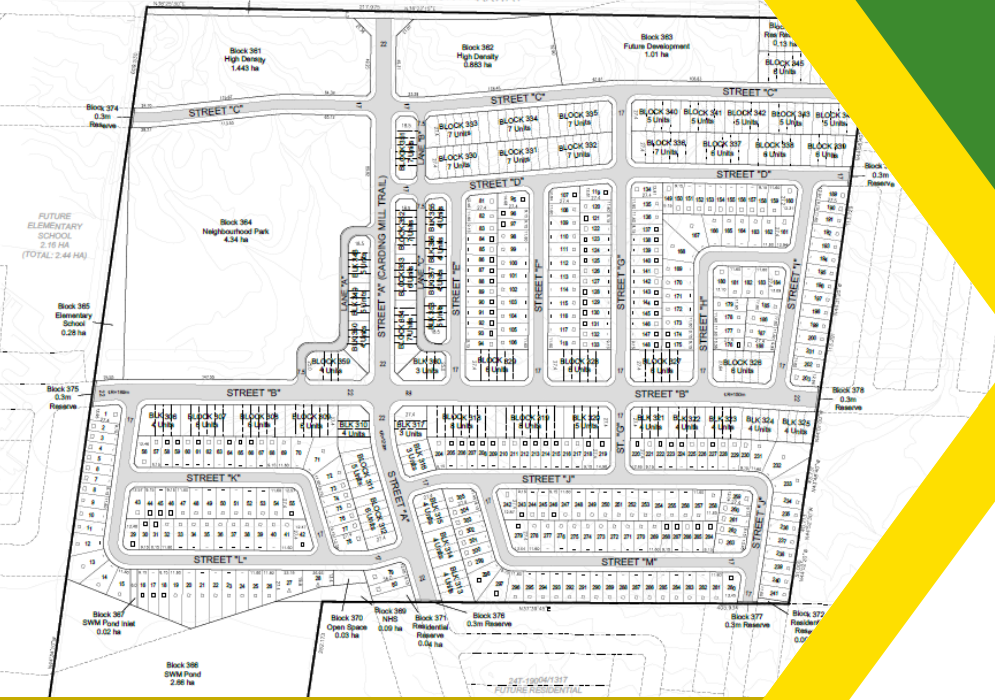


# Eno Investments Limited

## Remington Eno

### Transportation Impact Study



# Remington Eno Transportation Impact Study

Prepared for:

Eno Investments Limited

Prepared by:



628 Haines Road  
Newmarket, ON  
L3Y 6V5

October 2021

PN: 2020-60

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## 1 Introduction

This Transportation Impact Study (TIS) has been prepared to support the proposed development in North Oakville, located approximately 400 metres east of Burnhamthorpe Road at Neyagawa Boulevard. This area is being developed by Eno Investments. The proposed development includes a mix of 292 single detached houses, 309 townhouses, and several multi-storey mid-rise buildings with a total of approximately 1700 apartment units and a total of approximately 15,000 square feet of retail space. However, the landowner of this property is contemplating moving forward with only one building within the buildout horizon of this report, based on the Regional allocation available for these lands. For the purposes of this TIS, all other apartment buildings will be considered beyond the horizons of this study and will be further studied at the time that allotment is received, and those buildings can proceed. The property is currently a greenfield area that is bordered by Burnhamthorpe Road to the north. This section of Burnhamthorpe Road will ultimately become part of the future William Halton Parkway. For the purposes of this TIS, the projected full build-out and occupancy horizon is 2026, and the plus five-year horizon is 2031. Figure 1 illustrates the site context. Figure 2 illustrates the proposed site plan.




Access to the site will be accommodated via Carding Mill Trail, which runs north-south and connects to Burnhamthorpe Road (future William Halton Parkway), as well as Settlers Road West, which runs east-west and will connect the proposed site to Neyagawa Boulevard, and Sixth Line once the adjacent developments are built. Currently, there are no turn restrictions at the Carding Mill Trail at Burnhamthorpe Road intersection, and it is anticipated that a full movement access will remain upon completion of William Halton Parkway. Additionally, one intersection within the proposed development (Carding Mill Trail at Settlers Road West) will be analyzed and is proposed as full-movement intersection with no turn restrictions. The scope of this TIS has been confirmed with transportation staff from the Town of Oakville and the Halton Region. E-mail correspondence discussing the scope is included in Appendix A.

**DRAFT PLAN OF SUBDIVISION  
FILE 24T-**

**PART OF LOTS 17, 18 and 19  
CONCESSION 1, N.D.S.**  
(GEOGRAPHIC TOWNSHIP OF TRAFALGAR, COUNTY OF HALTON)  
NOW IN THE  
**TOWN OF OAKVILLE  
REGIONAL MUNICIPALITY OF HALTON**

**OWNER'S AUTHORIZATION**  
I HEREBY AUTHORIZE KORSIK URBAN PLANNING TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE TOWN OF OAKVILLE FOR APPROVAL.

SIGNED  DATE September 10, 2021  
Christopher Bratty, ASO  
ENO INVESTMENTS LIMITED  
ANKARA REALTY LIMITED  
7501 KEELE STREET, SUITE 100  
VAUGHAN, ONTARIO L4K 1Y2

**SURVEYOR'S CERTIFICATE**  
I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

SIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
Dan Dzaldov, Ontario Land Surveyor  
SCHAEFFER DZALDOV BENNETT LTD.  
ONTARIO LAND SURVEYORS  
64 JARDIN DRIVE, UNIT 1, CONCORD, ONTARIO L4K 3P3  
Tel. (416)987-0101 Fax (905)761-0119

**ADDITIONAL INFORMATION (UNDER SECTION 51 (17) OF THE PLANNING ACT)**  
A) SHOWN ON PLAN G) SHOWN ON PLAN  
B) SHOWN ON PLAN H) MUNICIPAL AND PIPED WATER TO BE PROVIDED  
C) SHOWN ON PLAN I) CLAY LOAM  
D) SHOWN ON PLAN J) SHOWN ON PLAN  
E) SHOWN ON PLAN K) SANITARY AND STORM SEWERS TO BE PROVIDED  
F) SHOWN ON PLAN L) SHOWN ON PLAN

**LAND USE SCHEDULE**

Land Use	Lots/Blocks	Lot/ Block Total	Area (ha)	Units
□ Single Detached (9.15m)	1-12, 32-34, 36-39, 46-55, 60-72, 75-84, 86-91, 95-100, 109-114, 116-122, 126-130, 132-134, 137, 138, 141-146, 159, 160, 163-167, 171-177, 188, 189, 191-202, 205-218, 225-233, 240-243, 250, 251, 262-269, 286-292	165	4.77	165
○ Single Detached (11.6m)	13-31, 35, 40-45, 56-59, 73, 74, 85, 92-94, 101-108, 115, 123-125, 131, 135, 136, 139, 140, 147-158, 161, 162, 168-170, 178-187, 190, 203, 204, 219-224, 234-239, 244-249, 252-261, 270-285	127	4.72	127
Street Townhouses (7.01m)	293-336	44	4.69	214
Lane Based Townhouses (6.05m)	337-348	12	1.10	75
Live/Rent Townhouses (6.10m)	349-352	4	0.40	20
Future Mixed Use/Apartment	353, 354	2	2.73	
Future Development	355	1	1.16	
Neighbourhood Park	356	1	4.34	
Elementary School	357	1	0.28	
SWM Pond Inlet	358	1	0.02	
SWM Pond	359	1	2.66	
Natural Heritage System (NHS)	360, 361	2	2.89	
Residential Reserve	362-368	7	0.07	
Road Widening	369, 370	2	0.22	
0.3m Reserve	371-378	8	0.00	
7.5m ROW (455 m)			0.36	
17m ROW (3,377 m)			5.79	
22m ROW (1,125 m)			2.51	
<b>Total</b>	<b>378</b>	<b>378</b>	<b>38.71</b>	<b>601</b>

Unit Type	Lots/Blocks	Units	SDE*
Single Detached	1-292	292	292.0
Townhouse	293-336	214	162.6
Lane-Based Townhouse	337-352	95	72.2
<b>Total</b>		<b>601</b>	<b>526.8</b>

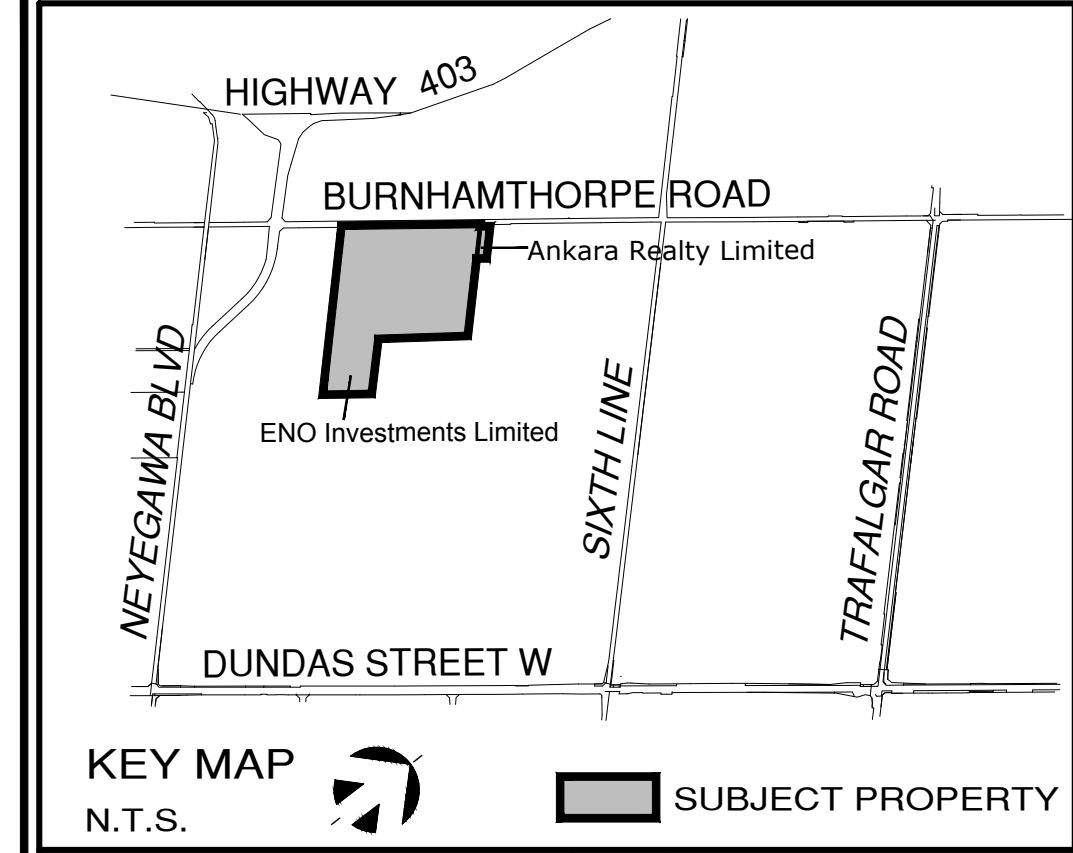
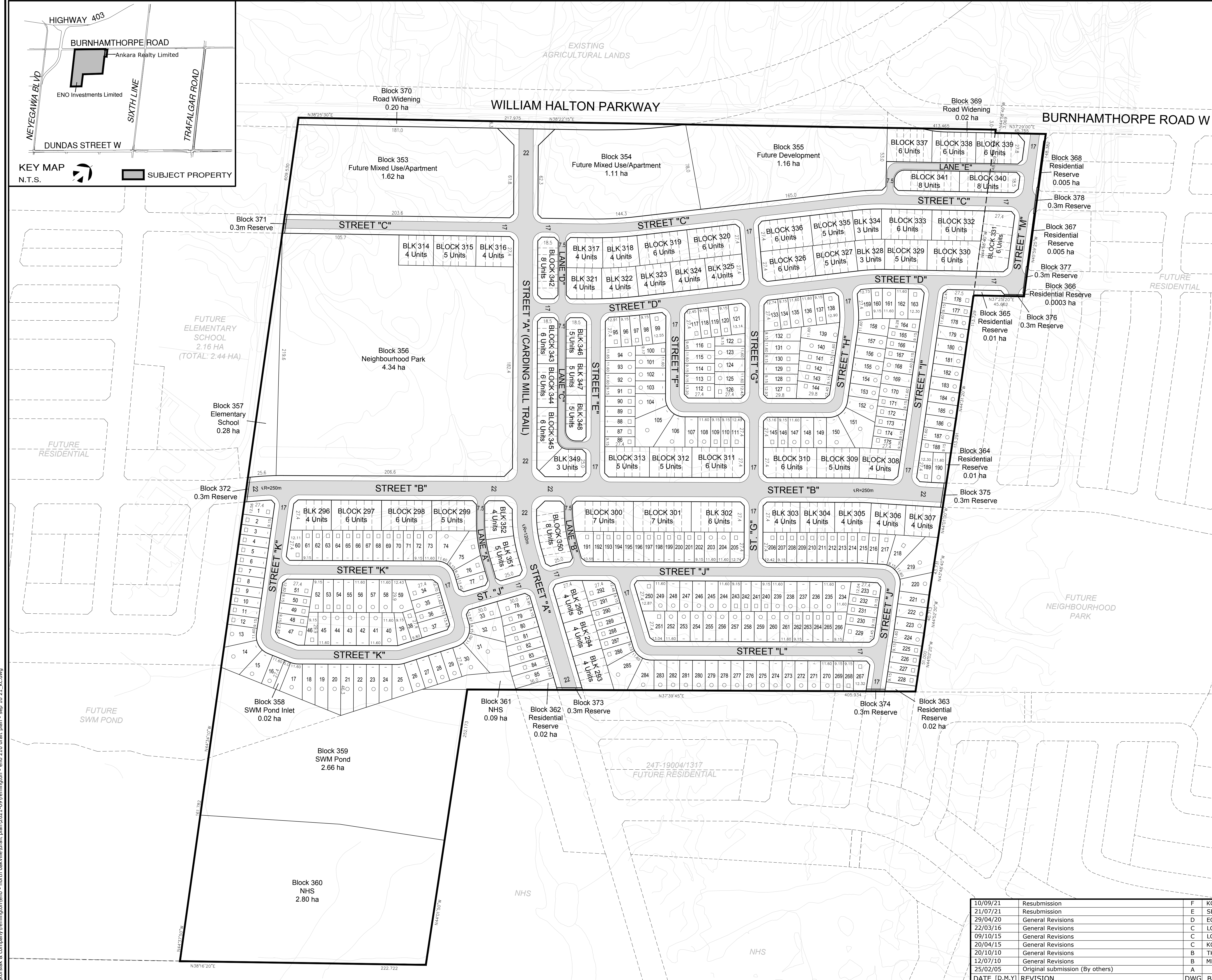
\* SDE Factors:  
Detached - 1.00  
Street Townhouse - 0.76  
Lane-Based Townhouse - 0.76

**NOTES:**  
- Pavement illustration is diagrammatic  
- Local to Local or Local to Connector or Avenue daylight triangle = 3.5 m  
- Connector or Avenue to Connector or Avenue daylight triangle = 7.5 m  
- Connector or Avenue to Arterial daylight triangle = 15 m

SCALE 1:1500 September 10, 2021  
DRAWN BY: KC CHECKED BY: SE



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T: 905-257-0227  
info@korsik.com



DATE [D.M.Y]	REVISION	DWG	BY
10/09/21	Resubmission	F	KC
21/07/21	Resubmission	E	SE
29/04/20	General Revisions	D	EC
22/03/16	General Revisions	C	LC
09/10/15	General Revisions	C	LC
20/04/15	General Revisions	C	KC
20/10/10	General Revisions	B	TK
12/07/10	General Revisions	B	MP
25/02/05	Original submission (By others)	A	

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## 2 Existing Conditions

### 2.1 Area Road Network

#### *Sixth Line*

Sixth Line is a Town of Oakville minor arterial road with a two-lane rural cross-section. The Town of Oakville Official Plan protects a 26-metre right-of-way for minor arterial roads. Left turn lanes are included at major intersections. An 80 km/h posted speed limit applies. Sixth Line is anticipated to be widened from two to four-lanes. As part of this widening, the right-of-way will increase to 31 metres. It has been indicated through discussions with the Town of Oakville that this upgrade is anticipated to be completed by 2024 and has been considered in the analysis herein.

#### *Burnhamthorpe Road*

Burnhamthorpe Road is a regional road with a two-lane rural cross-section. The Halton Region Official Plan protects for a 24-metre right of way for this road. A 60 km/h posted speed limit applies. It has been indicated that, within five years of the study date and upon completion of the future William Halton Parkway, responsibility for this roadway will transfer from the Region to the Town of Oakville. According to the Burnhamthorpe Road Character Study and Municipal Class Environmental Assessment (MMM Group, 2014), Burnhamthorpe Road will range between two and four lanes within the Study Area in future horizons and include sidewalks, bike lanes, and potential on-street parking areas.

#### *Neyagawa Boulevard*

Neyagawa Boulevard is a regional road with a four-lane urban cross-section. The Halton Region Official Plan protects for a 40-metre right-of-way north of Burnhamthorpe Road and a 35-metre right-of-way to the south. Auxiliary turn lanes are provided at major intersections. A 60 km/h posted speed limit applies.

#### *Carding Mill Trail (Street 'A')*

Carding Mill Trail is a proposed north-south avenue/transit corridor according to the North Oakville East Secondary Plan and has a right-of-way of 22 metres. This road provides access to the site on Burnhamthorpe Road (future William Halton Parkway). The unposted speed limit is assumed to be 50 km/hr.

#### *Settlers Road West (Street 'B')*

Settlers Road West is an east-west avenue/transit corridor according to the North Oakville East Secondary Plan and has a right-of-way of 22 metres. This road will provide east-west connections to the proposed development once the neighboring communities to the east and to the west are built out. The unposted speed limit is assumed to be 50 km/hr.

#### *William Halton Parkway (Future Arterial Road Corridor)*

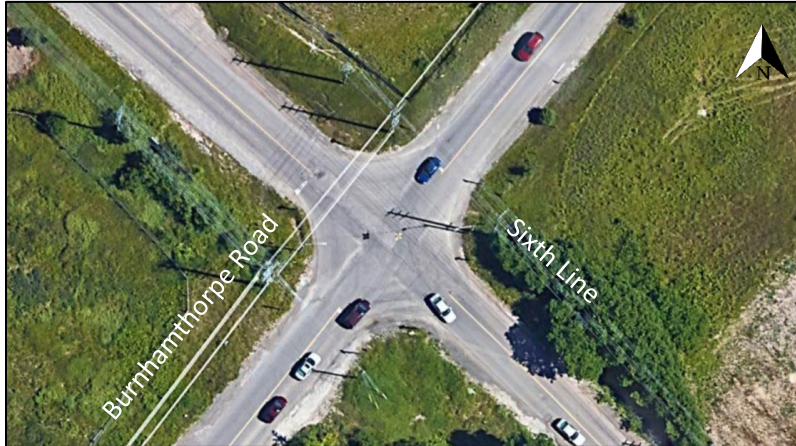
North of, and parallel to, Burnhamthorpe Road is the corridor protection for the future William Halton Parkway, a regional arterial road. This is shown in the Halton Region Official Plan as a Proposed Major Arterial Road. It has been indicated that this facility will be constructed between Neyagawa Boulevard and the eastern connection of William Halton Parkway to Burnhamthorpe Road. A contract has been awarded by the Region of Halton for the construction of William Halton Parkway from Sixth Line to Trafalgar Road, with construction starting in early 2019.

## 2.2 Existing Intersections

### *Sixth Line at Burnhamthorpe Road*

The intersection of Sixth Line at Burnhamthorpe Road is an all-way stop controlled intersection. No auxiliary lanes or sidewalks are provided on any of the legs. An overhead flashing red beacon has been installed over the centre of the intersection. Figure 3 illustrates the intersection of Sixth Line at Burnhamthorpe Road.

*Figure 3: Intersection of Sixth Line at Burnhamthorpe Road*



### *Carding Mill Trail at Burnhamthorpe Road*

The intersection of Carding Mill Trail at Burnhamthorpe Road is an unsignalized T-intersection. No auxiliary lanes, shoulders or sidewalks are provided on any of the legs. Figure 4 illustrates the intersection of Carding Mill Trail at Burnhamthorpe Road.

*Figure 4: Intersection of Carding Mill Trail at Burnhamthorpe Road*



### *Neyagawa Boulevard at Burnhamthorpe Road*

The intersection of Neyagawa Boulevard at Burnhamthorpe Road is a signalized intersection with auxiliary left and right turn lanes on all approaches. Crosswalks are present on all legs with pedestrian signal heads and call buttons. The sidewalks are not continuous beyond the intersection, with the exception of the west side of Neyagawa Boulevard, south of the intersection, where an asphalt multi-use path is provided. Curbside cycling lanes are provided throughout the intersection, however, these cycling lanes end just past the intersection to the north, east, and west, transitioning to gravel shoulders. South of the intersection the cycling lanes continue south, along both sides of the road, to Dundas Street. Figure 5 illustrates the intersection of Neyagawa Boulevard at Burnhamthorpe Road.

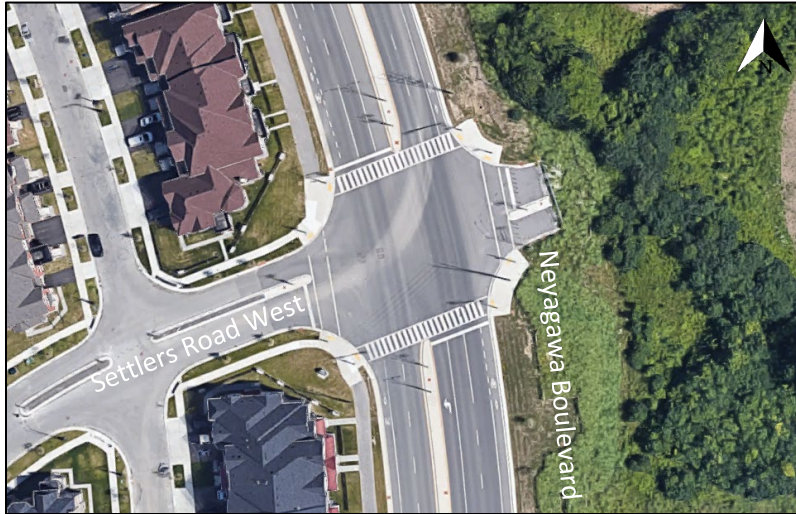
Figure 5: Intersection of Neyagawa Boulevard at Burnhamthorpe Road



*Settlers Road West at Neyagawa Boulevard*

The intersection of Settlers Road West at Neyagawa Boulevard is a signalized T-intersection with auxiliary left-turn lane on northbound approach. A paved area for a future southbound left-turn lane has been reserved on the southbound approach of Neyagawa Boulevard to accommodate the extension of Settlers Road to the west. During a site visit, a painted left-turn lane was also noticed on the eastbound approach of the intersection. Crosswalks are present on all legs with pedestrian signal heads and call buttons. The sidewalks run along Settlers Road West, and the west side of Neyagawa Boulevard. Curbside cycling lanes are provided along Neyagawa Boulevard. North of the intersection the cycling lanes continue to Burnhamthorpe Road. South of the intersection the cycling lanes continue to Dundas Street. Figure 6 illustrates the intersection of Settlers Road West at Neyagawa Boulevard.

Figure 6: Intersection of Settlers Road West at Neyagawa Boulevard



2.3 Cycling and Pedestrian Facilities

The proposed developments are in an area of North Oakville that is currently not developed and therefore there is minimal cycling and pedestrian infrastructure in the vicinity of the proposed development. As noted in Section 2.2, the signalized intersection of Neyagawa Boulevard at Burnhamthorpe Road has some pedestrian infrastructure (crosswalks and pedestrian signal heads) and cycling (cycling lanes) infrastructure but there are limited connections beyond this intersection. Sidewalks and bike lanes south of this intersection lead to the intersection of Neyagawa Boulevard at Settlers Road West and are continued to the south towards Dundas Street.

The Town of Oakville and Halton Region Active Transportation Master Plans (ATMPs) outline the proposed cycling and pedestrian network. Map 8 and Map 9 from the Town’s ATMP, as well as Map 3 and Map 4 from the Regional ATMP have been included in Appendix B for reference. Generally, sidewalks will be provided along the local and collector roads throughout the proposed development as is appropriate based on the proposed cross-sections. Additionally, paths will be included in the green spaces that will be reserved as part of the proposed development. Bike lanes, a sidewalk, and a multi-use trail are also proposed along William Halton Parkway.

## 2.4 Transit

Currently, Oakville Transit is providing a Home to Hub on-demand transit service for select communities in North Oakville. One such community is the subdivision located at the south-western quadrant of Neyagawa Boulevard and Burnhamthorpe Road intersection, approximately 300 metres west of the proposed development. It is also expected that as the area builds out, interim bus routes will be provided along arterials and connector roads. The frequency and path of interim routes will be determined by Oakville Transit.

## 2.5 Existing Peak Hour Travel Demand

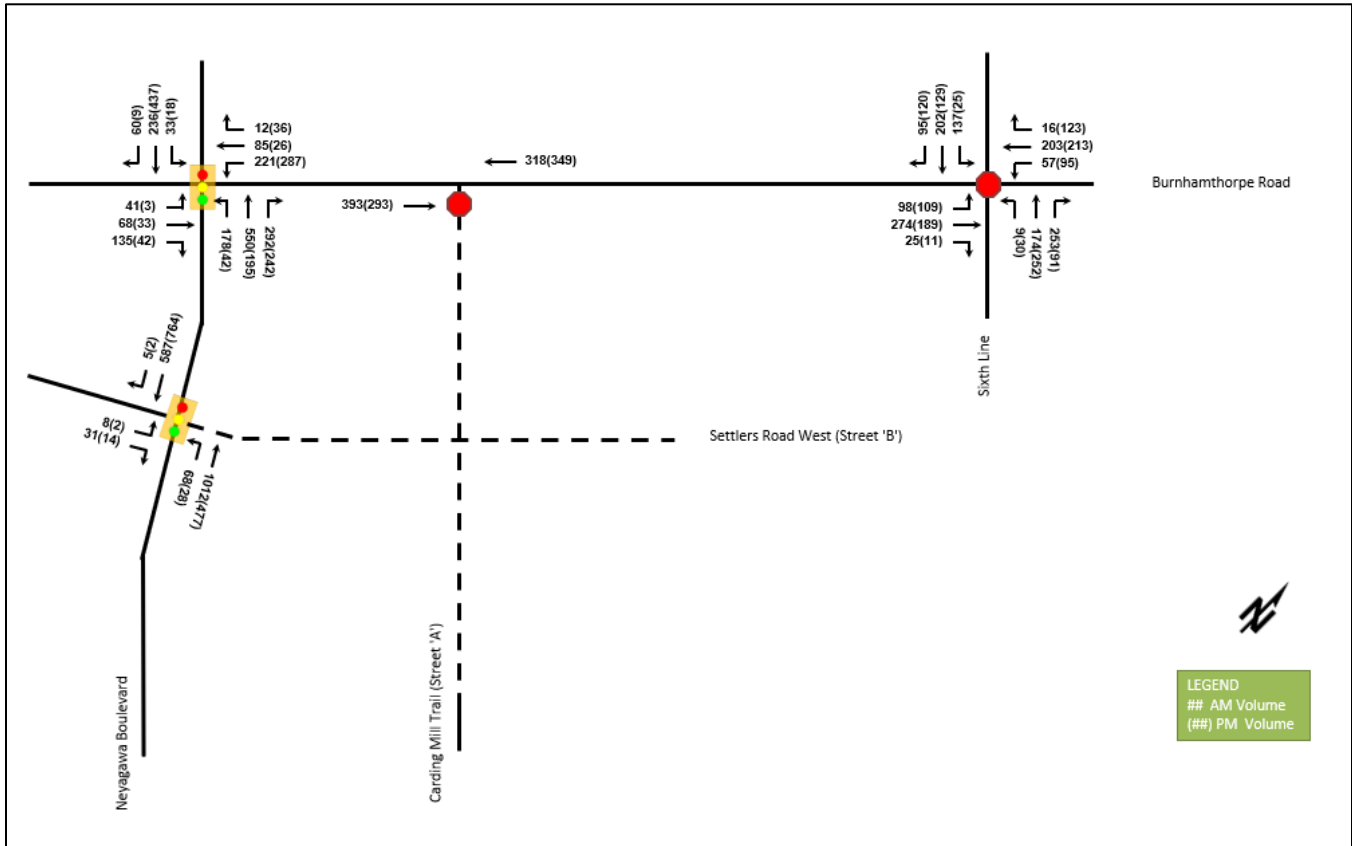
To understand the existing AM and PM peak hour traffic volumes, turning movement counts (TMC) for the Study Area intersections have been acquired from the Halton Region. As no traffic count data was available for the intersection of Settlers Road and Neyagawa Boulevard, the TMCs for this intersection were collected by Ontario Traffic Inc. To account for abnormal traffic patterns during COVID 19 lockdown measures, the southbound and northbound traffic counted in 2020 at Settlers Road and Neyagawa Boulevard intersection was increased (balanced) to align with the 2019 traffic volumes at Burnhamthorpe Road and Neyagawa Road intersection. Table 1 summarizes the date of the most recent turning movement count at each Study Area intersection.

*Table 1: Turning Movement Count Data Dates and Data Source*

<b>Intersection</b>	<b>Count Date</b>	<b>Data Source</b>
<b>Burnhamthorpe Road at Neyagawa Boulevard</b>	December 4, 2019	Halton Region
<b>Burnhamthorpe Road at Sixth Line</b>	December 4, 2019	Halton Region
<b>Settlers Road at Neyagawa Boulevard</b>	November 17, 2020	Ontario Traffic Inc.

A 2% per annum compound annual growth rate was applied to the turning movement counts to reflect a 2021 analysis horizon. This is consistent with the Transportation Impact Studies of nearby sites (Neighborhood 9/10/11 and Sherborne Lodge) prepared by CGH Transportation. The turning movement count volumes, grown to reflect a 2021 horizon, and balanced to account for traffic abnormalities during COVID 19 lockdown measures, are illustrated in Figure 7. Turning movement count data is included in Appendix C.

Figure 7: 2021 Adjusted Traffic Volumes



### 3 Future Background Conditions

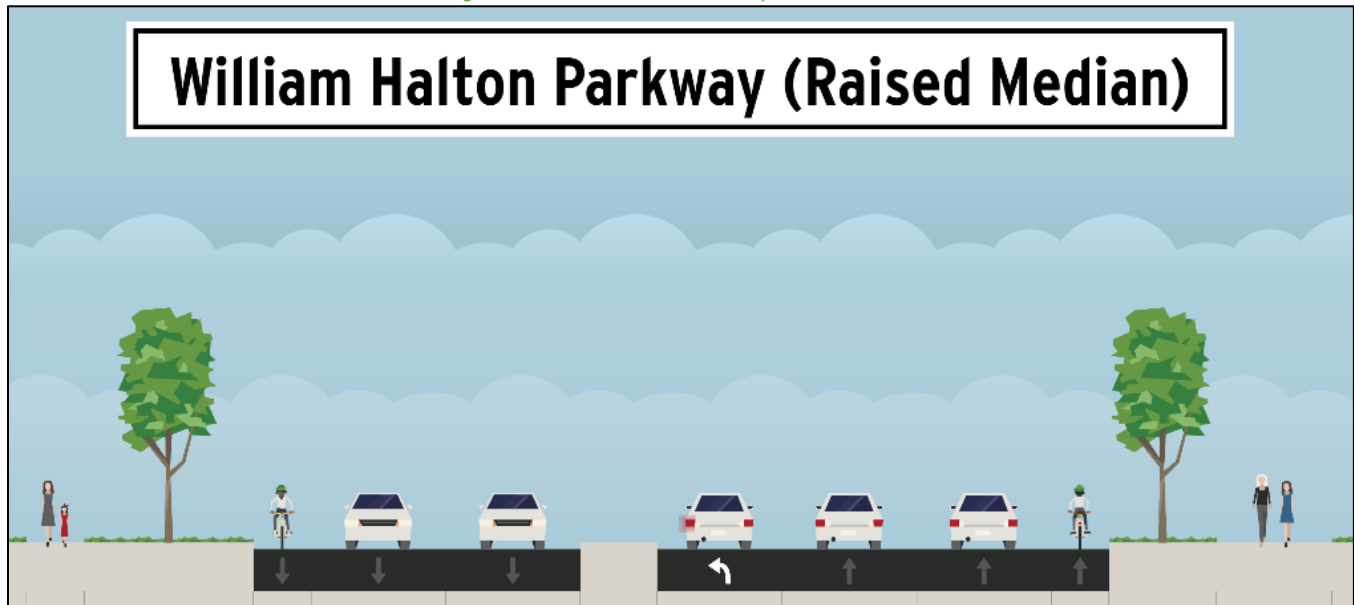
#### 3.1 Planned Conditions

##### 3.1.1 William Halton Parkway

North of, and parallel to, the existing Burnhamthorpe Road corridor is a planned arterial roadway corridor. This corridor, referred to as William Halton Parkway, is to be constructed in multiple phases and will ultimately connect from Bronte Road in the west to Ninth Line in the east. The section relevant to this TIS, Neyagawa Boulevard to Sixth Line, is anticipated to be completed by Winter 2022. The proposed cross-section has been recreated using Streetmix.net, illustrated in Figure 8, and includes the following elements (from left to right):

- 0.5 metre buffer
- 1.5 metre sidewalk
- 4.45 metre planting strip
- 1.5 metre bike lane
- Two 3.5 metre drive lanes
- 2.0 metre median
- 3.25 metre turn lanes (only at intersections)
- Two 3.5 metre drive lanes
- 1.5 metre bike lane
- 2.8 metre planting strip
- 3.0 metre multi-use pathway
- 0.5 metre buffer

Figure 8: William Halton Parkway Cross-Section



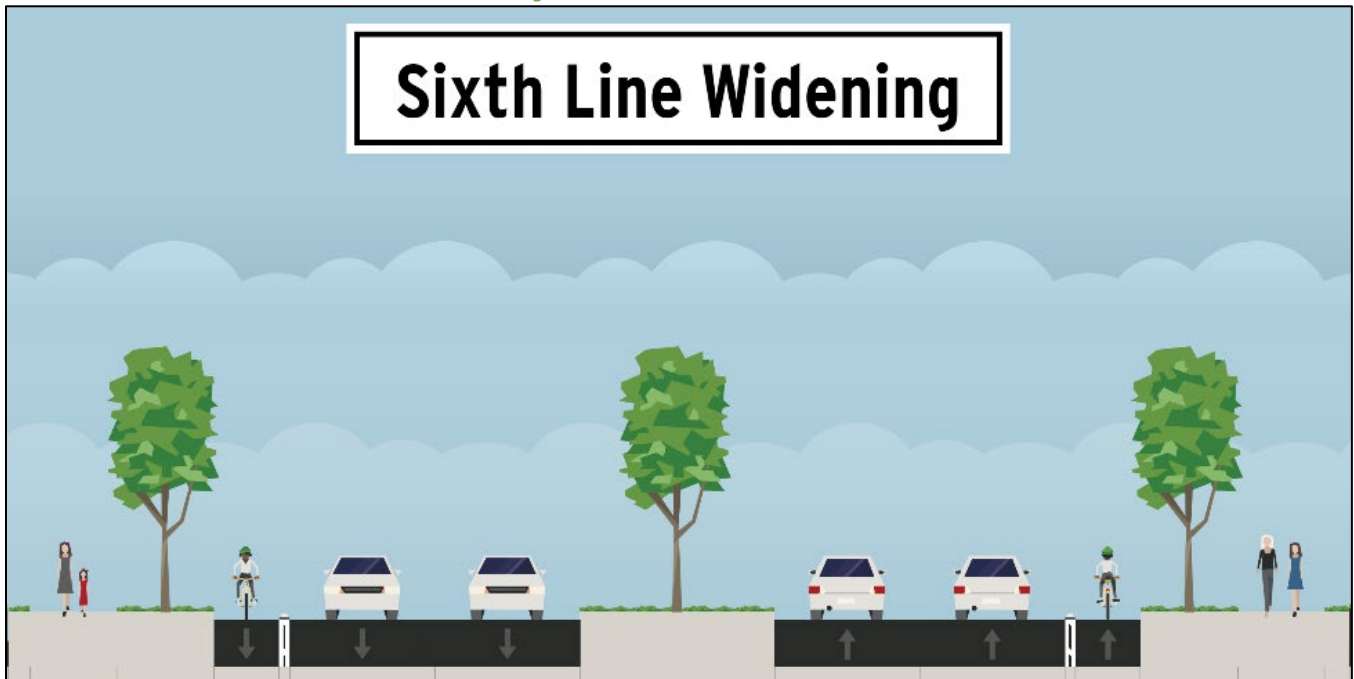
The Region of Halton has indicated that a peak hour volume of 2100 vehicles per hour in each direction should be assumed for William Halton Parkway for a neighboring site (Neighborhood 9/10/11 Landowner's Group) TIS, prepared by CGH Transportation in 2020. The email confirming the volumes along William Halton Parkway is attached in Appendix D.

