		95.3	39.5	49.2
Level of Service	F	D	C	E	F	C	F	D		F	D	D
Approach Delay (s)		80.6			143.6			89.0			52.9	
Approach LOS		F			F			F			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			100.8			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.34									
Actuated Cycle Length (s)			126.2			Sum of lost time (s)			21.6			
Intersection Capacity Utilization			119.5%			ICU Level of Service			H			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2035  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	46	4	17	284	5	66	274	618	205	115	684	51
Future Volume (vph)	46	4	17	284	5	66	274	618	205	115	684	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	45.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00			0.99		1.00		
Frt		0.966			0.975			0.963			0.990	
Flt Protected		0.967			0.962		0.950			0.950		
Satd. Flow (prot)	0	1789	0	0	1774	0	1825	3428	0	1825	3548	0
Flt Permitted		0.705			0.721		0.176			0.262		
Satd. Flow (perm)	0	1304	0	0	1328	0	338	3428	0	502	3548	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			15			55			9	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		111.6			260.3			94.8			72.4	
Travel Time (s)		8.0			18.7			5.7			4.3	
Confl. Peds. (#/hr)			1	1					6	6		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Adj. Flow (vph)	49	4	18	305	5	71	295	665	220	124	735	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	381	0	295	885	0	124	790	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2035  
PM Peak Hour

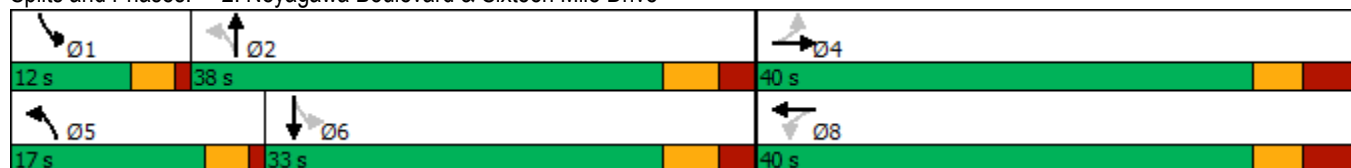


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	38.8	38.8		38.8	38.8		11.5	30.3		11.5	30.3	
Total Split (s)	40.0	40.0		40.0	40.0		17.0	38.0		12.0	33.0	
Total Split (%)	44.4%	44.4%		44.4%	44.4%		18.9%	42.2%		13.3%	36.7%	
Maximum Green (s)	33.2	33.2		33.2	33.2		13.0	31.7		8.0	26.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.0	3.7	
All-Red Time (s)	3.5	3.5		3.5	3.5		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	25.0	25.0		25.0	25.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		26.3			26.3		42.6	31.2		33.8	23.7	
Actuated g/C Ratio		0.33			0.33		0.53	0.39		0.42	0.30	
v/c Ratio		0.16			0.85		0.72	0.64		0.36	0.75	
Control Delay		16.0			43.4		24.6	23.2		14.6	31.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		16.0			43.4		24.6	23.2		14.6	31.1	
LOS		B			D		C	C		B	C	
Approach Delay		16.0			43.4			23.6			28.9	
Approach LOS		B			D			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	79.9
Natural Cycle:	85
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.85
Intersection Signal Delay:	28.2
Intersection LOS:	C
Intersection Capacity Utilization:	74.3%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 2: Neyagawa Boulevard & Sixteen Mile Drive





Queues  
2: Neyagawa Boulevard & Sixteen Mile Drive

Future Total 2035  
PM Peak Hour





















Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	71	381	295	885	124	790
v/c Ratio	0.16	0.85	0.72	0.64	0.36	0.75
Control Delay	16.0	43.4	24.6	23.2	14.6	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	43.4	24.6	23.2	14.6	31.1
Queue Length 50th (m)	5.7	52.9	25.2	59.4	9.6	59.3
Queue Length 95th (m)	14.8	#98.8	#61.5	86.0	19.7	84.5
Internal Link Dist (m)	87.6	236.3		70.8		48.4
Turn Bay Length (m)			45.0		50.0	
Base Capacity (vph)	562	571	426	1446	350	1214
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.67	0.69	0.61	0.35	0.65

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
2: Neyagawa Boulevard & Sixteen Mile Drive

















Future Total 2035  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	4	17	284	5	66	274	618	205	115	684	51
Future Volume (vph)	46	4	17	284	5	66	274	618	205	115	684	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.97		1.00	0.96		1.00	0.99	
Flt Protected		0.97			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1788			1771		1825	3428		1824	3546	
Flt Permitted		0.71			0.72		0.18	1.00		0.26	1.00	
Satd. Flow (perm)		1305			1328		337	3428		504	3546	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	49	4	18	305	5	71	295	665	220	124	735	55
RTOR Reduction (vph)	0	12	0	0	10	0	0	34	0	0	6	0
Lane Group Flow (vph)	0	59	0	0	371	0	295	851	0	124	784	0
Confl. Peds. (#/hr)			1	1					6	6		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	4%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.3			26.3		41.2	31.2		30.8	24.8	
Effective Green, g (s)		26.3			26.3		41.2	31.2		30.8	24.8	
Actuated g/C Ratio		0.33			0.33		0.51	0.39		0.38	0.31	
Clearance Time (s)		6.8			6.8		4.0	6.3		4.0	6.3	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		425			433		401	1326		290	1091	
v/s Ratio Prot							c0.11	0.25		0.03	0.22	
v/s Ratio Perm		0.05			c0.28		c0.26			0.13		
v/c Ratio		0.14			0.86		0.74	0.64		0.43	0.72	
Uniform Delay, d1		19.2			25.4		13.8	20.1		16.7	24.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			15.3		6.9	1.1		1.0	2.3	
Delay (s)		19.3			40.6		20.7	21.2		17.7	27.1	
Level of Service		B			D		C	C		B	C	
Approach Delay (s)		19.3			40.6			21.1			25.8	
Approach LOS		B			D			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			25.7				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			80.6				Sum of lost time (s)				17.1	
Intersection Capacity Utilization			74.3%				ICU Level of Service				D	
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
3: Street A & Sixteen Mile Drive

















Future Total 2035  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	25	18	55	47	0	0	4	35	0	0	0
Future Volume (vph)	0	25	18	55	47	0	0	4	35	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.943						0.878					
Fl <sub>t</sub> Protected				0.974								
Satd. Flow (prot)	0	1776	0	0	1834	0	0	1654	0	0	1883	0
Fl <sub>t</sub> Permitted				0.974								
Satd. Flow (perm)	0	1776	0	0	1834	0	0	1654	0	0	1883	0
Link Speed (k/h)	50			50			48			48		
Link Distance (m)	202.5			50.4			139.0			40.1		
Travel Time (s)	14.6			3.6			10.4			3.0		
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
Adj. Flow (vph)	0	27	20	60	51	0	0	4	38	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	111	0	0	42	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0			0.0			0.0			0.0		
Link Offset(m)	0.0			0.0			0.0			0.0		
Crosswalk Width(m)	1.6			1.6			1.6			1.6		
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14		24		14		24		14	
Sign Control	Free			Free			Stop			Stop		
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	22.2%			ICU Level of Service A								
Analysis Period (min)	15											

# HCM Unsignalized Intersection Capacity Analysis

## 3: Street A & Sixteen Mile Drive

Future Total 2035  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	25	18	55	47	0	0	4	35	0	0	0
Future Volume (Veh/h)	0	25	18	55	47	0	0	4	35	0	0	0
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)	0	27	20	60	51	0	0	4	38	0	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)					226							
pX, platoon unblocked												
vC, conflicting volume	51			47			208	208	37	248	218	51
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	51			47			208	208	37	248	218	51
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 %	100			96			100	99	96	100	100	100
cM capacity (veh/h)	1555			1560			727	662	1035	657	654	1017
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	47	111	42	0								
Volume Left	0	60	0	0								
Volume Right	20	0	38	0								
cSH	1555	1560	983	1700								
Volume to Capacity	0.00	0.04	0.04	0.00								
Queue Length 95th (m)	0.0	0.9	1.0	0.0								
Control Delay (s)	0.0	4.1	8.8	0.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	4.1	8.8	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			4.1									
Intersection Capacity Utilization			22.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
4: Dundas Street West & Street A

Future Total 2035  
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗		↗
Traffic Volume (vph)	0	1827	2633	92	0	122
Future Volume (vph)	0	1827	2633	92	0	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			35.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	*0.80	*0.80	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	4520	4520	1601	0	1629
Flt Permitted						
Satd. Flow (perm)	0	4520	4520	1601	0	1629
Link Speed (k/h)		70	70		48	
Link Distance (m)		242.5	206.4		100.7	
Travel Time (s)		12.5	10.6		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1986	2862	100	0	133
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1986	2862	100	0	133
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	65.1%
	ICU Level of Service C
Analysis Period (min)	15

\* User Entered Value

HCM Unsignalized Intersection Capacity Analysis  
4: Dundas Street West & Street A

Future Total 2035  
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑↑	↗		↗		
Traffic Volume (veh/h)	0	1827	2633	92	0	122		
Future Volume (Veh/h)	0	1827	2633	92	0	122		
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)	0	1986	2862	100	0	133		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None	None					
Median storage (veh)								
Upstream signal (m)			206					
pX, platoon unblocked	0.67				0.67	0.67		
vC, conflicting volume	2962				3524	954		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	2213				3049	0		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)								
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				100	82		
cM capacity (veh/h)	157				7	729		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	662	662	662	954	954	954	100	133
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	100	133
cSH	1700	1700	1700	1700	1700	1700	1700	729
Volume to Capacity	0.39	0.39	0.39	0.56	0.56	0.56	0.06	0.18
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0
Lane LOS								B
Approach Delay (s)	0.0			0.0				11.0
Approach LOS								B
Intersection Summary								
Average Delay			0.3					
Intersection Capacity Utilization			65.1%		ICU Level of Service			C
Analysis Period (min)			15					

Lanes, Volumes, Timings  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2035  
 PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↓	
Traffic Volume (vph)	0	132	0	1199	968	26
Future Volume (vph)	0	132	0	1199	968	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.996	
Flt Protected						
Satd. Flow (prot)	0	1629	0	3579	3564	0
Flt Permitted						
Satd. Flow (perm)	0	1629	0	3579	3564	0
Link Speed (k/h)	48			60	60	
Link Distance (m)	105.1			156.1	94.8	
Travel Time (s)	7.9			9.4	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	143	0	1303	1052	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	143	0	1303	1080	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 5: Neyagawa Boulevard & Block 1 Access

Future Total 2035  
 PM Peak Hour



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕	↕	↘
Traffic Volume (veh/h)	0	132	0	1199	968	26
Future Volume (Veh/h)	0	132	0	1199	968	26
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	143	0	1303	1052	28
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				156	95	
pX, platoon unblocked	0.89	0.81	0.81			
vC, conflicting volume	1718	540	1080			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	684	0	621			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	84	100			
cM capacity (veh/h)	342	875	771			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	143	652	652	701	379	
Volume Left	0	0	0	0	0	
Volume Right	143	0	0	0	28	
cSH	875	1700	1700	1700	1700	
Volume to Capacity	0.16	0.38	0.38	0.41	0.22	
Queue Length 95th (m)	4.4	0.0	0.0	0.0	0.0	
Control Delay (s)	9.9	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	9.9	0.0		0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.6					
Intersection Capacity Utilization	42.4%			ICU Level of Service	A	
Analysis Period (min)	15					



















Lanes, Volumes, Timings  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2035  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	49	0	21	0	14	0	9	25	103	43	0
Future Volume (vph)	0	49	0	21	0	14	0	9	25	103	43	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.947			0.901				
Fl <sub>t</sub> Protected					0.971						0.966	
Satd. Flow (prot)	0	1883	0	0	1732	0	0	1697	0	0	1819	0
Fl <sub>t</sub> Permitted					0.971						0.966	
Satd. Flow (perm)	0	1883	0	0	1732	0	0	1697	0	0	1819	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		51.8			105.1			58.4			90.0	
Travel Time (s)		3.9			7.9			4.4			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	53	0	23	0	15	0	10	27	112	47	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	38	0	0	37	0	0	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	30.0%					ICU Level of Service A						
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
6: Street B & Block 2 Access/Block 1 Access

Future Total 2035  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	49	0	21	0	14	0	9	25	103	43	0
Future Volume (Veh/h)	0	49	0	21	0	14	0	9	25	103	43	0
Sign Control		Stop			Stop			Free			Free	
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)	0	53	0	23	0	15	0	10	27	112	47	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	310	308	47	321	294	24	47			37		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	310	308	47	321	294	24	47			37		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	91	100	96	100	99	100			93		
cM capacity (veh/h)	599	563	1022	555	573	1053	1560			1574		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	53	38	37	159								
Volume Left	0	23	0	112								
Volume Right	0	15	27	0								
cSH	563	682	1560	1574								
Volume to Capacity	0.09	0.06	0.00	0.07								
Queue Length 95th (m)	2.4	1.3	0.0	1.7								
Control Delay (s)	12.1	10.6	0.0	5.4								
Lane LOS	B	B		A								
Approach Delay (s)	12.1	10.6	0.0	5.4								
Approach LOS	B	B										
Intersection Summary												
Average Delay			6.6									
Intersection Capacity Utilization			30.0%		ICU Level of Service				A			
Analysis Period (min)			15									

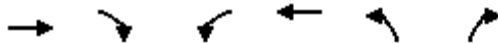
Lanes, Volumes, Timings  
7: Street B & Sixteen Mile Drive

Future Total 2035  
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	43	0	146	184	0	23
Future Volume (vph)	43	0	146	184	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected						0.978
Satd. Flow (prot)	1883	0	0	1842	1629	0
Fl <sub>t</sub> Permitted						0.978
Satd. Flow (perm)	1883	0	0	1842	1629	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	64.1			111.6	90.0	
Travel Time (s)	4.6			8.0	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	0	159	200	0	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	359	25	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	34.4%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
7: Street B & Sixteen Mile Drive










Future Total 2035  
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	
Traffic Volume (veh/h)	43	0	146	184	0	23
Future Volume (Veh/h)	43	0	146	184	0	23
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)	47	0	159	200	0	25
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	112					
pX, platoon unblocked					0.88	
vC, conflicting volume			47	565	47	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47	442	47	
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	100	98	
cM capacity (veh/h)			1560	455	1022	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	47	359	25			
Volume Left	0	159	0			
Volume Right	0	0	25			
cSH	1700	1560	1022			
Volume to Capacity	0.03	0.10	0.02			
Queue Length 95th (m)	0.0	2.6	0.6			
Control Delay (s)	0.0	3.8	8.6			
Lane LOS			A			
Approach Delay (s)	0.0	3.8	8.6			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			3.7			
Intersection Capacity Utilization			34.4%	ICU Level of Service	A	
Analysis Period (min)			15			










Lanes, Volumes, Timings  
8: Street A & Street B

Future Total 2035  
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	0	39	53	0	73
Future Volume (vph)	49	0	39	53	0	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.922					
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	1737	0	0	1883
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	1737	0	0	1883
Link Speed (k/h)	48	48		48		
Link Distance (m)	58.5	100.7		139.0		
Travel Time (s)	4.4	7.6		10.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	0	42	58	0	79
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	0	100	0	0	79
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7	0.0		0.0		
Link Offset(m)	0.0	0.0		0.0		
Crosswalk Width(m)	1.6	1.6		1.6		
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	14		24	
Sign Control	Stop	Free		Free		
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	15.3%		ICU Level of Service A			
Analysis Period (min)	15					

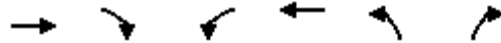
HCM Unsignalized Intersection Capacity Analysis  
 8: Street A & Street B

Future Total 2035  
 PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	49	0	39	53	0	73
Future Volume (Veh/h)	49	0	39	53	0	73
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)	53	0	42	58	0	79
<b>Pedestrians</b>						
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	150	71			100	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	150	71			100	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	100			100	
cM capacity (veh/h)	842	991			1493	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	53	100	79			
Volume Left	53	0	0			
Volume Right	0	58	0			
cSH	842	1700	1493			
Volume to Capacity	0.06	0.06	0.00			
Queue Length 95th (m)	1.5	0.0	0.0			
Control Delay (s)	9.6	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.6	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			2.2			
Intersection Capacity Utilization			15.3%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2035  
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	25	35	141	43	55	18
Future Volume (vph)	25	35	141	43	55	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921			0.966		
Flt Protected				0.963	0.964	
Satd. Flow (prot)	1735	0	0	1814	1754	0
Flt Permitted				0.963	0.964	
Satd. Flow (perm)	1735	0	0	1814	1754	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	50.4			64.1	33.5	
Travel Time (s)	3.6			4.6	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	38	153	47	60	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	0	0	200	80	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis  
 9: Block 2 Access & Sixteen Mile Drive

Future Total 2035  
 PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	25	35	141	43	55	18
Future Volume (Veh/h)	25	35	141	43	55	18
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)	27	38	153	47	60	20
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	176					
pX, platoon unblocked						
vC, conflicting volume			65	399		46
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			65	399		46
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	89	98	
cM capacity (veh/h)			1537	546	1023	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	65	200	80			
Volume Left	0	153	60			
Volume Right	38	0	20			
cSH	1700	1537	618			
Volume to Capacity	0.04	0.10	0.13			
Queue Length 95th (m)	0.0	2.5	3.4			
Control Delay (s)	0.0	6.0	11.7			
Lane LOS			A	B		
Approach Delay (s)	0.0	6.0	11.7			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			6.2			
Intersection Capacity Utilization			27.5%	ICU Level of Service		A
Analysis Period (min)			15			