### 3.1.2 Sixth Line Widening

Sixth Line is the main north-south corridor in the Study Area. This corridor has been the subject of an Environmental Assessment to examine widening Sixth Line from two-lanes to four-lanes between Dundas Street and just south of Highway 407. The proposed cross-section has been recreated using Streetmix.net, illustrated in Figure 9 and includes the following elements (from left to right):

- 0.5 metre buffer
- 2.0 metre sidewalk
- 2.25 metre planting strip
- 1.55 metre bike lane
- 0.25 metre buffer strip
- Two 3.35 metre drive lanes
- 4.5 metre median (would accommodate left turn lanes where needed)
- Two 3.35 metre drive lanes
- 0.25 metre buffer strip
- 1.55 metre bike lane
- 2.25 metre planting strip
- 2.0 metre sidewalk
- 0.5 metre buffer

Figure 9: Sixth Line Cross-Section

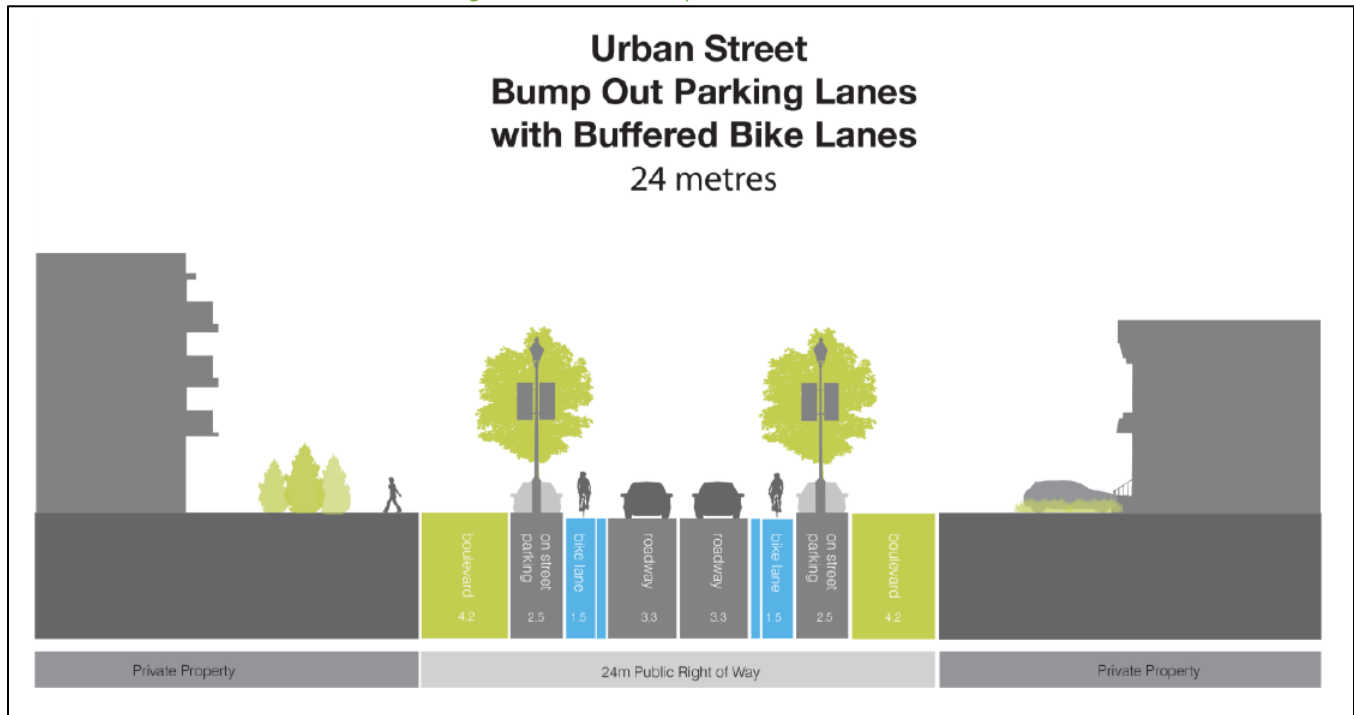


### 3.1.3 Burnhamthorpe Road

Burnhamthorpe Road is currently a Halton Region arterial road. After the construction of William Halton Parkway, which will serve as an east-west corridor of a regional importance, Burnhamthorpe Road will transition to the Town of Oakville jurisdiction and serve as a multi-modal roadway. The Burnhamthorpe Road Character Study and Municipal Class Environmental Assessment (MMM Group, 2014) indicates that within the Study Area, Burnhamthorpe Road will range between a total of two and four lanes. The proposed cross-section can be seen in Figure 10 and is excerpt from Burnhamthorpe Road Character Study and Municipal Class EA. The cross-section includes the following elements (from left to right):

- 4.2 metre boulevard
- 2.5 metre planting strip or on-street parking
- 1.5 metre like lane
- 3.3 metre drive lane
- 3.3 metre drive lane
- 1.5 metre like lane
- 2.5 metre planting strip or on-street parking
- 4.2 metre boulevard

Figure 10: Burnhamthorpe Road Cross-Section



Reference: Burnhamthorpe Road Character Study and Municipal Class EA; MMM Group; December 2014

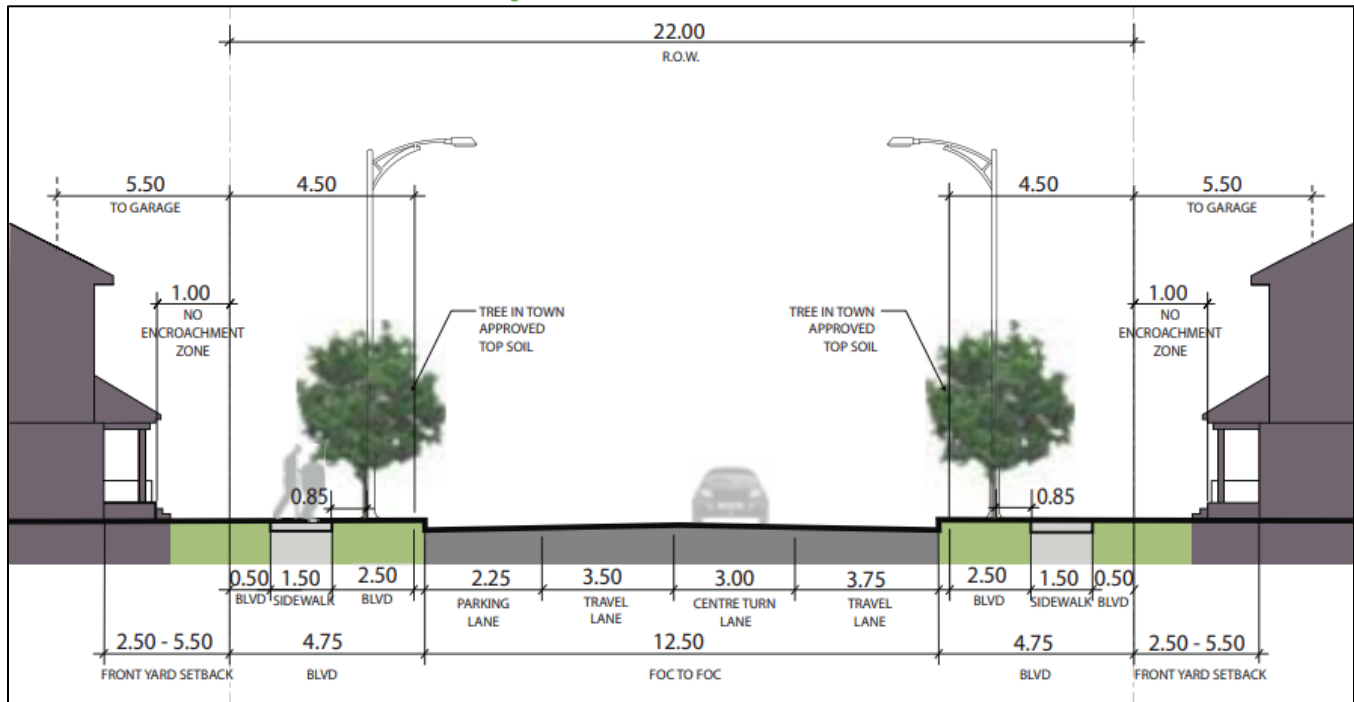
### 3.1.4 Settlers Road West

Settlers Road West is a Town of Oakville proposed east/west avenue/transit corridor according to the North Oakville East Secondary Plan. Settlers Road West is currently built from Fourth Line to Neyagawa Boulevard. In future horizons, this road will extend east, passing through the subject development and future adjacent developments, connecting the proposed community to Neyagawa Boulevard and beyond to the west, and Sixth Line and beyond to the east. The section relevant to this TIS is anticipated to be completed by the 2025 future horizon. The proposed cross-section can be seen in Figure 11, and is excerpt from North Oakville Urban Design and Open Space Guidelines. The cross-section includes the following elements (from left to right):

- 0.5 metre buffer
- 1.5 metre sidewalk
- 2.5 metre planting strip
- 2.25 metre parking lane
- 3.5 metre drive lane
- 3.0 metre centre turn lane
- 3.75 metre drive lane
- 2.5 metre planting strip
- 1.5 metre sidewalk
- 0.5 metre buffer



Figure 11: Settlers Road Cross-Section



Reference: North Oakville Urban Design and Open Space Guidelines; November 2009

### 3.1.5 North Oakville East Secondary Plan – Transportation Plan

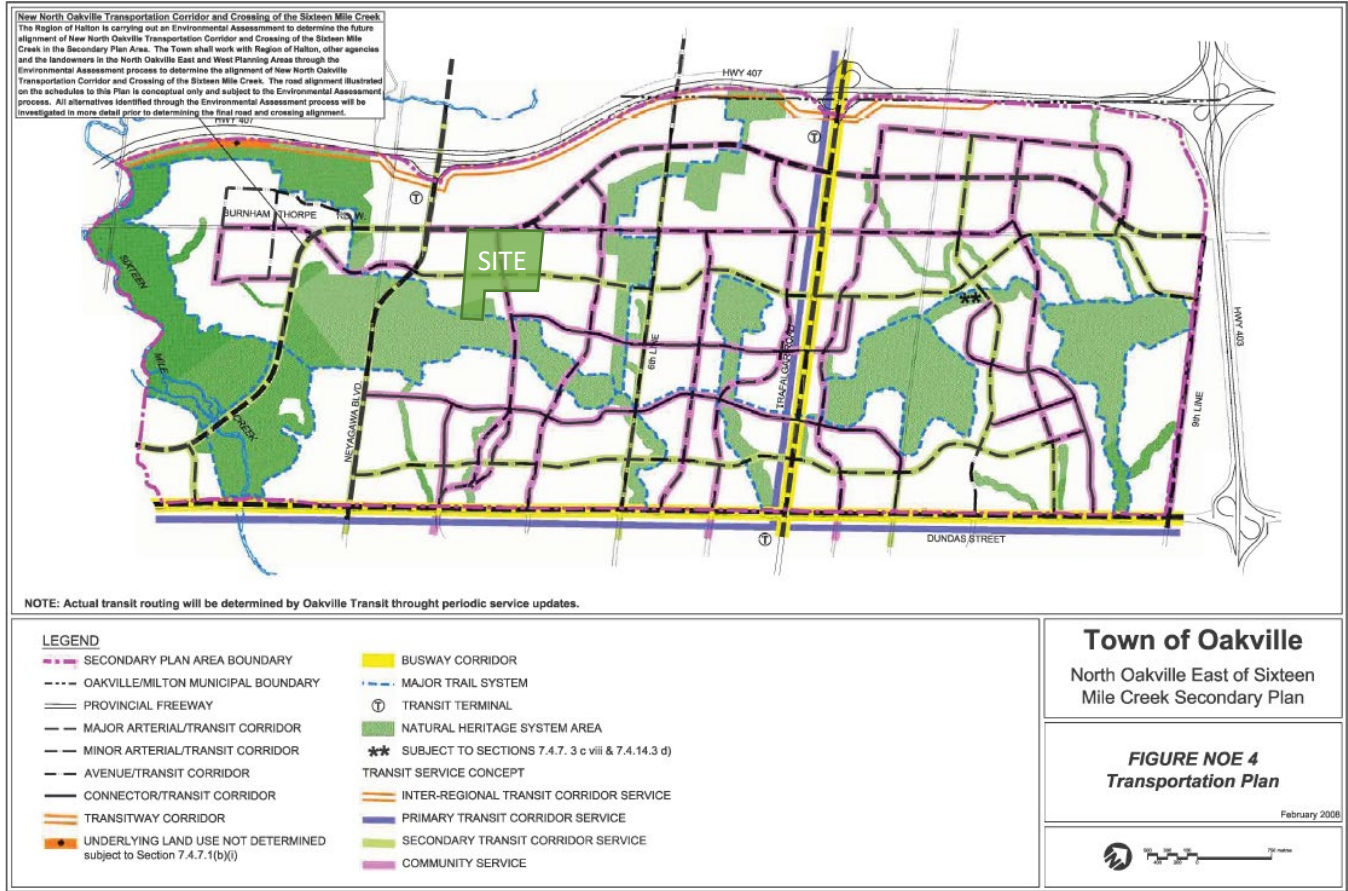
The North Oakville East Secondary Plan includes transit routes along key corridors within the proposed developments. Figure 12 illustrates the North Oakville East Secondary Plan Transportation Plan. Within the Study Area the following roads are noted as Secondary Transit Corridor Service:

- Sixth Line
- Neyagawa Boulevard
- Settler’s Road

The following Study Area roads are noted as Community Service Transit corridors:

- William Halton Parkway
- Burnhamthorpe Road

Figure 12: North Oakville East Secondary Plan – Transportation Plan



### 3.2 Other Study Area Developments

West and south of the proposed development and along Sixth Line are several ongoing developments. The TISs for those developments have been reviewed to determine the amount of background traffic that would be added to the Study Area road network as a result of those developments. The following nearby developments will be considered as part of the background traffic growth:

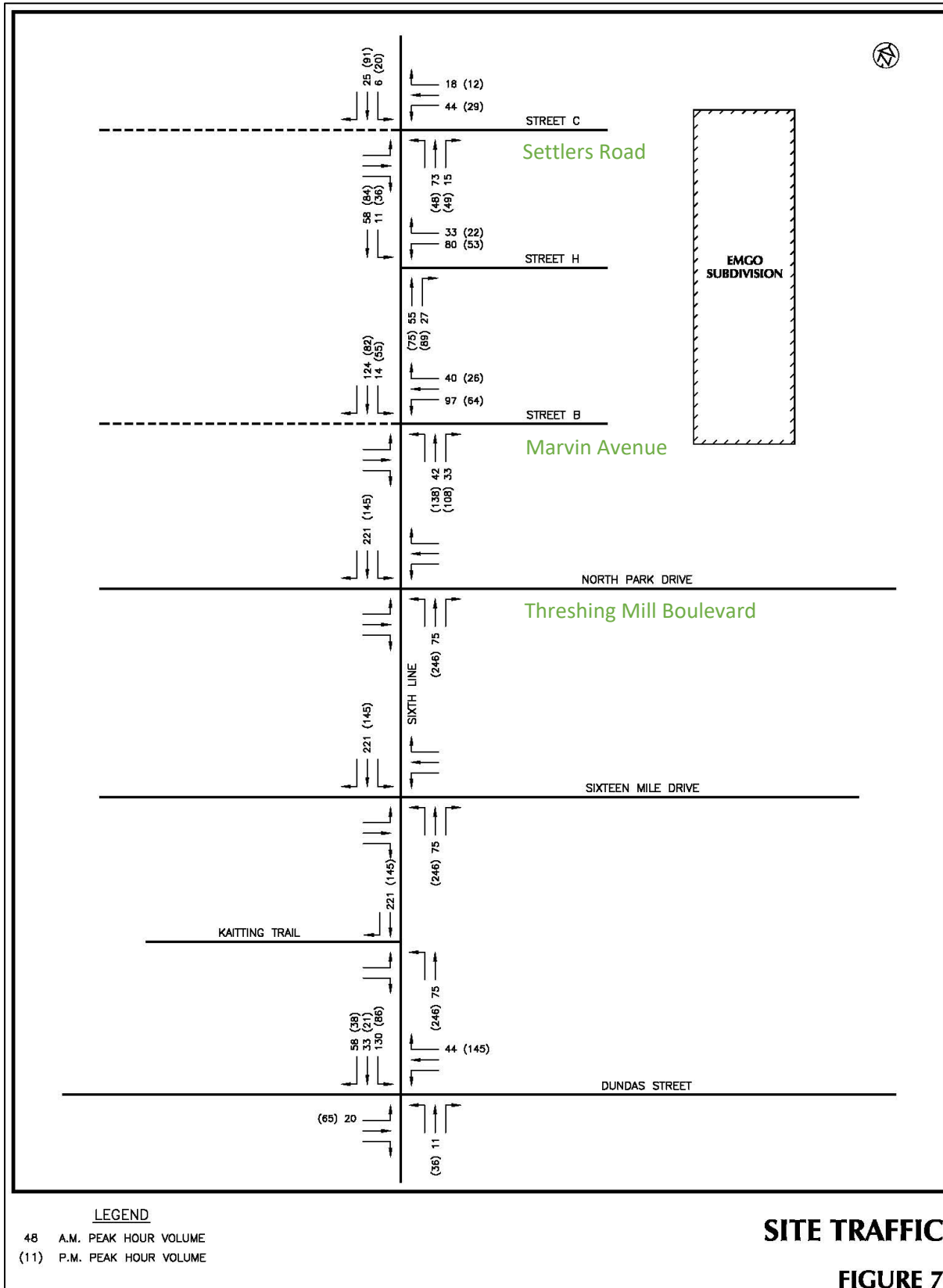
- EMGO North Oakville
- Petgor
- Sixth Line Corporation (NE Corner of Sixth Line at Dundas Street)
- Star Oak (NE Corner of Burnhamthorpe Road at Sixth Line)
- Landowner’s Group Neighborhood 9/10/11
- Sherborne Lodge

Each background development, and the traffic associated with it, has been summarized in the subsections below.

#### 3.2.1 EMGO North Oakville

The EMGO North Oakville development is located along Sixth Line between Dundas Street and Burnhamthorpe Road. This development includes 618 residential units with a mix of detached single-family units, and townhouse type units. Access to this development will be via three accesses on Sixth Line. The traffic generated by the EMGO development is summarized in Figure 13, commentary in green has been added to denote the updated name of the streets for ease of reference.

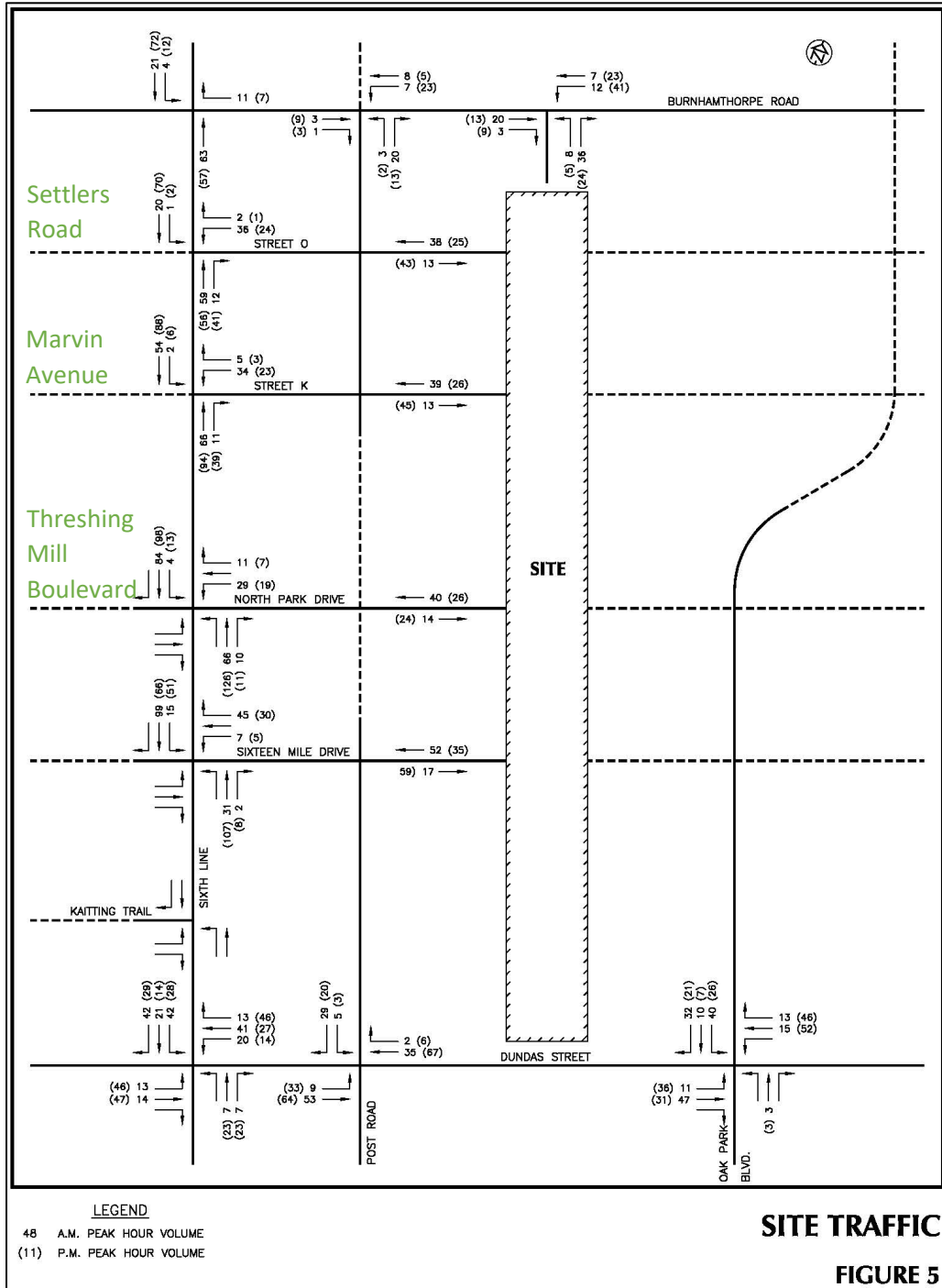
Figure 13: EMGO Site Generated Traffic



3.2.2 Petgor Draft Plan North Oakville

The Petgor Draft Plan North Oakville development is located between Sixth Line and Trafalgar Road, approximately halfway between the two roads. This development includes 780 residential units with a mix of detached single-family units, and townhouse units. Access to this development will be via roads through the adjacent developments to both Sixth Line and Trafalgar Road and direct access onto Burnhamthorpe Road. The traffic generated by the Petgor development is summarized in Figure 14, commentary in green has been added to denote the updated name of the streets for ease of reference.

Figure 14: Petgor Site Generated Traffic

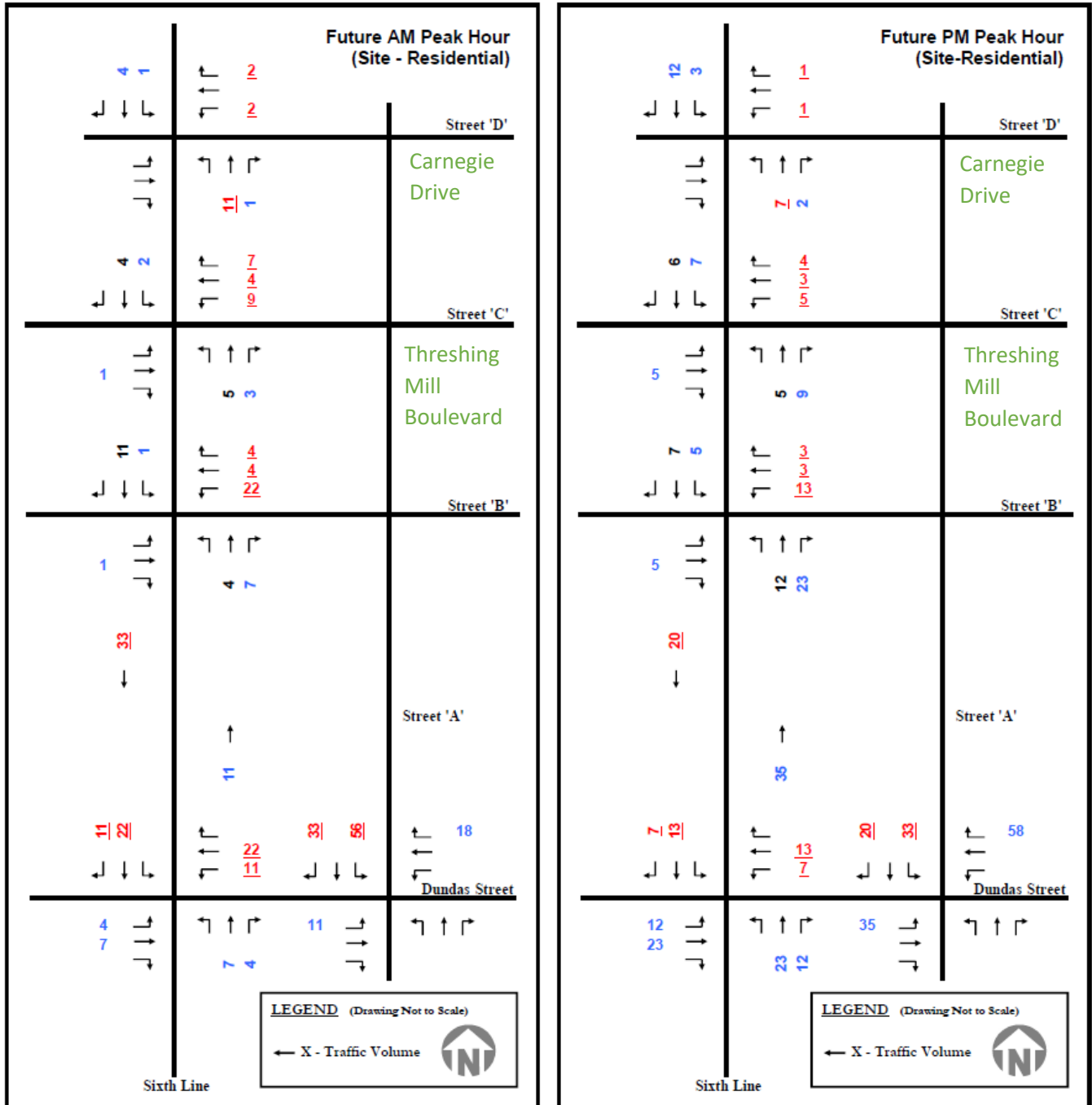


Reference: Traffic Impact Study Petgor Draft Plan North Oakville; Reed, Voorhees & Associates; December 2012

3.2.3 Sixth Line Corporation

The Sixth Line Corporation development is located at the northeast quadrant of Sixth Line at Dundas Street. This development includes 530 residential units with a mix of detached single-family units, and townhouse type units. Access to this development will be via three accesses on Sixth Line. The traffic generated by the Sixth Line Corporation is summarized in Figure 15, commentary in green has been added to denote the updated name of the streets for ease of reference.

Figure 15: Sixth Line Corporation Site Generated Traffic

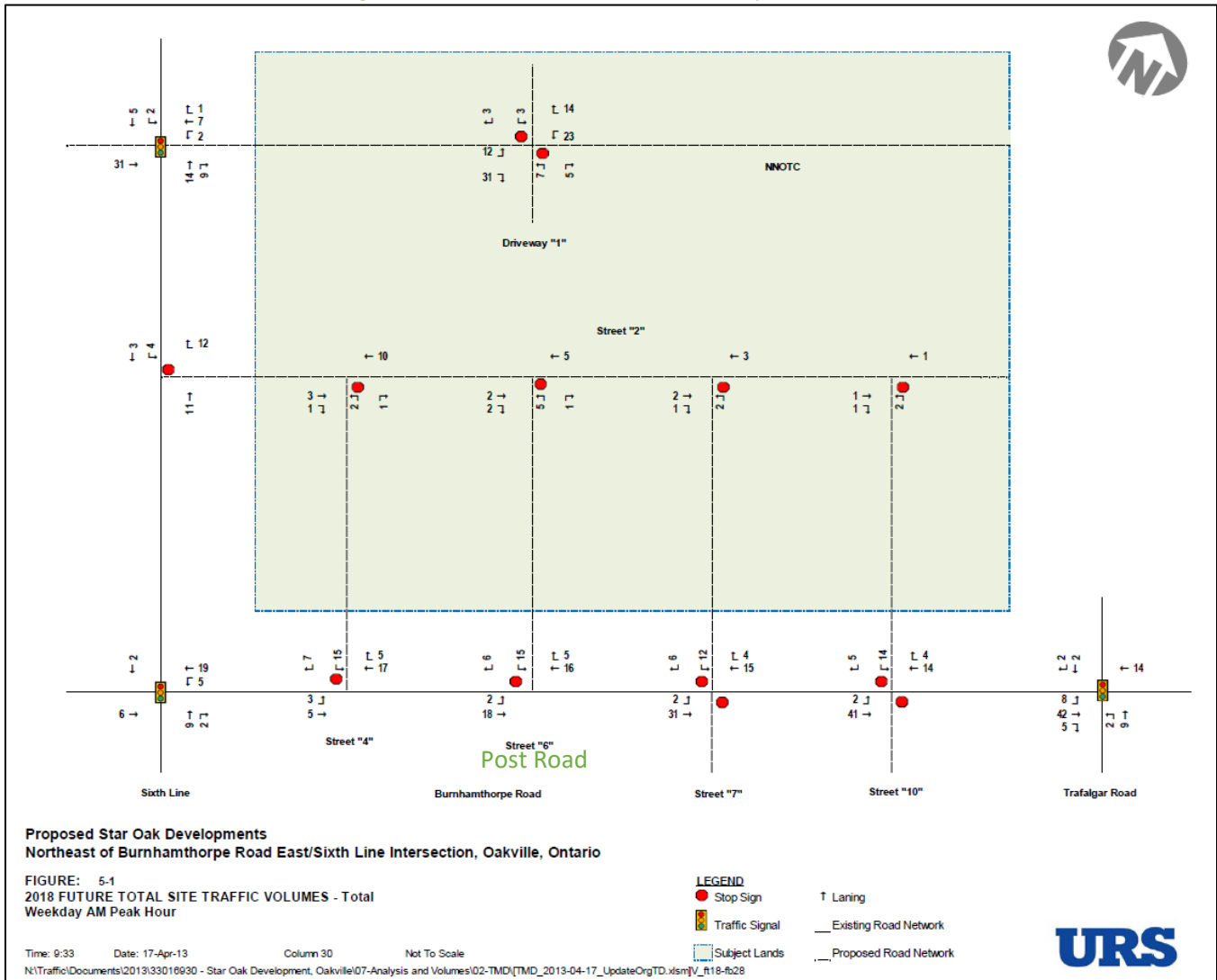


Reference: Traffic Impact Study Sixth Line Development Town of Oakville; URS Canada; November 2012

3.2.4 Star Oak (Northeast Corner of Burnhamthorpe at Sixth Line)

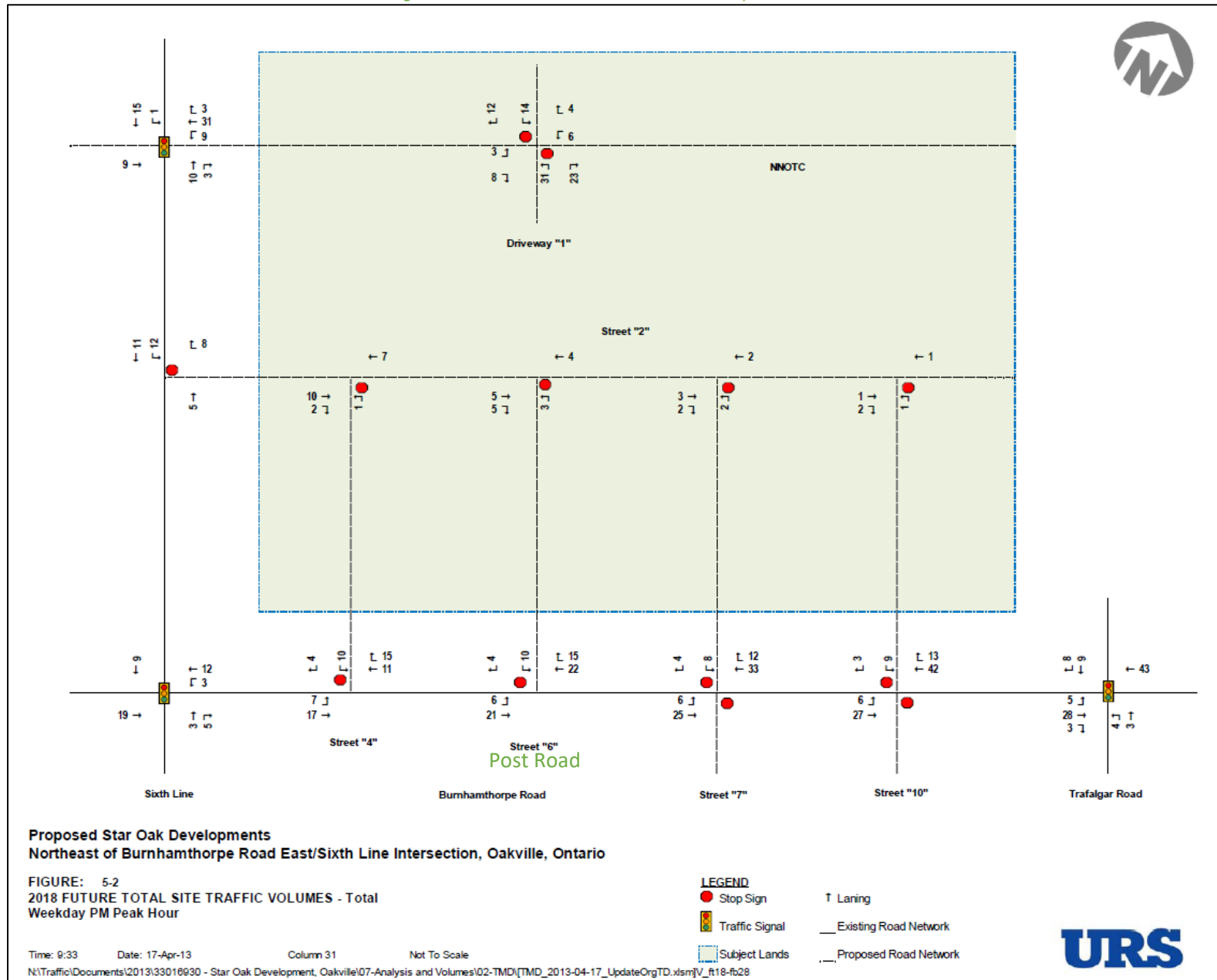
The Star Oak development is located at the northeast quadrant of Burnhamthorpe Road at Sixth Line. This development includes 217 residential units with a mix of detached single-family units, and townhouse type units and 154,000 square metres of employment uses. The residential portion of the development is anticipated to be completed prior to the 2025 horizon of this study. The employment uses are not anticipated to be completed until 2028, prior to the 2030 horizon of this study. This development will connect to the road network via accesses on Sixth Line, Burnhamthorpe Road, and William Halton Parkway. The traffic generated by the Star Oak Development is summarized in Figure 16 and Figure 17 for the residential portion of the development. Figure 18 and Figure 19 illustrate the total trips generated by the Star Oak Development. Commentary in green has been added to denote the updated name of the streets for ease of reference.