Lanes, Volumes, Timings  
10: Block 3 Access & Street B

Future Total 2035  
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (vph)	0	53	43	21	28	35
Future Volume (vph)	0	53	43	21	28	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865				0.925	
Flt Protected				0.968	0.978	
Satd. Flow (prot)	1629	0	0	1823	1704	0
Flt Permitted				0.968	0.978	
Satd. Flow (perm)	1629	0	0	1823	1704	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	58.5			53.3	40.3	
Travel Time (s)	4.4			4.0	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	58	47	23	30	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	0	70	68	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	20.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 10: Block 3 Access & Street B
































Future Total 2035  
 PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	0	53	43	21	28	35
Future Volume (Veh/h)	0	53	43	21	28	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)	0	58	47	23	30	38
<b>Pedestrians</b>						
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			58	146	29	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			58	146	29	
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	96	96	
cM capacity (veh/h)			1546	821	1046	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	58	70	68			
Volume Left	0	47	30			
Volume Right	58	0	38			
cSH	1700	1546	933			
Volume to Capacity	0.03	0.03	0.07			
Queue Length 95th (m)	0.0	0.7	1.8			
Control Delay (s)	0.0	5.0	9.2			
Lane LOS			A			
Approach Delay (s)	0.0	5.0	9.2			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			5.0			
Intersection Capacity Utilization			20.5%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030 - Dual LT  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	359	1315	250	232	974	42	256	318	83	99	295	397
Future Volume (vph)	359	1315	250	232	974	42	256	318	83	99	295	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Frt			0.850			0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1601	1807	4269	1555	3372	3416	0	1755	3476	1585
Flt Permitted	0.950			0.097			0.950			0.507		
Satd. Flow (perm)	3468	4433	1571	184	4269	1534	3368	3416	0	934	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			188			124			26			243
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	374	1370	260	242	1015	44	267	331	86	103	307	414
Shared Lane Traffic (%)												
Lane Group Flow (vph)	374	1370	260	242	1015	44	267	417	0	103	307	414
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030 - Dual LT  
AM Peak Hour

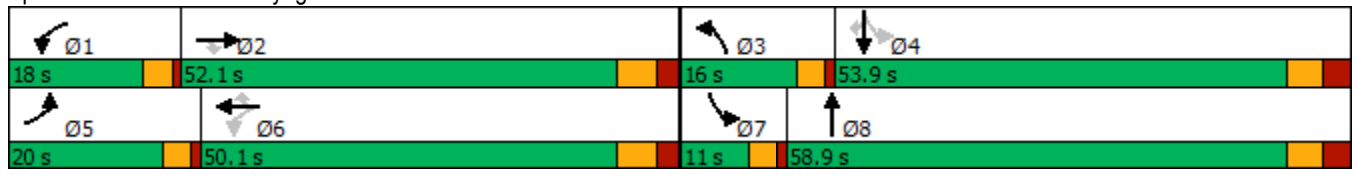


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	20.0	52.1	52.1	18.0	50.1	50.1	16.0	58.9		11.0	53.9	53.9
Total Split (%)	14.3%	37.2%	37.2%	12.9%	35.8%	35.8%	11.4%	42.1%		7.9%	38.5%	38.5%
Maximum Green (s)	16.0	45.4	45.4	14.0	43.4	43.4	12.0	52.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	15.9	43.0	43.0	58.2	41.3	41.3	12.1	26.9		31.8	21.8	21.8
Actuated g/C Ratio	0.14	0.38	0.38	0.52	0.37	0.37	0.11	0.24		0.28	0.19	0.19
v/c Ratio	0.77	0.81	0.36	0.81	0.65	0.07	0.74	0.50		0.33	0.46	0.83
Control Delay	59.8	37.0	9.8	49.4	33.3	0.2	63.9	36.5		27.8	42.1	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	59.8	37.0	9.8	49.4	33.3	0.2	63.9	36.5		27.8	42.1	32.5
LOS	E	D	A	D	C	A	E	D		C	D	C
Approach Delay		37.7			35.2			47.2			35.5	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	113
Natural Cycle:	130
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	38.0
Intersection LOS:	D
Intersection Capacity Utilization:	80.8%
ICU Level of Service:	D
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030 - Dual LT  
AM Peak Hour


































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	374	1370	260	242	1015	44	267	417	103	307	414
v/c Ratio	0.77	0.81	0.36	0.81	0.65	0.07	0.74	0.50	0.33	0.46	0.83
Control Delay	59.8	37.0	9.8	49.4	33.3	0.2	63.9	36.5	27.8	42.1	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	37.0	9.8	49.4	33.3	0.2	63.9	36.5	27.8	42.1	32.5
Queue Length 50th (m)	42.3	110.3	10.1	35.2	76.5	0.0	30.5	40.3	15.7	32.5	38.6
Queue Length 95th (m)	#74.8	160.0	33.9	#93.9	113.0	0.0	#58.1	54.7	27.4	45.3	75.4
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	497	1802	750	298	1659	672	362	1605	314	1463	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.76	0.35	0.81	0.61	0.07	0.74	0.26	0.33	0.21	0.52

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
































HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030 - Dual LT  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	359	1315	250	232	974	42	256	318	83	99	295	397
Future Volume (vph)	359	1315	250	232	974	42	256	318	83	99	295	397
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3471	4433	1573	1807	4269	1534	3372	3417		1753	3476	1564
Flt Permitted	0.95	1.00	1.00	0.10	1.00	1.00	0.95	1.00		0.51	1.00	1.00
Satd. Flow (perm)	3471	4433	1573	184	4269	1534	3372	3417		936	3476	1564
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)	374	1370	260	242	1015	44	267	331	86	103	307	414
RTOR Reduction (vph)	0	0	116	0	0	28	0	20	0	0	0	196
Lane Group Flow (vph)	374	1370	144	242	1015	16	267	397	0	103	307	218
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6				4		4
Actuated Green, G (s)	15.9	43.0	43.0	55.5	41.3	41.3	12.1	26.9		29.0	21.9	21.9
Effective Green, g (s)	15.9	43.0	43.0	55.5	41.3	41.3	12.1	26.9		29.0	21.9	21.9
Actuated g/C Ratio	0.14	0.38	0.38	0.49	0.37	0.37	0.11	0.24		0.26	0.19	0.19
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	489	1689	599	294	1563	561	361	814		292	674	303
v/s Ratio Prot	c0.11	c0.31		0.10	0.24		c0.08	0.12		0.02	0.09	
v/s Ratio Perm			0.09	0.30		0.01				0.07		c0.14
v/c Ratio	0.76	0.81	0.24	0.82	0.65	0.03	0.74	0.49		0.35	0.46	0.72
Uniform Delay, d1	46.6	31.3	23.8	27.8	29.7	22.9	48.8	37.0		33.1	40.2	42.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.0	3.1	0.2	16.8	0.9	0.0	7.7	0.5		0.7	0.5	8.2
Delay (s)	53.7	34.3	24.0	44.6	30.7	22.9	56.6	37.5		33.8	40.7	50.7
Level of Service	D	C	C	D	C	C	E	D		C	D	D
Approach Delay (s)		36.6			33.0			44.9			44.9	
Approach LOS		D			C			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			38.2	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			112.8	Sum of lost time (s)				21.6				
Intersection Capacity Utilization			80.8%	ICU Level of Service				D				
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030 - Dual LT  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	343	998	234	283	1637	77	304	464	114	93	334	447
Future Volume (vph)	343	998	234	283	1637	77	304	464	114	93	334	447
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	0.99		0.99		0.99
Frt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1617	1825	4476	1541	3471	3477	0	1807	3579	1585
Flt Permitted	0.950			0.133			0.950			0.234		
Satd. Flow (perm)	3471	4433	1588	255	4476	1521	3465	3477	0	442	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			241			93			24			91
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	357	1040	244	295	1705	80	317	483	119	97	348	466
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	1040	244	295	1705	80	317	602	0	97	348	466
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030 - Dual LT  
PM Peak Hour

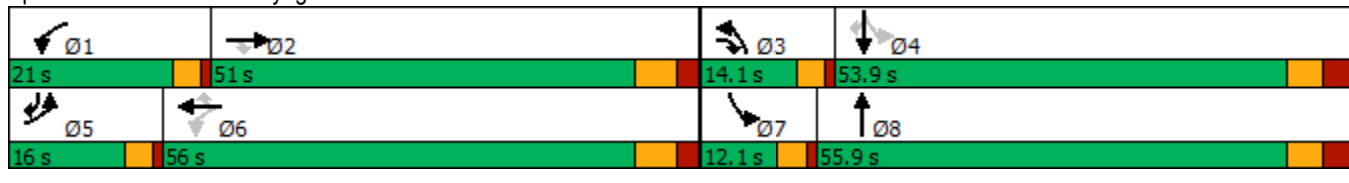


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	11.0	49.7	11.0	11.0	49.7	49.7	11.0	53.9		11.0	53.9	11.0
Total Split (s)	16.0	51.0	14.1	21.0	56.0	56.0	14.1	55.9		12.1	53.9	16.0
Total Split (%)	11.4%	36.4%	10.1%	15.0%	40.0%	40.0%	10.1%	39.9%		8.6%	38.5%	11.4%
Maximum Green (s)	12.0	44.3	10.1	17.0	49.3	49.3	10.1	49.0		8.1	47.0	12.0
Yellow Time (s)	3.0	4.2	3.0	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.0
All-Red Time (s)	1.0	2.5	1.0	1.0	2.5	2.5	1.0	3.2		1.0	3.2	1.0
Lost Time Adjust (s)	-2.0	0.0	0.0	0.0	-2.0	0.0	-2.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.0	6.7	4.0	4.0	4.7	6.7	2.0	6.9		4.0	6.9	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		36.0			36.0	36.0		40.0			40.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	14.0	44.4	57.2	68.2	51.4	49.4	12.1	25.2		33.8	23.0	37.9
Actuated g/C Ratio	0.12	0.38	0.49	0.59	0.44	0.43	0.10	0.22		0.29	0.20	0.33
v/c Ratio	0.85	0.61	0.27	0.78	0.86	0.11	0.88	0.78		0.44	0.49	0.81
Control Delay	70.3	31.5	2.9	35.1	35.4	3.9	76.7	48.6		32.5	43.5	38.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	70.3	31.5	2.9	35.1	35.4	3.9	76.7	48.6		32.5	43.5	38.3
LOS	E	C	A	D	D	A	E	D		C	D	D
Approach Delay		35.7			34.1			58.3			39.7	
Approach LOS		D			C			E			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 116.2  
 Natural Cycle: 140  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 39.5  
 Intersection LOS: D  
 Intersection Capacity Utilization 92.2%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 \* User Entered Value

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West





Queues  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030 - Dual LT  
PM Peak Hour


































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	357	1040	244	295	1705	80	317	602	97	348	466
v/c Ratio	0.85	0.61	0.27	0.78	0.86	0.11	0.88	0.78	0.44	0.49	0.81
Control Delay	70.3	31.5	2.9	35.1	35.4	3.9	76.7	48.6	32.5	43.5	38.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.3	31.5	2.9	35.1	35.4	3.9	76.7	48.6	32.5	43.5	38.3
Queue Length 50th (m)	41.6	78.7	0.3	36.6	142.7	0.0	37.2	65.8	15.2	37.3	74.8
Queue Length 95th (m)	#72.3	105.7	13.3	#86.6	#189.2	7.5	#67.4	85.4	27.0	51.2	112.8
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	419	1694	907	379	1980	700	362	1483	224	1451	573
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.61	0.27	0.78	0.86	0.11	0.88	0.41	0.43	0.24	0.81

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2030 - Dual LT  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	343	998	234	283	1637	77	304	464	114	93	334	447
Future Volume (vph)	343	998	234	283	1637	77	304	464	114	93	334	447
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	6.7	4.0	4.0	4.7	6.7	2.0	6.9		4.0	6.9	4.0
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3471	4433	1595	1825	4476	1521	3471	3481		1805	3579	1571
Flt Permitted	0.95	1.00	1.00	0.13	1.00	1.00	0.95	1.00		0.23	1.00	1.00
Satd. Flow (perm)	3471	4433	1595	255	4476	1521	3471	3481		444	3579	1571
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)	357	1040	244	295	1705	80	317	483	119	97	348	466
RTOR Reduction (vph)	0	0	128	0	0	46	0	19	0	0	0	64
Lane Group Flow (vph)	357	1040	116	295	1705	34	317	583	0	97	348	402
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases			2	6		6				4		4
Actuated Green, G (s)	12.0	44.4	54.5	65.4	49.4	49.4	10.1	25.2		30.9	23.0	35.0
Effective Green, g (s)	14.0	44.4	54.5	65.4	51.4	49.4	12.1	25.2		30.9	23.0	35.0
Actuated g/C Ratio	0.12	0.38	0.47	0.56	0.44	0.43	0.10	0.22		0.27	0.20	0.30
Clearance Time (s)	4.0	6.7	4.0	4.0	6.7	6.7	4.0	6.9		4.0	6.9	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	418	1695	748	373	1981	647	361	755		210	709	473
v/s Ratio Prot	c0.10	0.23	0.01	c0.12	c0.38		c0.09	0.17		0.03	0.10	c0.09
v/s Ratio Perm			0.06	0.33		0.02				0.09		0.17
v/c Ratio	0.85	0.61	0.16	0.79	0.86	0.05	0.88	0.77		0.46	0.49	0.85
Uniform Delay, d1	50.0	28.9	17.6	21.6	29.1	19.6	51.3	42.8		33.6	41.3	38.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.5	0.7	0.1	10.9	4.1	0.0	20.7	4.9		1.6	0.5	13.7
Delay (s)	65.5	29.6	17.7	32.5	33.2	19.6	71.9	47.7		35.2	41.9	51.8
Level of Service	E	C	B	C	C	B	E	D		D	D	D
Approach Delay (s)		35.6			32.6			56.0			46.2	
Approach LOS		D			C			E			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			39.6	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			116.1	Sum of lost time (s)				21.6				
Intersection Capacity Utilization			92.2%	ICU Level of Service				F				
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2030 - Dual LT  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	382	1315	250	232	975	54	256	326	83	126	322	400
Future Volume (vph)	382	1315	250	232	975	54	256	326	83	126	322	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Fr <sub>t</sub>			0.850			0.850		0.970				0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1601	1807	4269	1555	3372	3419	0	1755	3476	1585
Fl <sub>t</sub> Permitted	0.950			0.097			0.950			0.496		
Satd. Flow (perm)	3468	4433	1571	184	4269	1534	3368	3419	0	914	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			188			124			25			243
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	398	1370	260	242	1016	56	267	340	86	131	335	417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	398	1370	260	242	1016	56	267	426	0	131	335	417
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2030 - Dual LT  
AM Peak Hour

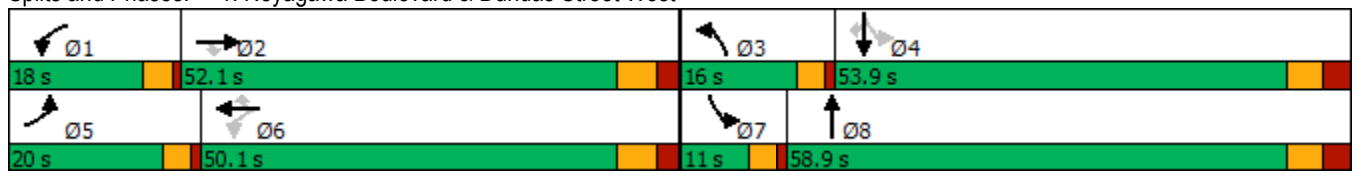


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	20.0	52.1	52.1	18.0	50.1	50.1	16.0	58.9		11.0	53.9	53.9
Total Split (%)	14.3%	37.2%	37.2%	12.9%	35.8%	35.8%	11.4%	42.1%		7.9%	38.5%	38.5%
Maximum Green (s)	16.0	45.4	45.4	14.0	43.4	43.4	12.0	52.0		7.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	16.2	43.1	43.1	58.0	41.1	41.1	12.2	27.5		32.4	22.4	22.4
Actuated g/C Ratio	0.14	0.38	0.38	0.51	0.36	0.36	0.11	0.24		0.28	0.20	0.20
v/c Ratio	0.81	0.82	0.37	0.82	0.66	0.09	0.74	0.50		0.42	0.49	0.83
Control Delay	62.3	37.4	10.0	50.4	33.9	0.3	64.5	36.6		30.1	42.5	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	62.3	37.4	10.0	50.4	33.9	0.3	64.5	36.6		30.1	42.5	32.2
LOS	E	D	A	D	C	A	E	D		C	D	C
Approach Delay		38.8			35.5			47.4			35.8	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 113.7  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 38.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 82.2%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 \* User Entered Value