Figure 16: Star Oak 2018 AM Peak Hour Site Trip Generation



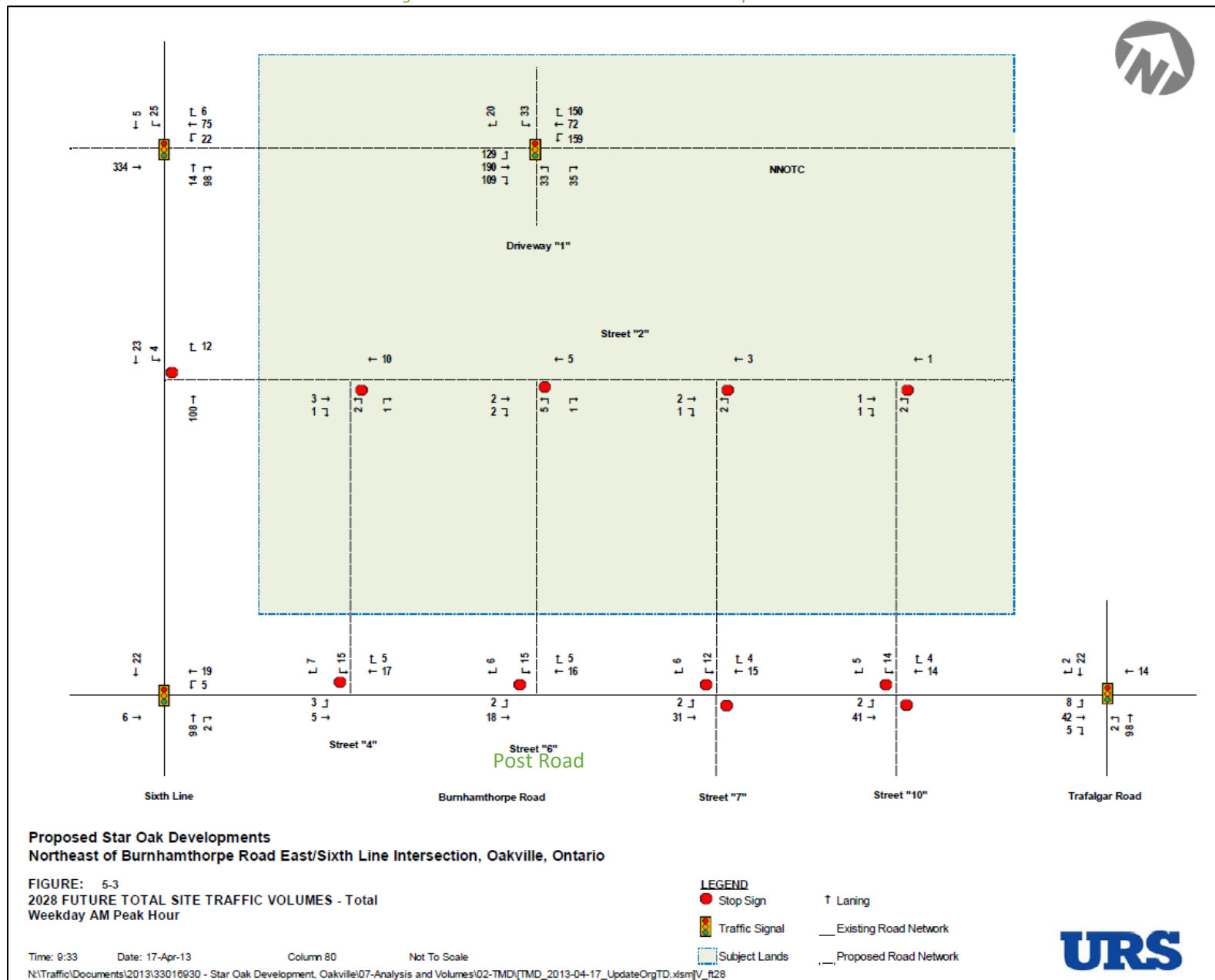
Reference: Traffic Impact Study Star Oak Developments Town of Oakville; URS Canada; April 2013

Figure 17: Star Oak 2018 PM Peak Hour Site Trip Generation



Reference: Traffic Impact Study Star Oak Developments Town of Oakville; URS Canada; April 2013

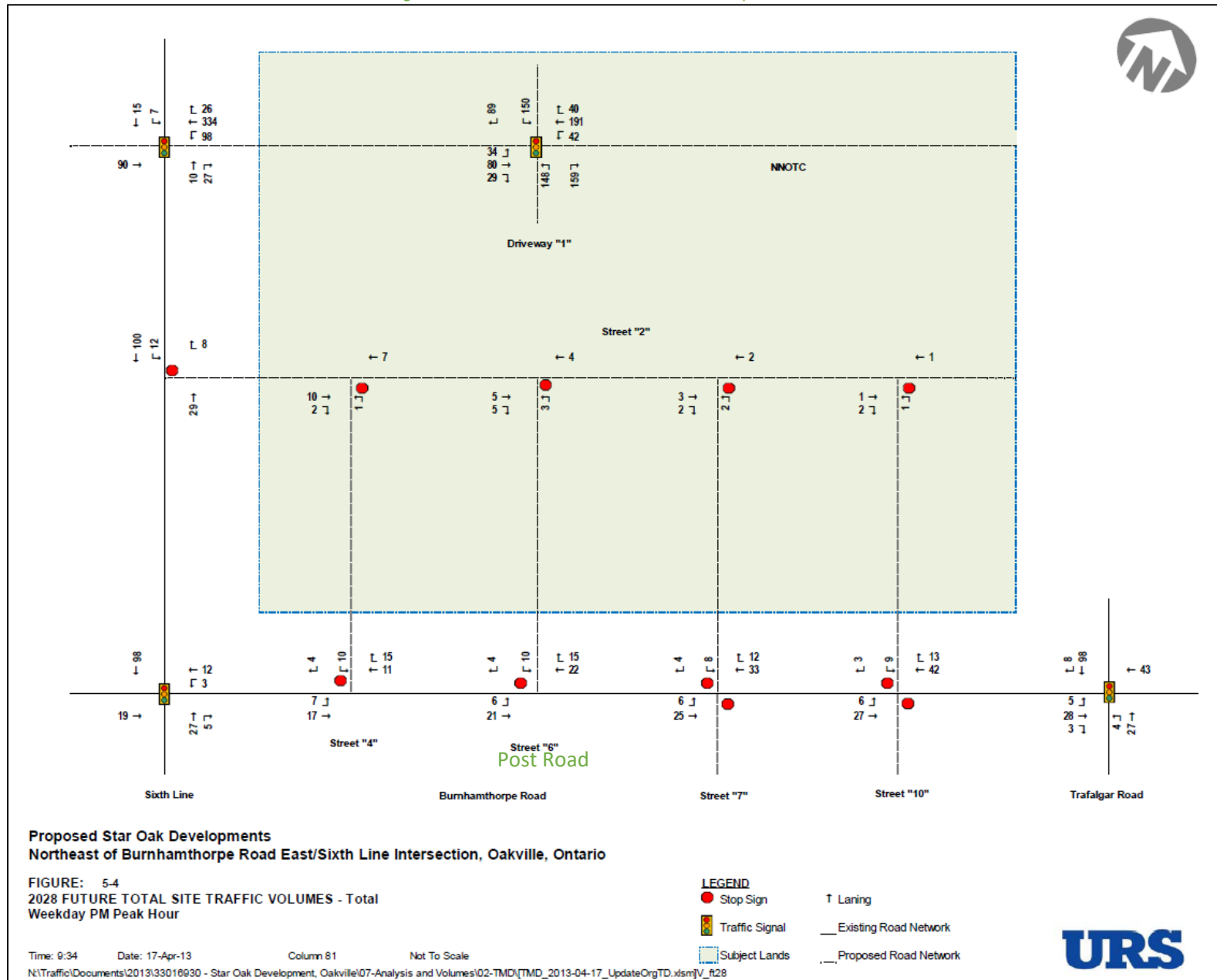
Figure 18: Star Oak 2028 AM Peak Hour Site Trip Generation



Reference: Traffic Impact Study Star Oak Developments Town of Oakville; URS Canada; April 2013



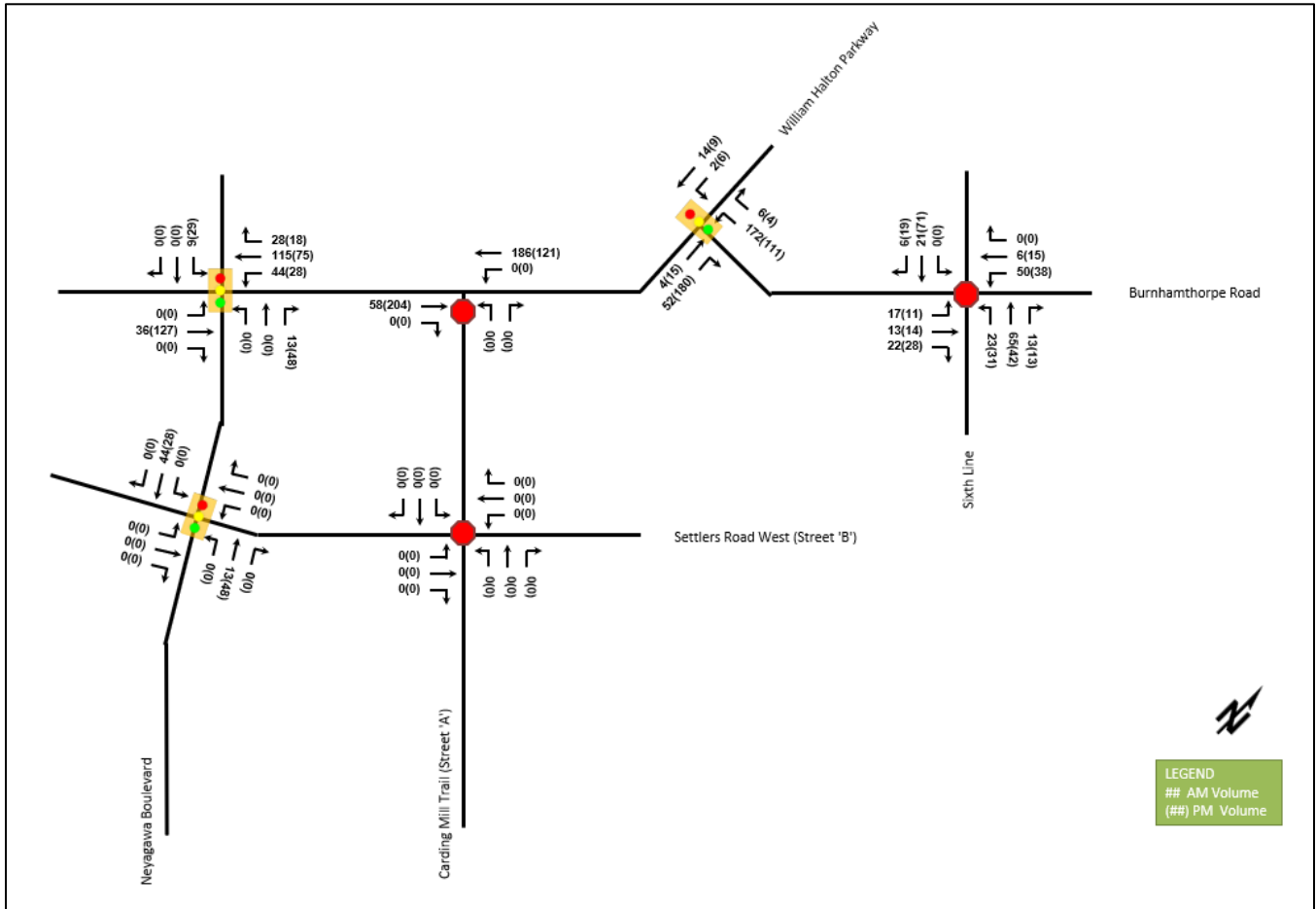
Figure 19: Star Oak 2028 PM Peak Hour Site Trip Generation



Reference: Traffic Impact Study Star Oak Developments Town of Oakville; URS Canada; April 2013



Figure 21: Neighborhood 9/10/11 2030 Site Trip Generation



### 3.2.6 Sherborne Lodge

North Oakville Sherborne Lodge Development is bordering the subject development to the west. This development includes an apartment block with anticipated 296 units, a low-rise subdivision with 84 single detached homes, and 128 townhouses, a commercial block, and an elementary school. This development will connect to the road network via one access on William Halton Parkway, and one access on Settlers Road West. The 2026 and 2031 Sherborne Lodge trip generation is illustrated in Figure 22 and Figure 23, respectively.

Figure 22: Sherborne Lodge 2026 Site Trip Generation

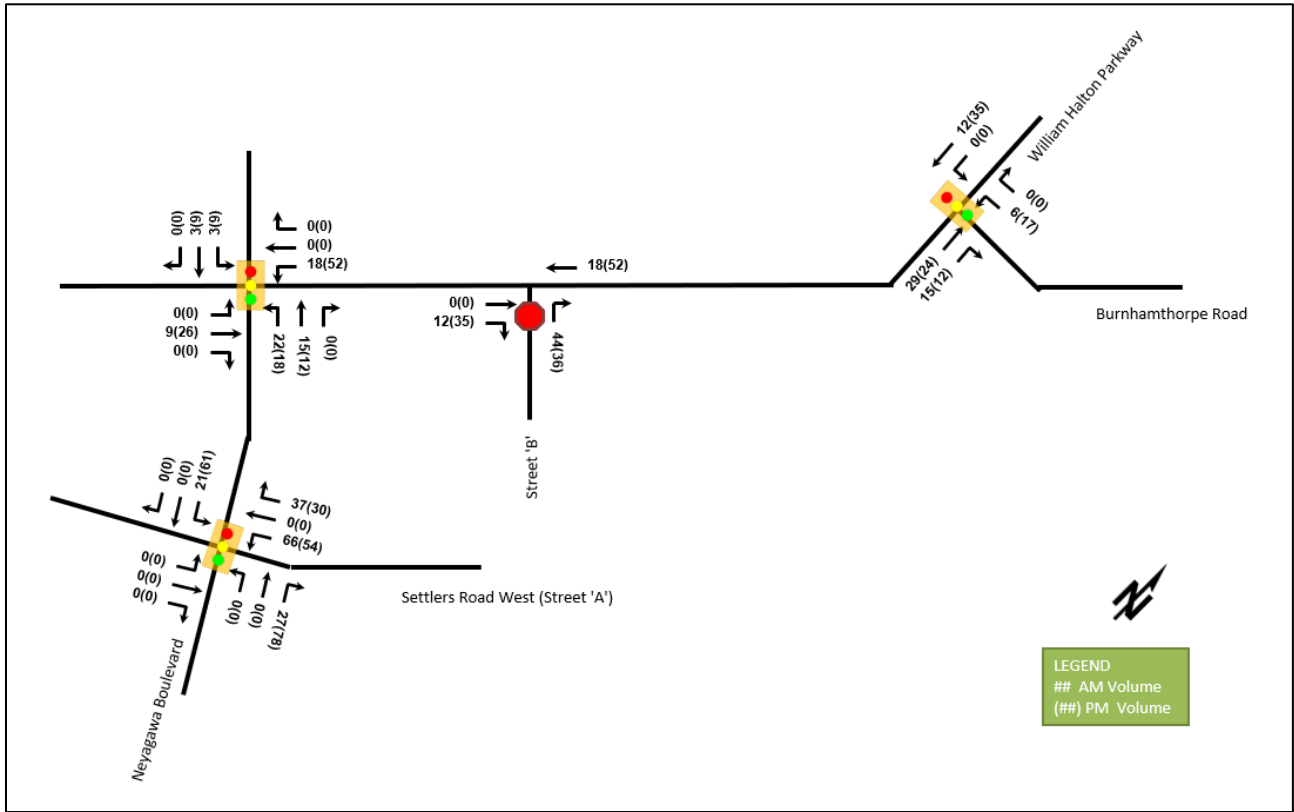
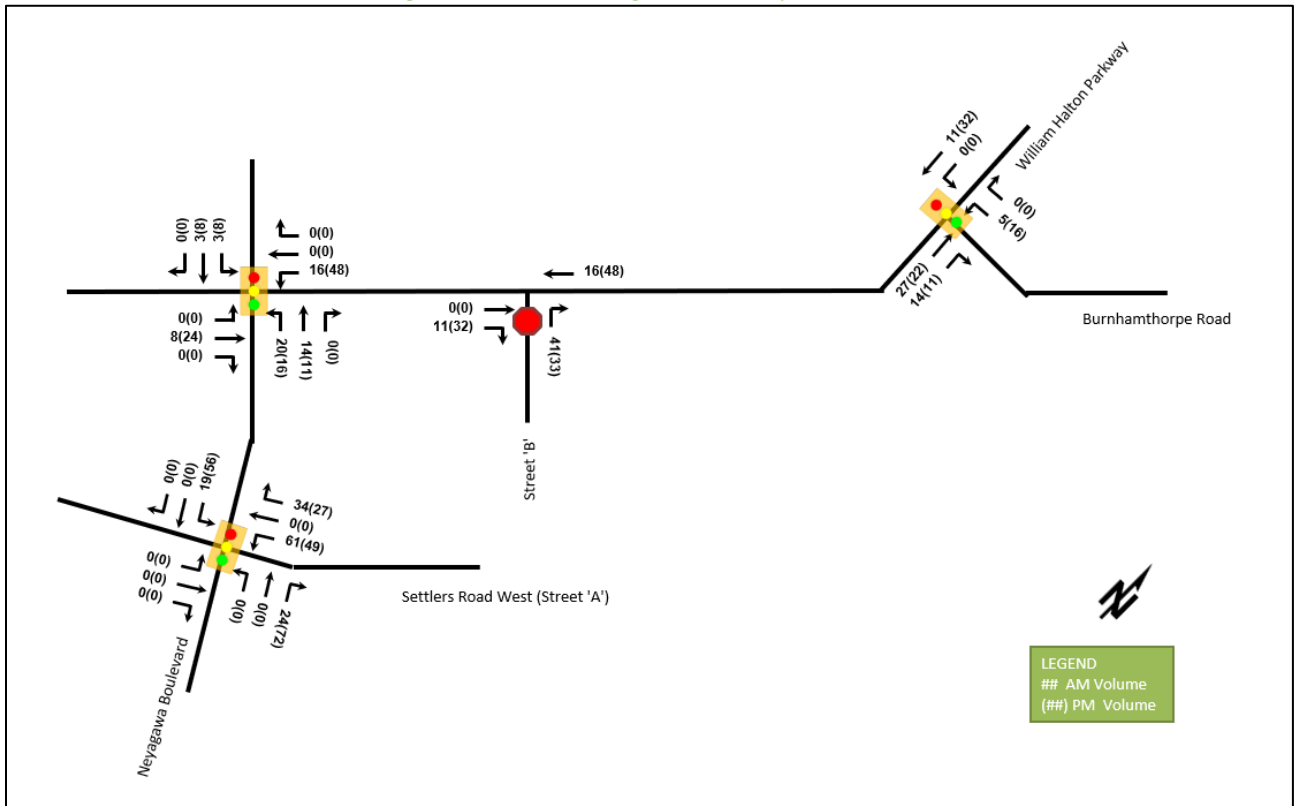


Figure 23: Sherborne Lodge 2031 Site Trip Generation



### 3.3 Background Growth

As discussed in Section 2.5 historical traffic counts have been reviewed to determine the historical growth rate. A 2% compound annual growth rate was selected.

### 3.4 Future Background Traffic Volumes

Using the background growth rate, the balanced turning movement volumes were grown along Neyagawa Boulevard, Burnhamthorpe Road, and Sixth Line to reflect the 2026 and 2031 Future Background traffic volumes. Additionally, at Neyagawa Boulevard and Burnhamthorpe Road the volumes have been increased to reflect the future eastbound and westbound volumes on William Halton Parkway. As discussed in Section 3.1.1, future anticipated volumes along WHP were provided by Halton Region. It was assumed that these volumes account for growth in through traffic in the Study Area, and therefore, background growth rate was not applied along William Halton Parkway. To reflect that William Halton Parkway will replace the functionality of Burnhamthorpe Road, the eastbound and westbound traffic volumes on Burnhamthorpe Road have been reduced as the new facility will carry that traffic. This was done by assuming that traffic that is eastbound and westbound through Neyagawa Boulevard would utilize the new William Halton Parkway whereas most traffic that is turning at any of the intersections along Burnhamthorpe Road, including Neyagawa Boulevard, would remain on Burnhamthorpe Road. Using these assumptions, traffic from Burnhamthorpe Road was reassigned and layered onto the background growth. Figure 24 illustrates the 2025 Future Background traffic volumes. Figure 25 illustrates the 2030 Future Background traffic volumes.

Figure 24: 2026 Future Background Traffic Volumes

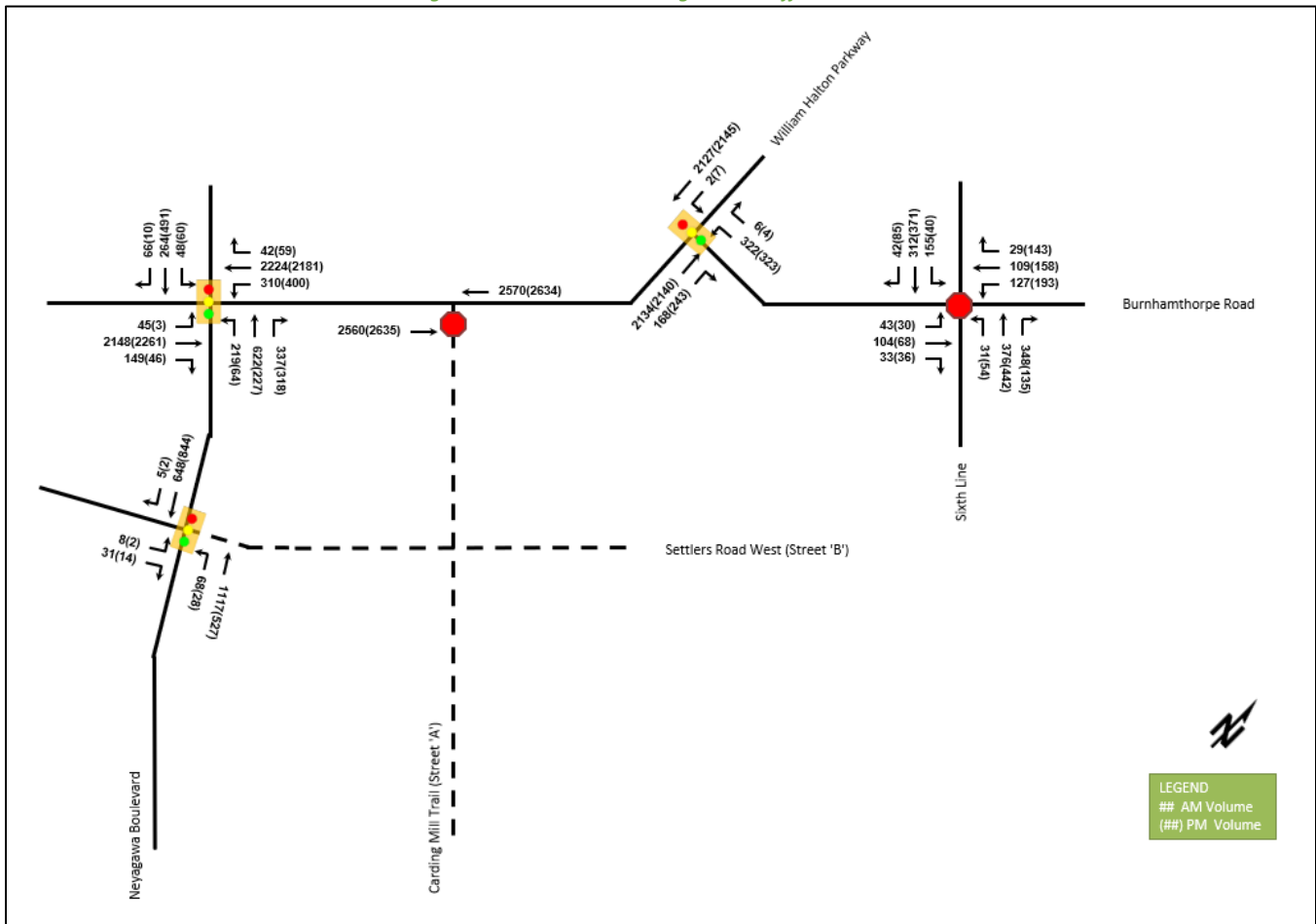
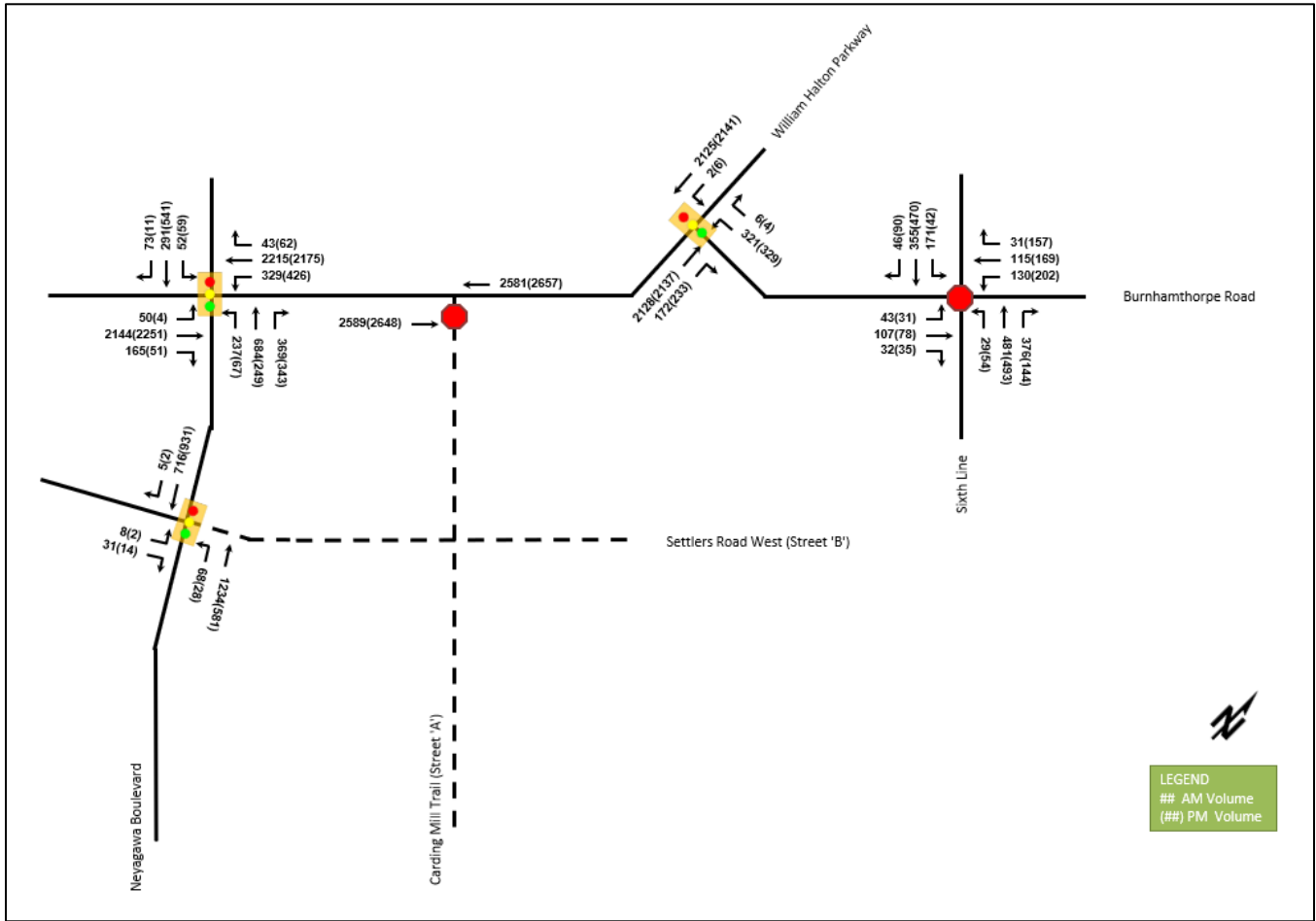


Figure 25: 2031 Future Background Traffic Volumes



## 4 Forecasting

### 4.1 Trip Generation and Mode Shares

The ITE Trip Generation Manual 10<sup>th</sup> Edition has been reviewed to determine the appropriate trip generation rate equations for the proposed land uses. The rate equations were used to determine appropriate vehicle trip generation rates for the residential portion of the development, and average trip rates were used for the commercial component. The Multifamily Housing (Low-Rise) is used to estimate trips for street townhouses and lane-based townhouses. Table 2 summarizes the ITE Trip Generation Equations and directional splits for each land use.

Table 2: ITE Equations and Directional Splits

Land Use (LUC)	AM Peak hour			PM Peak Hour		
	Equation	In %	Out %	Equation	In %	Out %
Single Family Detached (210)	$T = 0.71(X) + 4.8$	25%	75%	$\ln(T) = 0.96 \ln(T) + 0.20$	63%	37%
Multifamily Housing (Low-Rise) (220)	$\ln(T) = 0.95 \ln(T) - 0.51$	23%	77%	$\ln(T) = 0.89 \ln(T) - 0.02$	63%	37%
Multifamily Housing (Mid-Rise) (221)	$\ln(T) = 0.98 \ln(T) - 0.98$	26%	74%	$\ln(T) = 0.96 \ln(T) - 0.63$	61%	39%
Shopping Centre (820)	-	62%	38%	-	48%	52%

Using the above equations, the base vehicle trip rates for each development were calculated. These are converted to person trips using the 1.28 factor. Table 3 summarizes the person trip rates for the proposed land uses.

Table 3: ITE Trip Generation Person Trip Rates

Property	Dwelling Type	ITE LUC	Unit Count / GFA (s.f)	Peak Hour	Vehicle Trip Rate	Person Trip Rates
Remington Eno	Single Family Detached	210	292	AM	0.73	0.93
				PM	0.97	1.24
	Multifamily Housing (Low-Rise)	220	309	AM	0.45	0.58
				PM	0.52	0.67
	Multifamily Housing (Mid-Rise)	221	295	AM	0.34	0.44
				PM	0.43	0.55
	Shopping Centre	820	15,000	AM	0.94	1.2
				PM	3.81	4.88

LUC – Land Use Code

Using the above Person Trip rates, the total person trip generation has been estimated. Table 4 below illustrates the total person trip generation by land use.

Table 4: Total Person Trip Generation

Land Use	Units/GFA (s.f.)	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Single Family Detached	292	68	204	272	228	134	362
Multifamily Housing (Low-Rise)	309	41	138	179	130	77	207
Multifamily Housing (Mid-Rise)	295	32	92	124	97	62	159
Shopping Centre	15,000	11	7	18	35	38	73
<b>Total Person Trips</b>		<b>152</b>	<b>441</b>	<b>593</b>	<b>490</b>	<b>311</b>	<b>801</b>

To account for trips that are made within the proposed Mid-Rise Building (i.e. a building resident using retail portion of the mid-rise before coming home from work), an internal capture rate has been applied to the total person trip generation of the Retail land use. The ITE Trip Generation Handbook (3<sup>d</sup> Edition) provides the internal trip capture rates for trip origins and destinations within a mixed-use development and can be found in Appendix F.

The Residential portion is the largest use of the Mid-Rise Apartment Building. Therefore, this land use is treated as the anchor for this part of the development and is not reduced based on the multi-use capture rate. The commercial portion of the development, which generates a lower number of trips, has been reduced to reflect building residents utilizing the on-site retail stores. The internal capture rates for the Residential and Retail uses are summarized in Table 5. The total net person trip generation can be seen in Table 8.

Table 5: Internal Capture Rates

Land Use	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Residential to/from Retail	17%	14%	10%	26%

Table 6: Total Net Person Trip Generation

Land Use	Units/GFA (s.f.)	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Single Family Detached	292	68	204	272	228	134	362
Multifamily Housing (Low-Rise)	309	41	138	179	130	77	207
Multifamily Housing (Mid-Rise)	295	32	92	124	97	62	159
Shopping Centre	15,000	11	7	18	35	38	73
Shopping Centre Internal Capture Reduction	-	-2	-1	-3	-4	-10	-14
<b>Shopping Centre (Net)</b>	<b>15,000</b>	<b>9</b>	<b>6</b>	<b>15</b>	<b>31</b>	<b>28</b>	<b>59</b>
<b>Total Person Trips</b>		<b>150</b>	<b>440</b>	<b>590</b>	<b>486</b>	<b>301</b>	<b>787</b>

Mode share information for transit and active trips has been provided by Halton Region staff for 2026 and 2031. The total sum of auto and auto passenger mode shares has been calculated using these mode shares and split into two categories using the 2011 TTS auto driver to auto passenger mode ratio. Mode share information for 2026 and 2031 is summarized Table 7.



Table 7: Mode Share Assumptions

Travel Mode	2026 Mode Share	2031 Mode Share
Auto Driver	65%	60%
Auto Passenger	15%	15%
Transit	15%	20%
Non-Auto	5%	5%
<b>Total</b>	<b>100%</b>	<b>100%</b>

Using the above mode shares and person trip rates, the person trips by mode have been projected. Table 8 summarizes the 2026 trip generation by mode.

Table 8: 2026 Trip Generation by Mode

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto Driver	65%	97	285	383	316	194	510
Auto Passenger	15%	23	67	90	74	45	119
Transit	15%	23	67	90	74	45	119
Non-Auto Modes	5%	8	22	30	25	16	41
<b>Total</b>	<b>100%</b>	<b>150</b>	<b>440</b>	<b>590</b>	<b>486</b>	<b>301</b>	<b>787</b>

Table 9 summarizes the 2031 trip generation by mode.

Table 9: 2031 Trip Generation by Mode

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto Driver	60%	90	263	352	292	180	472
Auto Passenger	15%	23	67	90	74	45	119
Transit	20%	30	88	119	97	61	158
Non-Auto Modes	5%	8	22	30	25	16	41
<b>Total</b>	<b>100%</b>	<b>150</b>	<b>440</b>	<b>590</b>	<b>486</b>	<b>301</b>	<b>787</b>

As shown above, 590 AM and 787 PM peak hour two-way person trips are projected as a result of the proposed development. With the shift in mode share anticipated between the 2026 horizon and the 2031 horizon, the total number of auto drivers would be reduced. In 2026, the development is expected to generate 383 AM and 510 PM peak hour two-way vehicle trips, while in 2031, the net new auto trips will be reduced to a total of 352 AM and 472 PM two-way vehicle trips.

#### 4.2 Trip Distribution

To understand the travel patterns of the subject development the 2011 Transportation Tomorrow Survey (TTS) has been reviewed to determine the existing travel patterns for Oakville. This methodology is consistent with the TISs of Neighborhood 9/10/11 and Sherborne Lodge prepared by CGH Transportation in 2020 and 2021, respectively. Table 10 below summarizes the distribution.

Table 10: OD Survey – Oakville

To/From	Percent of Trips
North	15%
South	35%
East	20%
West	30%
Total	100%

### 4.3 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the Study Area road network. The total 2026 and 2031 site generated traffic volumes for the proposed development are summarized in Figure 26 and Figure 27, respectively.

Figure 26: New Site Generated Auto Volumes - 2026

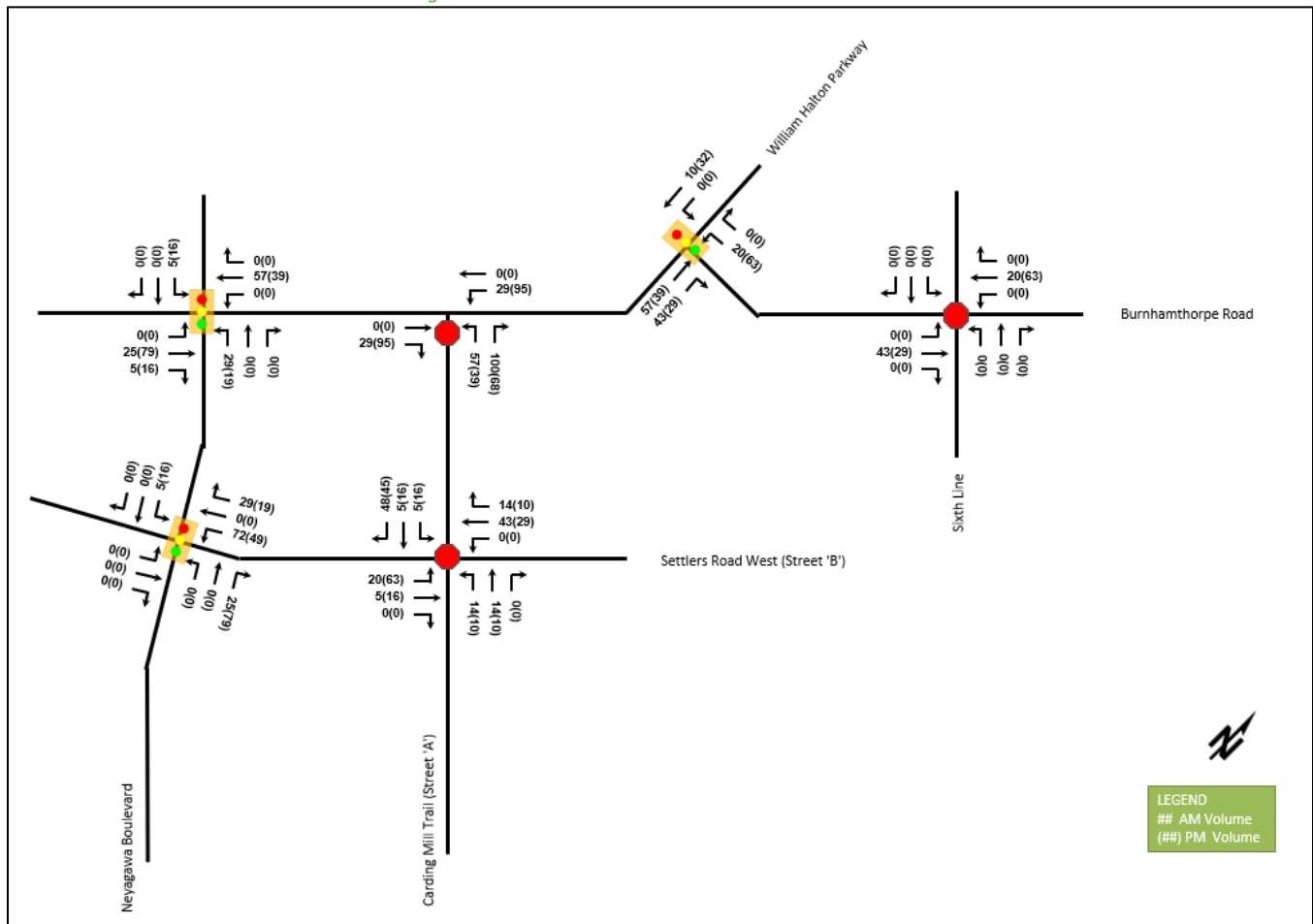
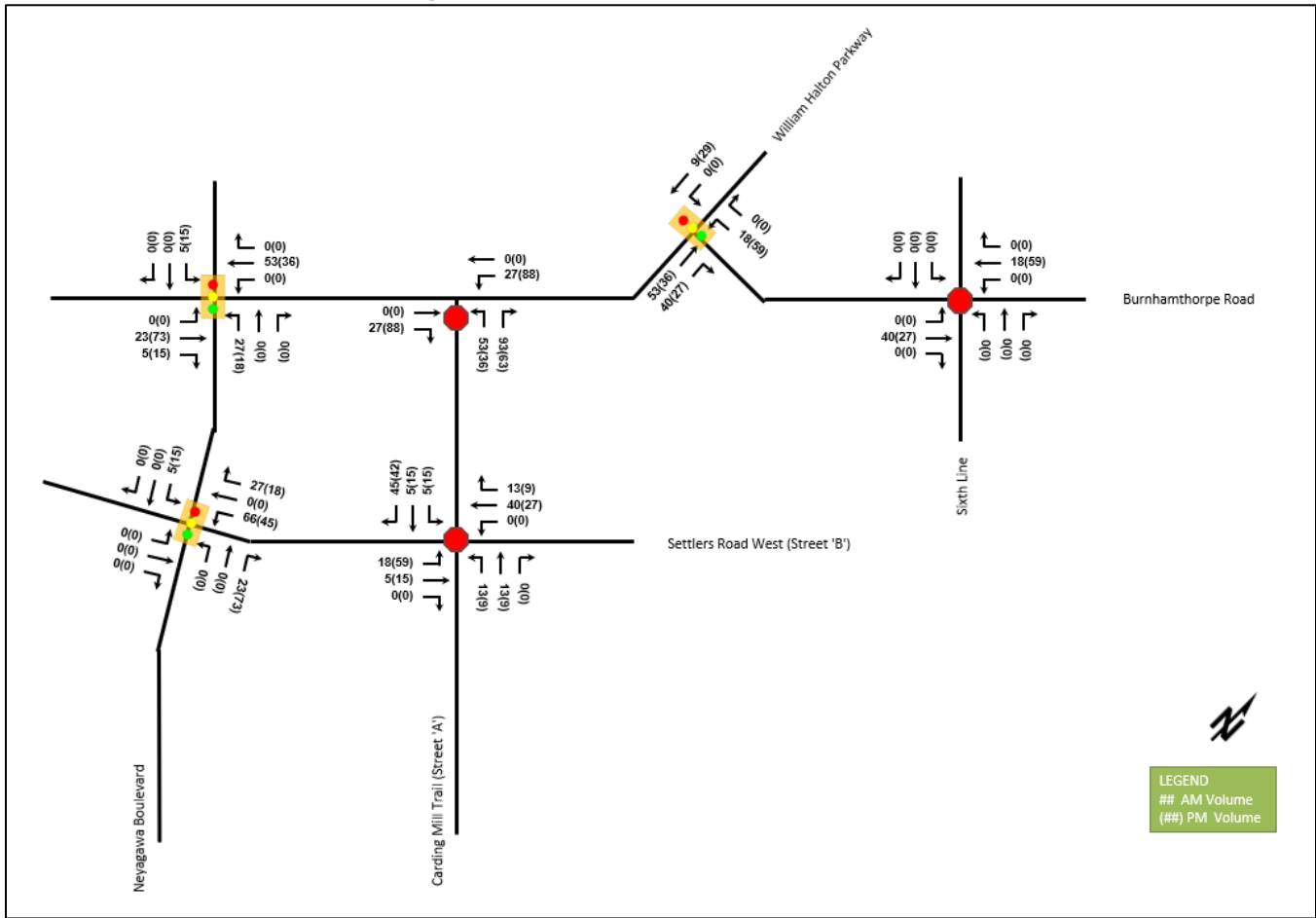


Figure 27: New Site Generated Auto Volumes - 2031



#### 4.4 Future Total Travel Demands

The site generated traffic has been combined with the 2026 and 2031 Future Background traffic volumes to estimate the Future Total traffic volumes. The 2026 and 2031 total future traffic volumes are illustrated in Figure 28 and Figure 29, respectively.

Figure 28: 2026 Future Total Traffic Volumes

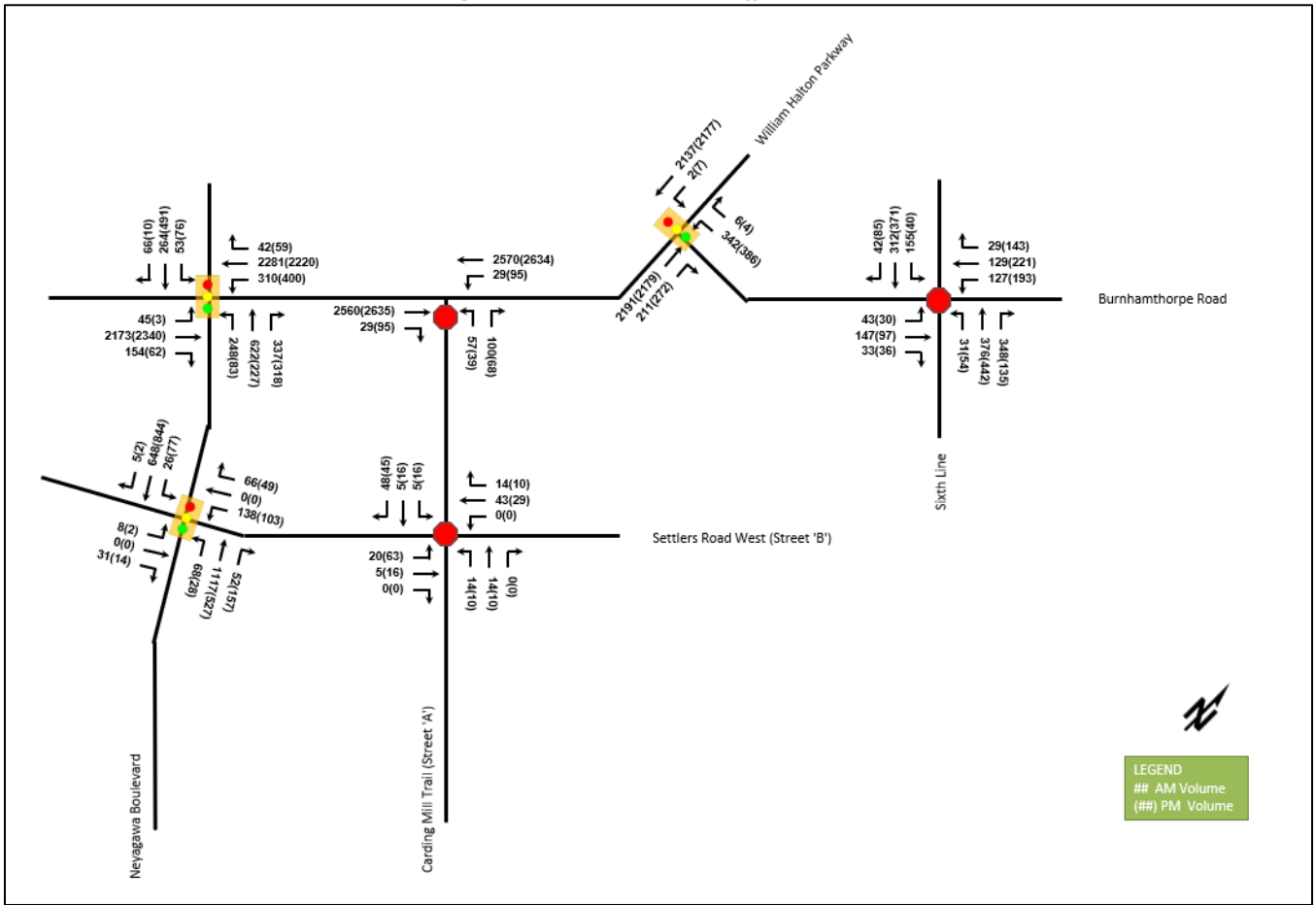
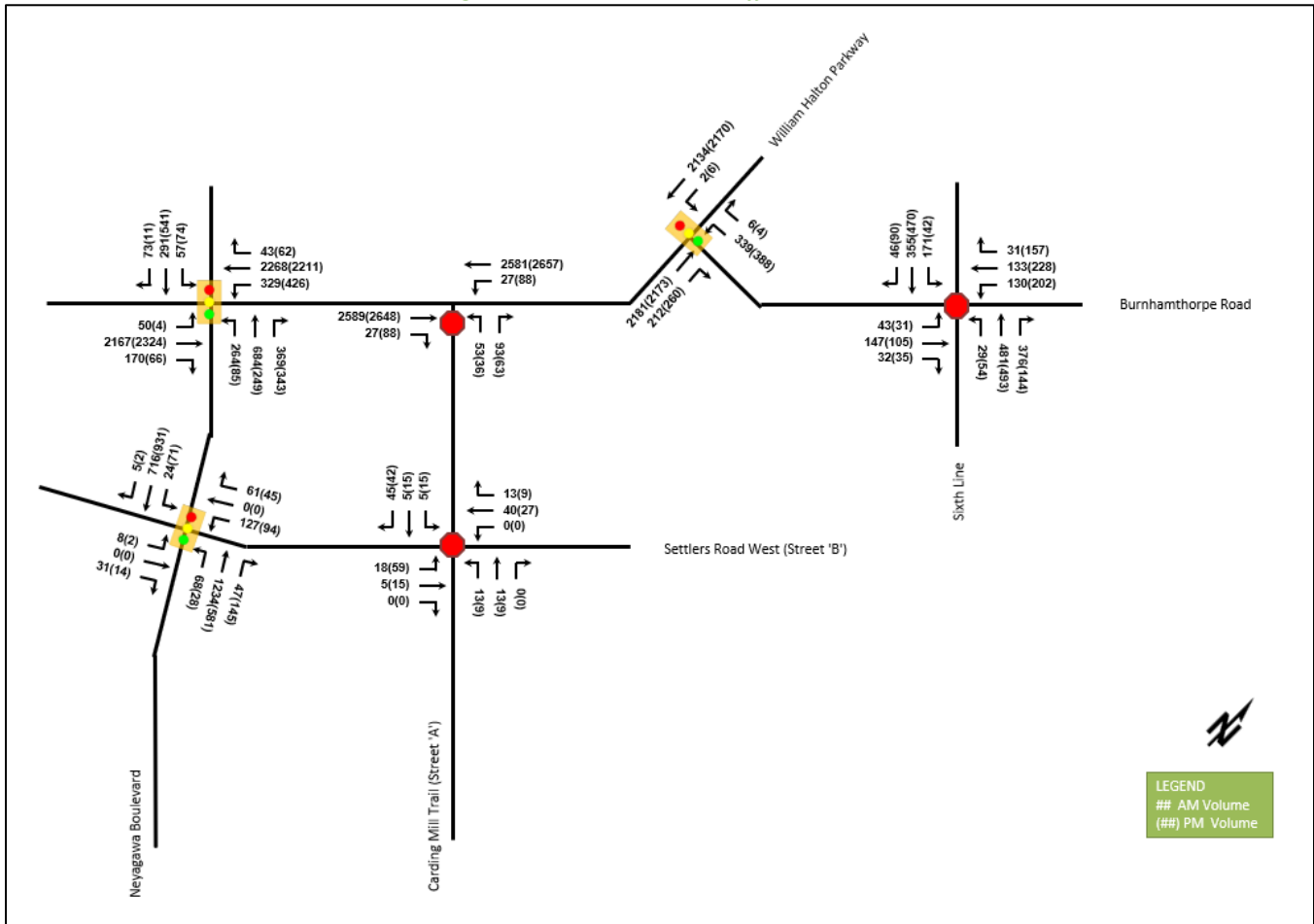


Figure 29: 2031 Future Total Traffic Volumes



## 5 Development Design

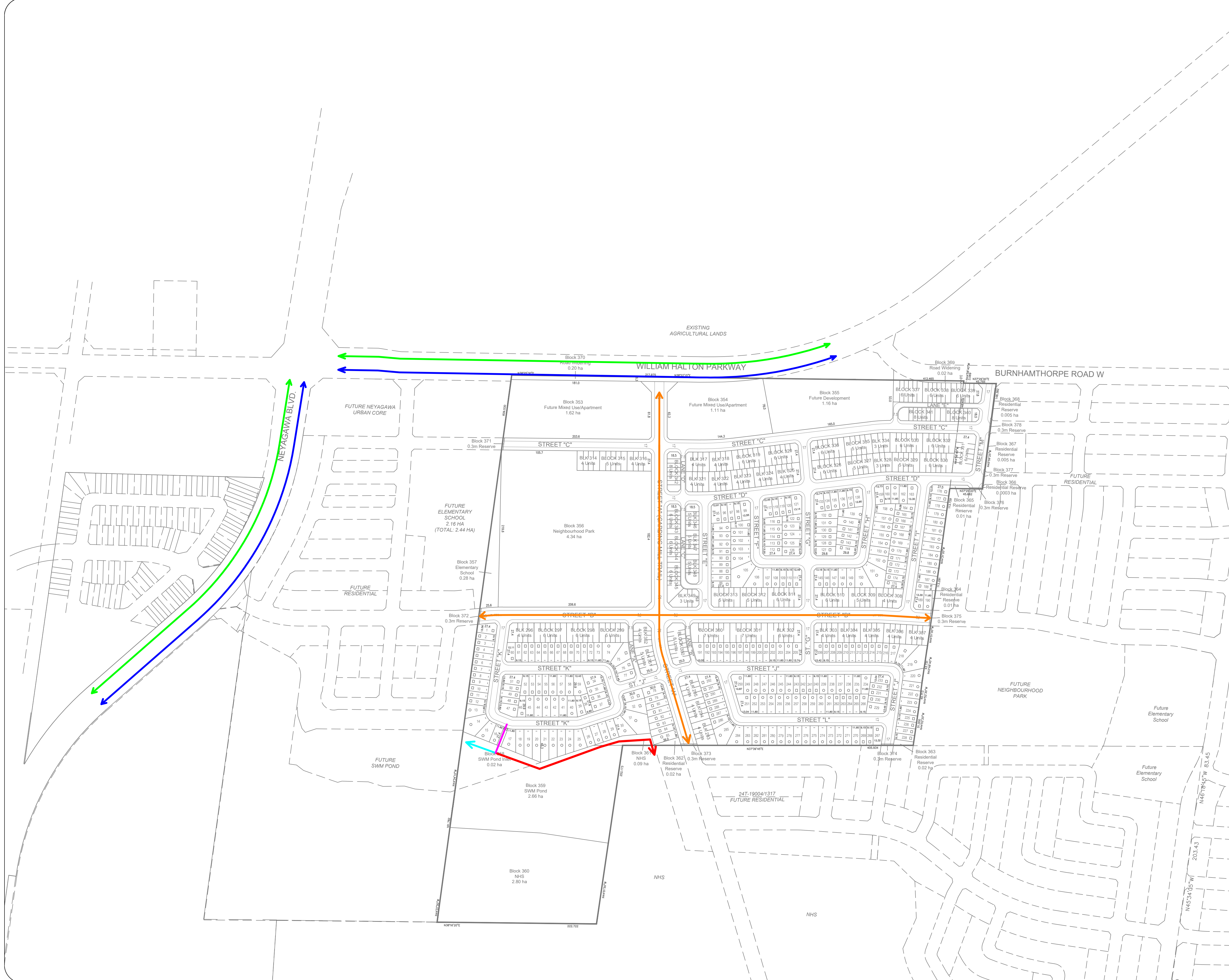
### 5.1 Transportation Demand Management

The proposed developments are residential units with a mix of unit types including primarily detached single family homes and townhouse or semi-detached units. In these types of development one of the most effective Transportation Demand Management (TDM) measures are access and usability of transit, cycling, and pedestrian facilities. To this end the following plans have been created to illustrate the appropriate cycling (Figure 30), transit (Figure 31), and pedestrian (Figure 32) facilities. A transit stop has been assumed in the adjacent property to ensure adequate transit coverage. This should be confirmed by the TIS for the adjacent properties.

Notes:

LEGEND:

-  Signed Route
-  Bicycle Lane
-  Multi Use Pathway
-  Major Trail
-  Pathway Connections
-  Multi-Use Trail



01	Issued for Review	BB	2021-10-18
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			



**CGH Transportation**  
 628 Haines Road  
 Newmarket, ON  
 L3Y 6V5  
 (905) 251-4070

CLIENT: Eno Investments Limited  
 Remington Group

ARCHITECT:

SITE: North Oakville

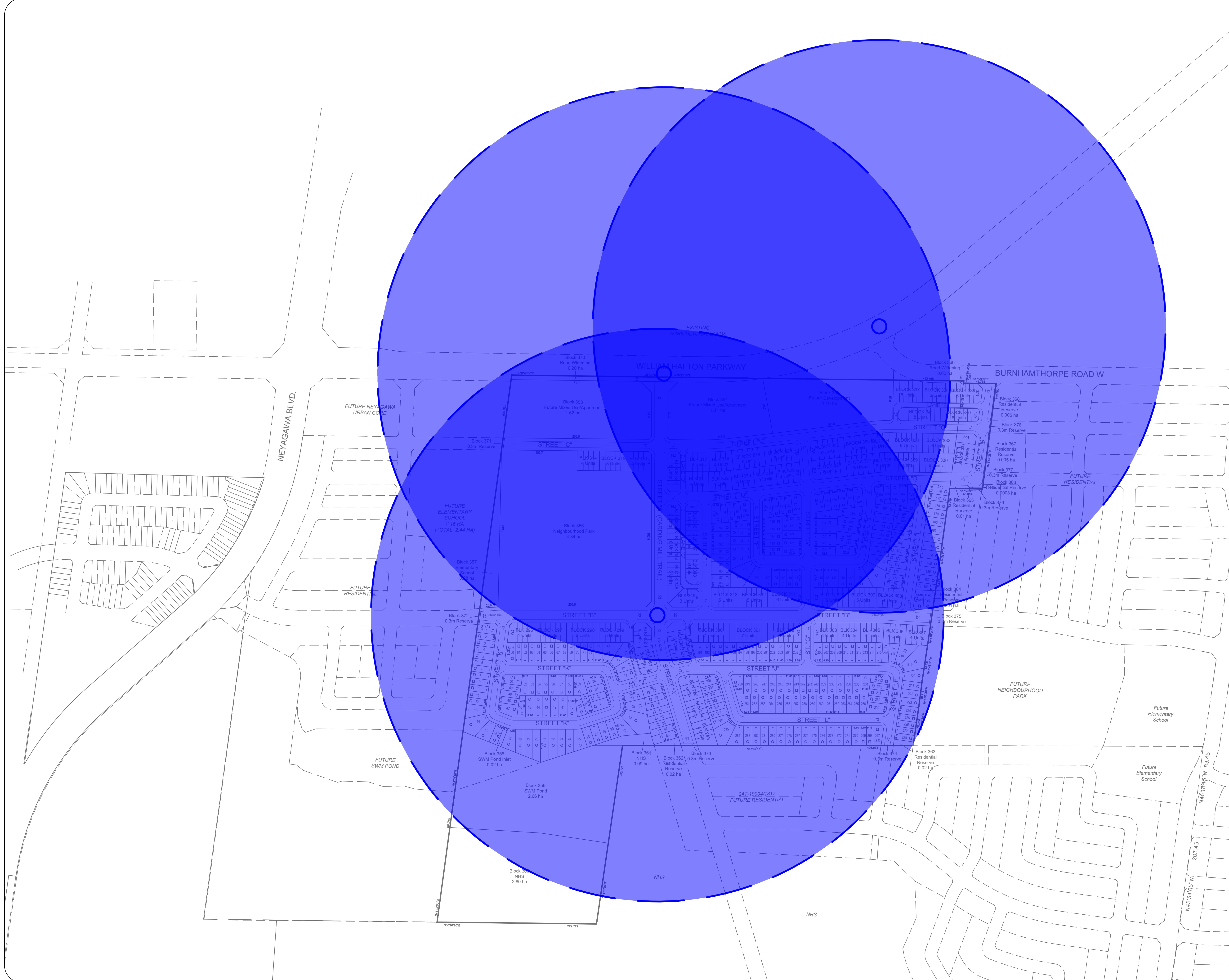
TITLE: Cycling Facilities  
 Concept Plan

SCALE AT A3: NTS	DATE: 2021-10-18	DRAWN: BB	CHECKED: AL
PROJECT NO: 2020-60	DRAWING NO: 030	REVISION: 01	

Notes:

LEGEND:

— 400m Transit Walking Distance



01	Issued for Review	BB	2021-10-15
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			



**CGH Transportation**  
 628 Haines Road  
 Newmarket, ON  
 L3Y 6V5  
 (905) 251-4070

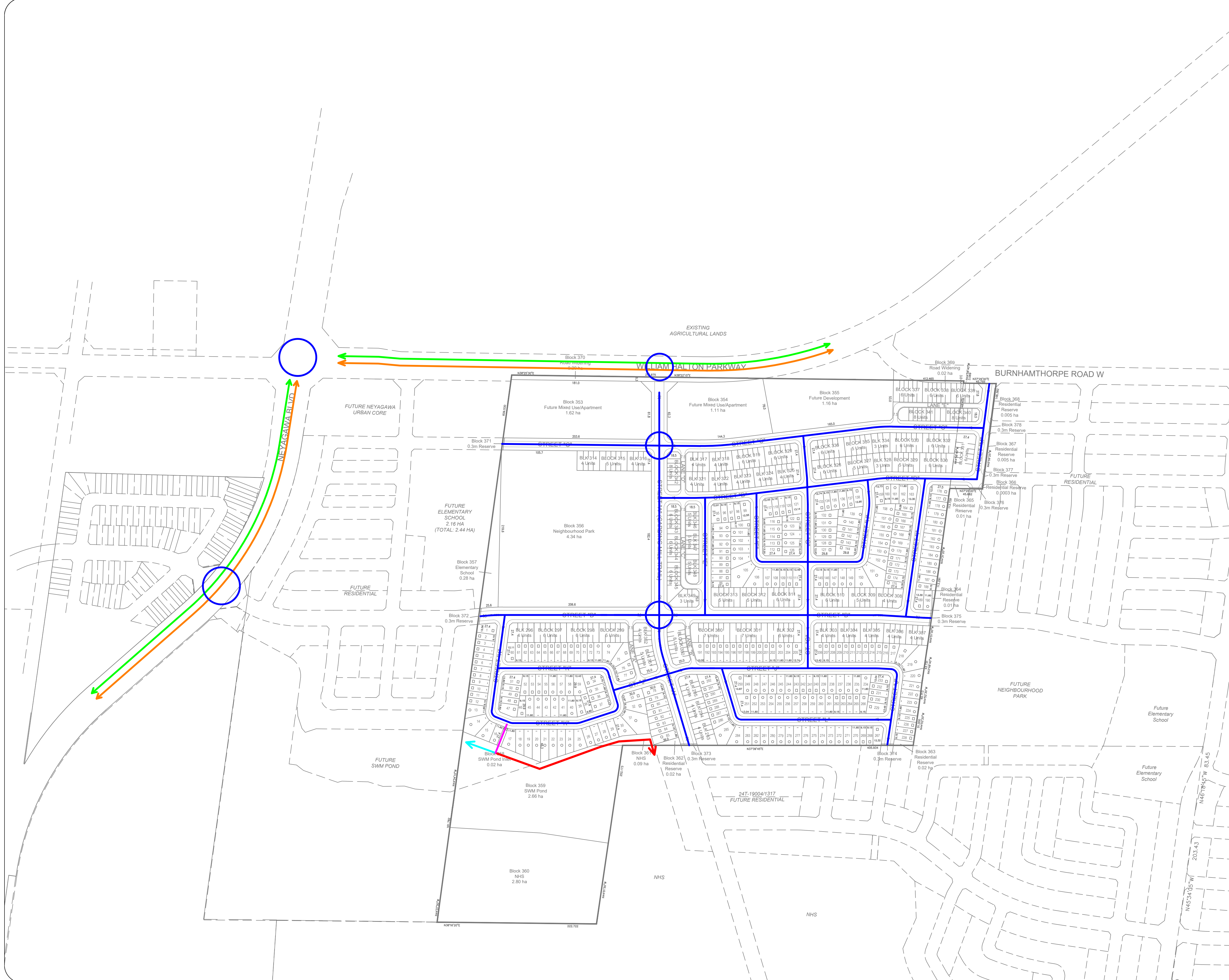
CLIENT:	Eno Investments Limited Remington Group
ARCHITECT:	

SITE:	North Oakville		
TITLE:	Transit Facilities Concept Plan		
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2021-07-12	BB	AL
PROJECT NO:	DRAWING NO:	REVISION:	
2020-60	031	01	

Notes:

LEGEND:

-  Single Side Sidewalk
-  Both Side Sidewalk
-  Pedestrian Crossing
-  Multi Use Pathway
-  Pathway Connections
-  Major Trail
-  Multi-Use Trail



01	Issued for Review	BB	2021-10-18
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			



**CGH Transportation**  
 628 Haines Road  
 Newmarket, ON  
 L3Y 6V5  
 (905) 251-4070

CLIENT: Eno Investments Limited  
 Remington Group

ARCHITECT:

SITE: North Oakville

TITLE: Sidewalk Facilities  
 Concept Plan

SCALE AT A3: NTS	DATE: 2021-10-18	DRAWN: BB	CHECKED: AL
PROJECT NO: 2020-60	DRAWING NO: 032	REVISION: 01	



## 5.2 Parking

The low-rise component of the proposed development is a residential subdivision and therefore the resident parking areas will be within each resident's home. These parking spaces will be provided as prescribed in the zoning bylaw based on each dwelling type. Additionally, 340 on-street parking stalls will be provided throughout the subdivision. The location and number of on-street parking stalls is subject to minor changes and will need to be refined as part of the detailed engineering submission once curb locations, utilities, and fire hydrants have been established. The proposed parking concept plan provided by Korsiak Planning can be found in Appendix G. The off-street parking requirements and provisions for the mixed-use component of the proposed development will be reviewed in later stages through the Site Plan Application (SPA) process. In case where the mid-rise building parking provisions will deviate from the Bylaw requirements, it has been assumed that a justification will be provided through the SPA process.

## 5.3 Development Access

Access to the development will be accommodated via signalized intersection of Neyagawa Boulevard at Settlers Road West (Site Access #1), and future intersection of William Halton Parkway at Carding Mill Trail (Site Access #2). Site Access #2 will be located 300 metres west of William Halton Parkway and Burnhamthorpe Road intersection (measured stop bar to stop bar) and will be a full-movement access.