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues

Future Total 2030 - Dual LT

1: Neyagawa Boulevard & Dundas Street West

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	398	1370	260	242	1016	56	267	426	131	335	417
v/c Ratio	0.81	0.82	0.37	0.82	0.66	0.09	0.74	0.50	0.42	0.49	0.83
Control Delay	62.3	37.4	10.0	50.4	33.9	0.3	64.5	36.6	30.1	42.5	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	37.4	10.0	50.4	33.9	0.3	64.5	36.6	30.1	42.5	32.2
Queue Length 50th (m)	45.4	110.7	10.1	35.3	76.9	0.0	30.5	41.5	20.3	35.8	39.5
Queue Length 95th (m)	#83.6	162.7	34.4	#95.5	115.0	0.0	#59.0	56.0	33.8	49.2	76.5
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	494	1792	747	296	1650	668	360	1596	313	1454	795
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.76	0.35	0.82	0.62	0.08	0.74	0.27	0.42	0.23	0.52

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 1: Neyagawa Boulevard & Dundas Street West
































Future Total 2030 - Dual LT  
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	382	1315	250	232	975	54	256	326	83	126	322	400	
Future Volume (vph)	382	1315	250	232	975	54	256	326	83	126	322	400	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9	
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3471	4433	1573	1807	4269	1534	3372	3419		1753	3476	1564	
Flt Permitted	0.95	1.00	1.00	0.10	1.00	1.00	0.95	1.00		0.50	1.00	1.00	
Satd. Flow (perm)	3471	4433	1573	185	4269	1534	3372	3419		915	3476	1564	
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)	398	1370	260	242	1016	56	267	340	86	131	335	417	
RTOR Reduction (vph)	0	0	117	0	0	36	0	19	0	0	0	195	
Lane Group Flow (vph)	398	1370	143	242	1016	20	267	407	0	131	335	222	
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2	
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%	
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm	
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases			2	6		6				4		4	
Actuated Green, G (s)	16.2	43.1	43.1	55.3	41.1	41.1	12.1	27.4		29.5	22.4	22.4	
Effective Green, g (s)	16.2	43.1	43.1	55.3	41.1	41.1	12.1	27.4		29.5	22.4	22.4	
Actuated g/C Ratio	0.14	0.38	0.38	0.49	0.36	0.36	0.11	0.24		0.26	0.20	0.20	
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	495	1684	597	293	1547	555	359	826		290	686	308	
v/s Ratio Prot	c0.11	c0.31		0.10	0.24		c0.08	0.12		0.03	0.10		
v/s Ratio Perm			0.09	0.30		0.01				0.09		c0.14	
v/c Ratio	0.80	0.81	0.24	0.83	0.66	0.04	0.74	0.49		0.45	0.49	0.72	
Uniform Delay, d1	47.1	31.5	24.0	28.0	30.2	23.4	49.1	37.0		33.5	40.4	42.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	9.2	3.1	0.2	17.0	1.0	0.0	8.1	0.5		1.1	0.5	8.1	
Delay (s)	56.3	34.7	24.2	45.1	31.3	23.4	57.2	37.5		34.7	41.0	50.6	
Level of Service	E	C	C	D	C	C	E	D		C	D	D	
Approach Delay (s)		37.6			33.5			45.1			44.6		
Approach LOS		D			C			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			38.8		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.79										
Actuated Cycle Length (s)			113.4		Sum of lost time (s)						21.6		
Intersection Capacity Utilization			82.2%		ICU Level of Service						E		
Analysis Period (min)			15										

c Critical Lane Group

Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2030 - Dual LT  
 PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	362	998	234	283	1641	131	304	490	114	116	348	450
Future Volume (vph)	362	998	234	283	1641	131	304	490	114	116	348	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	0.99		0.99		0.99
Frt			0.850			0.850		0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1617	1825	4476	1541	3471	3485	0	1807	3579	1585
Flt Permitted	0.950			0.131			0.950			0.217		
Satd. Flow (perm)	3471	4433	1588	251	4476	1521	3466	3485	0	410	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228			93			22			91
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	377	1040	244	295	1709	136	317	510	119	121	363	469
Shared Lane Traffic (%)												
Lane Group Flow (vph)	377	1040	244	295	1709	136	317	629	0	121	363	469
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2030 - Dual LT  
PM Peak Hour

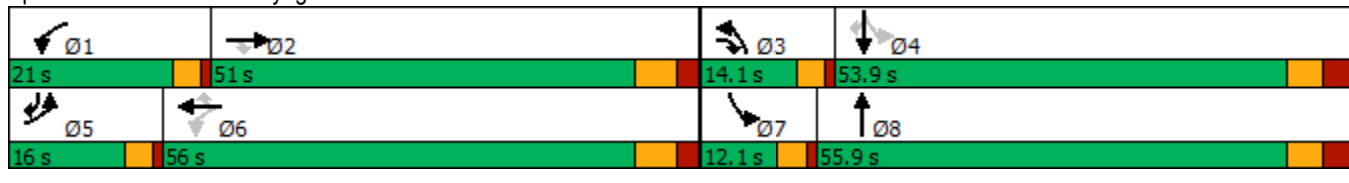


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	11.0	49.7	11.0	11.0	49.7	49.7	11.0	53.9		11.0	53.9	11.0
Total Split (s)	16.0	51.0	14.1	21.0	56.0	56.0	14.1	55.9		12.1	53.9	16.0
Total Split (%)	11.4%	36.4%	10.1%	15.0%	40.0%	40.0%	10.1%	39.9%		8.6%	38.5%	11.4%
Maximum Green (s)	12.0	44.3	10.1	17.0	49.3	49.3	10.1	49.0		8.1	47.0	12.0
Yellow Time (s)	3.0	4.2	3.0	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.0
All-Red Time (s)	1.0	2.5	1.0	1.0	2.5	2.5	1.0	3.2		1.0	3.2	1.0
Lost Time Adjust (s)	-2.0	0.0	0.0	0.0	-2.0	0.0	-2.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.0	6.7	4.0	4.0	4.7	6.7	2.0	6.9		4.0	6.9	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		36.0			36.0	36.0		40.0			40.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	14.0	44.4	57.2	68.1	51.4	49.4	12.1	26.3		35.1	24.2	39.1
Actuated g/C Ratio	0.12	0.38	0.49	0.58	0.44	0.42	0.10	0.22		0.30	0.21	0.33
v/c Ratio	0.91	0.62	0.27	0.79	0.87	0.20	0.89	0.79		0.56	0.49	0.80
Control Delay	78.5	32.3	3.5	36.8	36.7	9.3	78.7	49.0		36.7	43.2	37.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	78.5	32.3	3.5	36.8	36.7	9.3	78.7	49.0		36.7	43.2	37.3
LOS	E	C	A	D	D	A	E	D		D	D	D
Approach Delay		38.5			35.0			59.0			39.5	
Approach LOS		D			C			E			D	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	117.4
Natural Cycle:	140
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	40.8
Intersection LOS:	D
Intersection Capacity Utilization:	93.7%
ICU Level of Service:	F
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West





Queues

Future Total 2030 - Dual LT

1: Neyagawa Boulevard & Dundas Street West

PM Peak Hour


































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	377	1040	244	295	1709	136	317	629	121	363	469
v/c Ratio	0.91	0.62	0.27	0.79	0.87	0.20	0.89	0.79	0.56	0.49	0.80
Control Delay	78.5	32.3	3.5	36.8	36.7	9.3	78.7	49.0	36.7	43.2	37.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.5	32.3	3.5	36.8	36.7	9.3	78.7	49.0	36.7	43.2	37.3
Queue Length 50th (m)	44.7	80.0	1.7	37.9	145.8	5.8	37.6	69.7	19.2	39.0	75.5
Queue Length 95th (m)	#78.8	107.4	15.3	#89.6	#202.6	19.6	#68.4	89.6	32.5	53.3	113.9
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	414	1676	893	374	1960	693	358	1470	219	1435	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.62	0.27	0.79	0.87	0.20	0.89	0.43	0.55	0.25	0.80

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West
































Future Total 2030 - Dual LT  
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  			  		 	 			 		
Traffic Volume (vph)	362	998	234	283	1641	131	304	490	114	116	348	450	
Future Volume (vph)	362	998	234	283	1641	131	304	490	114	116	348	450	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	2.0	6.7	4.0	4.0	4.7	6.7	2.0	6.9		4.0	6.9	4.0	
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3471	4433	1595	1825	4476	1521	3471	3486		1805	3579	1570	
Flt Permitted	0.95	1.00	1.00	0.13	1.00	1.00	0.95	1.00		0.22	1.00	1.00	
Satd. Flow (perm)	3471	4433	1595	252	4476	1521	3471	3486		412	3579	1570	
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)	377	1040	244	295	1709	136	317	510	119	121	362	469	
RTOR Reduction (vph)	0	0	122	0	0	54	0	17	0	0	0	63	
Lane Group Flow (vph)	377	1040	122	295	1709	82	317	612	0	121	363	406	
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3	
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%	
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	pm+ov	
Protected Phases	5	2	3	1	6		3	8		7	4	5	
Permitted Phases			2	6		6				4		4	
Actuated Green, G (s)	12.0	44.4	54.5	65.4	49.4	49.4	10.1	26.3		32.2	24.2	36.2	
Effective Green, g (s)	14.0	44.4	54.5	65.4	51.4	49.4	12.1	26.3		32.2	24.2	36.2	
Actuated g/C Ratio	0.12	0.38	0.46	0.56	0.44	0.42	0.10	0.22		0.27	0.21	0.31	
Clearance Time (s)	4.0	6.7	4.0	4.0	6.7	6.7	4.0	6.9		4.0	6.9	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	414	1677	741	368	1961	640	358	781		208	738	484	
v/s Ratio Prot	c0.11	0.23	0.01	c0.12	c0.38		c0.09	c0.18		0.04	0.10	0.09	
v/s Ratio Perm			0.06	0.33		0.05				0.12		0.17	
v/c Ratio	0.91	0.62	0.16	0.80	0.87	0.13	0.89	0.78		0.58	0.49	0.84	
Uniform Delay, d1	51.0	29.6	18.2	22.5	29.9	20.8	51.9	42.8		33.8	41.1	37.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	23.8	0.7	0.1	11.9	4.6	0.1	22.0	5.2		4.1	0.5	12.1	
Delay (s)	74.8	30.3	18.3	34.4	34.5	20.9	73.9	48.0		37.9	41.6	49.9	
Level of Service	E	C	B	C	C	C	E	D		D	D	D	
Approach Delay (s)		38.7			33.6			56.7			45.2		
Approach LOS		D			C			E			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			40.9		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.93										
Actuated Cycle Length (s)			117.3		Sum of lost time (s)						21.6		
Intersection Capacity Utilization			93.7%		ICU Level of Service						F		
Analysis Period (min)			15										

c Critical Lane Group

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032 - Dual LT  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	372	1368	260	241	1011	44	267	331	86	103	306	413
Future Volume (vph)	372	1368	260	241	1011	44	267	331	86	103	306	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Frt			0.850			0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1601	1807	4269	1555	3372	3416	0	1755	3476	1585
Flt Permitted	0.950			0.097			0.950			0.428		
Satd. Flow (perm)	3469	4433	1571	184	4269	1534	3368	3416	0	788	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			193			93			26			225
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	388	1425	271	251	1053	46	278	345	90	107	319	430
Shared Lane Traffic (%)												
Lane Group Flow (vph)	388	1425	271	251	1053	46	278	435	0	107	319	430
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032 - Dual LT  
AM Peak Hour

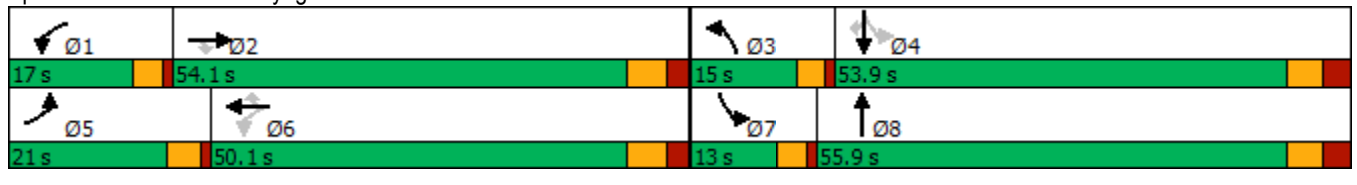


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	9.5	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	21.0	54.1	54.1	17.0	50.1	50.1	15.0	55.9		13.0	53.9	53.9
Total Split (%)	15.0%	38.6%	38.6%	12.1%	35.8%	35.8%	10.7%	39.9%		9.3%	38.5%	38.5%
Maximum Green (s)	16.5	47.4	47.4	13.0	43.4	43.4	11.0	49.0		9.0	47.0	47.0
Yellow Time (s)	3.5	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	16.5	44.9	44.9	57.1	41.2	41.2	11.2	27.0		36.2	24.5	24.5
Actuated g/C Ratio	0.14	0.39	0.39	0.49	0.36	0.36	0.10	0.23		0.31	0.21	0.21
v/c Ratio	0.79	0.83	0.37	0.91	0.69	0.08	0.86	0.53		0.34	0.43	0.85
Control Delay	62.1	38.1	10.2	67.0	36.0	0.2	77.6	38.4		27.4	40.7	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	62.1	38.1	10.2	67.0	36.0	0.2	77.6	38.4		27.4	40.7	36.0
LOS	E	D	B	E	D	A	E	D		C	D	D
Approach Delay		38.9			40.6			53.7			36.7	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	115.8
Natural Cycle:	140
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	41.1
Intersection LOS:	D
Intersection Capacity Utilization:	82.5%
ICU Level of Service:	E
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032 - Dual LT  
AM Peak Hour


































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	388	1425	271	251	1053	46	278	435	107	319	430
v/c Ratio	0.79	0.83	0.37	0.91	0.69	0.08	0.86	0.53	0.34	0.43	0.85
Control Delay	62.1	38.1	10.2	67.0	36.0	0.2	77.6	38.4	27.4	40.7	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	38.1	10.2	67.0	36.0	0.2	77.6	38.4	27.4	40.7	36.0
Queue Length 50th (m)	45.2	118.9	11.1	40.0	84.0	0.0	33.1	44.0	16.6	33.9	48.1
Queue Length 95th (m)	#82.1	#177.2	36.8	#109.5	125.1	0.2	#68.6	58.9	28.5	46.7	85.9
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	502	1843	765	275	1625	641	325	1483	325	1433	777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.77	0.35	0.91	0.65	0.07	0.86	0.29	0.33	0.22	0.55

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032 - Dual LT  
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  			  		 	 			 		
Traffic Volume (vph)	372	1368	260	241	1011	44	267	331	86	103	306	413	
Future Volume (vph)	372	1368	260	241	1011	44	267	331	86	103	306	413	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9	
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3471	4433	1573	1807	4269	1534	3372	3416		1753	3476	1564	
Flt Permitted	0.95	1.00	1.00	0.10	1.00	1.00	0.95	1.00		0.43	1.00	1.00	
Satd. Flow (perm)	3471	4433	1573	185	4269	1534	3372	3416		790	3476	1564	
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)	388	1425	271	251	1053	46	278	345	90	107	319	430	
RTOR Reduction (vph)	0	0	118	0	0	30	0	20	0	0	0	177	
Lane Group Flow (vph)	388	1425	153	251	1053	16	278	415	0	107	319	253	
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2	
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%	
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm	
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases			2	6		6				4		4	
Actuated Green, G (s)	16.5	45.0	45.0	54.4	41.2	41.2	11.2	27.0		33.2	24.5	24.5	
Effective Green, g (s)	16.5	45.0	45.0	54.4	41.2	41.2	11.2	27.0		33.2	24.5	24.5	
Actuated g/C Ratio	0.14	0.39	0.39	0.47	0.36	0.36	0.10	0.23		0.29	0.21	0.21	
Clearance Time (s)	4.5	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	495	1727	612	272	1522	547	326	798		299	737	331	
v/s Ratio Prot	0.11	c0.32		c0.11	0.25		c0.08	0.12		0.03	0.09		
v/s Ratio Perm			0.10	c0.33		0.01				0.08		c0.16	
v/c Ratio	0.78	0.83	0.25	0.92	0.69	0.03	0.85	0.52		0.36	0.43	0.76	
Uniform Delay, d1	47.8	31.7	23.8	30.7	31.7	24.2	51.3	38.6		31.3	39.5	42.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	7.9	3.4	0.2	34.6	1.4	0.0	18.9	0.6		0.7	0.4	10.0	
Delay (s)	55.7	35.1	24.1	65.2	33.1	24.2	70.2	39.2		32.0	39.9	52.8	
Level of Service	E	D	C	E	C	C	E	D		C	D	D	
Approach Delay (s)		37.5			38.8			51.3			45.4		
Approach LOS		D			D			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			41.2		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.84										
Actuated Cycle Length (s)			115.5		Sum of lost time (s)					22.1			
Intersection Capacity Utilization			82.5%		ICU Level of Service					E			
Analysis Period (min)			15										

c Critical Lane Group

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032 - Dual LT  
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	1039	243	294	1700	80	316	480	119	97	347	465
Future Volume (vph)	355	1039	243	294	1700	80	316	480	119	97	347	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	0.99		0.99		0.99
Frt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1617	1825	4476	1541	3471	3476	0	1807	3579	1585
Flt Permitted	0.950			0.109			0.950			0.252		
Satd. Flow (perm)	3471	4433	1587	209	4476	1520	3465	3476	0	476	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			208			87			22			251
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	370	1082	253	306	1771	83	329	500	124	101	361	484
Shared Lane Traffic (%)												
Lane Group Flow (vph)	370	1082	253	306	1771	83	329	624	0	101	361	484
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032 - Dual LT  
PM Peak Hour