Using TAC Geometric Guide for Canadian Roads, the spacing between Site Access #2 and Burnhamthorpe Road has been checked for suggested minimum corner clearances. It has been found that the suggested minimum clearance is 70 metres for an arterial road with an operating speed of 50 km/hr. To account for a higher expected operating speed along William Halton Parkway, the required corner clearance has been multiplied by a conservative factor of 1.5, which results in 105 metres of required corner clearance. Site Access #2 meets this guideline. The location of Site Access #2 has also been checked against the Halton Region Access management Guidelines. According to Table 1, the minimum spacing for a full-movement access along William Halton Parkway (C2 corridor) is 300 metres, measures from stop bar to stop bar. Thus, Site Access #2 meets this requirement.

Using OTM Book 12 Justification 7, and the volume projections herein, the traffic control signal warrant for Site Access #2 has been examined during 2026 and 2031 Future Total horizons. It has been found that signals are not warranted using Justification 7. The requirement for signals at this location will be further examined as part of the Future Total scenario operational analysis. The signalization warrants can be found in Appendix H.

A westbound left-turn lane and an eastbound right-turn lane will be implemented at Site Access #2 to facilitate movements from William Halton Parkway and onto Carding Mill Trail, as required by Halton Region Access Management Guidelines. Based on left-turning and right-turning volumes and storage requirements at Site Access #2, minimum taper and storage lengths will need to be applied when designing the auxiliary turn lanes. Additionally, left-turn lane warrants for unsignalized intersections were examined at the northbound approach of Site Access #2. To determine if a northbound left-turn lane is warranted, the MTO Geometric Design Standards for Ontario Highways, Section E, left-turn lane warrant nomographs were examined. It was determined that a northbound left-turn lane is not warranted in either 2026 or 2031 Future Total horizon. Left-turn lane nomographs have been provided in Appendix I.

## 5.4 Future High Density Block Waste Route

The proposed concept plan for the high-density blocks of the property account for an appropriate waste route, including 13 metre radius corners. This is illustrated in Appendix J. As part of a future Site Plan Application for these lands truck turning templates will be undertaken to confirm the truck circulation.

### 5.5 Intersections within the Subdivision

The future intersection of Settlers Road West and Carding Mill Trail is located within the proposed development. Using the Ontario Traffic Manual (OTM) Book 12 Justification 7 methodology, Traffic Control Signal Warrants have been examined at this intersection during 2026 and 2031 Future Total horizons. It was determined that signals are not warranted at this intersection in either horizon. Signal warrants can be found in Appendix H.

The need for an all-way stop control (AWSC) was also evaluated at Settlers Road West and Carding Mill Trail intersection using the Ontario Traffic Manual Book 5 methodology. At this intersection, the total vehicle volume on all intersection approaches in 2025 and 2030 Future Total scenarios does not exceed 350 during peak hours, and the volume split does not exceed 65/35. As such, only one condition (volume split) for an all-way stop control is met and an AWSC is not warranted at the subject intersection. However, as other similar existing major intersections along N Park Boulevard and Sixteen Mile Drive have all-way stop control, to remain consistent with the area, the internal intersection of Settlers Road West and Carding Mill Trail has been assumed to have an all-way stop control.

Additionally, left-turn lane warrants for unsignalized intersections were examined at the internal site intersection. To determine if a left-turn lane is warranted, the MTO Geometric Design Standards for Ontario Highways, Section E, left-turn lane warrant nomographs were examined. Left turn lanes were not warranted in either 2026 or 2031 Future Total horizons. Left-turn lane nomograms have been provided in Appendix I.

## 6 Operational Analysis

To understand the operational characteristics of the Study Area intersections, a Synchro model has been created using Trafficware's Synchro (Version 11). The Synchro model has been coded using the existing traffic signal timing, provided by Halton Region. Peak Hour factors (PHF) have been calculated based on the existing turning movement counts. Where peak hour 15-minute increments were not available, or at new intersections, a default PHF of 0.92 was used. The Heavy Vehicle percentage (HV %) has been calculated for each turning movement at the Study Area intersection. All Heavy Vehicle percentages calculated to be less than 2% were entered into the Synchro model as 2% in order to produce a conservative analysis. These calculations are shown in Appendix K. All other parameters have been coded using accepted best practices and default parameters where applicable.

### 6.1 2021 Existing Conditions

The existing intersection volumes have been analyzed to establish a baseline condition and determine the impact of the subject development as well as the surrounding background developments on the Study Area road network. Table 11 summarizes the operational analysis of the 2021 existing conditions. Appendix L contains the 2021 Existing Conditions Synchro Sheets.

Table 11: 2021 Existing Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour					PM Peak Hour				
		LOS	V/C	Del (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	LOS	V/C	Del. (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )
Burnhamthorpe Road at Neyagawa Boulevard (Signalized)	EBL	D	0.33	48	9	20	D	0.02	41	1	3
	EBT	D	0.20	42	7	14	D	0.10	42	4	9
	EBR	B	0.50	13	0	18	A	0.17	1	0	0
	WBL	D	0.67	40	41	63	F	1.08	110	~59	#121
	WBT	C	0.11	29	8	14	C	0.04	30	2	6
	WBR	A	0.03	0	0	0	A	0.11	2	0	2
	NBL	A	0.27	8	13	19	A	0.07	6	3	5
	NBT	B	0.31	11	22	28	A	0.10	8	8	9
	NBR	A	0.31	2	<1	8	A	0.24	1	0	4
	SBL	A	0.08	8	2	7	A	0.03	6	1	4
	SBT	B	0.16	16	15	26	B	0.22	11	26	36
SBR	A	0.08	0	0	1	A	0.01	0	0	0	
<b>Overall</b>	<b>B</b>	-	<b>16</b>	-	-	<b>C</b>	-	<b>30</b>	-	-	
Burnhamthorpe Road at Sixth Line (Unsignalized)	EBL/T/R	F	1.21	107	-	106	E	0.86	44	-	56
	WBL/T/R	E	0.91	47	-	50	F	1.09	101	-	119
	NBL/T/R	F	1.27	131	-	128	F	0.99	66	-	84
	SBL/T/R	F	1.28	139	-	131	D	0.76	34	-	43
Neyagawa Boulevard at Settlers Road West (Signalized)	EBL	D	0.07	42	2	7	D	0.01	41	<1	3
	EBR	A	0.11	1	0	0	A	0.05	0	0	0
	NBL	A	0.14	3	3	7	A	0.05	2	0	3
	NBT	A	0.42	3	37	40	A	0.15	2	0	15
	SBT/R	A	0.24	2	22	15	A	0.25	1	0	12
	<b>Overall</b>	<b>A</b>	-	<b>3</b>	-	-	<b>A</b>	-	<b>1</b>	-	-
<b>Notes:</b>	~ - volume exceeds capacity, queue is theoretically infinite # - 95% percentile volume exceeds capacity										

The operational performance of Burnhamthorpe Road at Neyagawa Boulevard intersection is satisfactory with an overall LOS B and C during the AM and PM peak periods, respectively. As a result of high turning volumes, the LOS of westbound left-turn movement at this intersection is F, with a V/C ratio of 1.08. The intersection of Neyagawa Boulevard at Settlers Road West operates well with an overall LOS A during peak periods.

The unsignalized intersection of Sixth Line and Burnhamthorpe Road, currently operating with an all-way stop control, was shown to operate poorly with very high delays, high V/C ratios, and poor LOS. This intersection will be signalized as part of the widening of Sixth Line. This upgrade will be analysed as part of the 2026 Future Background conditions along with the impacts of the widening on the road network.

### 6.2 2026 Future Background Conditions

The 2026 Future Background conditions have been examined to determine the future traffic conditions without the addition of the proposed development. This will isolate the impact of the subject development on the traffic network. Table 12 summarizes the operational analysis of 2026 Future Background conditions. Due to the large change in volumes at the intersection of Neyagawa Boulevard at William Halton Parkway (formerly the intersection of Neyagawa Boulevard at Burnhamthorpe Road) the signal timing splits, cycle length, and phasing have been adjusted. The intersection geometry of William Halton Parkway and Neyagawa Boulevard has been confirmed with the William Halton Parkway Capital Works Project staff. The email correspondence with the WHP design team can be seen in Appendix M. The intersection geometry at William Halton Parkway and Burnhamthorpe Road as well as Sixth Line at Burnhamthorpe Road was coded in Synchro according to the Burnhamthorpe Road Character Study and Municipal Class Environmental Assessment (MMM Group, 2014). An

excerpt of the Preliminary Design has been included in Appendix N. Synchro worksheets are included as Appendix O.

Table 12: 2026 Future Background Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour					PM Peak Hour					
		LOS	V/C	Del (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	LOS	V/C	Del. (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	
William Halton Parkway (former Burnhamthorpe Road) at Neyagawa Boulevard (Signalized)	EBL	E	0.66	74	9	#30	C	0.04	30	1	3	
	EBT	F	2.24	583	~408	#452	F	2.74	805	~451	#495	
	EBR	A	0.30	10	6	21	A	0.10	0	0	0	
	WBL	F	1.23	156	~68	#124	F	1.82	406	~118	#180	
	WBT	F	1.57	285	~370	#414	F	1.77	374	~382	#426	
	WBR	A	0.06	1	0	2	A	0.10	4	0	6	
	NBL	C	0.52	21	21	36	B	0.17	12	7	14	
	NBT	C	0.58	28	62	82	B	0.18	19	18	27	
	NBR	A	0.48	5	19	29	A	0.41	5	0	34	
	SBL	B	0.20	18	6	13	B	0.12	13	7	14	
	SBT	C	0.27	27	23	34	C	0.38	23	41	56	
	SBR	A	0.13	1	0	2	A	0.02	0	0	0	
	<b>Overall</b>	<b>F</b>	<b>-</b>	<b>305</b>	<b>-</b>	<b>-</b>	<b>F</b>	<b>-</b>	<b>461</b>	<b>-</b>	<b>-</b>	
	Mitigation Measures: Three through lanes eastbound and westbound, westbound and eastbound dual left turn lanes, 130s cycle length											
	EBL	E	0.38	70	7	14	E	0.02	61	<1	2	
	EBT	D	0.98	46	220	#263	D	0.98	47	232	#276	
	EBR	A	0.20	7	7	20	A	0.06	0	0	0	
	WBL	F	0.98	103	48	#79	F	0.97	92	61	#95	
	WBT	C	0.89	31	208	234	B	0.74	18	141	198	
	WBR	A	0.05	2	0	4	A	0.07	3	0	6	
NBL	E	0.87	74	61	#111	E	0.62	70	17	#40		
NBT	D	0.68	46	85	108	D	0.29	41	29	41		
NBR	C	0.67	33	57	94	C	0.67	28	41	77		
SBL	E	0.53	62	12	#30	D	0.26	43	14	29		
SBT	D	0.30	38	32	45	D	0.62	48	68	88		
SBR	A	0.14	3	0	6	A	0.02	0	0	0		
<b>Overall</b>	<b>D</b>	<b>-</b>	<b>42</b>	<b>-</b>	<b>-</b>	<b>D</b>	<b>-</b>	<b>38</b>	<b>-</b>	<b>-</b>		
Burnhamthorpe Road at Sixth Line (Signalized)	EBL	C	0.22	35	8	17	C	0.16	30	5	12	
	EBT/R	D	0.46	37	12	21	C	0.39	33	8	16	
	WBL	D	0.62	49	25	41	D	0.63	40	36	56	
	WBT/R	C	0.32	34	12	22	C	0.46	22	17	30	
	NBL	B	0.07	12	3	9	A	0.11	8	4	10	
	NBT/R	A	0.40	9	29	50	A	0.28	8	24	36	
	SBL	A	0.36	7	10	18	A	0.09	8	3	8	
	SBT/R	A	0.16	5	11	18	A	0.22	7	19	28	
	<b>Overall</b>	<b>B</b>	<b>-</b>	<b>16</b>	<b>-</b>	<b>-</b>	<b>B</b>	<b>-</b>	<b>16</b>	<b>-</b>	<b>-</b>	
Neyagawa Boulevard at Settlers Road West (Signalized)	EBL	D	0.06	42	2	7	D	0.01	41	<1	3	
	EBR	B	0.20	16	0	8	B	0.10	20	0	6	
	NBL	A	0.15	3	4	7	A	0.07	2	0	3	
	NBT	A	0.46	4	44	47	A	0.20	2	0	18	
	SBT/R	A	0.26	3	28	24	A	0.32	1	1	15	
<b>Overall</b>	<b>A</b>	<b>-</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>A</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>-</b>		

Intersection	Mvmnt	AM Peak Hour					PM Peak Hour				
		LOS	V/C	Del (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	LOS	V/C	Del. (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )
William Halton Parkway at Burnhamthorpe Road (Signalized)	EBT	C	0.97	32	264	#371	C	0.97	33	267	#373
	EBR	A	0.17	6	10	22	A	0.24	6	15	31
	WBL	A	0.03	10	<1	1	B	0.13	15	1	4
	WBT	C	0.97	31	262	#369	C	0.97	33	269	#374
	NBL	E	0.84	62	83	113	E	0.84	62	83	113
	NBR	B	0.02	18	0	4	B	0.01	20	0	3
	<b>Overall</b>	<b>C</b>	<b>-</b>	<b>33</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>C</b>	<b>-</b>	<b>33</b>	<b>-</b>
<b>Notes:</b>	~ - volume exceeds capacity, queue is theoretically infinite # - 95% percentile volume exceeds capacity										

It has been noted that the 95<sup>th</sup> percentile cycle exceeds capacity on several approaches and time periods at Study Area intersections along William Halton Parkway. However, as V/C ratio for these movements is less than one, it can be assumed that the 95<sup>th</sup> percentile queue will rarely be exceeded.

The signalized intersection of Neyagawa Boulevard at William Halton Parkway will be over capacity and experience high delays on eastbound and westbound approaches with the projected volumes provided by Halton Region staff. To address these capacity constraints signal timing changes were explored, however, these measures were not able to process the significant volume of traffic passing through this intersection. By adding a third through lane in both the eastbound and westbound directions as well as westbound and eastbound double left turn lanes the delays were reduced and the V/C ratio at all movements was brought below 1.0. Further, different timings were tested at the westbound left-turn to improve the LOS of this movement but any increase in time allocated to the dual left turn lanes decreased time available for the eastbound and westbound through movements. As William Halton Parkway is proposed to be a key arterial corridor, the east-west major flow was prioritized over turning movements and minor streets. William Halton Parkway is currently under construction and therefore the projections provided by the Region, should be re-evaluated with updated traffic data prior to implementing any changes to the existing design of the William Halton Parkway.

Other Study Area intersections operate well with an overall LOS B at Burnhamthorpe Road at Sixth Line, Los C at William Halton Parkway at Burnhamthorpe Road, and LOS A at Neyagawa Boulevard and Settlers Road West. At William Halton Parkway and Burnhamthorpe Road, eastbound through and westbound through movements are projected to be nearing the capacity in the 2026 Future Background horizon as a result of high volumes along William Halton Parkway. The delay at these movements is within acceptable thresholds.

### 6.3 2031 Future Background Traffic Conditions

The 2031 Future Background conditions have been examined to determine the future traffic conditions without the addition of the proposed development. This will isolate the impact of the subject development on the traffic network. Table 13 summarizes the operational analysis of 2031 Future Background conditions. All mitigation measures previously discussed have been carried forward for the analysis of Future Background conditions. Synchro worksheets are included as Appendix P.

Table 13: 2031 Future Background Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour					PM Peak Hour				
		LOS	V/C	Del (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	LOS	V/C	Del. (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )
William Halton Parkway (former Burnhamthorpe Road) at Neyagawa Boulevard (Signalized)	EBL	E	0.42	71	7	15	E	0.03	61	1	3
	EBT	D	1.01	54	~228	#270	D	0.98	47	232	#276
	EBR	A	0.23	8	8	22	A	0.07	1	0	1
	WBL	F	0.97	98	50	#82	F	0.97	89	69	#78
	WBT	C	0.90	32	210	236	B	0.73	12	82	130
	WBR	A	0.05	2	0	4	A	0.07	3	<1	1
	NBL	F	0.96	92	69	#125	F	0.85	111	19	#50
	NBT	D	0.73	46	95	119	D	0.32	42	32	45
	NBR	C	0.71	33	63	102	C	0.71	30	46	85
	SBL	F	0.68	81	14	#38	D	0.28	45	14	28
	SBT	D	0.32	37	35	49	D	0.70	50	77	98
SBR	A	0.15	4	0	8	A	0.03	0	0	0	
<b>Overall</b>	<b>D</b>	-	<b>46</b>	-	-	-	<b>D</b>	-	<b>37</b>	-	-
Burnhamthorpe Road at Sixth Line (Signalized)	EBL	C	0.22	35	8	17	C	0.18	30	5	13
	EBT/R	D	0.45	37	12	21	C	0.41	34	9	18
	WBL	D	0.65	51	25	#43	D	0.66	41	38	58
	WBT/R	C	0.34	34	13	23	C	0.47	21	18	32
	NBL	B	0.07	13	3	9	A	0.13	9	4	11
	NBT/R	B	0.49	12	44	73	A	0.31	8	28	41
	SBL	A	0.44	8	11	20	A	0.11	8	3	9
	SBT/R	A	0.18	5	13	21	A	0.27	8	25	36
<b>Overall</b>	<b>B</b>	-	<b>17</b>	-	-	-	<b>B</b>	-	<b>16</b>	-	-
Neyagawa Boulevard at Settlers Road West (Signalized)	EBL	D	0.06	42	2	7	D	0.01	41	<1	3
	EBR	B	0.20	16	0	8	B	0.10	20	0	6
	NBL	A	0.16	3	4	7	A	0.08	3	0	3
	NBT	A	0.51	4	52	55	A	0.22	2	0	20
	SBT/R	A	0.29	3	22	25	A	0.35	2	0	35
<b>Overall</b>	<b>A</b>	-	<b>4</b>	-	-	-	<b>A</b>	-	<b>2</b>	-	-
William Halton Parkway at Burnhamthorpe Road (Signalized)	EBT	C	0.96	31	262	#369	C	0.96	22	350	#365
	EBR	A	0.17	6	10	22	A	0.23	1	5	8
	WBL	A	0.03	10	<1	1	B	0.12	14	1	3
	WBT	C	0.96	31	261	#368	C	0.96	31	289	#386
	NBL	E	0.84	62	82	112	E	0.88	70	92	#131
	NBR	B	0.02	18	0	4	C	0.01	22	0	3
<b>Overall</b>	<b>C</b>	-	<b>32</b>	-	-	-	<b>C</b>	-	<b>28</b>	-	-
<b>Notes:</b>	~ - volume exceeds capacity, queue is theoretically infinite # - 95 <sup>th</sup> percentile volume exceeds capacity										

It has been noted that the 95<sup>th</sup> percentile cycle exceeds capacity on several approaches and time periods at Study Area intersections along William Halton Parkway. However, as V/C ratio for these movements is less than one, it can be assumed that the 95<sup>th</sup> percentile queue will rarely be exceeded.

With the addition of background growth to project the 2031 Future Background traffic volumes at William Halton Parkway and Neyagawa Boulevard the delay increased, and the overall intersection level of service remained at LOS D. No mitigation measures have been proposed or applied to this intersection. As previously mentioned, the volume projections along William Halton Parkway provided by the Region are quite high. Further, it was noted by the Halton Region staff, that the transit mode share would increase over time, decreasing reliance on single occupant vehicles. While it is difficult to predict the impact of this effect, it would reduce not just the trips generated by any one site but should lower the rate of growth of traffic over time. The analysis has been presented without any reduction in the background traffic volumes to account for an increased transit mode share.

Other Study Area intersections operate well with V/C ratios and delays similar to the 2026 Future Background horizon. At William Halton Parkway and Burnhamthorpe Road intersection, eastbound through and westbound through movements are nearing capacity as a result of high volumes along William Halton Parkway with a V/C ratio of 0.97 and high delay.

### 6.4 2026 Future Total Conditions

The 2026 trip generation for the proposed developments has been added to the 2026 Future Background traffic volumes to project the impact of the new traffic on the future road network. The analysis parameters and mitigation measures proposed through the 2026 Future Background operational analysis have been carried forward as part of the analysis of 2026 Total Future conditions. Table 14 summarizes the results of the Synchro Analysis. Synchro worksheets have been included in Appendix Q.

Table 14: 2026 Total Future Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour					PM Peak Hour				
		LOS	V/C	Del (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	LOS	V/C	Del. (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )
William Halton Parkway (former Burnhamthorpe Road) at Neyagawa Boulevard (Signalized)	EBL	E	0.38	70	7	14	E	0.02	61	<1	2
	EBT	D	1.00	53	~229	#272	D	1.02	55	~265	#294
	EBR	A	0.21	8	8	21	A	0.08	1	0	3
	WBL	F	0.98	103	48	#79	F	1.03	107	~65	#99
	WBT	C	0.92	34	223	#251	B	0.76	19	150	208
	WBR	A	0.05	2	0	4	A	0.07	3	0	6
	NBL	F	0.95	89	72	#128	F	0.75	82	23	#53
	NBT	D	0.66	44	84	106	D	0.28	40	28	41
	NBR	C	0.66	32	56	93	C	0.66	29	44	80
	SBL	E	0.56	62	13	#33	D	0.33	44	18	35
	SBT	D	0.29	37	32	45	D	0.60	46	67	87
	SBR	A	0.14	3	0	6	A	0.02	0	0	0
<b>Overall</b>	<b>D</b>	-	<b>46</b>	-	-	<b>D</b>	-	<b>42</b>	-	-	
Burnhamthorpe Road at Sixth Line (Signalized)	EBL	C	0.21	33	8	17	C	0.17	29	5	12
	EBT/R	D	0.52	41	17	28	D	0.44	35	11	20
	WBL	D	0.59	45	24	40	D	0.62	39	36	55
	WBT/R	C	0.33	34	14	24	C	0.52	25	24	38
	NBL	B	0.07	13	3	9	A	0.12	9	4	11
	NBT/R	B	0.41	10	30	53	A	0.29	8	25	37
	SBL	A	0.37	8	10	19	A	0.09	8	3	8
	SBT/R	A	0.16	6	12	20	A	0.22	8	19	29
<b>Overall</b>	<b>B</b>	-	<b>17</b>	-	-	<b>B</b>	-	<b>17</b>	-	-	
Neyagawa Boulevard at Settlers Road West – Site Access #1 (Signalized)	EBL	C	0.05	32	2	6	C	0.01	34	<1	2
	EBT/R	A	0.09	1	0	0	A	0.06	0	0	0
	WBL	D	0.67	53	29	47	D	0.58	52	22	37
	WBT/R	B	0.24	18	5	16	A	0.12	1	0	0
	NBL	A	0.19	7	5	12	A	0.10	5	2	5
	NBT/R	A	0.59	9	64	89	A	0.32	5	23	34
	SBL	A	0.14	8	2	6	A	0.18	6	4	12
	SBT/R	A	0.32	6	27	41	A	0.40	6	34	48
<b>Overall</b>	<b>B</b>	-	<b>11</b>	-	-	<b>A</b>	-	<b>8</b>	-	-	
William Halton Parkway at Burnhamthorpe Road (Signalized)	EBT	D	1.01	42	~330	#388	D	1.03	50	~341	#384
	EBR	A	0.21	6	14	27	A	0.28	7	20	35
	WBL	A	0.03	10	<1	1	B	0.13	15	1	4
	WBT	D	0.98	36	277	#372	D	1.03	49	~340	#383
	NBL	E	0.86	63	88	121	E	0.90	66	98	#152
	NBR	B	0.02	20	<1	4	B	0.01	20	0	3
<b>Overall</b>	<b>D</b>	-	<b>39</b>	-	-	<b>D</b>	-	<b>49</b>	-	-	

Intersection	Mvmnt	AM Peak Hour					PM Peak Hour					
		LOS	V/C	Del (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	LOS	V/C	Del. (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	
Carding Mill Trail at William Halton Parkway – Site Access #2 (Unsignalized)	EBT	-	-	-	-	-	-	-	-	-	-	
	EBR	-	-	-	-	-	-	-	-	-	-	
	WBT	-	-	-	-	-	-	-	-	-	-	
	WBL	E	0.24	40	-	7	F	0.88	123	-	41	
	NBL/R	F	56.88	27520	-	178	F	0.94	132	-	46	
	Mitigation Measure: Traffic Control Signals											
	EBT	D	0.96	39	422	#435	E	1.06	63	~468	#491	
	EBR	A	0.02	4	2	3	A	0.08	5	7	10	
	WBT	D	0.56	48	2	#11	C	0.54	32	10	30	
	WBL	D	0.97	41	278	#460	B	0.92	18	222	#448	
	NBL	E	0.33	57	16	29	E	0.36	66	11	23	
NBR	E	0.63	68	27	45	C	0.46	27	3	19		
<b>Overall</b>	<b>D</b>	<b>-</b>	<b>40</b>	<b>-</b>	<b>-</b>	<b>D</b>	<b>-</b>	<b>39</b>	<b>-</b>	<b>-</b>		
Carding Mill Trail at Settlers Road West (Unsignalized)	EBL/T/R	A	0.03	8	-	1	A	0.10	8	-	2	
	WBL/T/R	A	0.07	7	-	2	A	0.05	7	-	1	
	NBL/T/R	A	0.04	7	-	1	A	0.03	8	-	1	
	SBL/T/R	A	0.06	7	-	2	A	0.09	7	-	2	
<b>Notes:</b>	~ - volume exceeds capacity, queue is theoretically infinite # - 95 <sup>th</sup> percentile volume exceeds capacity											

It has been noted that the 95<sup>th</sup> percentile cycle exceeds capacity on several approaches and time periods at Study Area intersections along William Halton Parkway. However, where the V/C ratio is less than one, it can be assumed that the 95<sup>th</sup> percentile queue will rarely be exceeded.

The intersections previously analysed in the 2026 Future Background horizon operate similarly with the addition of the site generated traffic, with marginal differences in operational performance. As previously discussed, westbound left-turn movements at William Halton Parkway and Neyagawa Road intersection are projected to operate with poor LOS and high delays. This is as a result of the very high eastbound and westbound volumes projected on William Halton Parkway that were provided by the Halton Region. Site Access #1 and the internal intersection of Carding Mill Trail at Settlers Road West operate well, with LOS A at all most approaches.

At the unsignalized intersection of Carding Mill Trail and William Halton Parkway (Site Access #2), no delay is expected at the eastbound approach. The westbound left-turn movement operates at a LOS F, with a V/C ratio of 0.88 during the PM peak period. Further, as a result of the high through volumes along William Halton Parkway, little to no gap is available for northbound vehicles to proceed onto the regional road. To improve the level of service and reduce the likelihood of angled collisions from occurring at this access intersection, signalization was modeled in Synchro as a mitigation measure and the results can be seen in Table 14. As a result, the V/C ratio at the eastbound through movement is 1.06. The eastbound approach is also marginally over capacity at the adjacent intersection of William Halton Parkway at Burnhamthorpe Road. However, given that the auto trip generation of the proposed development will decrease in the 2031 Future Total horizon as a result of a mode share shift, and considering the conservative volume projections along William Halton Parkway, no further mitigations have been explored at Carding Mill Trail and William Halton Parkway, and William Halton Parkway at Burnhamthorpe Road in the 2026 Future Total horizon.



6.5 2031 Future Total Traffic Conditions

The 2031 Total Future intersection volumes, including the site generated traffic and other development traffic, have been analyzed to understand the impact of the subject development on the Study Area intersections. Table 15 summarizes the results of the Synchro Analysis. Synchro worksheets have been included in Appendix R.

Table 15: 2031 Total Future Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour					PM Peak Hour					
		LOS	V/C	Del (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	LOS	V/C	Del. (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	
William Halton Parkway (former Burnhamthorpe Road) at Neyagawa Boulevard (Signalized)	EBL	E	0.42	71	7	15	E	0.03	61	1	3	
	EBT	E	1.03	62	~249	#279	D	1.01	53	~250	#290	
	EBR	A	0.24	8	9	24	A	0.09	2	0	4	
	WBL	F	1.04	101	~54	#58	F	1.03	95	~71	#80	
	WBT	C	0.94	24	208	#232	B	0.75	10	93	172	
	WBR	A	0.05	1	0	0	A	0.07	1	1	1	
	NBL	F	1.01	100	~78	#139	F	1.02	150	~26	#63	
	NBT	D	0.69	44	93	116	D	0.32	42	32	45	
	NBR	C	0.69	33	64	103	C	0.72	32	49	88	
	SBL	E	0.65	72	15	#38	D	0.34	46	18	34	
	SBT	D	0.30	36	34	48	D	0.68	49	76	97	
	SBR	A	0.14	4	0	8	A	0.03	0	0	0	
	<b>Overall</b>	<b>D</b>	-	<b>46</b>	-	-	<b>D</b>	-	<b>39</b>	-	-	
	Updated operational performance as a result of the mitigation measures at Carding Mill Trail and William Halton Parkway											
	EBL	E	0.42	71	7	15	E	0.03	61	1	3	
	EBT	E	1.03	62	~249	#279	D	1.01	53	~250	#290	
	EBR	A	0.24	8	9	24	A	0.09	2	0	4	
	WBL	F	1.04	116	~54	#86	F	1.03	108	~71	#107	
	WBT	C	0.94	28	204	#272	B	0.75	12	90	164	
	WBR	A	0.05	1	<1	1	A	0.07	3	2	4	
NBL	F	1.01	100	~78	#139	F	1.02	150	~26	#63		
NBT	D	0.69	44	93	116	D	0.32	42	32	45		
NBR	C	0.69	33	64	103	C	0.72	32	49	88		
SBL	E	0.65	72	15	#38	D	0.34	46	18	34		
SBT	D	0.30	36	34	48	D	0.68	49	76	97		
SBR	A	0.14	4	0	8	A	0.03	0	0	0		
<b>Overall</b>	<b>D</b>	-	<b>48</b>	-	-	<b>D</b>	-	<b>41</b>	-	-		
Burnhamthorpe Road at Sixth Line (Signalized)	EBL	C	0.21	33	8	17	C	0.18	29	5	12	
	EBT/R	D	0.52	41	17	28	D	0.46	36	12	21	
	WBL	D	0.62	47	25	41	D	0.65	40	37	57	
	WBT/R	C	0.35	35	15	25	C	0.54	24	25	40	
	NBL	B	0.07	14	3	9	A	0.13	9	4	11	
	NBT/R	B	0.50	13	45	75	A	0.32	9	29	42	
	SBL	A	0.45	9	11	21	A	0.11	9	3	9	
	SBT/R	A	0.18	6	14	22	A	0.28	8	25	37	
	<b>Overall</b>	<b>B</b>	-	<b>18</b>	-	-	<b>B</b>	-	<b>17</b>	-	-	
Neyagawa Boulevard at Settlers Road West – Site Access #1 (Signalized)	EBL	C	0.05	33	2	6	C	0.01	35	<1	2	
	EBT/R	A	0.10	1	0	0	A	0.06	0	0	0	
	WBL	D	0.64	53	27	44	D	0.55	51	20	35	
	WBT/R	C	0.24	22	6	17	A	0.13	1	0	0	
	NBL	A	0.20	7	5	12	A	0.10	5	2	5	
	NBT/R	A	0.64	10	73	100	A	0.32	4	24	36	
	SBL	A	0.16	9	1	6	A	0.17	5	4	11	
	SBT/R	A	0.35	6	30	44	A	0.41	5	37	53	
<b>Overall</b>	<b>B</b>	-	<b>11</b>	-	-	<b>A</b>	-	<b>7</b>	-	-		

Intersection	Mvmnt	AM Peak Hour					PM Peak Hour					
		LOS	V/C	Del (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	LOS	V/C	Del. (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	
William Halton Parkway at Burnhamthorpe Road (Signalized)	EBT	C	0.98	34	~266	#377	D	1.00	36	~271	67	
	EBR	A	0.21	5	9	12	A	0.26	4	8	9	
	WBL	A	0.04	10	<1	1	B	0.12	14	1	3	
	WBT	C	0.96	35	294	#383	D	1.00	42	~334	#395	
	NBL	E	0.88	71	94	#140	E	0.94	78	111	#173	
	NBR	B	0.02	20	0	4	C	0.01	22	0	3	
	<b>Overall</b>	<b>D</b>	-	<b>36</b>	-	-	<b>D</b>	-	<b>40</b>	-	-	
	Updated operational performance as a result of the mitigation measure at Carding Mill Trail and William Halton Parkway											
	EBT	C	0.98	20	~53	#393	C	1.00	27	~363	#390	
	EBR	A	0.21	1	<1	2	A	0.26	1	0	0	
	WBL	A	0.04	10	<1	1	B	0.12	14	1	3	
	WBT	C	0.96	31	294	#383	D	1.00	42	~334	#395	
	NBL	E	0.88	71	94	#140	E	0.94	78	111	#173	
	NBR	B	0.02	20	0	4	C	0.01	22	0	3	
<b>Overall</b>	<b>C</b>	-	<b>28</b>	-	-	<b>D</b>	-	<b>36</b>	-	-		
Carding Mill Trail at William Halton Parkway – Site Access #2 (Signalized)	EBT	E	0.97	63	426	#421	E	1.06	79	~467	#496	
	EBR	A	0.02	3	1	2	A	0.08	4	6	9	
	WBL	C	0.52	22	1	2	C	0.53	25	12	13	
	WBT	B	0.97	12	90	#454	A	0.93	10	133	143	
	NBL	E	0.32	58	15	28	E	0.35	66	10	22	
	NBR	E	0.61	68	25	43	C	0.43	24	2	16	
	<b>Overall</b>	<b>D</b>	-	<b>38</b>	-	-	<b>D</b>	-	<b>43</b>	-	-	
	Mitigation Measures: Three through lanes eastbound and westbound											
	EBT	B	0.67	19	275	267	B	0.73	18	291	292	
	EBR	A	0.02	3	1	2	A	0.08	3	4	7	
	WBL	C	0.52	22	1	2	C	0.56	26	12	14	
	WBT	A	0.67	3	39	52	A	0.64	3	62	69	
	NBL	E	0.32	58	15	28	E	0.35	66	10	22	
	NBR	E	0.61	68	25	43	C	0.41	21	0	15	
<b>Overall</b>	<b>B</b>	-	<b>12</b>	-	-	<b>B</b>	-	<b>11</b>	-	-		
Carding Mill Trail at Settlers Road West (Unsignalized)	EBL/T/R	A	0.03	8	-	1	A	0.10	8	-	2	
	WBL/T/R	A	0.06	7	-	2	A	0.04	7	-	1	
	NBL/T/R	A	0.03	7	-	1	A	0.02	8	-	1	
	SBL/T/R	A	0.06	7	-	2	A	0.09	7	-	2	
<b>Notes:</b>	~ - volume exceeds capacity, queue is theoretically infinite # - 95 <sup>th</sup> percentile volume exceeds capacity											

It has been noted that the 95<sup>th</sup> percentile cycle exceeds capacity on several approaches and time periods at Study Area intersections along William Halton Parkway. However, where the V/C ratio is less than one, it can be assumed that the 95<sup>th</sup> percentile queue will rarely be exceeded.

Overall, the addition of the site generated traffic to the 2031 Future Background does not significantly impact the Study Area intersections. At Neyagawa Boulevard and William Halton Parkway intersection, the addition of site-generated trips results in V/C ratios of the previously failing eastbound through, westbound left and northbound left turn movements to shift above one. However, it is important to note that the proposed development contributes a maximum of 2.5% of the total intersection volume during the peak hours. As the cycle length has already been maximized at this intersection in the 2026 Future Background horizon, there is no room to increase the capacity by adding more green time. Considering this, the operational performance of the eastbound through, westbound left, and northbound left turn movements is acceptable.

The site accesses and the internal intersection generally operate with a reasonable LOS. At the signalized access of William Halton Parkway and Carding Mill Trail, the eastbound through movement is noted to have a V/C ratio above one during the PM peak period. As previously mentioned, the volume along William Halton Parkway projected by Halton Region is 2100 vehicles during the peak hours. When combined with annual compound growth rate, and the background development traffic, this volume projection leads to operational constraints along William Halton Parkway starting in 2026 Future Background Horizon. In 2031 Future Total scenario, the total projected through traffic along William Halton Parkway results in approximately 2600 vehicles in each direction during the peak hours. Such high volume projection for a four-lane roadway indicates that there may be some overlap between the volumes projected by the Region and the background traffic, which results in double counting and an overly conservative estimate. A three lane configuration of the William Halton Parkway has been coded in Synchro to bring the V/C ratio at the eastbound through movement below one, however, given the conservative volume assumptions discussed above it is unlikely that this mitigation measure will be needed. It is also anticipated that the Region will experience a shift from single occupant vehicle to other modes of travel, in particular transit. While this impact has been explicitly accounted for in the trip generation for the subject development, the impact of this effect on background traffic is hard to predict and quantify. This shift will reduce the number of single occupant vehicles, reducing the impact of the growth that has been projected in this analysis. Therefore, the mitigations proposed along William Halton Parkway should be carefully evaluated prior to implementing any changes to the existing design of the William Halton Parkway. Upon the completion, this corridor should be monitored and if the future capacity issues come to fruition, the solutions proposed in this study should be explored by the Region.

## 6.6 Sensitivity Analysis

In the previous sections, traffic volumes generated by the proposed and background developments have been assigned to all segments and intersections throughout the study area. This is a typical approach for a TIS, where the impact of additional background traffic, and site traffic are evaluated incrementally, which allows for a net comparison between the horizons. However, when multiple movements are failing in the background horizon, these movements can affect other approaches, making it challenging to determine the causal correlation between traffic volumes and operational performance of specific movements. Therefore, mitigation measures including widening of WHP to three through lanes and double left turn lanes have been modelled and carried forward in the analysis to allow for a clear comparison between background traffic and site-generated traffic impacts. This analysis has shown that the proposed development has marginal impact on study area road network, when compared to growth in background traffic and projected volumes along William Halton Parkway.

The mitigation measures proposed in the 2026 Future Background horizon are not likely to be needed, as the intersection of Neyagawa Boulevard at Burnhamthorpe Road (future WHP) is currently built to its final configuration. Design of regional arterial roadways is usually guided by a macroscopic traffic model which takes into account long-range population and employment density targets along the proposed corridor to determine the roadway capacity that will need to be provided. Therefore, CGH Transportation has undertaken a sensitivity analysis to more closely examine how the traffic volumes and directionality will change at the intersection of William Halton Parkway and Neyagawa Boulevard, and to ensure that the current intersection capacity is suitable to accommodate future volumes.

To determine the changes in traffic directionality, existing turning movements at the intersection of Burnhamthorpe Road and Neyagawa Boulevard were closely examined. The review has shown that eastbound and westbound through volumes at this intersection are significantly lower than what is usually observed at

arterial roads. Further, the lower volumes at eastbound through and westbound through movements were coupled with higher than average volumes at northbound right turn and westbound left turn movements. This indicates that vehicles coming from or going towards west make a turning movement at Neyagawa Boulevard to reach their destination via an alternative route (i.e. Dundas Street). Burnhamthorpe Road does not connect to any north-south arterials west of Neyagawa Boulevard, which explains the existing unusual traffic directionality at the subject intersection.

The construction of Phase II of William Halton Parkway will enable drivers to proceed to / from the west via WHP, eliminating the need to make turning movements at Neyagawa Boulevard. Thus, as part of the sensitivity analysis, 90% of the existing traffic on the westbound left turn and northbound right turn were reassigned to westbound through and eastbound through movements, respectively. To determine the future total volume on westbound left turn and northbound right turn, the remaining existing trips at these movements were combined with trips from background developments and the subject site. No further adjustments were made to the turning movements at the intersection of WHP and Neyagawa Boulevard, as background developments and subject site are local trip generators and the residents / patrons from these developments are most likely to make turning movements and change their trip direction at the start of their trips.

Next, the Halton Region volume projections along William Halton Parkway were treated as the ultimate peak hour volume along any given segment of WHP. To ensure that 2100 vehicles per peak hour is the maximum segment volume on the proposed arterial road, through movements were reduced until the total approach and/or departure volumes do not exceed 2100 vph. The resulting 2031 Future Total Volumes at the intersection of William Halton Parkway and Neyagawa Boulevard as well as William Halton Parkway at Carding Mill Trail can be seen in Figure 33. These volumes were modeled in Synchro using the existing intersection configuration in combination with recommended turning lanes at Carding Mill Trail and William Halton Parkway. Table 15 summarizes the results of the Synchro Analysis. Synchro worksheets have been included in Appendix S.

Figure 33: Adjusted 2031 Future Total Traffic Volumes

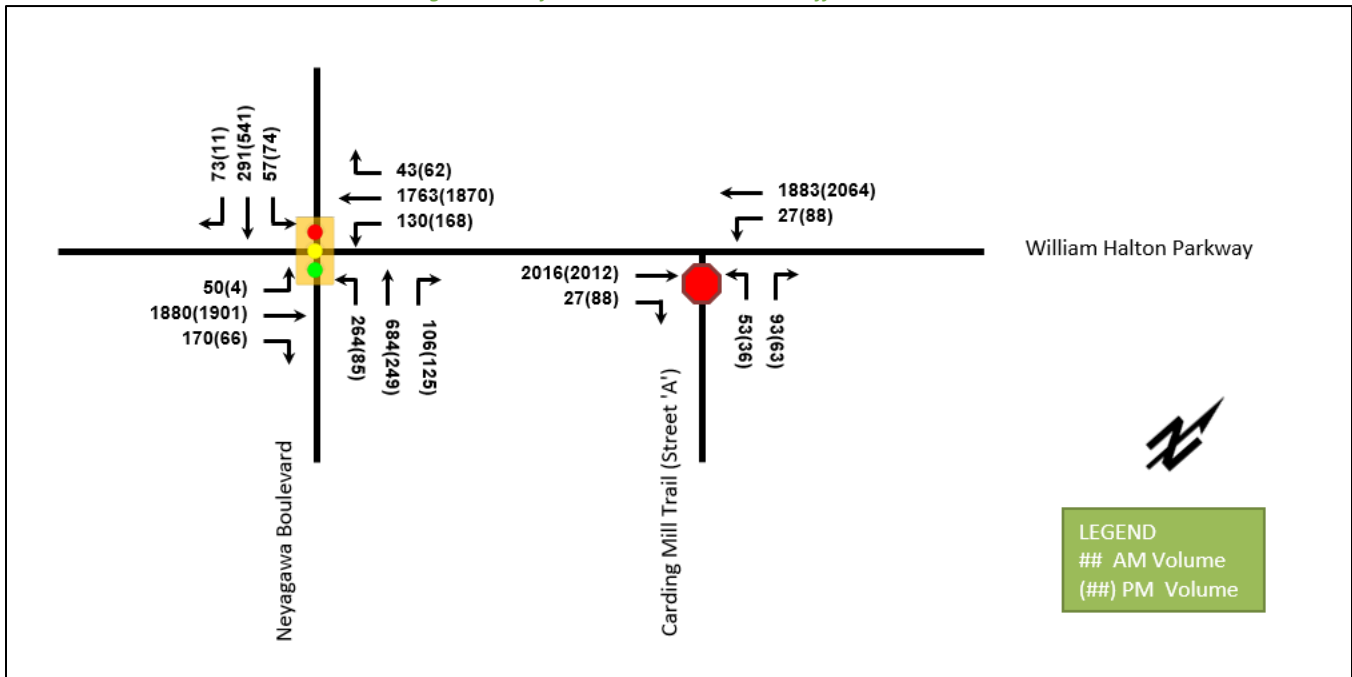


Table 16: 2031 Total Future Conditions Sensitivity Analysis

Intersection	Mvmnt	AM Peak Hour					PM Peak Hour				
		LOS	V/C	Del (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )	LOS	V/C	Del. (s)	Q (50 <sup>th</sup> )	Q (95 <sup>th</sup> )
William Halton Parkway (former Burnhamthorpe Road) at Neyagawa Boulevard (Signalized)	EBL	C	0.46	25	6	14	B	0.08	17	1	3
	EBT	F	1.10	87	~356	#399	D	1.01	52	~318	#375
	EBR	A	0.21	8	11	23	A	0.08	5	3	10
	WBL	F	0.99	104	25	#71	F	1.01	106	~38	#89
	WBT	D	1.00	50	~310	#354	C	0.87	23	226	266
	WBR	A	0.05	1	0	3	A	0.07	3	1	6
	NBL	F	0.99	95	69	#134	F	0.98	141	27	#65
	NBT	D	0.72	49	102	126	D	0.33	46	35	49
	NBR	B	0.22	16	9	25	B	0.29	10	2	20
	SBL	F	0.71	91	17	#43	D	0.36	51	20	37
	SBT	D	0.40	48	41	57	E	0.71	55	84	106
SBR	A	0.19	10	0	14	A	0.03	0	0	0	
<b>Overall</b>	<b>E</b>	-	<b>63</b>	-	-	<b>D</b>	-	<b>42</b>	-	-	
Carding Mill Trail at William Halton Parkway – Site Access #2 (Signalized)	EBT	B	0.83	15	193	228	C	0.94	30	260	#316
	EBR	A	0.02	3	1	4	A	0.09	6	6	13
	WBL	D	0.54	48	3	#24	D	0.76	55	9	#40
	WBT	B	0.77	13	163	192	B	0.86	17	205	246
	NBL	D	0.18	50	14	28	D	0.12	45	9	20
	NBR	D	0.34	43	20	39	B	0.19	12	0	13
	<b>Overall</b>	<b>B</b>	-	<b>15</b>	-	-	<b>C</b>	-	<b>24</b>	-	-
<b>Notes:</b>	~ - volume exceeds capacity, queue is theoretically infinite # - 95% percentile volume exceeds capacity										

Figure 29 above shows 2031 Future Total traffic volumes, based on two key assumptions. First, it was assumed that the existing northbound right turn and westbound left turn volumes will be redirected to eastbound through and westbound through movements as a result of WHP being extended beyond 16 Mile Creek. The second assumption is based on a more direct interpretation of Region’s traffic volume projections along WHP, where 2100 vph was used as the maximum future traffic volume along any given WHP segment.

As can be seen in Table 18, the resulting traffic volumes are much better aligned with the final design of WHP at Neyagawa Boulevard intersection. Overall, the subject intersection is within the Town of Oakville and Halton Region operational thresholds. Some movements, including eastbound through, westbound through, westbound left and northbound left turn are at or slightly above capacity during the peak 15 minutes of the AM and PM peak periods, with an average V/C ratio of 1.01. This is typical for an intersection of two arterial roadways, and also in line with existing operations at heavy movements of this intersection. Therefore, no changes to the existing intersection geometry are required to support the 2031 Future Total volumes at William Halton Parkway and Neyagawa Boulevard intersection.

## 7 Conclusions

This Transportation Impact Study has examined the trip generation, access requirements, and Study Area road network impact of the proposed Remington Eno development in North Oakville. The TIS has shown the following:

- a) The proposed development is located along south side of Burnhamthorpe Road, 400 metres east of Neyagawa Boulevard, and will include 292 single detached homes, 309 townhouses, and several multi-storey mid-rise buildings with a total of approximately 1700 apartment units and a total of approximately 15,000 square feet of retail space. However, the landowner of this property has only received allotment for 295 apartment units, in one building. For the purposes of this TIS, all other apartment buildings will be considered beyond the horizons of this study and will be further studied at the time that allotment is received, and those buildings can proceed.
- b) Access to the development will be accommodated via intersection of Settlers Road West and Neyagawa Boulevard (Site Access #1) to the west, and intersection of Carding Mill Trail at future William Halton Parkway (Site Access #2) to the north. Site Access #2 will be located 300 metres west of William Halton Parkway and Burnhamthorpe Road intersection (measured stop bar to stop bar) and will be a full-movement access.
- c) Based on a combination of the historical data and engineering judgement, a 2% per annum compound annual growth rate was selected. This is consistent with the TIS of nearby sites (Neighborhood 9/10/11 and Sherborne Lodge) prepared by CGH Transportation in 2020 and 2021.
- d) To estimate the impact of the subject development on the Study Area a person trip generation exercise has been undertaken. The subject development is anticipated to generate 383 AM and 510 PM two-way peak hour auto trips in 2026 horizon, and 352 AM and 472 PM two-way peak hour auto trips in 2031 horizon. The vehicle trips were estimated using the projected 2026 and 2031 mode shares provided by Halton Region.
- e) Using the existing traffic volumes, projected to 2021, and balanced between adjacent intersections, an operational analysis of existing conditions was undertaken. Through this analysis it was determined that the intersection of Burnhamthorpe Road and Sixth Line is experiencing capacity constraints. However, given the upcoming upgrades to this intersection no major mitigation measures were proposed to address the existing deficiencies.
- f) The 2026 Future Background traffic volumes, including background growth, the construction of William Halton Parkway, the Sixth Line widening, and upgrades to intersections along Burnhamthorpe Road were analysed. To address projected deficiencies the following changes were made to the Study Area road network:
  - a. Neyagawa Boulevard at William Halton Parkway
    - i. Add a third through lane eastbound and westbound
    - ii. Westbound and eastbound dual left turn lanes
    - iii. Signal timing and phasing changes

With the changes noted above, the intersections operations improve significantly, however, eastbound left and westbound left turn movements are still experiencing high delays, as high through volumes were given priority when allocating green time.

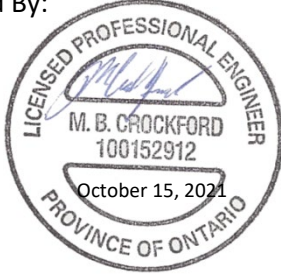
- g) The operations of William Halton Parkway at Neyagawa Boulevard further deteriorate in the 2031 Future Background horizon. No further mitigation measures have been proposed or applied to this intersection as by this horizon it is anticipated that commuters would start to shift from single occupant vehicle trips to transit and active modes. This must be promoted in order to ensure that by 2031 the overall amount

of traffic growth can be accommodated by the Study Area road network. It should also be noted that a 2% background growth rate has been applied to the 2021 balanced volumes and this amount of growth will not be sustained into the future as the area surrounding the subject development will build-out and growth at this rate will not continue indefinitely.

- h) In 2026 Future Total horizon it was found that the addition of the site generated traffic has a minimal impact on the Study Area intersections. Site Access #1 and the internal intersection were shown to operate with good LOS and low delays. The intersection of Carding Mill Trail at William Halton Parkway (Site Access #2) was shown to operate poorly as a result of limited gap opportunities to get in and out of the site. A traffic signal was examined to address these deficiencies and prevent safety hazards. With the proposed signals the Carding Mill Trail at William Halton Parkway intersection was projected to operate at a better LOS. This, however resulted in a V/C ratio of 1.06 at the eastbound through approach. The eastbound approach was also marginally over capacity at the adjacent intersection to the east. However, given that the auto trip generation of the proposed development will decrease in the 2031 Future Total horizon, and considering the overly conservative volume projections along William Halton Parkway, no further mitigations have been explored for the 2026 Future Total horizon.
- i) The addition of the site generated traffic to the 2031 Future Background traffic volumes does not have a significant impact on the Study Area intersections. At the most operationally constrained intersection in the Study Area (Neyagawa Boulevard and William Halton Parkway), the proposed development contributes less than 2.5 percent of the peak hour volumes. Some of the movements at Neyagawa Boulevard and William Halton Parkway shift just over capacity with the addition of site generated trips, however, the poor LOS is predominantly caused by background volumes as the V/C ratios at failing movements were approaching capacity in the 2031 Future Background horizon.
- j) The site accesses and the internal intersection generally operate with reasonable LOS during the 2031 Future Total horizon, with the exception of the eastbound through movement at William Halton Parkway and Carding Mill Trail intersection. A three-lane configuration has been proposed along William Halton Parkway to bring the V/C ratio of the eastbound movement below one, however it is likely that this mitigation measure is not needed due to the following:
  - a. High volume projections along William Halton Parkway indicate that there may be some overlap between the Regional projections and the background traffic, which results in double counting and an overly conservative estimate.
  - b. A shift from reliance on single occupant vehicles to other modes of travel is anticipated by 2030 which may alleviate some of the capacity constraints.
- k) A sensitivity analysis has been undertaken to ensure that the current configuration of William Halton Parkway at Neyagawa Boulevard, built to the final design of WHP, is sufficient to carry the 2031 Future Total volumes. The results of the analysis show that future demand is within thresholds of the current intersection capacity, and therefore, no mitigation measures are required.
- l) TDM measures are implemented to encourage commuters to shift away from single occupant vehicle trips. For a development of the type proposed for Remington Eno, primarily low-density residential units, the most effective measures are access and usability of transit, cycling and pedestrian facilities. To ensure that the proposed developments are appropriately served by transit, cycling, and pedestrian facilities, concept plans have been prepared.

The proposed development will have a minor impact on the Study Area road network. The proposed accesses and the internal site intersection will operate at an acceptable level of service. The proposed development will provide a good pedestrian and cycling network along with good access to transit throughout the development. It is recommended that, from a transportation perspective, the proposed development application proceeds.

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# Appendix A

Scope Confirmation



# Technical Memorandum

To: Syed Rizvi – Town of Oakville  
Quadri Adebayo– Halton Region

Date: 2020-08-04

Cc: Robin Marinac – CGH Transportation

From: Mark Crockford

Project Number: 2020-60

## Re: Eno Investments Limited North Oakville – Terms of Reference

We have been asked to undertake a Transportation Impact Study (TIS) for Eno Investments property in North Oakville, located approximately 400 metres east of Burnhamthorpe Road at Neyagawa Boulevard. The proposed development includes a mix of 341 single detached houses, 204 townhouses, and an apartment tower with approximately 350 units. It has been indicated that allotment for this development will only allow one of the three 12-storey apartment towers shown on the concept plan, however at a future time it is anticipated that high density blocks will be present in the location of the three apartment towns shown on the plan. The property is currently a greenfield area that is bordered to the north by Burnhamthorpe Road. This section of Burnhamthorpe Road will ultimately become part of the future William Halton Parkway.

CGH has recently completed a TIS for nearby developments which will be used as a reference document for the required TIS.

We have prepared the following TIS scope of work for review. Please let us know if you have any comments or additions.

### Transportation Impact Study Requirements:

The study will be in accordance with North Oakville's *Terms of Reference for Transportation Impact Studies and Transportation Functional Design Studies (2009)*.

### Study Area:

- An overview of the transportation network existing conditions will be documented (including transit, cycling, pedestrian and automobile modes)
- An overview of the Study Area road network will be provided including the road classification and descriptions of:
  - Neyagawa Boulevard
  - Burnhamthorpe Road (William Halton Parkway)
  - Old Burnhamthorpe Road
  - Sixth Line
  - Street A (Carding Mill Trail)
- The following intersections will be included in the Transportation Impact Study:
  - Neyagawa Boulevard at Burnhamthorpe Road (William Halton Parkway) - *Existing*
  - Street A (Carding Mill Trail) at Burnhamthorpe Road (William Halton Parkway) - *Existing*
  - Sixth Line at Burnhamthorpe Road - *Existing*
  - William Halton Parkway at Old Burnhamthorpe Road - *Future*
  - Internal intersection of Street B at Street A (Carding Mill Trail) - *Future*
- Existing Turning Movement Count Summary Reports for Neyagawa Boulevard at Burnhamthorpe Road (William Halton Parkway), Street A (Carding Mill Trail) at Burnhamthorpe Road (William Halton Parkway), and Sixth Line at

Burnhamthorpe Road will be requested from the Town of Oakville and used to determine the existing volumes at the applicable Study Area intersections.

- Signal Timing Plans for Trafalgar Road at Neyagawa Boulevard at Burnhamthorpe Road (William Halton Parkway) will be requested from the Town of Oakville.
- Existing collision data to be requested from the Town of Oakville in order to produce a traffic collision analysis

Proposed Development Overview:

- A description of the proposed development and any planned active mode facilities
- Outline of land use as it relates to the development and site statistics
- Transportation Demand Management (TDM) supportive elements of the proposed development

Study Horizon & Peak Periods:

- Base year 2020, followed by a build-out future horizon of 2025 (five-year future horizon)
- AM and PM peak hour horizons

Background Growth:

- A 2% compound annual background growth rate will be used to project both the 2020 existing volumes and 2025 future horizon volumes. These growth rates have been taken from the Transportation Impact Study for the adjacent development of Neighbourhood 9/10/11 in order to ensure consistency
- Surrounding development traffic impact assessments

Development Site Traffic:

- Trip generation: ITE Trip Generation Manual 10<sup>th</sup> Edition
- Existing Modal Split: TTS
- Future Modal Split: TTS and consideration of planned transportation improvements and future implemented TDM measures
- Trip distribution and assignment of auto trips: TTS, surrounding area characteristics
- Trip reductions as required

Analysis:

- Traffic analysis to be performed using Synchro 10, on Study Area network intersections to determine the LOS, delay, V / C ratio and the 95<sup>th</sup> percentile queues for both signalized and unsignalized intersections as well as individual critical movements using Highway Capacity Manual (HCM) methodology
  - Heavy Vehicle %, Peak Hour Factors, pedestrian volumes, and cyclist volumes will be taken from the collected TMC data
  - Other Synchro inputs will be based on site observations as well as Synchro default parameters
- A qualitative transit, cycling, and pedestrian analysis in consideration of any planned improvements
- Safety analysis to be performed if required
- Access location analysis including a sight distance evaluation
- Site parking, loading and circulation to be considered where necessary

Recommendations:

- Any recommended offsite improvements or mitigation measures, which may include turn lane requirements, pedestrian / cycling / transit amenities, construction impacts, safety measures etc.

## Viktoriya Zaytseva

---

**From:** Adebayo, Quadri <Quadri.Adebayo@halton.ca>  
**Sent:** August 18, 2020 3:34 PM  
**To:** Mark Crockford  
**Cc:** Robin Marinac; Syed Rizvi  
**Subject:** RE: 374 Burnhamthorpe Road (Response to TIS Terms of Reference)

Good afternoon Mark,

Below is our transportation planning staff comments after reviewing the TIS terms of reference thus:

The terms of reference state “The study will be in accordance with North Oakville’s Terms of Reference for Transportation Impact Studies and Transportation Functional Design Studies (2009).” The Study must also be in accordance to Halton Region’s Transportation Impact Study Guidelines (2015), Halton’s Access By-Law 32-17 and Halton’s Access Management Guidelines (2015).

The study intersections listed in the terms of reference are acceptable.

### Data Requests:

For the traffic volume counts and traffic signal timing, information can be requested from our Road Operations group at [trafficdatarequests@halton.ca](mailto:trafficdatarequests@halton.ca). Additionally, collision data for the area must be obtained for the last 5 years and outlined in the Study as part of a safety assessment. \*Considering the current times we are experiencing with COVID-19, older counts may be used with an acceptable growth rate of 2% for the through movements at the Burnhamthorpe/Neyagawa intersection and along Burnhamthorpe. I would ask that if this is the case, please obtain at least two counts from past years and, review the consistency in all movements for both counts, prior to using. Should you find a discrepancy, please discuss with me prior to moving forward.

### Burnhamthorpe Road:

Burnhamthorpe Road is currently designated as a Regional arterial road under the jurisdiction of Halton Region. However, a new roadway (William Halton Parkway) is being built just north of Burnhamthorpe Road and is expected to address future east-west travel demands in this area, replacing the Regional road function of Burnhamthorpe Road.

Burnhamthorpe Road is to be transferred to the Town in approximately 3-5 years, with the section from Sixth Line to Trafalgar Road to be transferred in the next 6-12 months.

For the Town’s Burnhamthorpe Road Character Study and Class Environmental Assessment information, please see the study at this link: <https://www.oakville.ca/residents/eas-burnhamthorpe.html>

For any area developments, Town of Oakville development engineering staff will provide area development details.

The TIS report shall 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

Transit Mode Splits:

Halton's Transportation Master Plan 2011 utilizes a transit mode split of 10% for 2021, 15% for 2026 and 20% for 2031. Assumption of travel via other modes (active transportation i.e.: walk, cycle) should utilize a 5% mode split for 2031. Transportation Demand Management (TDM) assumptions of 3% for 2031 would also be acceptable.

Let me know if you have further questions

Regards,

Quadri Adebayo

**Quadri Adebayo, M.PL, PMP**

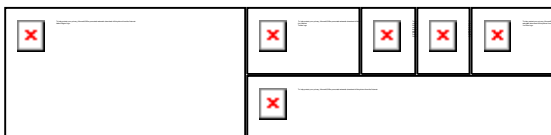
**Intermediate Planner**

Planning Services

Legislative & Planning Services

**Halton Region**

905-825-6000, ext. 3105 | 1-866-442-5866



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---

**From:** Adebayo, Quadri  
**Sent:** Wednesday, August 12, 2020 3:51 PM  
**To:** 'Mark Crockford' <mark.crockford@cghtransportation.com>

**Cc:** Robin Marinac <[robin.marinac@cghtransportation.com](mailto:robin.marinac@cghtransportation.com)>

**Subject:** RE: 374 Burnhamthorpe Road

Thanks for the information.

This is to acknowledge receipt of your email and to advise that I have forwarded it on to the Region's Transportation Planner (Matt Krusto). He will communicate with you after he reviews it.

Regards,

Quadri

---

**From:** Mark Crockford <[mark.crockford@cghtransportation.com](mailto:mark.crockford@cghtransportation.com)>

**Sent:** Wednesday, August 12, 2020 3:25 PM

**To:** Adebayo, Quadri <[Quadri.Adebayo@halton.ca](mailto:Quadri.Adebayo@halton.ca)>; Syed Rizvi <[syed.rizvi@oakville.ca](mailto:syed.rizvi@oakville.ca)>

**Cc:** Robin Marinac <[robin.marinac@cghtransportation.com](mailto:robin.marinac@cghtransportation.com)>

**Subject:** 374 Burnhamthorpe Road

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Hi Quadri and Syed,

We have been asked to undertake a TIS for 374 Burnhamthorpe Road. As part of our startup for this we've prepared a Terms of Reference for your review, please see attached. We've also included a preliminary concept plan for discussion purposes, please keep in mind this plan will likely change throughout the process. Please let us know if you have any comments or questions.

Thanks,  
Mark



Mark Crockford, P.Eng.

**CGH Transportation Inc.**

P:905-251-4070

E:[Mark.Crockford@CGHTransportation.com](mailto:Mark.Crockford@CGHTransportation.com)

## Viktoriya Zaytseva

---

**From:** Syed Rizvi <syed.rizvi@oakville.ca>  
**Sent:** August 18, 2020 4:13 PM  
**To:** Mark Crockford; Quadri.Adebayo@halton.ca  
**Cc:** Robin Marinac  
**Subject:** RE: 374 Burnhamthorpe Road

Hi Mark,

Town's Transportation comments on the TOR submitted are below:

- Add "Street B" and Neyagawa Blvd among the study area intersections.
- 2% annual growth rate for the area where sizeable developments are planned for next 5-8 years seems to be very low. The TIS that was completed recently should be consulted for consistency and growth factor should be used after approval from Region with cc to Town staff.
- A separate email for the traffic data required should be sent to the town staff for data processing.

Please feel free to contact if you have any questions.

Thanks,  
Syed

**Syed Rizvi, M.Sc., P. Eng**  
**Transportation Engineer**  
**Engineering & Construction**  
Town of Oakville | 905-845-6601, ext.3981 | [www.oakville.ca](http://www.oakville.ca)

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<http://www.oakville.ca/privacy.html>

---

**From:** Mark Crockford <mark.crockford@cghtransportation.com>  
**Sent:** August 12, 2020 3:25 PM  
**To:** Quadri.Adebayo@halton.ca; Syed Rizvi <syed.rizvi@oakville.ca>  
**Cc:** Robin Marinac <robin.marinac@cghtransportation.com>  
**Subject:** 374 Burnhamthorpe Road

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Hi Quadri and Syed,

We have been asked to undertake a TIS for 374 Burnhamthorpe Road. As part of our startup for this we've prepared a Terms of Reference for your review, please see attached. We've also included a preliminary concept plan for discussion purposes, please keep in mind this plan will likely change throughout the process. Please let us know if you have any comments or questions.