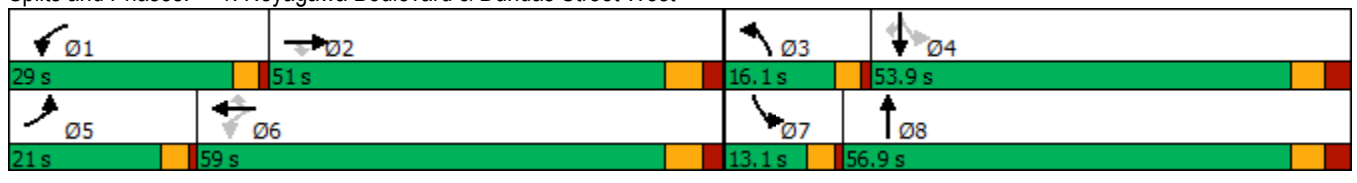


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	21.0	51.0	51.0	29.0	59.0	59.0	16.1	56.9		13.1	53.9	53.9
Total Split (%)	14.0%	34.0%	34.0%	19.3%	39.3%	39.3%	10.7%	37.9%		8.7%	35.9%	35.9%
Maximum Green (s)	17.0	44.3	44.3	25.0	52.3	52.3	12.1	50.0		9.1	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	-2.0	0.0	0.0	0.0	-2.0	0.0	-2.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.0	6.7	6.7	4.0	4.7	6.7	2.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	18.5	48.0	48.0	74.6	54.7	52.7	14.2	33.7		41.9	30.3	30.3
Actuated g/C Ratio	0.14	0.36	0.36	0.56	0.41	0.40	0.11	0.25		0.31	0.23	0.23
v/c Ratio	0.77	0.68	0.36	0.82	0.96	0.13	0.89	0.70		0.43	0.45	0.88
Control Delay	68.2	41.3	9.8	47.8	53.4	6.1	85.6	47.4		33.0	45.2	41.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	68.2	41.3	9.8	47.8	53.4	6.1	85.6	47.4		33.0	45.2	41.5
LOS	E	D	A	D	D	A	F	D		C	D	D
Approach Delay		42.5			50.8			60.6			42.0	
Approach LOS		D			D			E			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 133.4  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 48.5  
 Intersection LOS: D  
 Intersection Capacity Utilization 94.0%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 \* User Entered Value

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West





Queues  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2032 - Dual LT  
PM Peak Hour


































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	370	1082	253	306	1771	83	329	624	101	361	484
v/c Ratio	0.77	0.68	0.36	0.82	0.96	0.13	0.89	0.70	0.43	0.45	0.88
Control Delay	68.2	41.3	9.8	47.8	53.4	6.1	85.6	47.4	33.0	45.2	41.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.2	41.3	9.8	47.8	53.4	6.1	85.6	47.4	33.0	45.2	41.5
Queue Length 50th (m)	48.8	103.0	8.0	52.7	188.2	0.0	44.7	76.4	17.6	43.2	64.5
Queue Length 95th (m)	#80.4	146.3	32.9	#109.9	#279.7	10.7	#84.1	95.5	29.7	57.3	108.8
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	498	1593	703	424	1836	653	369	1326	242	1270	716
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.68	0.36	0.72	0.96	0.13	0.89	0.47	0.42	0.28	0.68

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West
































Future Background 2032 - Dual LT  
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  			  		 	 			 		
Traffic Volume (vph)	355	1039	243	294	1700	80	316	480	119	97	347	465	
Future Volume (vph)	355	1039	243	294	1700	80	316	480	119	97	347	465	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	2.0	6.7	6.7	4.0	4.7	6.7	2.0	6.9		4.0	6.9	6.9	
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3471	4433	1589	1825	4476	1521	3471	3478		1804	3579	1562	
Flt Permitted	0.95	1.00	1.00	0.11	1.00	1.00	0.95	1.00		0.25	1.00	1.00	
Satd. Flow (perm)	3471	4433	1589	209	4476	1521	3471	3478		478	3579	1562	
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)	370	1082	253	306	1771	83	329	500	124	101	361	484	
RTOR Reduction (vph)	0	0	133	0	0	50	0	16	0	0	0	194	
Lane Group Flow (vph)	370	1082	120	306	1771	33	329	608	0	101	361	290	
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3	
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%	
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm	
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases			2	6		6				4		4	
Actuated Green, G (s)	16.5	48.0	48.0	73.2	52.7	52.7	12.2	33.7		39.1	30.3	30.3	
Effective Green, g (s)	18.5	48.0	48.0	73.2	54.7	52.7	14.2	33.7		39.1	30.3	30.3	
Actuated g/C Ratio	0.14	0.36	0.36	0.55	0.41	0.40	0.11	0.25		0.29	0.23	0.23	
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	481	1596	572	371	1836	601	369	879		227	813	355	
v/s Ratio Prot	0.11	0.24		c0.13	c0.40		c0.09	0.17		0.03	0.10		
v/s Ratio Perm			0.08	0.32		0.02				0.10		c0.19	
v/c Ratio	0.77	0.68	0.21	0.82	0.96	0.05	0.89	0.69		0.44	0.44	0.82	
Uniform Delay, d1	55.3	36.1	29.5	32.1	38.4	24.9	58.8	45.1		35.9	44.3	48.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	7.3	1.2	0.2	13.8	13.5	0.0	22.6	2.4		1.4	0.4	13.5	
Delay (s)	62.6	37.3	29.7	45.9	51.9	24.9	81.4	47.5		37.3	44.6	62.4	
Level of Service	E	D	C	D	D	C	F	D		D	D	E	
Approach Delay (s)		41.6			50.0			59.2			52.9		
Approach LOS		D			D			E			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			49.5		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.94										
Actuated Cycle Length (s)			133.3		Sum of lost time (s)						21.6		
Intersection Capacity Utilization			94.0%		ICU Level of Service						F		
Analysis Period (min)			15										

c Critical Lane Group

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2032 - Dual LT  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	406	1368	260	241	1012	67	267	350	86	154	357	416
Future Volume (vph)	406	1368	260	241	1012	67	267	350	86	154	357	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	1.00		1.00		0.99
Frt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1601	1807	4269	1555	3372	3419	0	1755	3476	1585
Flt Permitted	0.950			0.097			0.950			0.399		
Satd. Flow (perm)	3469	4433	1571	184	4269	1534	3368	3419	0	735	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			193			93		24				225
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	423	1425	271	251	1054	70	278	365	90	160	372	433
Shared Lane Traffic (%)												
Lane Group Flow (vph)	423	1425	271	251	1054	70	278	455	0	160	372	433
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2032 - Dual LT  
AM Peak Hour

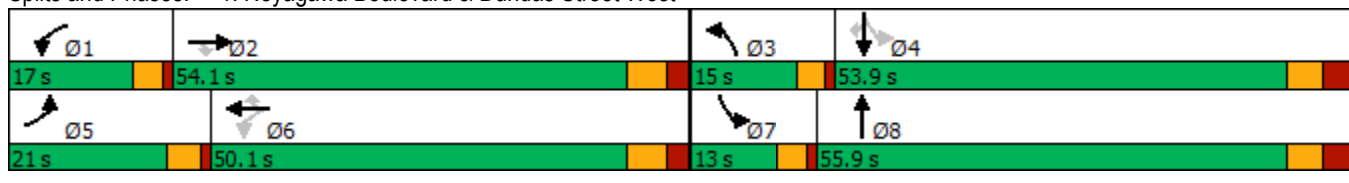


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	9.5	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	21.0	54.1	54.1	17.0	50.1	50.1	15.0	55.9		13.0	53.9	53.9
Total Split (%)	15.0%	38.6%	38.6%	12.1%	35.8%	35.8%	10.7%	39.9%		9.3%	38.5%	38.5%
Maximum Green (s)	16.5	47.4	47.4	13.0	43.4	43.4	11.0	49.0		9.0	47.0	47.0
Yellow Time (s)	3.5	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	16.7	45.1	45.1	57.0	41.1	41.1	11.1	27.6		37.6	25.6	25.6
Actuated g/C Ratio	0.14	0.39	0.39	0.49	0.35	0.35	0.09	0.24		0.32	0.22	0.22
v/c Ratio	0.85	0.83	0.37	0.92	0.70	0.12	0.87	0.55		0.51	0.49	0.84
Control Delay	67.5	38.7	10.3	69.3	36.8	3.5	79.5	39.1		31.7	41.6	35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	67.5	38.7	10.3	69.3	36.8	3.5	79.5	39.1		31.7	41.6	35.1
LOS	E	D	B	E	D	A	E	D		C	D	D
Approach Delay		40.8			41.0			54.4			37.0	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	116.9
Natural Cycle:	140
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	42.1
Intersection LOS:	D
Intersection Capacity Utilization:	85.6%
ICU Level of Service:	E
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2032 - Dual LT  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	423	1425	271	251	1054	70	278	455	160	372	433
v/c Ratio	0.85	0.83	0.37	0.92	0.70	0.12	0.87	0.55	0.51	0.49	0.84
Control Delay	67.5	38.7	10.3	69.3	36.8	3.5	79.5	39.1	31.7	41.6	35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	38.7	10.3	69.3	36.8	3.5	79.5	39.1	31.7	41.6	35.1
Queue Length 50th (m)	50.0	119.4	11.2	40.2	84.5	0.0	33.3	46.7	25.7	40.2	48.9
Queue Length 95th (m)	#93.2	#178.5	36.9	#109.9	125.5	6.3	#68.6	62.0	40.6	54.1	87.3
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	496	1821	759	272	1606	635	321	1466	316	1416	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.78	0.36	0.92	0.66	0.11	0.87	0.31	0.51	0.26	0.56
































Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis
































## 1: Neyagawa Boulevard & Dundas Street West

Future Total 2032 - Dual LT  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	406	1368	260	241	1012	67	267	350	86	154	357	416
Future Volume (vph)	406	1368	260	241	1012	67	267	350	86	154	357	416
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3471	4433	1573	1807	4269	1534	3372	3421		1753	3476	1564
Flt Permitted	0.95	1.00	1.00	0.10	1.00	1.00	0.95	1.00		0.40	1.00	1.00
Satd. Flow (perm)	3471	4433	1573	185	4269	1534	3372	3421		736	3476	1564
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)	423	1425	271	251	1054	70	278	365	90	160	372	433
RTOR Reduction (vph)	0	0	118	0	0	45	0	18	0	0	0	176
Lane Group Flow (vph)	423	1425	153	251	1054	25	278	437	0	160	372	257
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6				4		4
Actuated Green, G (s)	16.7	45.1	45.1	54.3	41.1	41.1	11.1	27.6		34.7	25.6	25.6
Effective Green, g (s)	16.7	45.1	45.1	54.3	41.1	41.1	11.1	27.6		34.7	25.6	25.6
Actuated g/C Ratio	0.14	0.39	0.39	0.47	0.35	0.35	0.10	0.24		0.30	0.22	0.22
Clearance Time (s)	4.5	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	497	1714	608	269	1504	540	321	809		298	763	343
v/s Ratio Prot	c0.12	c0.32		0.11	0.25		c0.08	0.13		0.04	0.11	
v/s Ratio Perm			0.10	c0.33		0.02				0.12		c0.16
v/c Ratio	0.85	0.83	0.25	0.93	0.70	0.05	0.87	0.54		0.54	0.49	0.75
Uniform Delay, d1	48.7	32.3	24.3	31.2	32.5	24.8	52.0	38.9		31.8	39.8	42.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	13.2	3.6	0.2	37.1	1.5	0.0	20.9	0.7		1.9	0.5	8.9
Delay (s)	61.9	35.9	24.5	68.3	34.0	24.9	72.9	39.6		33.6	40.3	51.4
Level of Service	E	D	C	E	C	C	E	D		C	D	D
Approach Delay (s)		39.6			39.8			52.3			44.2	
Approach LOS		D			D			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			42.3			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			116.6			Sum of lost time (s)			22.1			
Intersection Capacity Utilization			85.6%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2032 - Dual LT  
 PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	424	1039	243	294	1704	162	316	523	119	140	373	468
Future Volume (vph)	424	1039	243	294	1704	162	316	523	119	140	373	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	0.99		0.99		0.99
Fr <sub>t</sub>			0.850			0.850		0.972				0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1617	1825	4476	1541	3471	3485	0	1807	3579	1585
Fl <sub>t</sub> Permitted	0.950			0.107			0.950			0.216		
Satd. Flow (perm)	3471	4433	1587	205	4476	1520	3465	3485	0	408	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			208			97			20			251
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	442	1082	253	306	1775	169	329	545	124	146	389	488
Shared Lane Traffic (%)												
Lane Group Flow (vph)	442	1082	253	306	1775	169	329	669	0	146	389	488
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2032 - Dual LT  
PM Peak Hour

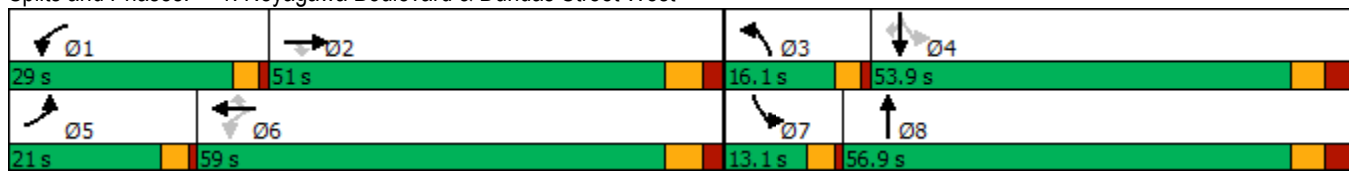


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	21.0	51.0	51.0	29.0	59.0	59.0	16.1	56.9		13.1	53.9	53.9
Total Split (%)	14.0%	34.0%	34.0%	19.3%	39.3%	39.3%	10.7%	37.9%		8.7%	35.9%	35.9%
Maximum Green (s)	17.0	44.3	44.3	25.0	52.3	52.3	12.1	50.0		9.1	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	-2.0	0.0	0.0	0.0	-2.0	0.0	-2.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.0	6.7	6.7	4.0	4.7	6.7	2.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	19.1	48.2	48.2	74.6	54.6	52.6	14.2	34.7		43.7	31.6	31.6
Actuated g/C Ratio	0.14	0.36	0.36	0.55	0.40	0.39	0.11	0.26		0.32	0.23	0.23
v/c Ratio	0.90	0.68	0.36	0.83	0.98	0.26	0.91	0.74		0.65	0.46	0.88
Control Delay	80.1	42.0	9.9	49.6	57.5	14.7	88.7	49.3		42.8	45.5	40.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	80.1	42.0	9.9	49.6	57.5	14.7	88.7	49.3		42.8	45.5	40.7
LOS	F	D	A	D	E	B	F	D		D	D	D
Approach Delay		46.9			53.2			62.3			42.9	
Approach LOS		D			D			E			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 135.2  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay: 51.1  
 Intersection LOS: D  
 Intersection Capacity Utilization 98.5%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 \* User Entered Value

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West





Queues  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2032 - Dual LT  
PM Peak Hour


































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	442	1082	253	306	1775	169	329	669	146	389	488
v/c Ratio	0.90	0.68	0.36	0.83	0.98	0.26	0.91	0.74	0.65	0.46	0.88
Control Delay	80.1	42.0	9.9	49.6	57.5	14.7	88.7	49.3	42.8	45.5	40.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.1	42.0	9.9	49.6	57.5	14.7	88.7	49.3	42.8	45.5	40.7
Queue Length 50th (m)	60.4	105.1	8.2	54.2	192.5	12.2	45.3	83.7	26.2	47.0	66.0
Queue Length 95th (m)	#104.9	146.3	32.9	#110.8	#281.0	33.2	#84.1	103.7	41.0	61.6	110.5
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	490	1581	700	417	1807	650	363	1308	226	1251	709
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.68	0.36	0.73	0.98	0.26	0.91	0.51	0.65	0.31	0.69

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
 1: Neyagawa Boulevard & Dundas Street West
