# Appendix B

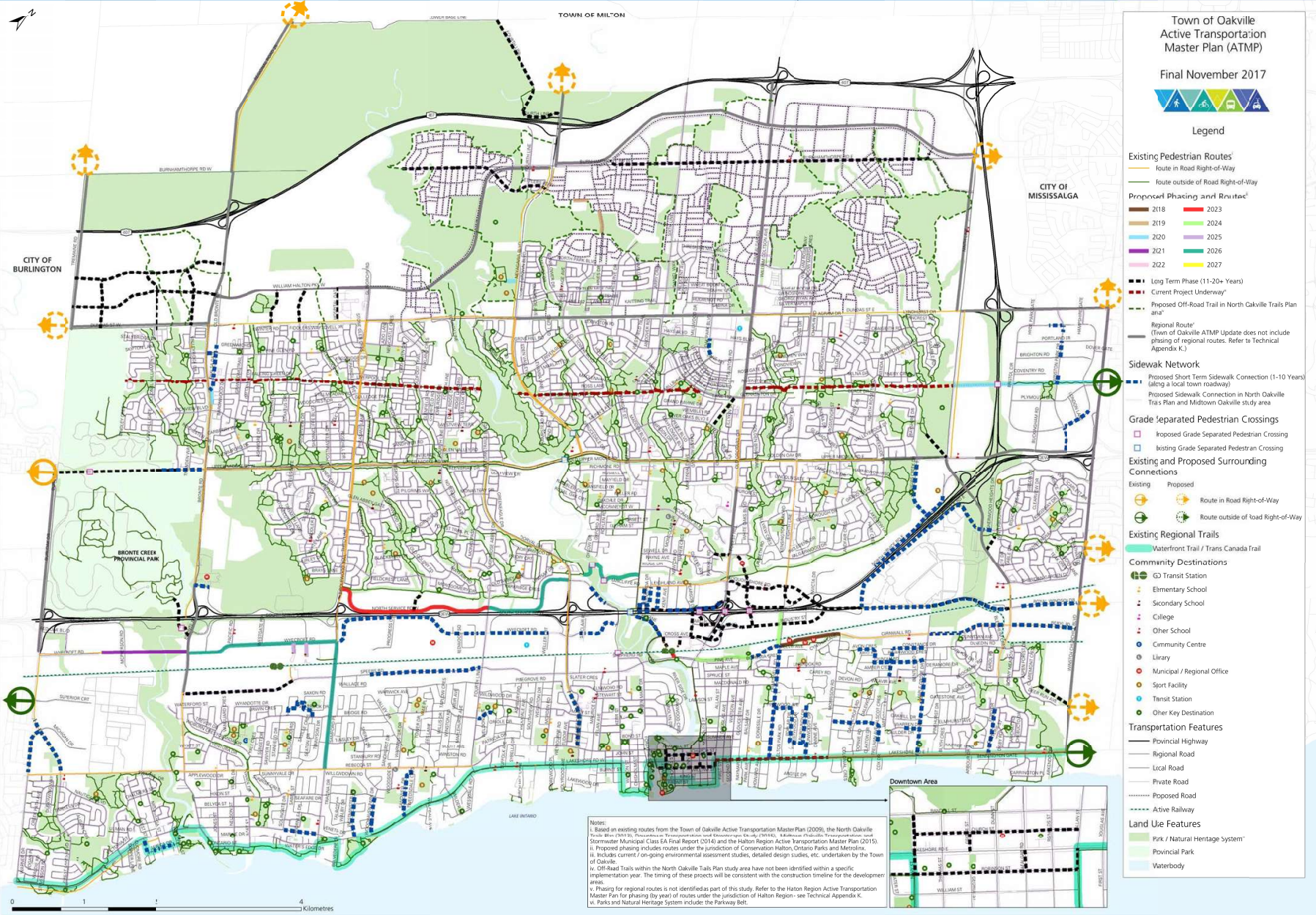
Town of Oakville Active Transportation Master Plan Maps



# Map 8 - Proposed Pedestrian Network Phasing



# Map 8



Town of Oakville  
Active Transportation  
Master Plan (ATMP)  
Final November 2017



- Legend**
- Existing Pedestrian Routes<sup>1</sup>**
    - Route in Road Right-of-Way
    - Route outside of Road Right-of-Way
  - Proposed Phasing and Routes<sup>2</sup>**
    - 2018
    - 2019
    - 2020
    - 2021
    - 2022
    - 2023
    - 2024
    - 2025
    - 2026
    - 2027
  - Long Term Phase (11-20+ Years)
  - Current Project Underway<sup>3</sup>
  - Proposed Off-Road Trail in North Oakville Trails Plan area<sup>4</sup>
  - Regional Route<sup>5</sup> (Town of Oakville ATMP Update does not include phasing of regional routes. Refer to Technical Appendix K.)
  - Sidewalk Network**
    - Proposed Short Term Sidewalk Connection (1-10 Years) (along a local town roadway)
    - Proposed Sidewalk Connection in North Oakville Trails Plan and Midtown Oakville study area
  - Grade Separated Pedestrian Crossings**
    - Proposed Grade Separated Pedestrian Crossing
    - Existing Grade Separated Pedestrian Crossing
  - Existing and Proposed Surrounding Connections**
    - Existing: Route in Road Right-of-Way, Route outside of Road Right-of-Way
    - Proposed: Route in Road Right-of-Way, Route outside of Road Right-of-Way
  - Existing Regional Trails**
    - Waterfront Trail / Trans Canada Trail
  - Community Destinations**
    - Transit Station
    - Elementary School
    - Secondary School
    - College
    - Other School
    - Community Centre
    - Library
    - Municipal / Regional Office
    - Sport Facility
    - Transit Station
    - Other Key Destination
  - Transportation Features**
    - Provincial Highway
    - Regional Road
    - Local Road
    - Private Road
    - Proposed Road
    - Active Railway
  - Land Use Features**
    - Park / Natural Heritage System<sup>6</sup>
    - Provincial Park
    - Waterbody

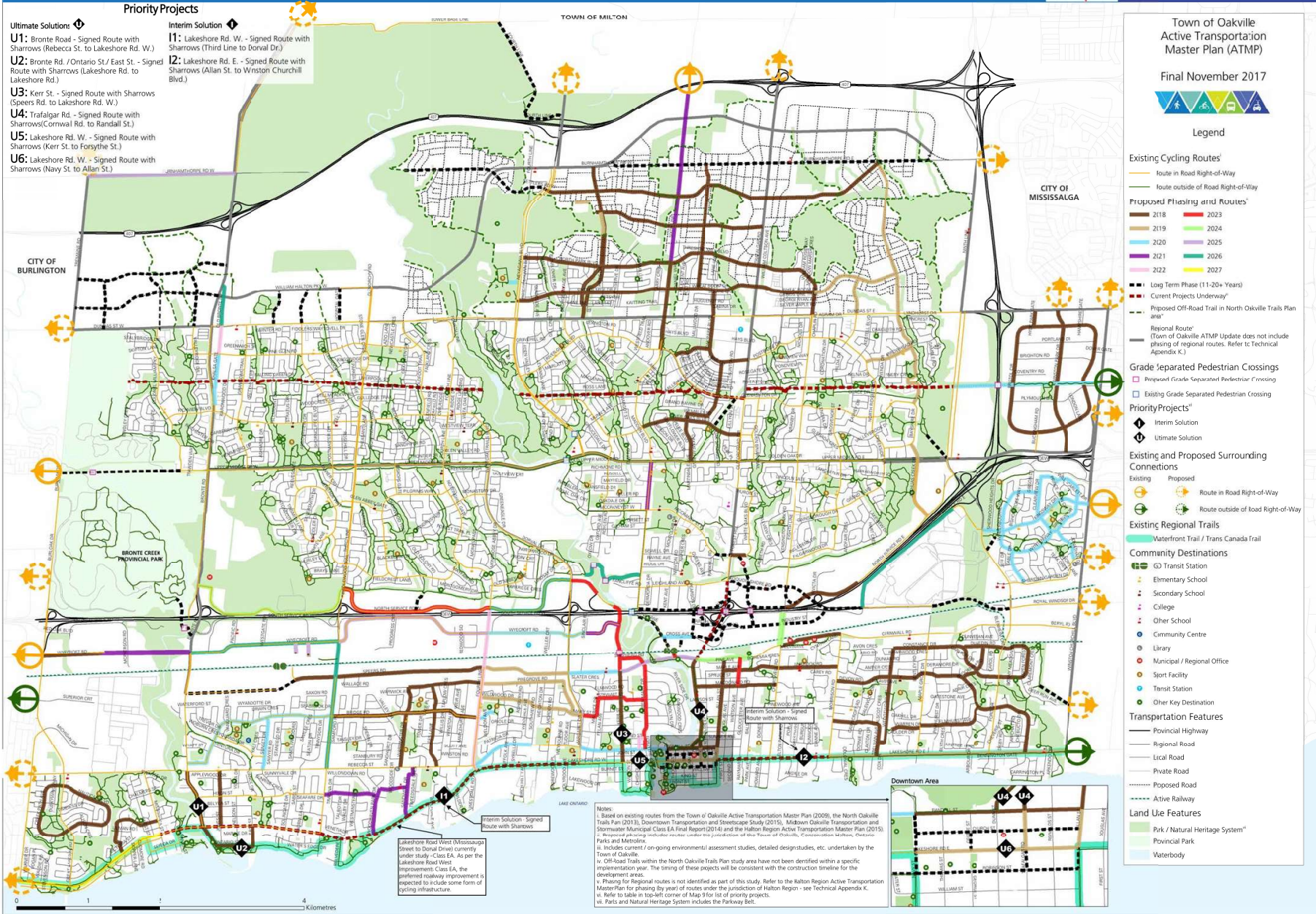
**Notes:**  
 i. Based on existing routes from the Town of Oakville Active Transportation Master Plan (2009), the North Oakville Trails Plan (2010), Pedestrian Transportation and Mobility Study (2014), Midtown Oakville Transportation and Stormwater Municipal Class EA Final Report (2014) and the Halton Region Active Transportation Master Plan (2015).  
 ii. Proposed phasing includes routes under the jurisdiction of Conservation Halton, Ontario Parks and Metrolinx.  
 iii. Includes currently ongoing environmental assessment studies, detailed design studies, etc. undertaken by the Town of Oakville.  
 iv. Off-Road Trails within the North Oakville Trails Plan study area have not been identified within a specific implementation year. The timing of these projects will be consistent with the construction timeline for the development areas.  
 v. Phasing for regional routes is not identified as part of this study. Refer to the Halton Region Active Transportation Master Plan for phasing (by year) of routes under the jurisdiction of Halton Region - see Technical Appendix K. vi. Parks and Natural Heritage System includes the Parkway Belt.



# Map 9 - Proposed Cycling Network Phasing & Priority Projects

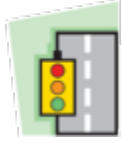


# Map 9



# Appendix C

Turning Movement Count Data



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## Project #20-185 - CGH Transportation

### Intersection Count Report

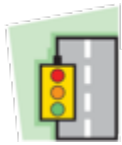
**Intersection:** Settlers Rd W & Neyagawa Blvd  
**Municipality:** Oakville  
**Count Date:** Nov 17, 2020  
**Site Code:** 2018500001  
**Count Categories:** Cars, Trucks, Bicycles, Pedestrians  
**Count Period:** 07:00-09:00, 16:00-18:00  
**Weather:** Clear



## Traffic Count Map

Intersection: Settlers Rd W & Neyagawa Blvd  
Municipality: Oakville  
Count Date: Nov 17, 2020





## Traffic Count Summary

Intersection: Settlers Rd W & Neyagawa Blvd  
Municipality: Oakville  
Count Date: Nov 17, 2020

### Neyagawa Blvd - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	153	0	0	153	1	9	271	0	0	280	0
08:00 - 09:00	0	262	5	0	267	0	68	306	0	0	374	0
BREAK												
16:00 - 17:00	0	295	2	0	297	0	28	220	0	0	248	0
17:00 - 18:00	0	250	4	0	254	0	33	197	0	0	230	0
<b>GRAND TOTAL</b>	<b>0</b>	<b>960</b>	<b>11</b>	<b>0</b>	<b>971</b>	<b>1</b>	<b>138</b>	<b>994</b>	<b>0</b>	<b>0</b>	<b>1132</b>	<b>0</b>



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## Traffic Count Summary

Intersection: Settlers Rd W & Neyagawa Blvd  
Municipality: Oakville  
Count Date: Nov 17, 2020

### Settlers Rd W - Traffic Summary

Hour	East Approach Totals						West Approach Totals					
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	0	0	0	0	0	6	0	12	0	18	0
08:00 - 09:00	0	0	0	0	0	0	8	0	31	0	39	0
BREAK												
16:00 - 17:00	0	0	0	0	0	0	2	0	14	0	16	0
17:00 - 18:00	0	0	0	0	0	0	0	0	25	0	25	0
<b>GRAND TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>82</b>	<b>0</b>	<b>98</b>	<b>0</b>



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## Traffic Count Data

Intersection: Settlers Rd W & Neyagawa Blvd  
Municipality: Oakville  
Count Date: Nov 17, 2020

### North Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	32	0	0	32	0	2	0	0	2	0	0	0	0	0	0
07:15	0	41	0	0	41	0	1	0	0	1	0	0	0	0	0	1
07:30	0	30	0	0	30	0	0	0	0	0	0	0	0	0	0	0
07:45	0	47	0	0	47	0	0	0	0	0	0	0	0	0	0	0
08:00	0	53	1	0	54	0	0	0	0	0	0	0	0	0	0	0
08:15	0	58	3	0	61	0	1	0	0	1	0	0	0	0	0	0
08:30	0	84	0	0	84	0	1	0	0	1	0	0	0	0	0	0
08:45	0	62	1	0	63	0	3	0	0	3	0	0	0	0	0	0
<b>SUBTOTAL</b>	0	407	5	0	412	0	8	0	0	8	0	0	0	0	0	1





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## Traffic Count Data

Intersection: Settlers Rd W & Neyagawa Blvd  
Municipality: Oakville  
Count Date: Nov 17, 2020

### North Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds	
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total		
16:00	0	78	1	0	79	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	61	1	0	62	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	80	0	0	80	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	76	0	0	76	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	56	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	71	1	0	72	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	67	1	0	68	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	56	2	0	58	0	0	0	0	0	0	0	0	0	0	0	0
<b>SUBTOTAL</b>	0	545	6	0	551	0	0	0	0	0	0	0	0	0	0	0	0
<b>GRAND TOTAL</b>	0	952	11	0	963	0	8	0	0	8	0	0	0	0	0	0	1



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## Traffic Count Data

Intersection: Settlers Rd W & Neyagawa Blvd  
Municipality: Oakville  
Count Date: Nov 17, 2020

### South Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds	
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total		
07:00	0	67	0	0	67	0	0	0	0	0	0	0	0	0	0	0	0
07:15	2	77	0	0	79	0	0	0	0	0	0	0	0	0	0	0	0
07:30	3	69	0	0	72	0	0	0	0	0	0	0	0	0	0	0	0
07:45	4	58	0	0	62	0	0	0	0	0	0	0	0	0	0	0	0
08:00	10	77	0	0	87	0	6	0	0	6	0	0	0	0	0	0	0
08:15	19	91	0	0	110	1	3	0	0	4	0	0	0	0	0	0	0
08:30	29	74	0	0	103	0	4	0	0	4	0	0	0	0	0	0	0
08:45	9	47	0	0	56	0	4	0	0	4	0	0	0	0	0	0	0
<b>SUBTOTAL</b>	76	560	0	0	636	1	17	0	0	18	0	0	0	0	0	0	0



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## Traffic Count Data

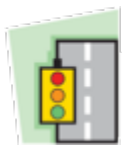
Intersection: Settlers Rd W & Neyagawa Blvd  
Municipality: Oakville  
Count Date: Nov 17, 2020

### South Approach - Neyagawa Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	4	52	0	0	56	0	1	0	0	1	0	0	0	0	0	0
16:15	7	58	0	0	65	0	1	0	0	1	0	0	0	0	0	0
16:30	9	52	0	0	61	0	0	0	0	0	0	0	0	0	0	0
16:45	8	56	0	0	64	0	0	0	0	0	0	0	0	0	0	0
17:00	8	48	0	0	56	0	0	0	0	0	0	0	0	0	0	0
17:15	7	61	0	0	68	0	0	0	0	0	0	0	0	0	0	0
17:30	8	51	0	0	59	0	0	0	0	0	0	0	0	0	0	0
17:45	10	37	0	0	47	0	0	0	0	0	0	0	0	0	0	0
<b>SUBTOTAL</b>	61	415	0	0	476	0	2	0	0	2	0	0	0	0	0	0
<b>GRAND TOTAL</b>	137	975	0	0	1112	1	19	0	0	20	0	0	0	0	0	0







# 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:** Settlers Rd W & Neyagawa Blvd  
**Site ID:** 2018500001  
**Count Date:** Nov 17, 2020

**Weather conditions:**

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

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

**North Approach**

	Out	In	Total
	262	297	559
	5	17	22
	0	0	0
<b>Totals</b>	<b>267</b>	<b>314</b>	<b>581</b>

**Neyagawa Blvd**

	0	0	0
	0	5	0
	5	257	0
<b>Totals</b>	<b>5</b>	<b>262</b>	<b>0</b>



**Peds: 0**

**Settlers Rd W**

			Totals
0	0	0	<b>0</b>
0	0	8	<b>8</b>
0	0	31	<b>31</b>

**Peds: 0**



**Peds: 0**

**Peds: 0**

**West Approach**

	Out	In	Total
	39	72	111
	0	1	1
	0	0	0
<b>Totals</b>	<b>39</b>	<b>73</b>	<b>112</b>

Totals	68	306	0
	67	289	0
	1	17	0
	0	0	0

**Neyagawa Blvd**

**South Approach**

	Out	In	Total
	356	288	644
	18	5	23
	0	0	0
<b>Totals</b>	<b>374</b>	<b>293</b>	<b>667</b>

- Cars

- Trucks

- Bicycles

**Comments**



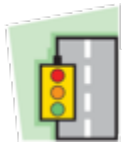
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## Peak Hour Summary

Intersection: Settlers Rd W & Neyagawa Blvd  
 Count Date: Nov 17, 2020  
 Period: 07:00 - 09:00

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

Start Time	North Approach Neyagawa Blvd					South Approach Neyagawa Blvd					East Approach					West Approach Settlers Rd W					Total Vehicles				
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑		→	↻	Peds	Total
08:00		53	1	0	0	54	10	83		0	0	93					0		2		5	0	0	7	154
08:15		59	3	0	0	62	20	94		0	0	114					0		0		4	0	0	4	180
08:30		85	0	0	0	85	29	78		0	0	107					0		2		13	0	0	15	207
08:45		65	1	0	0	66	9	51		0	0	60					0		4		9	0	0	13	139
<b>Grand Total</b>		<b>262</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>267</b>	<b>68</b>	<b>306</b>		<b>0</b>	<b>0</b>	<b>374</b>					<b>0</b>	<b>0</b>	<b>8</b>		<b>31</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>680</b>
<b>Approach %</b>		98.1	1.9	0	-	-	18.2	81.8		0	-	-					-	-	20.5		79.5	0	-	-	
<b>Totals %</b>		38.5	0.7	0	-	39.3	10	45		0	-	55					0	-	1.2		4.6	0	-	5.7	
<b>PHF</b>		<b>0.77</b>	<b>0.42</b>	<b>0</b>	<b>0</b>	<b>0.79</b>	<b>0.59</b>	<b>0.81</b>		<b>0</b>	<b>0</b>	<b>0.82</b>					<b>0</b>	<b>0</b>	<b>0.5</b>		<b>0.6</b>	<b>0</b>	<b>0</b>	<b>0.65</b>	<b>0.82</b>
<b>Cars</b>		257	5	0	-	262	67	289		0	-	356					0	-	8		31	0	-	39	657
<b>% Cars</b>		98.1	100	0	-	98.1	98.5	94.4		0	-	95.2					0	-	100		100	0	-	100	96.6
<b>Trucks</b>		5	0	0	-	5	1	17		0	-	18					0	-	0		0	0	-	0	23
<b>% Trucks</b>		1.9	0	0	-	1.9	1.5	5.6		0	-	4.8					0	-	0		0	0	-	0	3.4
<b>Bicycles</b>		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
<b>Peds</b>					0	-				0	-						0	-				0	-		0
<b>% Peds</b>					0	-				0	-						0	-				0	-		0



# 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:** Settlers Rd W & Neyagawa Blvd  
**Site ID:** 2018500001  
**Count Date:** Nov 17, 2020

**Weather conditions:**

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

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

**North Approach**

	Out	In	Total
	297	220	517
	0	2	2
	0	0	0
<b>Totals</b>	<b>297</b>	<b>222</b>	<b>519</b>

**Neyagawa Blvd**

	0	0	0
	0	0	0
	2	295	0
<b>Totals</b>	<b>2</b>	<b>295</b>	<b>0</b>



**Peds: 0**

**Settlers Rd W**

			Totals	
0	0	0	0	
0	0	2	2	
0	0	14	14	

**Peds: 0**



**Peds: 0**

**Peds: 0**

**West Approach**

	Out	In	Total
	16	30	46
	0	0	0
	0	0	0
<b>Totals</b>	<b>16</b>	<b>30</b>	<b>46</b>

	Out	In	Total
<b>Totals</b>	<b>28</b>	<b>220</b>	<b>0</b>
	28	218	0
	0	2	0
	0	0	0

**Neyagawa Blvd**

**South Approach**

	Out	In	Total
	246	309	555
	2	0	2
	0	0	0
<b>Totals</b>	<b>248</b>	<b>309</b>	<b>557</b>

- Cars

- Trucks

- Bicycles

**Comments**





**Ontario Traffic Inc.**  
TRAFFIC MONITORING SERVICES & PRODUCTS

## Peak Hour Summary

Intersection: Settlers Rd W & Neyagawa Blvd  
 Count Date: Nov 17, 2020  
 Period: 16:00 - 18:00

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

Start Time	North Approach Neyagawa Blvd					South Approach Neyagawa Blvd					East Approach					West Approach Settlers Rd W					Total Vehicles				
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑		→	↻	Peds	Total
16:00		78	1	0	0	79	4	53		0	0	57					0		0		5	0	0	5	141
16:15		61	1	0	0	62	7	59		0	0	66					0		0		3	0	0	3	131
16:30		80	0	0	0	80	9	52		0	0	61					0		0		3	0	0	3	144
16:45		76	0	0	0	76	8	56		0	0	64					2		0		3	0	0	5	145
<b>Grand Total</b>		<b>295</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>297</b>	<b>28</b>	<b>220</b>		<b>0</b>	<b>0</b>	<b>248</b>					<b>0</b>	<b>0</b>	<b>2</b>		<b>14</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>561</b>
<b>Approach %</b>		99.3	0.7	0	-	-	11.3	88.7		0	-	-					-	-	12.5		87.5	0	-	-	
<b>Totals %</b>		52.6	0.4	0	-	52.9	5	39.2		0	-	44.2					0	-	0.4		2.5	0	-	2.9	
<b>PHF</b>		<b>0.92</b>	<b>0.5</b>	<b>0</b>	<b>0</b>	<b>0.93</b>	<b>0.78</b>	<b>0.93</b>		<b>0</b>	<b>0</b>	<b>0.94</b>					<b>0</b>	<b>0</b>	<b>0.25</b>		<b>0.7</b>	<b>0</b>	<b>0</b>	<b>0.8</b>	<b>0.97</b>
<b>Cars</b>		295	2	0	-	297	28	218		0	-	246					0	-	2		14	0	-	16	559
<b>% Cars</b>		100	100	0	-	100	100	99.1		0	-	99.2					0	-	100		100	0	-	100	99.6
<b>Trucks</b>		0	0	0	-	0	0	2		0	-	2					0	-	0		0	0	-	0	2
<b>% Trucks</b>		0	0	0	-	0	0	0.9		0	-	0.8					0	-	0		0	0	-	0	0.4
<b>Bicycles</b>		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
<b>Peds</b>					0	-				0	-						0	-			0	-	-		0
<b>% Peds</b>					0	-				0	-						0	-			0	-	-		0

# Burnhamthorpe Rd W @ Neyagawa Blvd

## Morning Peak Diagram

### Specified Period

**From:** 7:00:00

**To:** 9:00:00

### One Hour Peak

**From:** 7:45:00

**To:** 8:45:00

**Municipality:** Halton Region  
**Site #:** 0000003297  
**Intersection:** Neyagawa Blvd & Burnhamthorpe R  
**TFR File #:** 3  
**Count date:** 4-Dec-2019

**Weather conditions:**  
Overcast/Wet  
**Person(s) who counted:**  
Cam

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

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

North Leg Total: 897

North Entering: 317

North Peds: 0

Peds Cross:  $\times$

Heavys	2	7	2	11
Trucks	0	4	2	6
Cars	56	216	28	300
<b>Totals</b>	<b>58</b>	<b>227</b>	<b>32</b>	



Heavys 2

Trucks 1

Cars 577

**Totals 580**

East Leg Total: 684

East Entering: 306

East Peds: 0

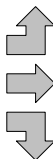
Peds Cross:  $\times$

Heavys	Trucks	Cars	Totals
16	1	294	311

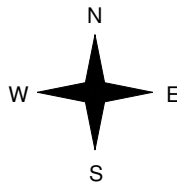


Burnhamthorpe Rd W

Heavys	Trucks	Cars	Totals
1	0	38	39
4	0	61	65
9	0	121	130
14	0	220	



Neyagawa Blvd



Cars	Trucks	Heavys	Totals
12	0	0	12
76	0	6	82
212	0	0	212
300	0	6	

Burnhamthorpe Rd W



Cars	Trucks	Heavys	Totals
368	3	7	378

Peds Cross:  $\times$

West Peds: 0

West Entering: 234

West Leg Total: 545

Cars	549	Cars	162	527	279	968
Trucks	4	Trucks	1	1	1	3
Heavys	16	Heavys	8	1	1	10
<b>Totals</b>	<b>569</b>	<b>Totals</b>	<b>171</b>	<b>529</b>	<b>281</b>	



Peds Cross:  $\times$

South Peds: 0

South Entering: 981

South Leg Total: 1550

## Comments

# Burnhamthorpe Rd W @ Neyagawa Blvd

## Mid-day Peak Diagram

### Specified Period

**From:** 11:00:00

**To:** 14:00:00

### One Hour Peak

**From:** 11:30:00

**To:** 12:30:00

**Municipality:** Halton Region  
**Site #:** 0000003297  
**Intersection:** Neyagawa Blvd & Burnhamthorpe R  
**TFR File #:** 3  
**Count date:** 4-Dec-2019

**Weather conditions:**  
Overcast/Wet  
**Person(s) who counted:**  
Cam

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

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

North Leg Total: 209

North Entering: 93

North Peds: 0

Peds Cross:  $\times$

Heavys	0	5	1	6
Trucks	0	3	0	3
Cars	5	70	9	84
<b>Totals</b>	<b>5</b>	<b>78</b>	<b>10</b>	



Heavys 1

Trucks 3

Cars 112

Totals 116

East Leg Total: 288

East Entering: 137

East Peds: 0

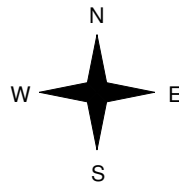
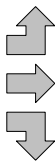
Peds Cross:  $\times$

Heavys	Trucks	Cars	Totals
1	2	91	94



Burnhamthorpe Rd W

Heavys	Trucks	Cars	Totals
0	0	3	3
0	0	23	23
1	1	63	65
1	1	89	



Neyagawa Blvd

Cars	Trucks	Heavys	Totals
7	3	0	10
22	1	0	23
102	0	2	104
131	4	2	

Burnhamthorpe Rd W



Cars	Trucks	Heavys	Totals
145	3	3	151

Peds Cross:  $\times$

West Peds: 1

West Entering: 91

West Leg Total: 185

Cars	235	Cars	64	102	113	279
Trucks	4	Trucks	1	0	3	4
Heavys	8	Heavys	1	1	2	4
<b>Totals</b>	<b>247</b>	<b>Totals</b>	<b>66</b>	<b>103</b>	<b>118</b>	



Peds Cross:  $\times$

South Peds: 0

South Entering: 287

South Leg Total: 534

## Comments

# Burnhamthorpe Rd W @ Neyagawa Blvd

## Afternoon Peak Diagram

### Specified Period

**From:** 15:00:00

**To:** 18:00:00

### One Hour Peak

**From:** 16:45:00

**To:** 17:45:00

**Municipality:** Halton Region  
**Site #:** 0000003297  
**Intersection:** Neyagawa Blvd & Burnhamthorpe R  
**TFR File #:** 3  
**Count date:** 4-Dec-2019

**Weather conditions:**  
Overcast/Wet  
**Person(s) who counted:**  
Cam

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

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

North Leg Total: 671

North Entering: 446

North Peds: 0

Peds Cross:  $\times$

Heavys	0	1	1	2
Trucks	0	0	0	0
Cars	9	419	16	444
<b>Totals</b>	<b>9</b>	<b>420</b>	<b>17</b>	



Heavys 4

Trucks 4

Cars 217

**Totals 225**

East Leg Total: 618

East Entering: 336

East Peds: 0

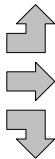
Peds Cross:  $\times$

Heavys	1	Trucks	1	Cars	72	Totals	74
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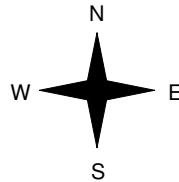


Burnhamthorpe Rd W

Heavys	0	Trucks	0	Cars	3	Totals	3
	1		0		31		32
	0		0		40		40
	1		0		74		



Neyagawa Blvd



Cars	32	Trucks	0	Heavys	3	Totals	35
	24		0		1		25
	276		0		0		276
	332		0		4		

Burnhamthorpe Rd W



Cars	277	Trucks	2	Heavys	3	Totals	282
------	-----	--------	---	--------	---	--------	-----

Peds Cross:  $\times$

West Peds: 0

West Entering: 75

West Leg Total: 149

Cars	735	Cars	39	182	230	451
Trucks	0	Trucks	1	4	2	7
Heavys	1	Heavys	0	1	1	2
<b>Totals</b>	<b>736</b>	<b>Totals</b>	<b>40</b>	<b>187</b>	<b>233</b>	



Peds Cross:  $\times$

South Peds: 0

South Entering: 460

South Leg Total: 1196

## Comments

# Burnhamthorpe Rd W @ Neyagawa Blvd

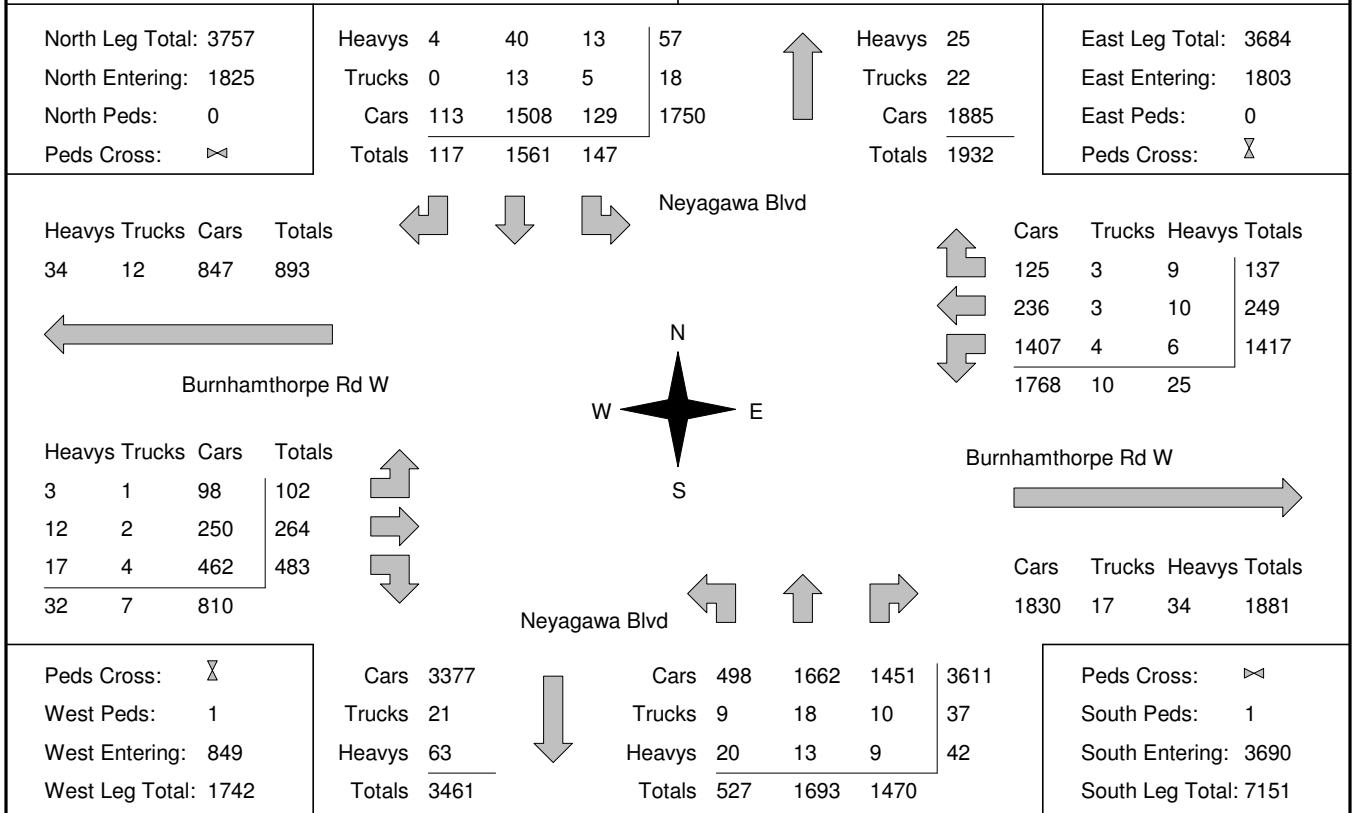
## Total Count Diagram

**Municipality:** Halton Region  
**Site #:** 0000003297  
**Intersection:** Neyagawa Blvd & Burnhamthorpe R  
**TFR File #:** 3  
**Count date:** 4-Dec-2019

**Weather conditions:**  
 Overcast/Wet  
**Person(s) who counted:**  
 Cam

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

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



### Comments

# Burnhamthorpe Rd E @ Sixth Line

## Morning Peak Diagram

### Specified Period

**From:** 7:00:00

**To:** 9:00:00

### One Hour Peak

**From:** 7:45:00

**To:** 8:45:00

**Municipality:** Halton Region  
**Site #:** 0000003298  
**Intersection:** Burnhamthorpe Rd E & Sixth Line  
**TFR File #:** 4  
**Count date:** 4-Dec-2019

**Weather conditions:**  
Overcast/Wet  
**Person(s) who counted:**  
Cam

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Burnhamthorpe Rd E runs W/E

North Leg Total: 693  
 North Entering: 417  
 North Peds: 2  
 Peds Cross:  $\bowtie$

Heavys	1	5	4	10
Trucks	0	1	4	5
Cars	90	188	124	402
<b>Totals</b>	<b>91</b>	<b>194</b>	<b>132</b>	



Heavys	3
Trucks	3
Cars	270
<b>Totals</b>	<b>276</b>

East Leg Total: 903  
 East Entering: 265  
 East Peds: 0  
 Peds Cross:  $\bowtie$

Heavys	Trucks	Cars	Totals
7	1	287	295

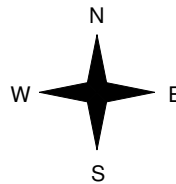


Sixth Line

Cars	Trucks	Heavys	Totals
15	0	0	15
189	1	5	195
54	0	1	55
<b>258</b>	<b>1</b>	<b>6</b>	



Burnhamthorpe Rd E



Heavys	Trucks	Cars	Totals
3	1	90	94
1	0	262	263
2	1	21	24
<b>6</b>	<b>2</b>	<b>373</b>	



Sixth Line

Burnhamthorpe Rd E



Cars	Trucks	Heavys	Totals
627	4	7	638

Peds Cross:  $\bowtie$   
 West Peds: 0  
 West Entering: 381  
 West Leg Total: 676

Cars	263
Trucks	2
Heavys	8
<b>Totals</b>	<b>273</b>



Cars	8	165	241	414
Trucks	0	2	0	2
Heavys	1	0	2	3
<b>Totals</b>	<b>9</b>	<b>167</b>	<b>243</b>	

Peds Cross:  $\bowtie$   
 South Peds: 0  
 South Entering: 419  
 South Leg Total: 692

## Comments

# Burnhamthorpe Rd E @ Sixth Line

## Mid-day Peak Diagram

### Specified Period

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

### One Hour Peak

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

**Municipality:** Halton Region  
**Site #:** 0000003298  
**Intersection:** Burnhamthorpe Rd E & Sixth Line  
**TFR File #:** 4  
**Count date:** 4-Dec-2019

**Weather conditions:**  
Overcast/Wet  
**Person(s) who counted:**  
Cam

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Burnhamthorpe Rd E runs W/E

North Leg Total: 248  
North Entering: 126  
North Peds: 0  
Peds Cross:  $\times$

Heavys	1	2	2	5
Trucks	0	4	3	7
Cars	42	60	12	114
Totals	43	66	17	



Heavys	9
Trucks	4
Cars	109
Totals	122

East Leg Total: 280  
East Entering: 122  
East Peds: 0  
Peds Cross:  $\times$

Heavys	Trucks	Cars	Totals
1	3	135	139

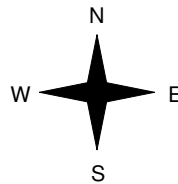


Sixth Line

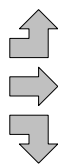
Cars	Trucks	Heavys	Totals
11	2	3	16
80	1	0	81
22	2	1	25
113	5	4	



Burnhamthorpe Rd E



Heavys	Trucks	Cars	Totals
3	0	36	39
0	1	99	100
5	0	19	24
8	1	154	



Burnhamthorpe Rd E



Cars	Trucks	Heavys	Totals
149	4	5	158

Peds Cross:  $\times$   
West Peds: 0  
West Entering: 163  
West Leg Total: 302

Cars	101	Cars	13	62	38	113
Trucks	6	Trucks	2	2	0	4
Heavys	8	Heavys	0	3	3	6
Totals	115	Totals	15	67	41	



Sixth Line



Peds Cross:  $\times$   
South Peds: 0  
South Entering: 123  
South Leg Total: 238

## Comments

# Burnhamthorpe Rd E @ Sixth Line

## Afternoon Peak Diagram

### Specified Period

**From:** 15:00:00

**To:** 18:00:00

### One Hour Peak

**From:** 16:30:00

**To:** 17:30:00

**Municipality:** Halton Region  
**Site #:** 0000003298  
**Intersection:** Burnhamthorpe Rd E & Sixth Line  
**TFR File #:** 4  
**Count date:** 4-Dec-2019

**Weather conditions:**  
Overcast/Wet  
**Person(s) who counted:**  
Cam

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Burnhamthorpe Rd E runs W/E

North Leg Total: 728

North Entering: 263

North Peds: 0

Peds Cross:  $\times$

Heavys	0	0	1	1
Trucks	0	1	0	1
Cars	115	123	23	261
<b>Totals</b>	<b>115</b>	<b>124</b>	<b>24</b>	



Heavys 2

Trucks 0

Cars 463

**Totals 465**

East Leg Total: 707

East Entering: 414

East Peds: 0

Peds Cross:  $\times$

Heavys	Trucks	Cars	Totals
4	0	345	349

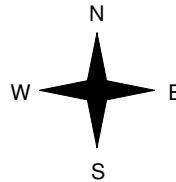


Sixth Line

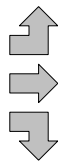
Cars	Trucks	Heavys	Totals
118	0	0	118
204	0	1	205
91	0	0	91
<b>413</b>	<b>0</b>	<b>1</b>	



Burnhamthorpe Rd E



Heavys	Trucks	Cars	Totals
1	0	104	105
2	0	180	182
0	0	11	11
3	0	295	



Sixth Line

Burnhamthorpe Rd E



Cars	Trucks	Heavys	Totals
288	1	4	293

Peds Cross:  $\times$

West Peds: 0

West Entering: 298

West Leg Total: 647

Cars	225	Cars	26	241	85	352
Trucks	1	Trucks	0	0	1	1
Heavys	0	Heavys	3	1	1	5
<b>Totals</b>	<b>226</b>	<b>Totals</b>	<b>29</b>	<b>242</b>	<b>87</b>	



Peds Cross:  $\times$

South Peds: 1

South Entering: 358

South Leg Total: 584

## Comments



# Burnhamthorpe Rd E @ Sixth Line

## Total Count Diagram

**Municipality:** Halton Region  
**Site #:** 0000003298  
**Intersection:** Burnhamthorpe Rd E & Sixth Line  
**TFR File #:** 4  
**Count date:** 4-Dec-2019

**Weather conditions:**  
 Overcast/Wet  
**Person(s) who counted:**  
 Cam

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Burnhamthorpe Rd E runs W/E

North Leg Total: 3820  
 North Entering: 1852  
 North Peds: 2  
 Peds Cross:  $\bowtie$

Heavys	5	15	10	30
Trucks	1	19	14	34
Cars	583	873	332	1788
Totals	589	907	356	



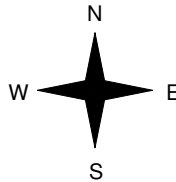
Heavys	35
Trucks	23
Cars	1910
Totals	1968

East Leg Total: 4210  
 East Entering: 1932  
 East Peds: 3  
 Peds Cross:  $\bowtie$

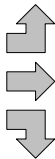
Heavys	Trucks	Cars	Totals
19	11	1799	1829



Burnhamthorpe Rd E



Heavys	Trucks	Cars	Totals
13	3	586	602
12	4	1162	1178
13	4	109	126
38	11	1857	



Sixth Line

Cars	Trucks	Heavys	Totals
337	10	6	353
1115	5	7	1127
440	5	7	452
1892	20	20	

Burnhamthorpe Rd E



Cars	Trucks	Heavys	Totals
2219	27	32	2278

Peds Cross:  $\bowtie$   
 West Peds: 0  
 West Entering: 1906  
 West Leg Total: 3735

Cars	1422	Cars	101	987	725	1813
Trucks	28	Trucks	5	10	9	24
Heavys	35	Heavys	7	16	10	33
Totals	1485	Totals	113	1013	744	



Peds Cross:  $\bowtie$   
 South Peds: 1  
 South Entering: 1870  
 South Leg Total: 3355

### Comments

# Appendix D

Volumes Along Future William Halton Parkway

**From:** [Mark Crockford](#)  
**To:** [Viktoriya Zaytseva](#)  
**Subject:** FW: Neighbourhood 10 - Revised Scope  
**Date:** January 14, 2021 10:39:09 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)

---



Mark Crockford, P.Eng.  
**CGH Transportation Inc.**  
P:905-251-4070  
E:[Mark.Crockford@CGHTransportation.com](mailto:Mark.Crockford@CGHTransportation.com)

---

**From:** Krusto, Matt <Matt.Krusto@halton.ca>  
**Sent:** November 27, 2018 1:56 PM  
**To:** Mark Crockford <mark.crockford@cghtransportation.com>; syed.rizvi@oakville.ca  
**Cc:** Christopher Gordon <christopher.gordon@cghtransportation.com>  
**Subject:** RE: Neighbourhood 10 - Revised Scope

All looks thorough and detailed enough for me.