Future Total 2032 - Dual LT  
 PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  			  		 	 			 		
Traffic Volume (vph)	424	1039	243	294	1704	162	316	523	119	140	373	468	
Future Volume (vph)	424	1039	243	294	1704	162	316	523	119	140	373	468	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	2.0	6.7	6.7	4.0	4.7	6.7	2.0	6.9		4.0	6.9	6.9	
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3471	4433	1588	1825	4476	1521	3471	3487		1805	3579	1562	
Flt Permitted	0.95	1.00	1.00	0.11	1.00	1.00	0.95	1.00		0.22	1.00	1.00	
Satd. Flow (perm)	3471	4433	1588	206	4476	1521	3471	3487		411	3579	1562	
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)	442	1082	253	306	1775	169	329	545	124	146	389	488	
RTOR Reduction (vph)	0	0	134	0	0	59	0	15	0	0	0	192	
Lane Group Flow (vph)	442	1082	119	306	1775	110	329	654	0	146	389	296	
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3	
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%	
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm	
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases			2	6		6				4		4	
Actuated Green, G (s)	17.1	48.3	48.3	73.7	52.6	52.6	12.2	34.7		40.7	31.6	31.6	
Effective Green, g (s)	19.1	48.3	48.3	73.7	54.6	52.6	14.2	34.7		40.7	31.6	31.6	
Actuated g/C Ratio	0.14	0.36	0.36	0.55	0.40	0.39	0.11	0.26		0.30	0.23	0.23	
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	490	1584	567	368	1808	592	364	895		217	837	365	
v/s Ratio Prot	c0.13	0.24		c0.13	c0.40		c0.09	0.19		0.05	0.11		
v/s Ratio Perm			0.08	0.32		0.07				0.16		c0.19	
v/c Ratio	0.90	0.68	0.21	0.83	0.98	0.19	0.90	0.73		0.67	0.46	0.81	
Uniform Delay, d1	57.1	36.9	30.2	33.1	39.8	27.1	59.8	45.9		36.8	44.5	48.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	19.7	1.2	0.2	14.7	16.9	0.2	24.8	3.1		8.0	0.4	12.7	
Delay (s)	76.7	38.1	30.3	47.8	56.7	27.3	84.6	49.0		44.8	44.9	61.7	
Level of Service	E	D	C	D	E	C	F	D		D	D	E	
Approach Delay (s)		46.6			53.3			60.8			52.9		
Approach LOS		D			D			E			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			52.5		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.96										
Actuated Cycle Length (s)			135.1		Sum of lost time (s)						21.6		
Intersection Capacity Utilization			98.5%		ICU Level of Service						F		
Analysis Period (min)			15										

c Critical Lane Group

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035 - Dual LT  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	394	1452	276	254	1070	47	283	350	92	108	323	438
Future Volume (vph)	394	1452	276	254	1070	47	283	350	92	108	323	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98			0.99	1.00	1.00		1.00		0.99
Fr <sub>t</sub>			0.850			0.850		0.969				0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1601	1807	4269	1555	3372	3416	0	1755	3476	1585
Fl <sub>t</sub> Permitted	0.950			0.091			0.950			0.394		
Satd. Flow (perm)	3469	4433	1571	173	4269	1534	3368	3416	0	726	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			93			26			242
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	410	1513	288	265	1115	49	295	365	96	113	336	456
Shared Lane Traffic (%)												
Lane Group Flow (vph)	410	1513	288	265	1115	49	295	461	0	113	336	456
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035 - Dual LT  
AM Peak Hour

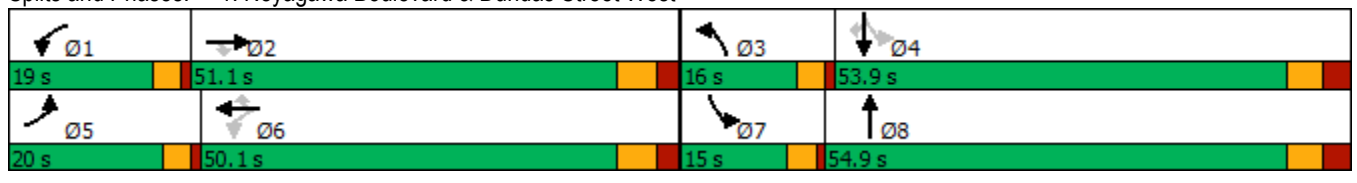


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	20.0	51.1	51.1	19.0	50.1	50.1	16.0	54.9		15.0	53.9	53.9
Total Split (%)	14.3%	36.5%	36.5%	13.6%	35.8%	35.8%	11.4%	39.2%		10.7%	38.5%	38.5%
Maximum Green (s)	16.0	44.4	44.4	15.0	43.4	43.4	12.0	48.0		11.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	-2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	18.0	44.8	44.8	61.8	44.0	44.0	12.1	28.6		39.0	26.3	26.3
Actuated g/C Ratio	0.15	0.37	0.37	0.51	0.37	0.37	0.10	0.24		0.32	0.22	0.22
v/c Ratio	0.79	0.92	0.41	0.90	0.71	0.08	0.87	0.55		0.35	0.44	0.86
Control Delay	62.4	46.6	12.9	64.5	37.4	0.5	79.4	39.7		27.1	41.3	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	62.4	46.6	12.9	64.5	37.4	0.5	79.4	39.7		27.1	41.3	36.4
LOS	E	D	B	E	D	A	E	D		C	D	D
Approach Delay		45.2			41.2			55.2			37.1	
Approach LOS		D			D			E			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 120.1  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 44.1  
 Intersection LOS: D  
 Intersection Capacity Utilization 85.3%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 \* User Entered Value

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035 - Dual LT  
AM Peak Hour


































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	410	1513	288	265	1115	49	295	461	113	336	456
v/c Ratio	0.79	0.92	0.41	0.90	0.71	0.08	0.87	0.55	0.35	0.44	0.86
Control Delay	62.4	46.6	12.9	64.5	37.4	0.5	79.4	39.7	27.1	41.3	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	46.6	12.9	64.5	37.4	0.5	79.4	39.7	27.1	41.3	36.4
Queue Length 50th (m)	48.0	138.5	15.6	44.5	92.2	0.0	35.5	47.5	17.4	35.9	51.1
Queue Length 95th (m)	#85.6	#220.2	45.8	#115.8	137.5	0.7	#72.0	63.2	29.4	48.8	90.7
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	524	1652	702	294	1562	620	339	1392	338	1371	763
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.92	0.41	0.90	0.71	0.08	0.87	0.33	0.33	0.25	0.60

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West
































Future Background 2035 - Dual LT  
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  			  		 	 			 		
Traffic Volume (vph)	394	1452	276	254	1070	47	283	350	92	108	323	438	
Future Volume (vph)	394	1452	276	254	1070	47	283	350	92	108	323	438	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	2.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9	
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3471	4433	1573	1807	4269	1534	3372	3416		1753	3476	1564	
Flt Permitted	0.95	1.00	1.00	0.09	1.00	1.00	0.95	1.00		0.39	1.00	1.00	
Satd. Flow (perm)	3471	4433	1573	173	4269	1534	3372	3416		727	3476	1564	
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)	410	1512	288	265	1115	49	295	365	96	112	336	456	
RTOR Reduction (vph)	0	0	117	0	0	31	0	20	0	0	0	189	
Lane Group Flow (vph)	410	1513	171	265	1115	18	295	441	0	113	336	267	
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2	
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%	
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm	
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases			2	6		6				4		4	
Actuated Green, G (s)	15.9	44.8	44.8	59.1	44.0	44.0	12.1	28.6		36.1	26.3	26.3	
Effective Green, g (s)	17.9	44.8	44.8	59.1	44.0	44.0	12.1	28.6		36.1	26.3	26.3	
Actuated g/C Ratio	0.15	0.37	0.37	0.49	0.37	0.37	0.10	0.24		0.30	0.22	0.22	
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	518	1656	587	291	1566	562	340	814		302	762	343	
v/s Ratio Prot	0.12	c0.34		c0.11	0.26		c0.09	0.13		0.03	0.10		
v/s Ratio Perm			0.11	0.33		0.01				0.08		c0.17	
v/c Ratio	0.79	0.91	0.29	0.91	0.71	0.03	0.87	0.54		0.37	0.44	0.78	
Uniform Delay, d1	49.2	35.7	26.4	34.1	32.5	24.3	53.1	39.9		31.4	40.4	44.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	8.1	8.1	0.3	30.6	1.6	0.0	20.1	0.7		0.8	0.4	10.6	
Delay (s)	57.3	43.8	26.7	64.7	34.1	24.3	73.2	40.7		32.2	40.9	54.7	
Level of Service	E	D	C	E	C	C	E	D		C	D	D	
Approach Delay (s)		44.1			39.4			53.4			46.8		
Approach LOS		D			D			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			44.6		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			119.9		Sum of lost time (s)					21.6			
Intersection Capacity Utilization			85.3%		ICU Level of Service					E			
Analysis Period (min)			15										

c Critical Lane Group

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035 - Dual LT  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	373	1102	258	311	1800	85	335	507	126	102	367	493
Future Volume (vph)	373	1102	258	311	1800	85	335	507	126	102	367	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	0.99		0.99		0.99
Fr <sub>t</sub>			0.850			0.850		0.970				0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1617	1825	4476	1541	3471	3476	0	1807	3579	1585
Fl <sub>t</sub> Permitted	0.950			0.086			0.950			0.189		
Satd. Flow (perm)	3471	4433	1587	165	4476	1520	3465	3476	0	357	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			185			87			21			85
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	389	1148	269	324	1875	89	349	528	131	106	382	514
Shared Lane Traffic (%)												
Lane Group Flow (vph)	389	1148	269	324	1875	89	349	659	0	106	382	514
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035 - Dual LT  
PM Peak Hour

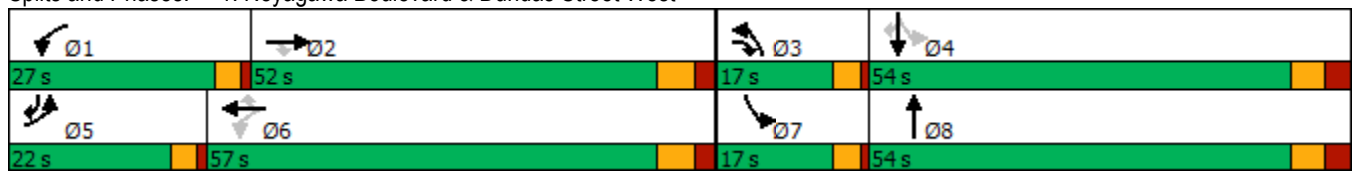


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	11.0	49.7	11.0	11.0	49.7	49.7	11.0	53.9		11.0	53.9	11.0
Total Split (s)	22.0	52.0	17.0	27.0	57.0	57.0	17.0	54.0		17.0	54.0	22.0
Total Split (%)	14.7%	34.7%	11.3%	18.0%	38.0%	38.0%	11.3%	36.0%		11.3%	36.0%	14.7%
Maximum Green (s)	18.0	45.3	13.0	23.0	50.3	50.3	13.0	47.1		13.0	47.1	18.0
Yellow Time (s)	3.0	4.2	3.0	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.0
All-Red Time (s)	1.0	2.5	1.0	1.0	2.5	2.5	1.0	3.2		1.0	3.2	1.0
Lost Time Adjust (s)	-2.0	0.0	0.0	0.0	-2.0	0.0	-2.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.0	6.7	4.0	4.0	4.7	6.7	2.0	6.9		4.0	6.9	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		36.0			36.0	36.0		40.0			40.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	19.4	45.4	61.2	74.6	52.6	50.6	15.1	29.9		41.3	27.6	47.9
Actuated g/C Ratio	0.15	0.35	0.47	0.57	0.40	0.39	0.12	0.23		0.32	0.21	0.37
v/c Ratio	0.76	0.74	0.32	0.85	1.04	0.14	0.87	0.81		0.46	0.50	0.82
Control Delay	64.3	42.1	8.0	55.3	70.3	6.8	79.5	54.5		34.0	47.1	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	64.3	42.1	8.0	55.3	70.3	6.8	79.5	54.5		34.0	47.1	39.1
LOS	E	D	A	E	E	A	E	D		C	D	D
Approach Delay		41.8			65.7			63.1			41.6	
Approach LOS		D			E			E			D	

Intersection Summary

Area Type:	Other
Cycle Length:	150
Actuated Cycle Length:	130.3
Natural Cycle:	150
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.04
Intersection Signal Delay:	54.3
Intersection LOS:	D
Intersection Capacity Utilization:	96.8%
ICU Level of Service:	F
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West





Queues  
1: Neyagawa Boulevard & Dundas Street West

Future Background 2035 - Dual LT  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	389	1148	269	324	1875	89	349	659	106	382	514
v/c Ratio	0.76	0.74	0.32	0.85	1.04	0.14	0.87	0.81	0.46	0.50	0.82
Control Delay	64.3	42.1	8.0	55.3	70.3	6.8	79.5	54.5	34.0	47.1	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	42.1	8.0	55.3	70.3	6.8	79.5	54.5	34.0	47.1	39.1
Queue Length 50th (m)	50.0	108.5	11.2	62.7	~219.0	0.3	46.3	83.0	18.3	46.0	95.0
Queue Length 95th (m)	#75.9	144.7	31.9	#127.2	#288.5	11.9	#81.4	106.1	30.9	61.1	136.6
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	535	1549	846	388	1806	643	401	1276	264	1300	639
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.74	0.32	0.84	1.04	0.14	0.87	0.52	0.40	0.29	0.80

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West
































Future Background 2035 - Dual LT  
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  			  		 	 			 		
Traffic Volume (vph)	373	1102	258	311	1800	85	335	507	126	102	367	493	
Future Volume (vph)	373	1102	258	311	1800	85	335	507	126	102	367	493	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	2.0	6.7	4.0	4.0	4.7	6.7	2.0	6.9		4.0	6.9	4.0	
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3471	4433	1595	1825	4476	1521	3471	3479		1805	3579	1571	
Flt Permitted	0.95	1.00	1.00	0.09	1.00	1.00	0.95	1.00		0.19	1.00	1.00	
Satd. Flow (perm)	3471	4433	1595	166	4476	1521	3471	3479		359	3579	1571	
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)	389	1148	269	324	1875	89	349	528	131	106	382	514	
RTOR Reduction (vph)	0	0	102	0	0	53	0	16	0	0	0	56	
Lane Group Flow (vph)	389	1148	167	324	1875	36	349	643	0	106	382	458	
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3	
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%	
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	pm+ov	
Protected Phases	5	2	3	1	6		3	8		7	4	5	
Permitted Phases			2	6		6				4		4	
Actuated Green, G (s)	17.3	45.4	58.5	71.9	50.6	50.6	13.1	30.0		38.3	27.6	44.9	
Effective Green, g (s)	19.3	45.4	58.5	71.9	52.6	50.6	15.1	30.0		38.3	27.6	44.9	
Actuated g/C Ratio	0.15	0.35	0.45	0.55	0.40	0.39	0.12	0.23		0.29	0.21	0.34	
Clearance Time (s)	4.0	6.7	4.0	4.0	6.7	6.7	4.0	6.9		4.0	6.9	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	514	1545	716	378	1808	591	402	801		224	758	541	
v/s Ratio Prot	0.11	0.26	0.02	c0.15	c0.42		c0.10	c0.18		0.04	0.11	0.11	
v/s Ratio Perm			0.08	0.33		0.02				0.10		0.18	
v/c Ratio	0.76	0.74	0.23	0.86	1.04	0.06	0.87	0.80		0.47	0.50	0.85	
Uniform Delay, d1	53.2	37.3	22.1	36.8	38.8	24.9	56.6	47.3		35.4	45.3	39.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	6.3	2.0	0.2	17.1	31.4	0.0	17.6	5.8		1.6	0.5	11.7	
Delay (s)	59.5	39.2	22.2	53.9	70.2	25.0	74.2	53.1		37.0	45.8	51.2	
Level of Service	E	D	C	D	E	C	E	D		D	D	D	
Approach Delay (s)		41.1			66.2			60.4			47.6		
Approach LOS		D			E			E			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			54.8		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.99										
Actuated Cycle Length (s)			130.2		Sum of lost time (s)						21.6		
Intersection Capacity Utilization			96.8%		ICU Level of Service						F		
Analysis Period (min)			15										

c Critical Lane Group

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2035 - Dual LT  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	456	1452	276	254	1087	70	292	369	92	196	411	441
Future Volume (vph)	456	1452	276	254	1087	70	292	369	92	196	411	441
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98			0.99	1.00	1.00		1.00		0.99
Frt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1601	1807	4269	1555	3372	3419	0	1755	3476	1585
Flt Permitted	0.950			0.092			0.950			0.357		
Satd. Flow (perm)	3469	4433	1571	175	4269	1534	3369	3419	0	658	3476	1564
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			93			24			241
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%
Adj. Flow (vph)	475	1513	288	265	1132	73	304	384	96	204	428	459
Shared Lane Traffic (%)												
Lane Group Flow (vph)	475	1513	288	265	1132	73	304	480	0	204	428	459
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2035 - Dual LT  
AM Peak Hour

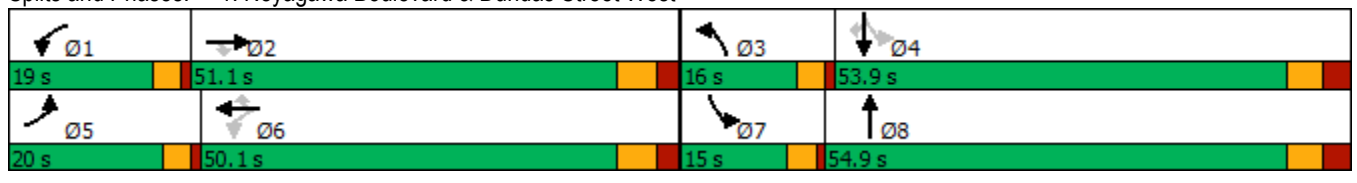


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	11.0	49.7	49.7	11.0	49.7	49.7	11.0	53.9		11.0	53.9	53.9
Total Split (s)	20.0	51.1	51.1	19.0	50.1	50.1	16.0	54.9		15.0	53.9	53.9
Total Split (%)	14.3%	36.5%	36.5%	13.6%	35.8%	35.8%	11.4%	39.2%		10.7%	38.5%	38.5%
Maximum Green (s)	16.0	44.4	44.4	15.0	43.4	43.4	12.0	48.0		11.0	47.0	47.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.7
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.2		1.0	3.2	3.2
Lost Time Adjust (s)	-2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		40.0			40.0	40.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	18.1	44.7	44.7	61.6	43.7	43.7	12.1	29.1		41.9	28.0	28.0
Actuated g/C Ratio	0.15	0.37	0.37	0.51	0.36	0.36	0.10	0.24		0.34	0.23	0.23
v/c Ratio	0.92	0.93	0.41	0.91	0.74	0.12	0.91	0.57		0.63	0.54	0.84
Control Delay	75.9	48.9	13.2	67.0	39.0	4.1	86.0	40.6		35.1	42.7	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	75.9	48.9	13.2	67.0	39.0	4.1	86.0	40.6		35.1	42.7	34.8
LOS	E	D	B	E	D	A	F	D		D	D	C
Approach Delay		50.0			42.3			58.2			38.0	
Approach LOS		D			D			E			D	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	121.7
Natural Cycle:	150
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.93
Intersection Signal Delay:	46.8
Intersection LOS:	D
Intersection Capacity Utilization:	90.6%
ICU Level of Service:	E
Analysis Period (min):	15
* User Entered Value	

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West



Queues

Future Total 2035 - Dual LT

1: Neyagawa Boulevard & Dundas Street West

AM Peak Hour


































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	475	1513	288	265	1132	73	304	480	204	428	459
v/c Ratio	0.92	0.93	0.41	0.91	0.74	0.12	0.91	0.57	0.63	0.54	0.84
Control Delay	75.9	48.9	13.2	67.0	39.0	4.1	86.0	40.6	35.1	42.7	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.9	48.9	13.2	67.0	39.0	4.1	86.0	40.6	35.1	42.7	34.8
Queue Length 50th (m)	57.7	141.2	15.9	45.2	96.0	0.0	37.2	50.4	33.2	47.2	52.4
Queue Length 95th (m)	#107.5	#224.1	46.4	#117.1	142.5	7.4	#75.9	66.2	50.3	61.9	92.2
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	517	1629	695	291	1533	610	334	1373	326	1352	755
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.93	0.41	0.91	0.74	0.12	0.91	0.35	0.63	0.32	0.61

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Neyagawa Boulevard & Dundas Street West
































Future Total 2035 - Dual LT  
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  			  		 	 			 		
Traffic Volume (vph)	456	1452	276	254	1087	70	292	369	92	196	411	441	
Future Volume (vph)	456	1452	276	254	1087	70	292	369	92	196	411	441	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	2.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9	
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3471	4433	1572	1807	4269	1534	3372	3419		1754	3476	1564	
Flt Permitted	0.95	1.00	1.00	0.09	1.00	1.00	0.95	1.00		0.36	1.00	1.00	
Satd. Flow (perm)	3471	4433	1572	174	4269	1534	3372	3419		659	3476	1564	
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)	475	1512	288	265	1132	73	304	384	96	204	428	459	
RTOR Reduction (vph)	0	0	118	0	0	47	0	18	0	0	0	185	
Lane Group Flow (vph)	475	1513	170	265	1132	26	304	462	0	204	428	274	
Confl. Peds. (#/hr)	2		7	7		2	2		6	6		2	
Heavy Vehicles (%)	2%	4%	2%	1%	8%	5%	5%	4%	0%	4%	5%	3%	
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm	
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases			2	6		6				4		4	
Actuated Green, G (s)	16.1	44.7	44.7	58.8	43.7	43.7	12.1	29.1		39.0	28.0	28.0	
Effective Green, g (s)	18.1	44.7	44.7	58.8	43.7	43.7	12.1	29.1		39.0	28.0	28.0	
Actuated g/C Ratio	0.15	0.37	0.37	0.48	0.36	0.36	0.10	0.24		0.32	0.23	0.23	
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.9		4.0	6.9	6.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	517	1630	578	287	1535	551	335	818		310	801	360	
v/s Ratio Prot	c0.14	c0.34		0.11	0.27		c0.09	0.14		0.06	0.12		
v/s Ratio Perm			0.11	0.33		0.02				0.15		c0.17	
v/c Ratio	0.92	0.93	0.29	0.92	0.74	0.05	0.91	0.56		0.66	0.53	0.76	
Uniform Delay, d1	51.0	36.9	27.2	34.9	33.9	25.3	54.1	40.6		32.0	41.0	43.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	21.3	9.6	0.3	33.4	1.9	0.0	26.9	0.9		5.0	0.7	8.9	
Delay (s)	72.3	46.5	27.5	68.3	35.8	25.4	81.0	41.5		36.9	41.7	52.5	
Level of Service	E	D	C	E	D	C	F	D		D	D	D	
Approach Delay (s)		49.4			41.1			56.8			45.4		
Approach LOS		D			D			E			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			47.5		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.89										
Actuated Cycle Length (s)			121.5		Sum of lost time (s)					21.6			
Intersection Capacity Utilization			90.6%		ICU Level of Service					E			
Analysis Period (min)			15										

c Critical Lane Group

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2035 - Dual LT  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 			 	
Traffic Volume (vph)	466	1102	258	311	1876	167	351	566	126	171	409	496
Future Volume (vph)	466	1102	258	311	1876	167	351	566	126	171	409	496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		75.0	80.0		80.0	110.0		0.0	60.0		85.0
Storage Lanes	2		1	1		1	2		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00	0.99		0.99		0.99
Frt			0.850			0.850		0.973				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3471	4433	1617	1825	4476	1541	3471	3489	0	1807	3579	1585
Flt Permitted	0.950			0.080			0.950			0.151		
Satd. Flow (perm)	3471	4433	1587	154	4476	1520	3466	3489	0	285	3579	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157			89			18			85
Link Speed (k/h)		70			70			60				60
Link Distance (m)		206.4			284.9			131.3				156.1
Travel Time (s)		10.6			14.7			7.9				9.4
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%
Adj. Flow (vph)	485	1148	269	324	1954	174	366	590	131	178	426	517
Shared Lane Traffic (%)												
Lane Group Flow (vph)	485	1148	269	324	1954	174	366	721	0	178	426	517
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4				7.4
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		1.6			1.6			1.6				1.6
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Dundas Street West

Future Total 2035 - Dual LT  
PM Peak Hour

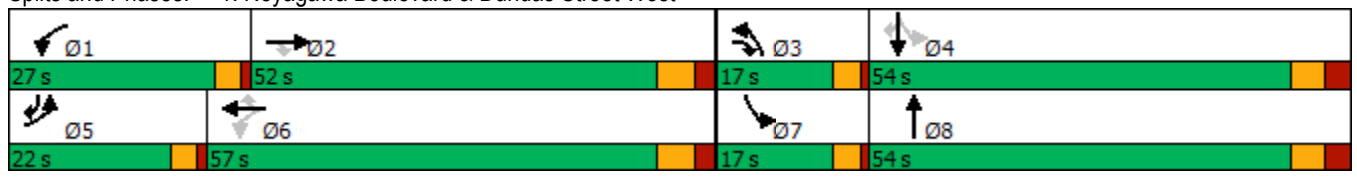


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases			2	6		6				4		4
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0	20.0	7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	11.0	49.7	11.0	11.0	49.7	49.7	11.0	53.9		11.0	53.9	11.0
Total Split (s)	22.0	52.0	17.0	27.0	57.0	57.0	17.0	54.0		17.0	54.0	22.0
Total Split (%)	14.7%	34.7%	11.3%	18.0%	38.0%	38.0%	11.3%	36.0%		11.3%	36.0%	14.7%
Maximum Green (s)	18.0	45.3	13.0	23.0	50.3	50.3	13.0	47.1		13.0	47.1	18.0
Yellow Time (s)	3.0	4.2	3.0	3.0	4.2	4.2	3.0	3.7		3.0	3.7	3.0
All-Red Time (s)	1.0	2.5	1.0	1.0	2.5	2.5	1.0	3.2		1.0	3.2	1.0
Lost Time Adjust (s)	-2.0	0.0	0.0	0.0	-2.0	0.0	-2.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.0	6.7	4.0	4.0	4.7	6.7	2.0	6.9		4.0	6.9	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None		None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		36.0			36.0	36.0		40.0			40.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	20.1	45.8	61.6	75.0	52.4	50.4	15.0	33.9		48.7	33.3	54.3
Actuated g/C Ratio	0.15	0.34	0.45	0.55	0.38	0.37	0.11	0.25		0.36	0.24	0.40
v/c Ratio	0.95	0.77	0.33	0.90	1.14	0.28	0.96	0.82		0.74	0.49	0.77
Control Delay	87.4	45.9	10.8	65.6	108.0	17.0	97.0	55.5		47.2	45.8	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	87.4	45.9	10.8	65.6	108.0	17.0	97.0	55.5		47.2	45.8	34.9
LOS	F	D	B	E	F	B	F	E		D	D	C
Approach Delay		51.5			95.9			69.5			41.0	
Approach LOS		D			F			E			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 136.5  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.14  
 Intersection Signal Delay: 69.3  
 Intersection LOS: E  
 Intersection Capacity Utilization 105.3%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 \* User Entered Value

Splits and Phases: 1: Neyagawa Boulevard & Dundas Street West





Queues

Future Total 2035 - Dual LT

1: Neyagawa Boulevard & Dundas Street West

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	485	1148	269	324	1954	174	366	721	178	426	517
v/c Ratio	0.95	0.77	0.33	0.90	1.14	0.28	0.96	0.82	0.74	0.49	0.77
Control Delay	87.4	45.9	10.8	65.6	108.0	17.0	97.0	55.5	47.2	45.8	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.4	45.9	10.8	65.6	108.0	17.0	97.0	55.5	47.2	45.8	34.9
Queue Length 50th (m)	68.1	116.8	16.8	69.3	~257.7	15.4	51.7	95.3	32.1	52.1	95.9
Queue Length 95th (m)	#112.2	151.3	40.0	#136.7	#322.7	36.2	#90.8	117.5	#51.8	67.7	136.6
Internal Link Dist (m)		182.4			260.9			107.3		132.1	
Turn Bay Length (m)	125.0		75.0	80.0		80.0	110.0		60.0		85.0
Base Capacity (vph)	510	1488	804	367	1719	617	382	1219	248	1238	675
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.77	0.33	0.88	1.14	0.28	0.96	0.59	0.72	0.34	0.77

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis  
 1: Neyagawa Boulevard & Dundas Street West

Future Total 2035 - Dual LT  
 PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  			  		 	 			 	 	
Traffic Volume (vph)	466	1102	258	311	1876	167	351	566	126	171	409	496	
Future Volume (vph)	466	1102	258	311	1876	167	351	566	126	171	409	496	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	2.0	6.7	4.0	4.0	4.7	6.7	2.0	6.9		4.0	6.9	4.0	
Lane Util. Factor	0.97	*0.80	1.00	1.00	*0.80	1.00	0.97	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3471	4433	1595	1825	4476	1521	3471	3490		1806	3579	1570	
Flt Permitted	0.95	1.00	1.00	0.08	1.00	1.00	0.95	1.00		0.15	1.00	1.00	
Satd. Flow (perm)	3471	4433	1595	154	4476	1521	3471	3490		288	3579	1570	
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)	485	1148	269	324	1954	174	366	590	131	178	426	517	
RTOR Reduction (vph)	0	0	89	0	0	56	0	14	0	0	0	53	
Lane Group Flow (vph)	485	1148	180	324	1954	118	366	707	0	178	426	464	
Confl. Peds. (#/hr)	1		6	6		1	3		22	22		3	
Heavy Vehicles (%)	2%	4%	1%	0%	3%	6%	2%	1%	2%	1%	2%	3%	
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		pm+pt	NA	pm+ov	
Protected Phases	5	2	3	1	6		3	8		7	4	5	
Permitted Phases			2	6		6				4		4	
Actuated Green, G (s)	18.1	45.8	58.8	72.5	50.4	50.4	13.0	33.9		45.9	33.4	51.5	
Effective Green, g (s)	20.1	45.8	58.8	72.5	52.4	50.4	15.0	33.9		45.9	33.4	51.5	
Actuated g/C Ratio	0.15	0.34	0.43	0.53	0.38	0.37	0.11	0.25		0.34	0.24	0.38	
Clearance Time (s)	4.0	6.7	4.0	4.0	6.7	6.7	4.0	6.9		4.0	6.9	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	511	1487	687	359	1718	561	381	866		235	875	592	
v/s Ratio Prot	c0.14	0.26	0.02	c0.15	c0.44		c0.11	c0.20		0.07	0.12	0.10	
v/s Ratio Perm			0.09	0.33		0.08				0.18		0.19	
v/c Ratio	0.95	0.77	0.26	0.90	1.14	0.21	0.96	0.82		0.76	0.49	0.78	
Uniform Delay, d1	57.7	40.7	24.9	41.0	42.0	29.4	60.5	48.4		35.3	44.2	37.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	27.2	2.6	0.2	24.9	69.5	0.2	35.8	6.0		13.0	0.4	6.7	
Delay (s)	84.9	43.2	25.1	65.9	111.6	29.6	96.2	54.4		48.3	44.6	44.3	
Level of Service	F	D	C	E	F	C	F	D		D	D	D	
Approach Delay (s)		51.3			99.7			68.5			45.1		
Approach LOS		D			F			E			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			71.2			HCM 2000 Level of Service			E				
HCM 2000 Volume to Capacity ratio			1.04										
Actuated Cycle Length (s)			136.5			Sum of lost time (s)			21.6				
Intersection Capacity Utilization			105.3%			ICU Level of Service			G				
Analysis Period (min)			15										

c Critical Lane Group

# **Appendix G**

**AutoTURN Swept Path Analysis**

FUTURE EXTENSION OF SIXTEEN MILE DRIVE

DUNDAS STREET WEST

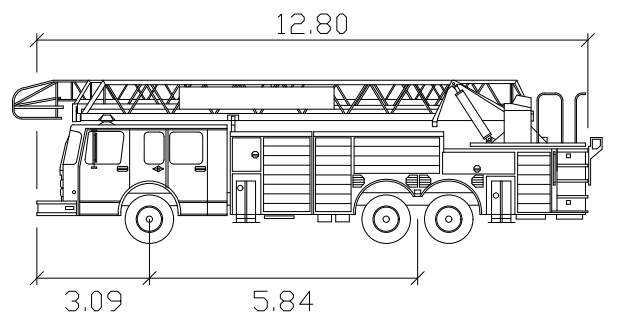
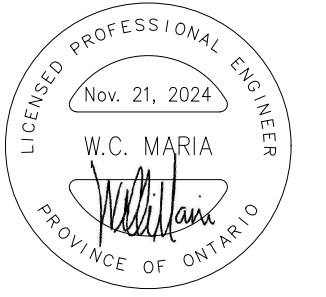
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Aerial Fire meters

Width	:	2.54
Track	:	2.54
Lock to Lock Time	:	6.0
Steering Angle	:	37.0

No.	Issue	Checked	W.M	W.M	11/21/24	Date
1	First Submission					

Author R.A Designer R.A  
Drafting Check W.M Design Check W.M  
Project Manager W.M Project Director W.M

Client  
**NEATT (16 MILE CREEK) INC.**

Project  
**3056 NEYAGAWA BOULEVARD**

Date November 21, 2024 Scale NTS

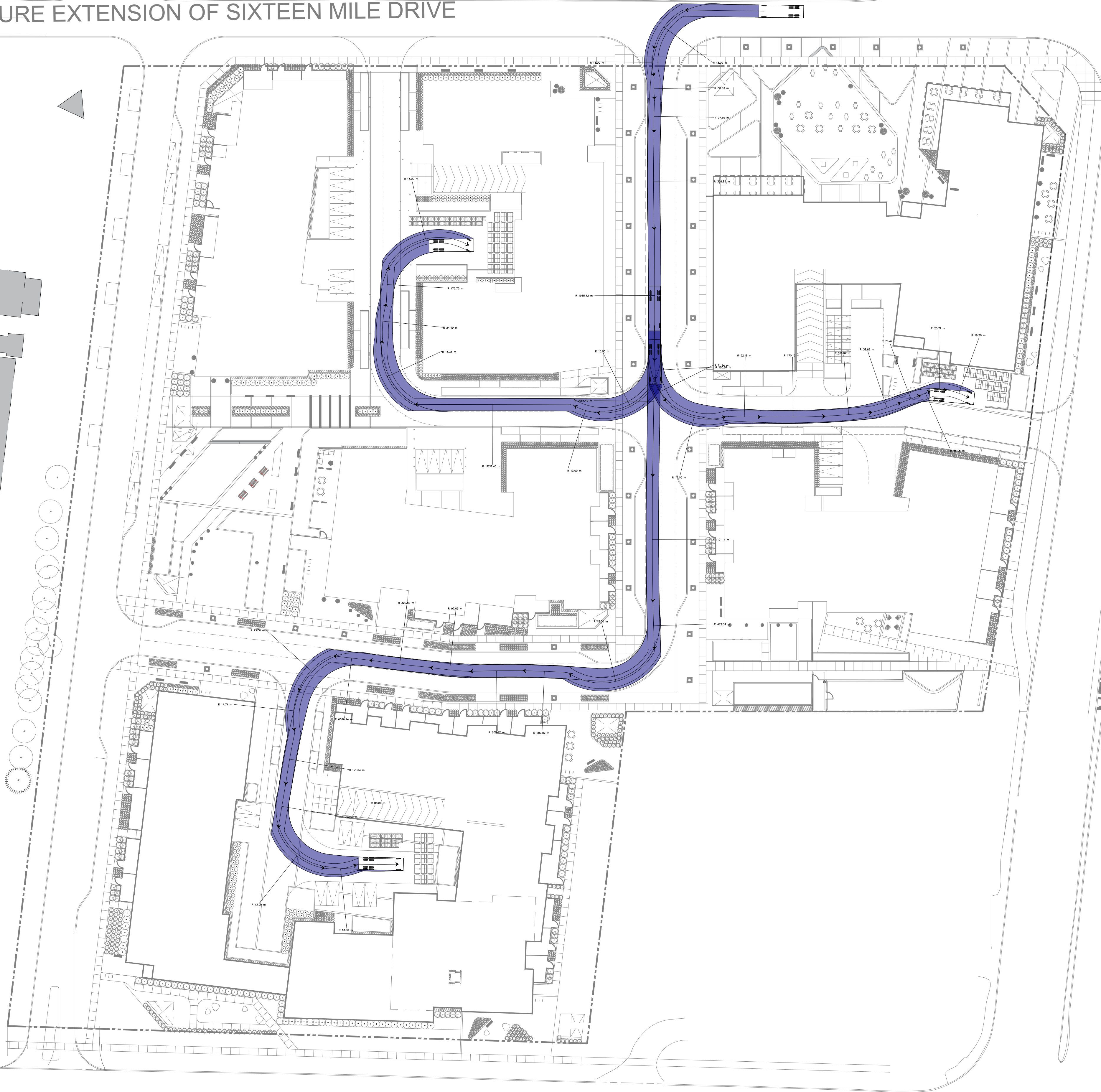
Project No. 12624194

Title  
**VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK**

Size  
ANSI D

Sheet No.  
AT-101

FUTURE EXTENSION OF SIXTEEN MILE DRIVE



DUNDAS STREET WEST

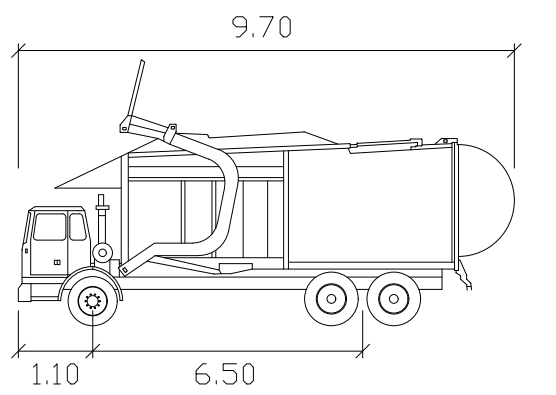
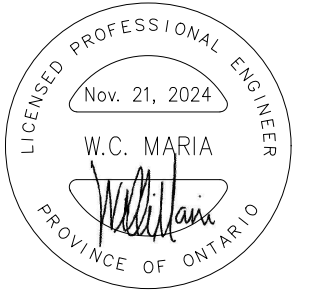
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Halton-Front-End  
meters  
Width : 2.70  
Track : 2.70  
Lock to Lock Time : 6.0  
Steering Angle : 30.0

No.	Issue	Checked	W.M	W.M	11/21/24	Date
1	First Submission		W.M	W.M		11/21/24

Author R.A Designer R.A

Drafting W.M Design W.M  
Check W.M Check W.M

Project W.M Project W.M  
Manager W.M Director W.M

Client  
**NEATT (16 MILE CREEK) INC.**

Project  
**3056 NEYAGAWA BOULEVARD**

Date November 21, 2024 Scale NTS

Project No.  
12624194

Title  
**VEHICLE MANEUVERING DIAGRAM - WASTE COLLECTION (INBOUND)**

Size  
ANSI D

Sheet No.  
AT-102

FUTURE EXTENSION OF SIXTEEN MILE DRIVE



DUNDAS STREET WEST

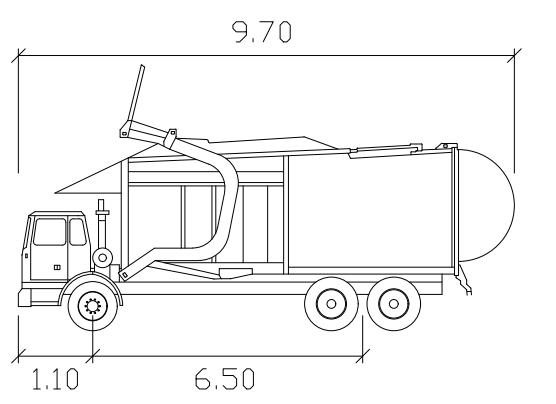
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Halton-Front-End  
meters  
Width : 2.70  
Track : 2.70  
Lock to Lock Time : 6.0  
Steering Angle : 30.0

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	11/21/24

Author R.A Designer R.A  
Drafting Check W.M Design Check W.M  
Project Manager W.M Project Director W.M

Client  
**NEATT (16 MILE CREEK) INC.**

Project  
**3056 NEYAGAWA BOULEVARD**

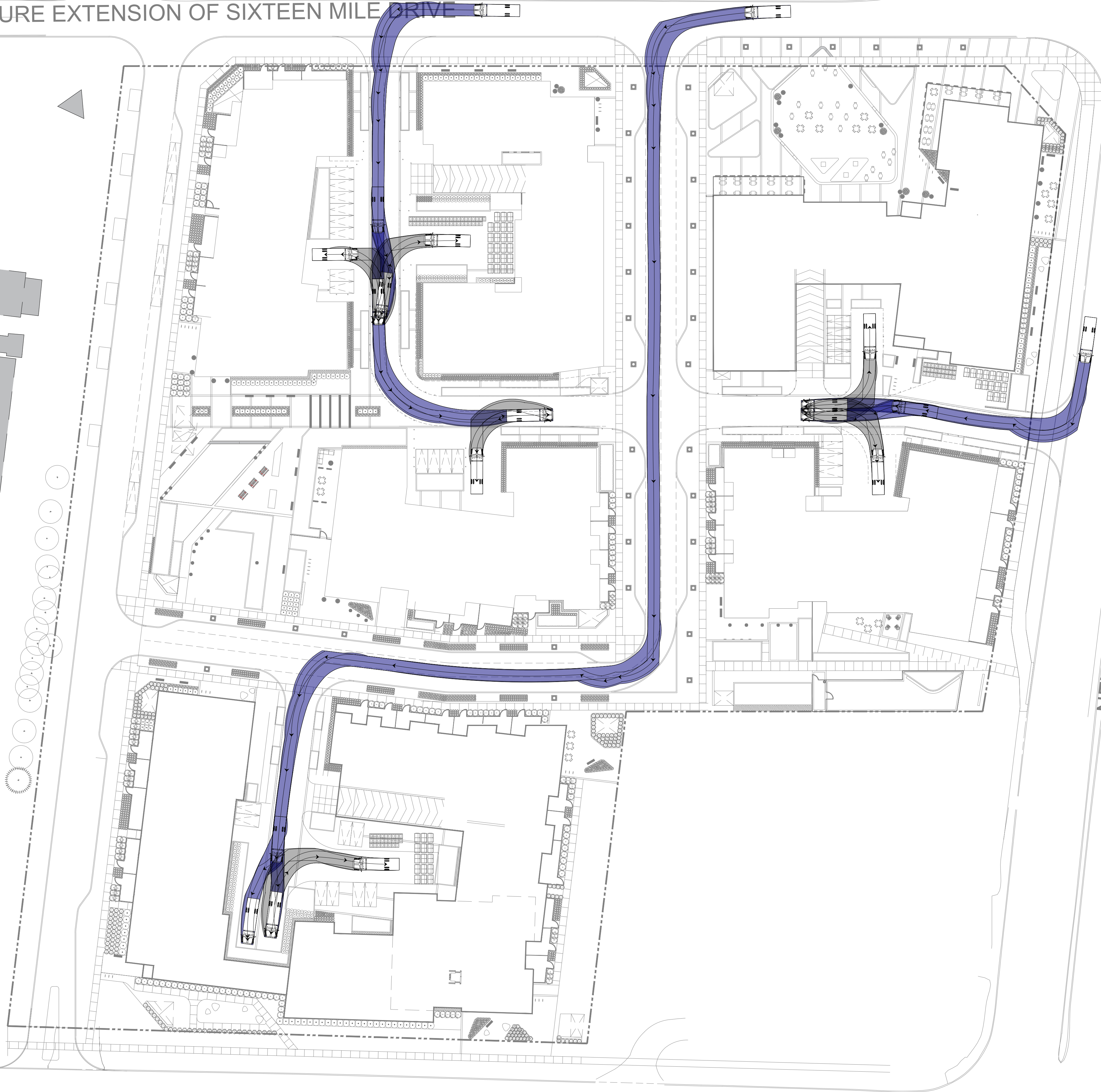
Date November 21, 2024 Scale NTS

Project No. 12624194

Title  
**VEHICLE MANEUVERING DIAGRAM - WASTE COLLECTION (OUTBOUND)**

Sheet No. AT-103

FUTURE EXTENSION OF SIXTEEN MILE DRIVE



DUNDAS STREET WEST

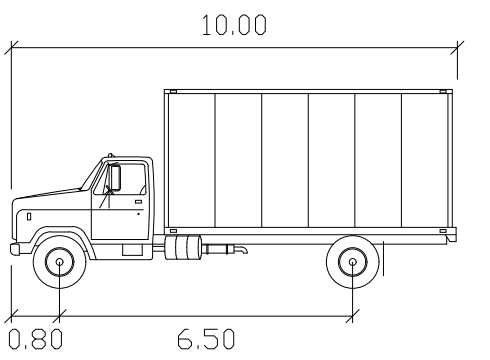
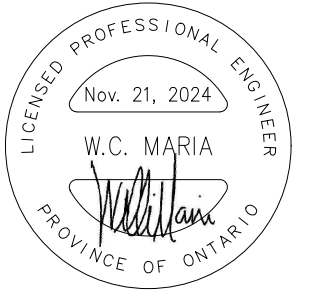
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MSU meters  
Width : 2.60  
Track : 2.60  
Lock to Lock Time : 6.0  
Steering Angle : 40.2

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	11/21/24

Author R.A Designer R.A  
Drafting Check W.M Design Check W.M  
Project Manager W.M Project Director W.M

Client  
**NEATT (16 MILE CREEK) INC.**

Project  
**3056 NEYAGAWA BOULEVARD**

Date November 21, 2024 Scale NTS

Project No. 12624194

Title  
**VEHICLE MANEUVERING DIAGRAM - MSU TRUCK (INBOUND)**

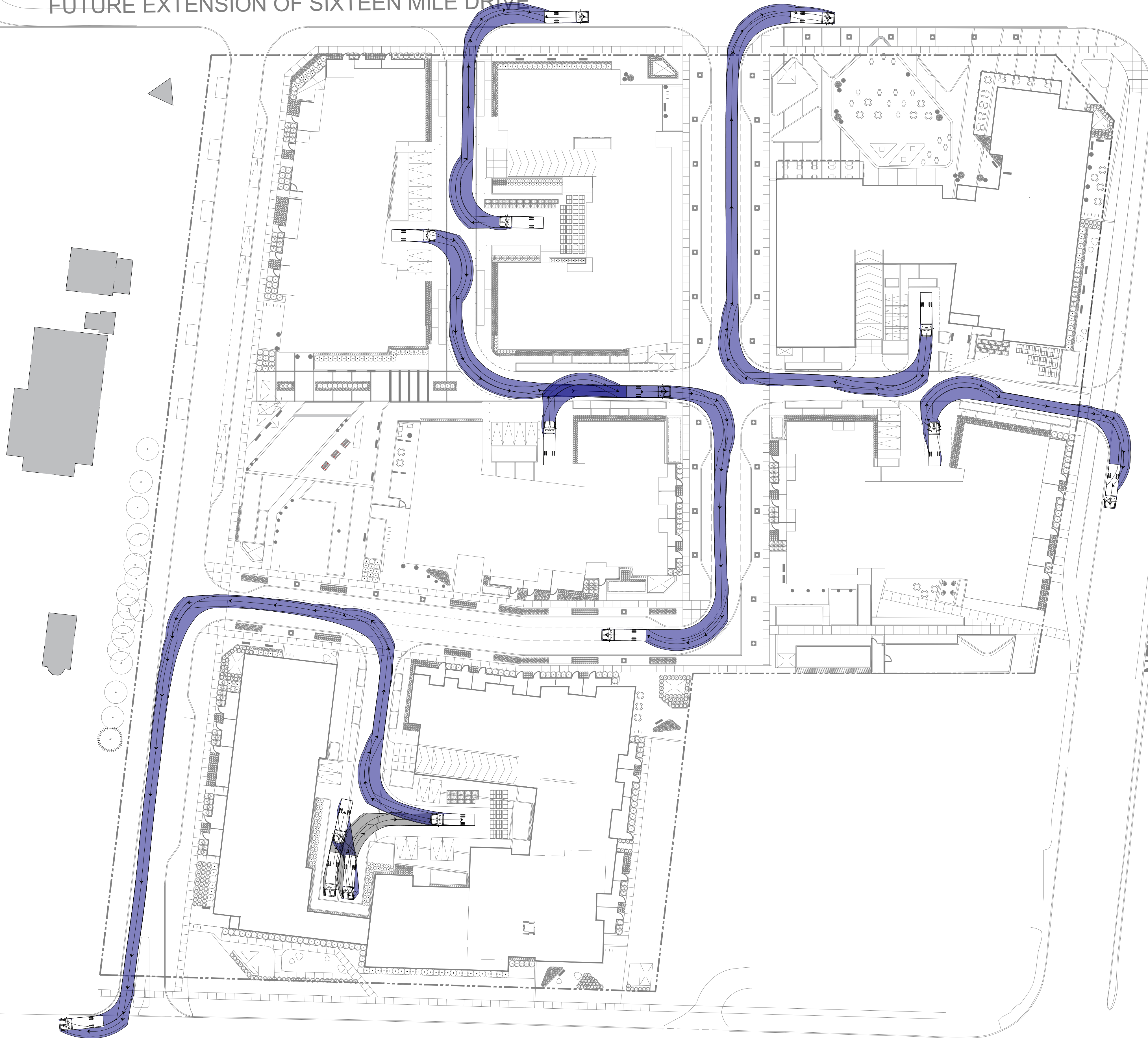
Size  
**ANSI D**

Sheet No.  
**AT-104**

FUTURE EXTENSION OF SIXTEEN MILE DRIVE

DUNDAS STREET WEST

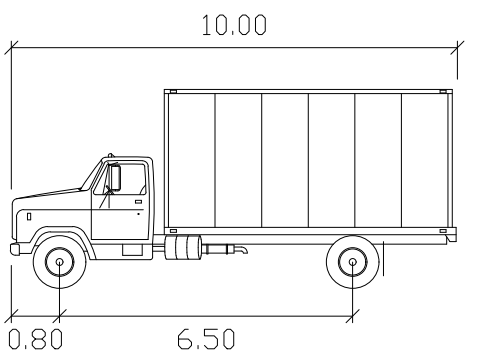
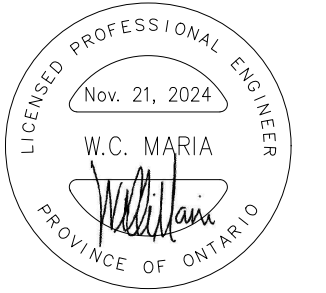
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MSU meters  
Width : 2.60  
Track : 2.60  
Lock to Lock Time : 6.0  
Steering Angle : 40.2

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	11/21/24

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client  
**NEATT (16 MILE CREEK) INC.**

Project  
**3056 NEYAGAWA BOULEVARD**

Date: November 21, 2024 Scale: NTS

Project No. 12624194

Title  
**VEHICLE MANEUVERING DIAGRAM - MSU TRUCK (OUTBOUND)**

Size  
**ANSI D**  
Sheet No.  
**AT-105**



FUTURE EXTENSION OF SIXTEEN MILE DRIVE

DUNDAS STREET WEST

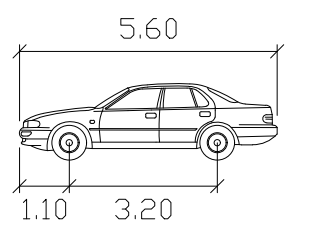
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P  
Width : 2.00 meters  
Track : 2.00  
Lock to Lock Time : 6.0  
Steering Angle : 35.9

No.	Issue	Checked	W.M	W.M	11/21/24	Approved	Date
1	First Submission						

Author R.A Designer R.A

Drafting Check W.M Design Check W.M

Project Manager W.M Project Director W.M

Client  
**NEATT (16 MILE CREEK) INC.**

Project  
**3056 NEYAGAWA BOULEVARD**

Date November 21, 2024 Scale NTS

Project No. 12624194

Title  
**VEHICLE MANEUVERING DIAGRAM - PASSENGER VEHICLE**

Sheet No. AT-106

# **Appendix H**

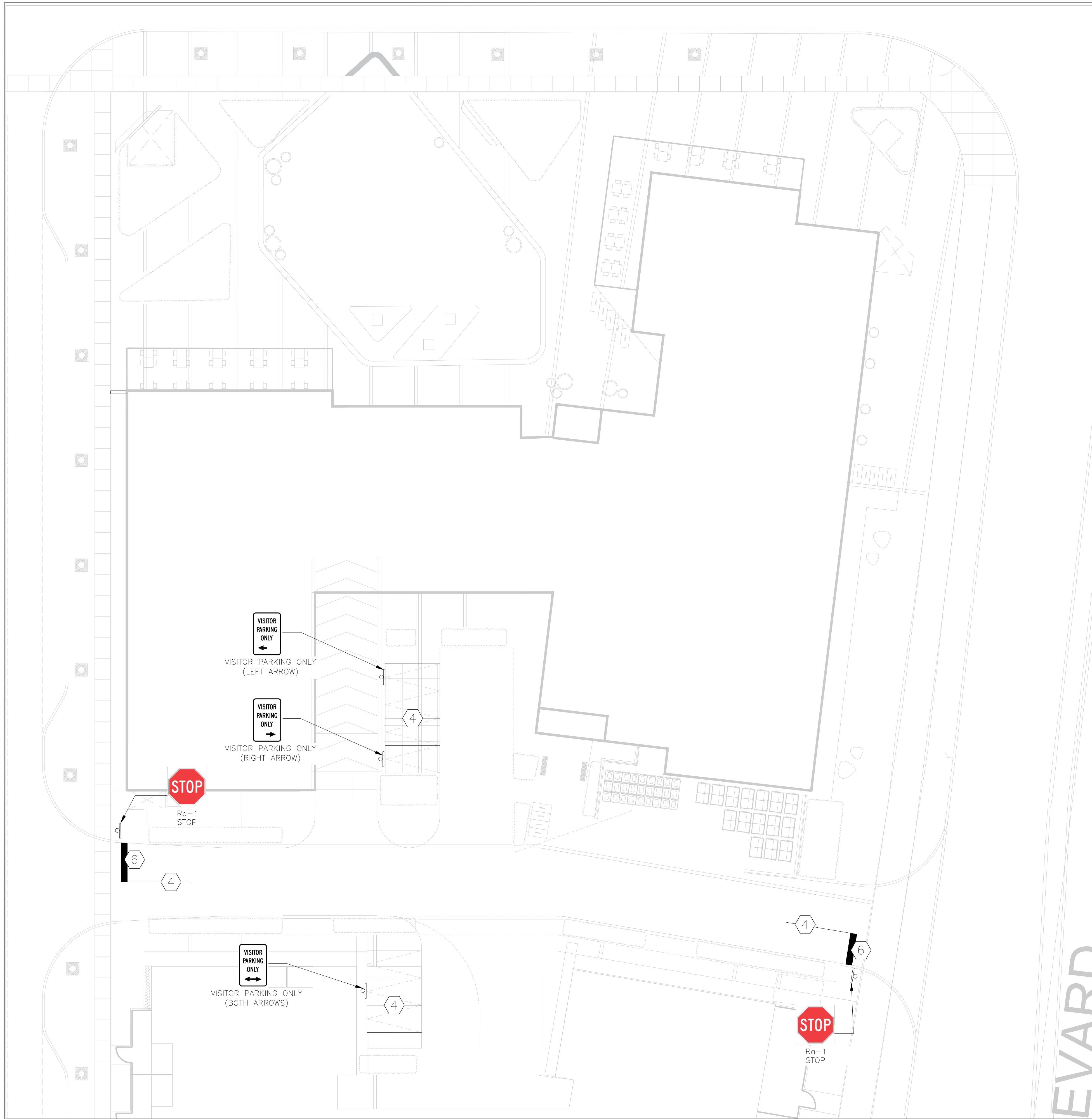
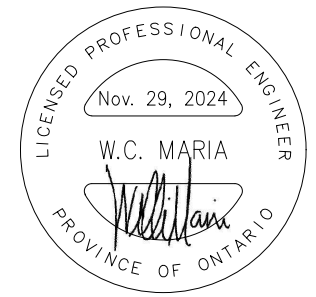
## **Pavement Marking and Signage Plan**



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LEGEND

 SIGNS

PAVEMENT MARKING LEGEND			
IDENTIFICATION	TYPE	COLOUR	WIDTH (cm)
1	SOLID	WHITE	10
2	1-1-1 BROKEN	YELLOW	10
3	3-3-3 BROKEN	YELLOW	10
4	SOLID	YELLOW	10
5	3-6-3 BROKEN	YELLOW	10
6	SOLID	WHITE	60
20	SYMBOLS	WHITE	

- PAVEMENT MARKING LEGEND TABLE NOTES
- 3-3-3, 3-6-3, 3-9-3, DENOTES PAVEMENT MARKING SPACING (I.E., 3m LINE, 3m GAP, 3m LINE)
  - USE  TO DENOTE PAVEMENT MARKING

TRAFFIC SIGN SCHEDULE			
SIGN NUMBER	SIGN NAME	QUANTITY	COMMENTS
Ra-1	STOP	2	
CUSTOM	VISITOR PARKING ONLY	1	BOTH ARROWS
CUSTOM	VISITOR PARKING ONLY	1	LEFT ARROW
CUSTOM	VISITOR PARKING ONLY	1	RIGHT ARROW
TOTAL		5	

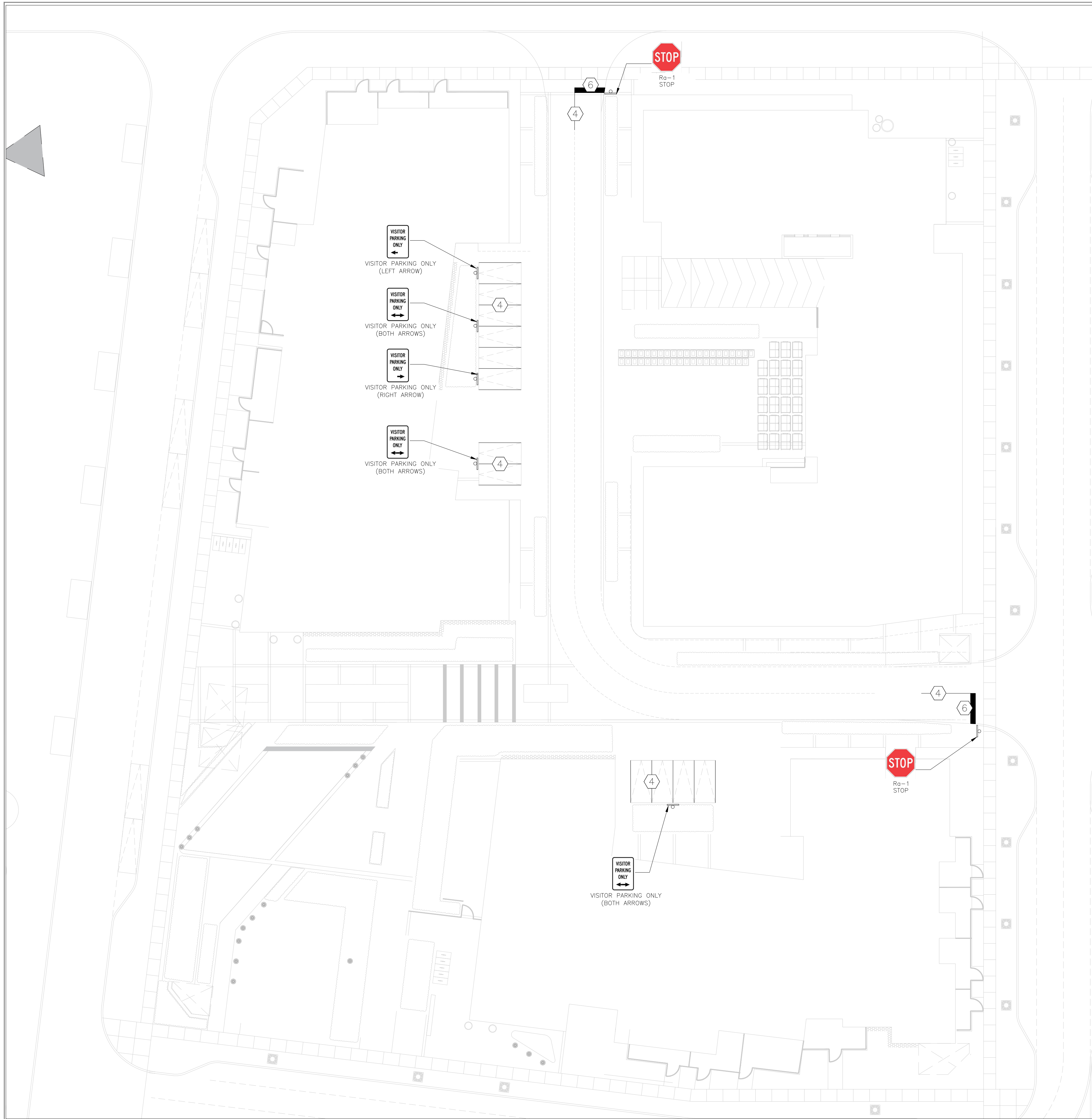
No.	Issue	Checked	Approved	Date
1	ISSUED FOR FIRST SUBMISSION	W.M	W.M	11/29/24

Author RA Designer RA  
 Drafting Check W.M Design Check W.M  
 Project Manager W.M Project Director W.M

Client  
**NEATT (16 MILE CREEK) INC.**

Project  
**3056 NEYAGAWA BOULEVARD**

Date	November 29, 2024	Scale	NTS
Project No.	12624194		
Title	<b>PAVEMENT MARKING AND SIGNAGE PLAN - BLOCK 1</b>		




**LEGEND**

 SIGNS

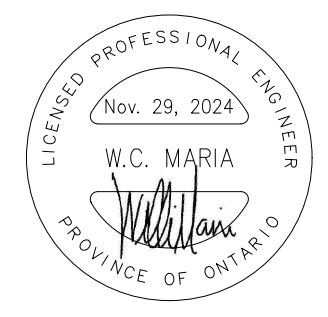
**PAVEMENT MARKING LEGEND**

IDENTIFICATION	TYPE	COLOUR	WIDTH (cm)
1	SOLID	WHITE	10
2	1-1-1 BROKEN	YELLOW	10
3	3-3-3 BROKEN	YELLOW	10
4	SOLID	YELLOW	10
5	3-6-3 BROKEN	YELLOW	10
6	SOLID	WHITE	60
20	SYMBOLS	WHITE	

- PAVEMENT MARKING LEGEND TABLE NOTES**
- 3-3-3, 3-6-3, 3-9-3, DENOTES PAVEMENT MARKING SPACING (I.E., 3m LINE, 3m GAP, 3m LINE)
  - USE  TO DENOTE PAVEMENT MARKING

**TRAFFIC SIGN SCHEDULE**

SIGN NUMBER	SIGN NAME	QUANTITY	COMMENTS
Ro-1	STOP	2	
CUSTOM	VISITOR PARKING ONLY	3	BOTH ARROWS
CUSTOM	VISITOR PARKING ONLY	1	LEFT ARROW
CUSTOM	VISITOR PARKING ONLY	1	RIGHT ARROW
TOTAL		7	



No.	Issue	Checked	Approved	Date
1	ISSUED FOR FIRST SUBMISSION	W.M	W.M	11/29/24

Author **RA** Designer **RA**

Drafting Check **W.M** Design Check **W.M**

Project Manager **W.M** Project Director **W.M**

Client

**NEATT (16 MILE CREEK) INC.**

Project

**3056 NEYAGAWA BOULEVARD**

Date **November 29, 2024** Scale **NTS**

Project No. **12624194**

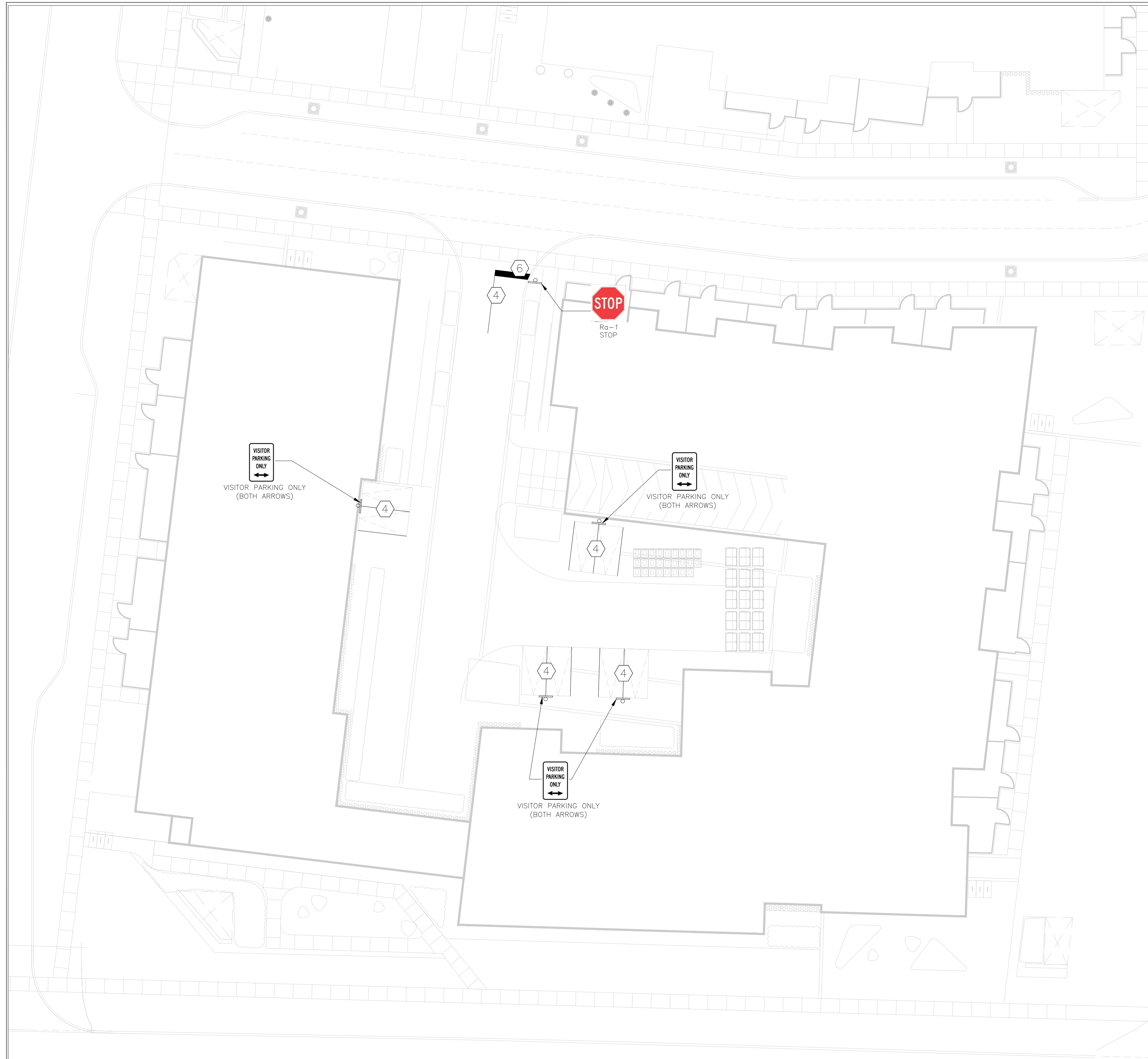
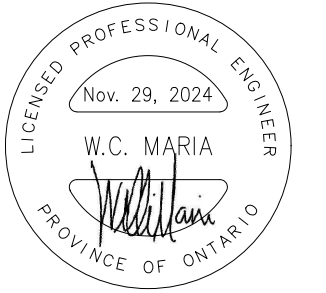
**PAVEMENT MARKING AND SIGNAGE PLAN - BLOCK 2**



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# REET WEST

**LEGEND**

SIGNS

**PAVEMENT MARKING LEGEND**

IDENTIFICATION	TYPE	COLOUR	WIDTH (cm)
1	SOLID	WHITE	10
2	1-1-1 BROKEN	YELLOW	10
3	3-3-3 BROKEN	YELLOW	10
4	SOLID	YELLOW	10
5	3-6-3 BROKEN	YELLOW	10
6	SOLID	WHITE	60
20	SYMBOLS	WHITE	

- PAVEMENT MARKING LEGEND TABLE NOTES**
- 3-3-3, 3-6-3, 3-9-3, DENOTES PAVEMENT MARKING SPACING (I.E., 3m LINE, 3m GAP, 3m LINE)
  - USE TO DENOTE PAVEMENT MARKING

**TRAFFIC SIGN SCHEDULE**

SIGN NUMBER	SIGN NAME	QUANTITY	COMMENTS
Ra-1	STOP	1	
CUSTOM	VISITOR PARKING ONLY	4	BOTH ARROWS
CUSTOM	VISITOR PARKING ONLY	0	LEFT ARROW
CUSTOM	VISITOR PARKING ONLY	0	RIGHT ARROW
TOTAL		5	

No.	Issue	Checked	Approved	Date
1	ISSUED FOR FIRST SUBMISSION	W.M	W.M	11/29/24

Author **RA** Designer **RA**

Drafting Check **W.M** Design Check **W.M**

Project Manager **W.M** Project Director **W.M**

Client  
**NEATT (16 MILE CREEK) INC.**

Project  
**3056 NEYAGAWA BOULEVARD**

Date **November 29, 2024** Scale **NTS**

Project No.  
**12624194**

## PAVEMENT MARKING AND SIGNAGE PLAN - BLOCK 3