Thanks Mark!

Matt

**Matt Krusto**  
**Transportation Planning Coordinator**  
Infrastructure Planning & Policy  
Public Works  
**Halton Region**  
905-825-6000, ext. 7225 | 1-866-442-5866



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---

**From:** Mark Crockford [<mailto:mark.crockford@cghtransportation.com>]  
**Sent:** Tuesday, November 27, 2018 12:54 PM

**To:** Krusto, Matt; [syed.rizvi@oakville.ca](mailto:syed.rizvi@oakville.ca)  
**Cc:** Christopher Gordon  
**Subject:** Neighbourhood 10 - Revised Scope

Hi Matt and Syed,

Thank you both for your responses regarding our scope of work on the Neighbourhood 10 TIA. Given that you both had some comments and we've had some additional back and forth I wanted to consolidate it all into a single email. Please see below for the consolidated scope of work. I think I have consolidated everything in this e-mail but please reply to this email if I have missed anything.

Transportation Impact Study Requirements (TIS):

Study will be in accordance to Halton Region's Transportation Impact Guidelines and the North Oakville TIS Guidelines.

**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), [NOTE: Matt and I have discussed one exception where at Sixth Line and Burnhamthorpe Road a 3 year old count will be used, with growth up to 2018]
- 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

Study Area:

The following additional intersections must also be included in the Transportation Impact Study:

- Trafalgar Road and Burnhamthorpe Road
- Trafalgar Road and William Halton Parkway
- Dundas Street and Sixth Line

- William Halton Parkway and Neyagawa
- William Halton Parkway and Street X (to be analyzed as a signalized intersection)
- Site Accesses Intersections (five anticipated at this time, but all will be included if that changes)
- Sixth Line at Burnhamthorpe Road
- Burnhamthorpe Road at William Halton Parkway
- Future Intersection of William Halton Parkway at Sixth Line

#### Study Horizon:

- Base year 2019, followed by 2024, 2030
- AM and PM peak hours for all horizons

#### Background Growth

- % background growth using historical counts
- No TISEs for other developments have been provided for the adjacent lands. Therefore it is assumed this development will proceed in advance of the other developments and no specific background growth will be included in the forecasts.
- For William Halton Parkway, based on a review of Halton's transportation model and updated 2031 volume assumptions for William Halton Parkway, acceptable year 2024 and 2031 eastbound and westbound peak hours volumes are 2100 (eastbound) and 2100 (westbound).

-

#### Transit Mode Splits:

- Halton's Transportation Master Plan 2011 utilizes a transit mode split of 10% for 2021, 15% for 2026 and 20% for 2031. Assumption of travel via other modes (active transportation i.e.: walk, cycle) should utilize a 5% mode split for 2031. Transportation Demand Management (TDM) assumptions of 3% for 2031 would also be acceptable.

#### Trip Generation

- ITE Trip Generation Manual 10<sup>th</sup> Edition
- Base Vehicle Trips will be converted to Person Trips using a factor of 1.28
- Mode Share will be determined using TTS Data.
- Using the existing Mode Share the trip generation by mode will be calculated
- Distribution and Assignment will be determined using TTS Data

#### Changes to the Study Area Road Network:

##### **Sixth Line Widening**

- Assumed to be in place by the 2024 analysis horizon.

##### **William Halton Parkway**

- Assumed to be in place by the 2024 analysis horizon.

Thanks,

Mark

# Appendix E

Landowner's Group Neighborhood 9/10/11 Traffic Volumes

Figure 23: 2024 Traffic Assignment (Sheet A)

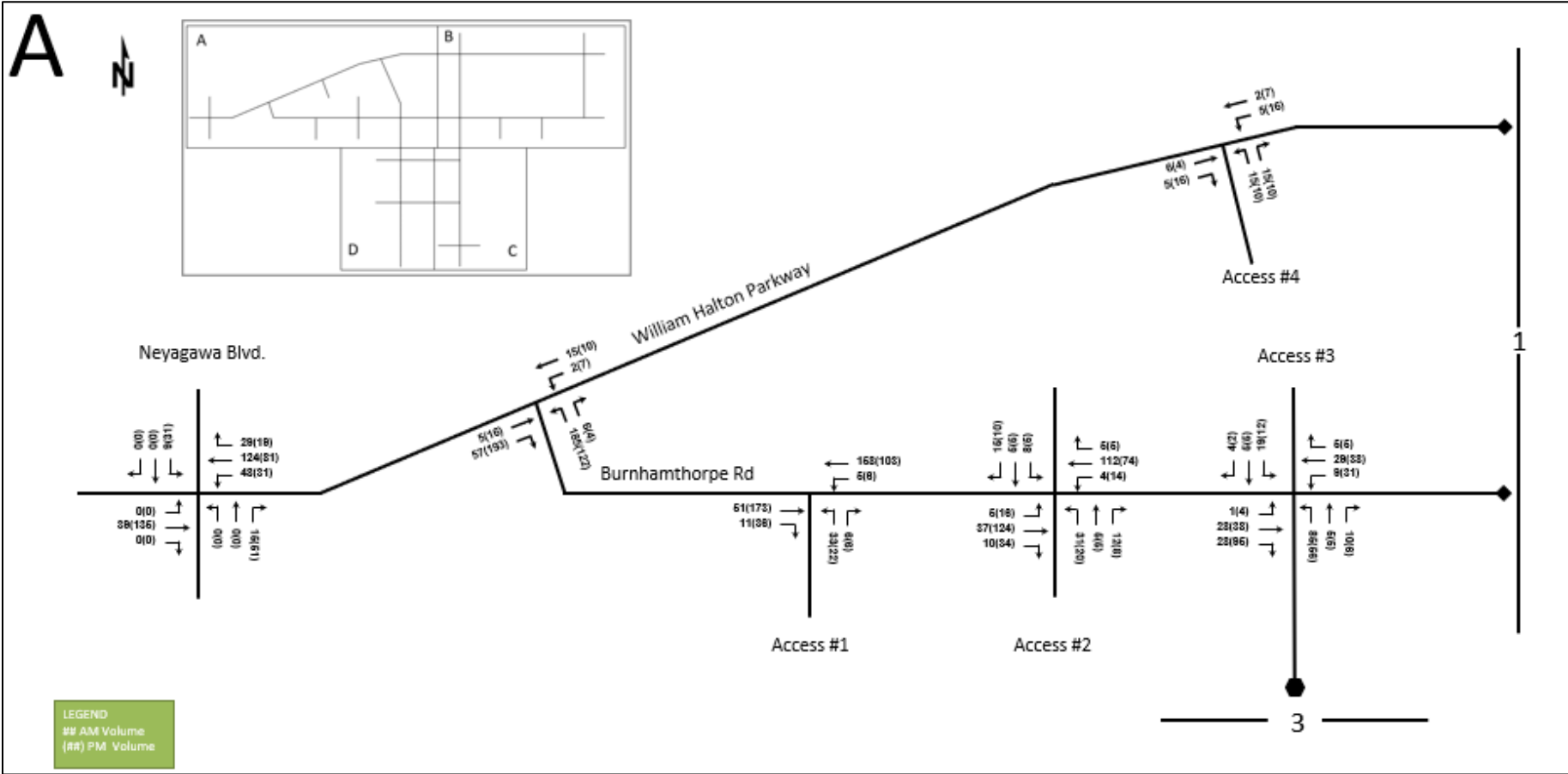


Figure 24: 2024 Traffic Assignment (Sheet B)

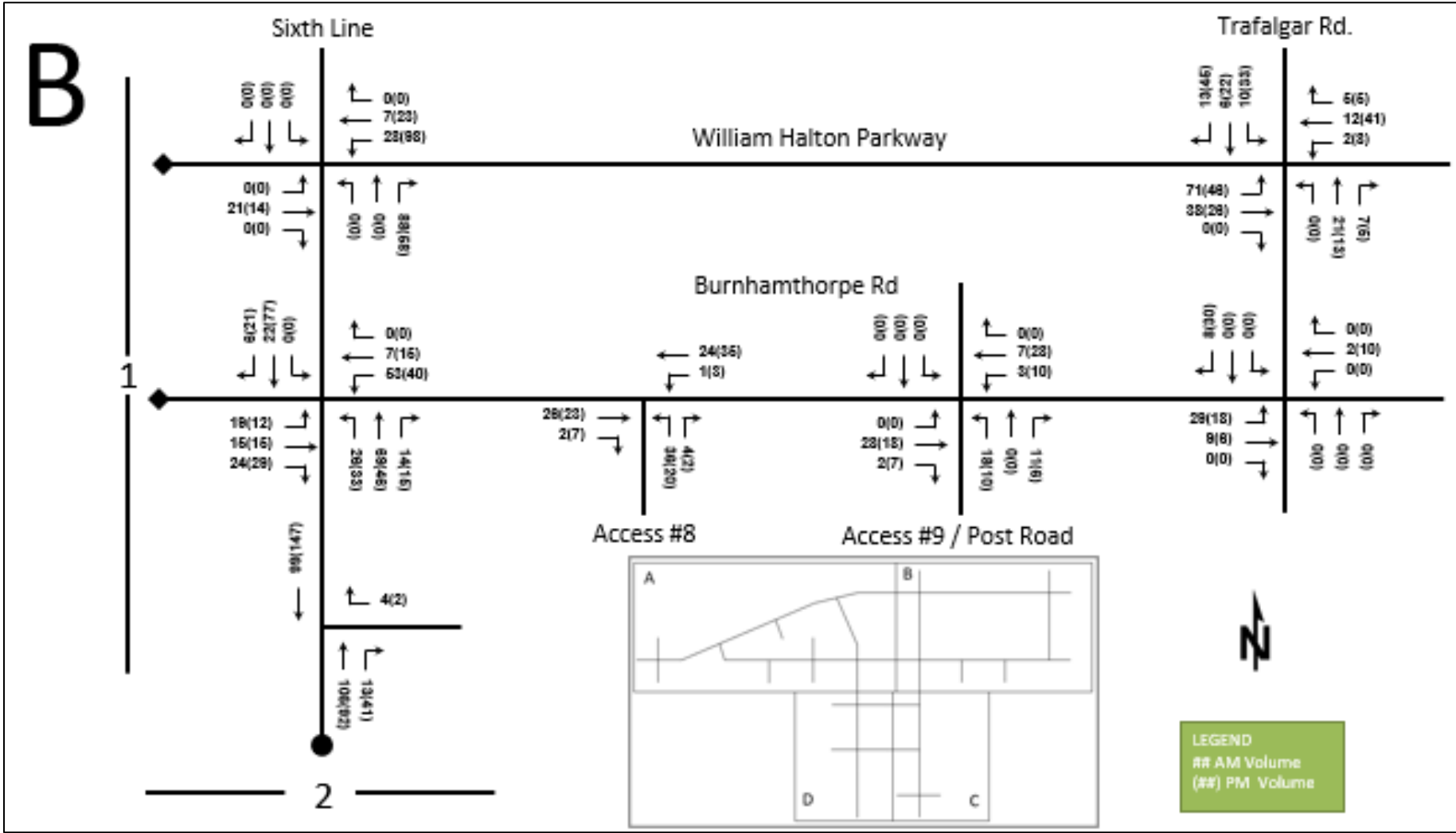




Figure 25: 2024 Traffic Assignment (Sheet C)

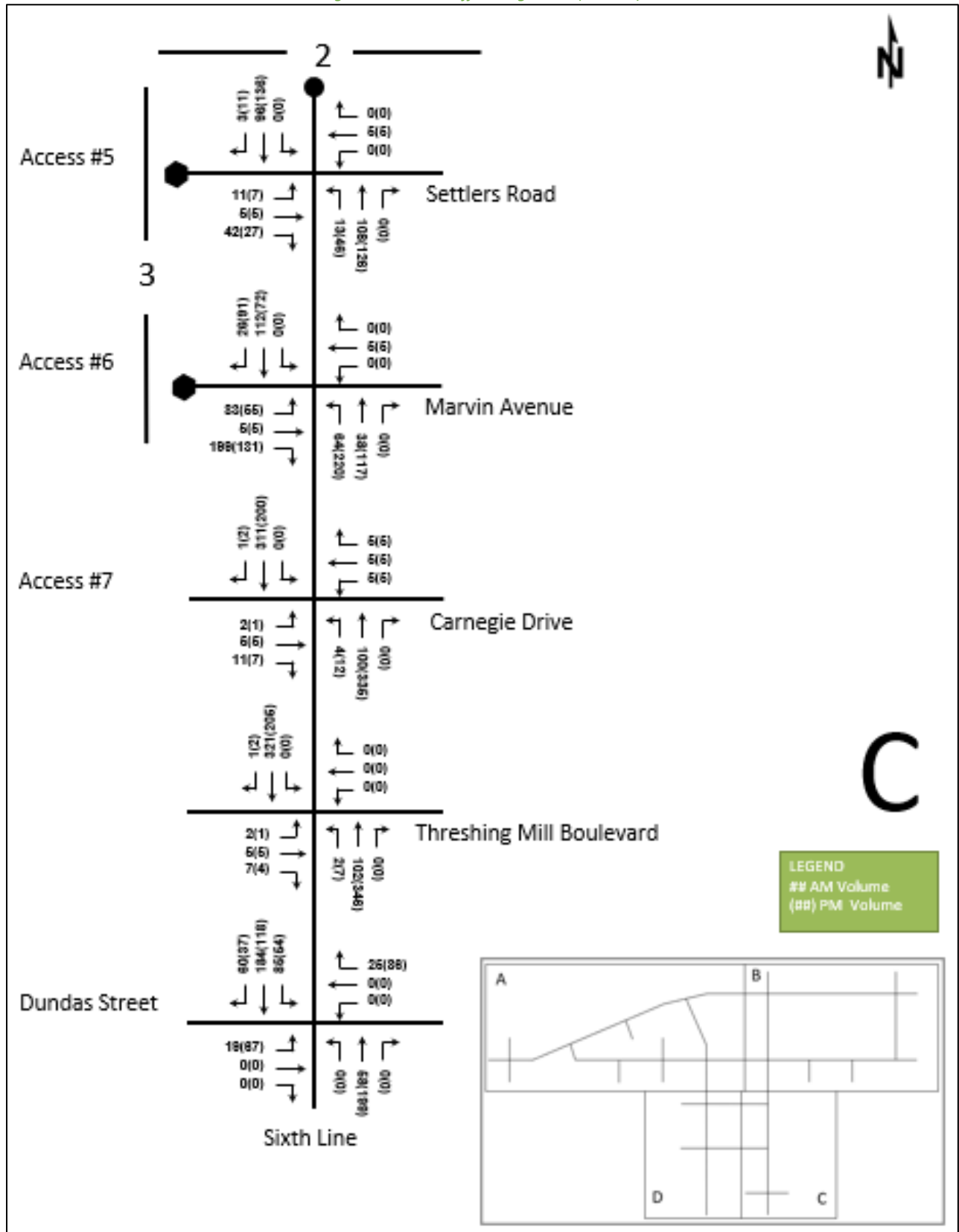


Figure 26: 2024 Traffic Assignment (Sheet D)

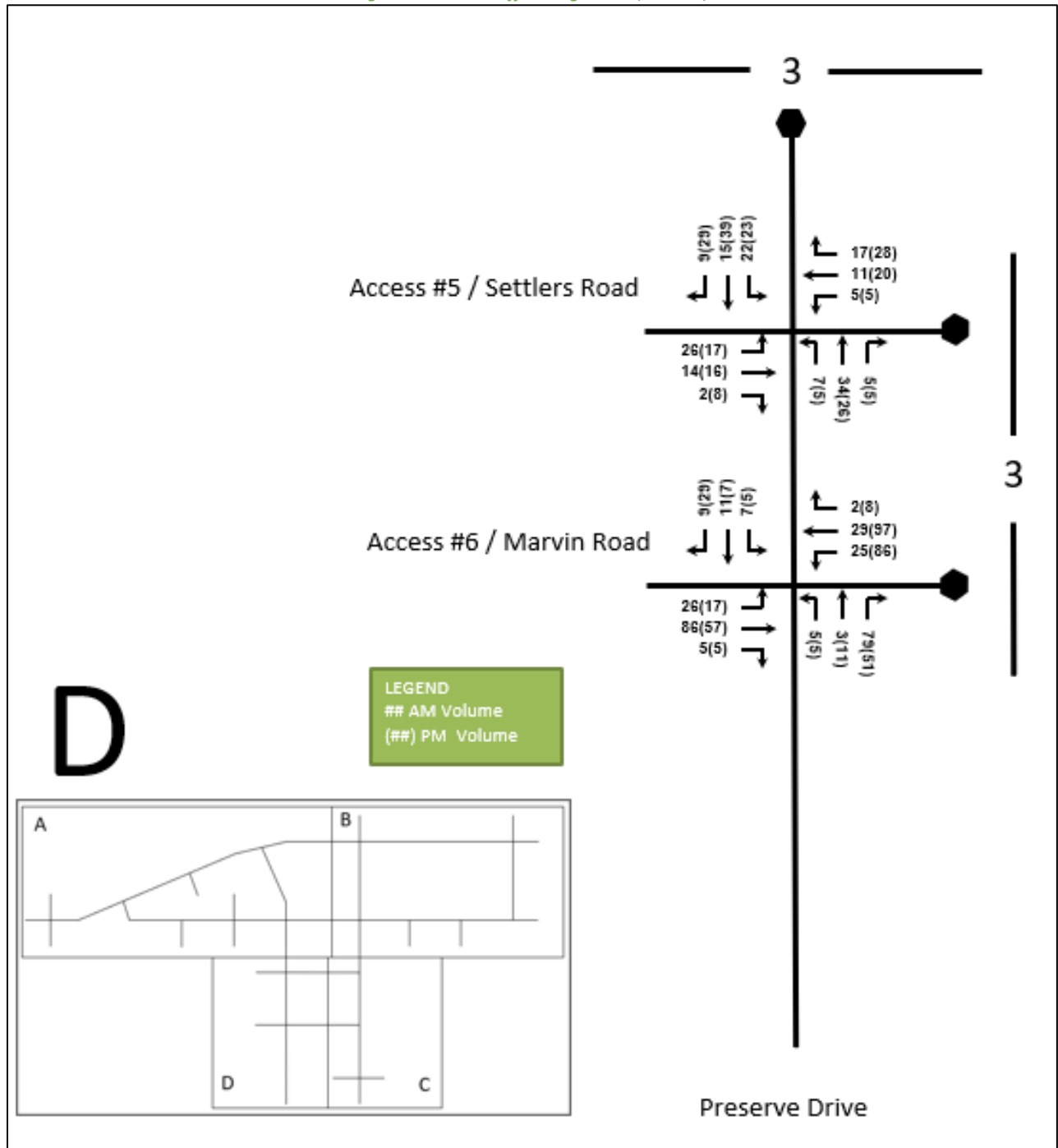


Figure 27: 2030 Traffic Assignment (Sheet A)

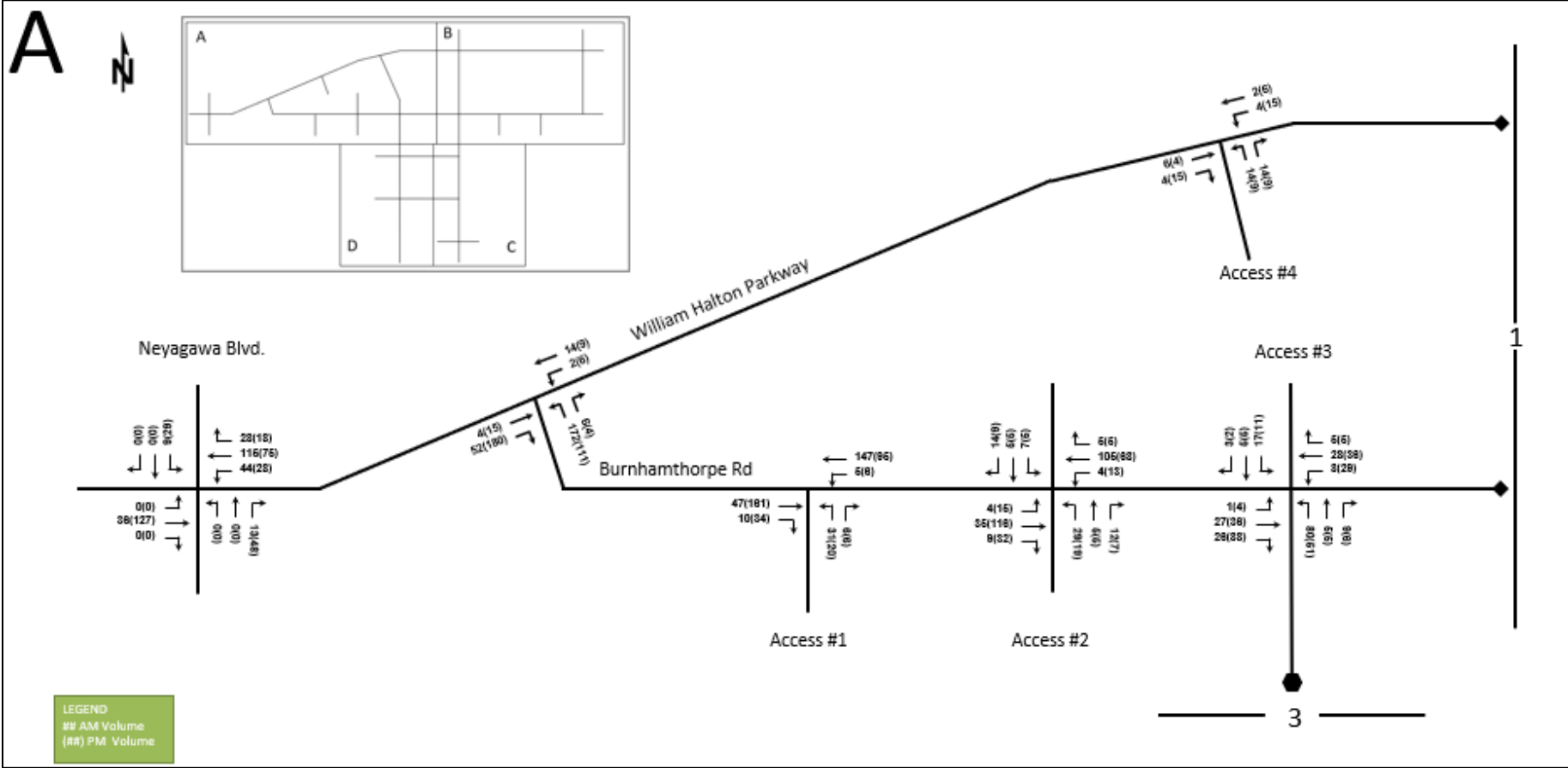


Figure 28: 2030 Traffic Assignment (Sheet B)

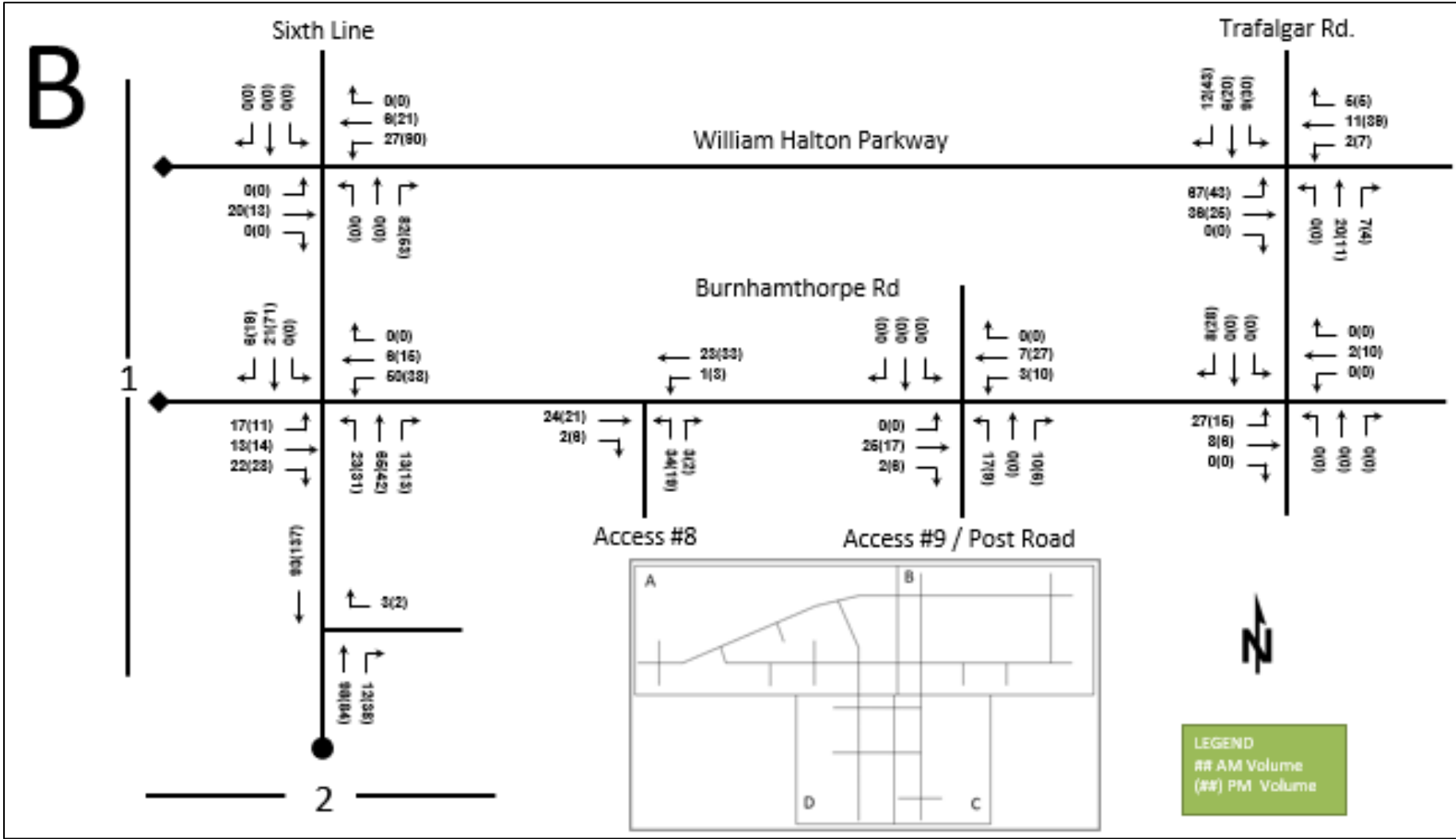


Figure 29: 2030 Traffic Assignment (Sheet C)

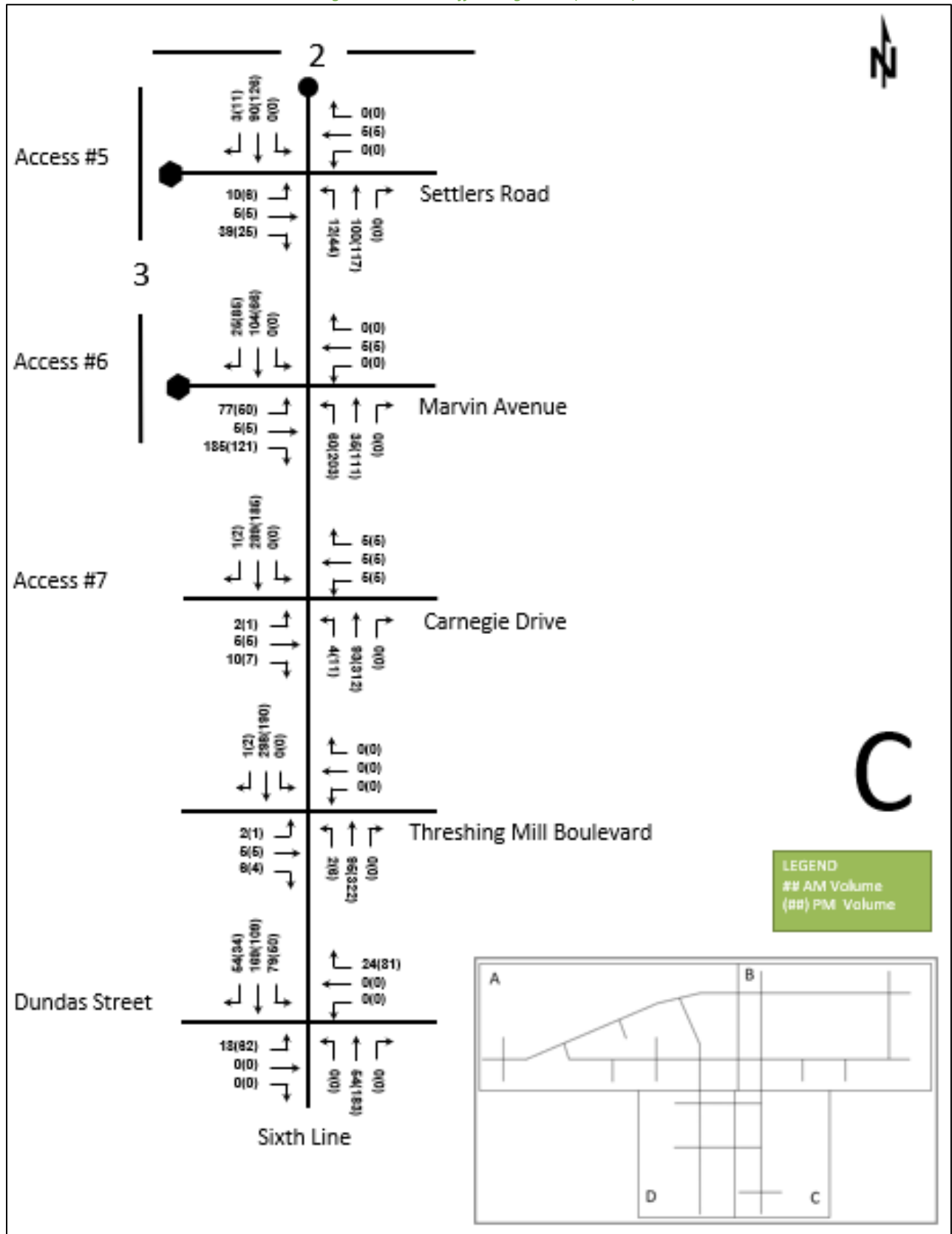
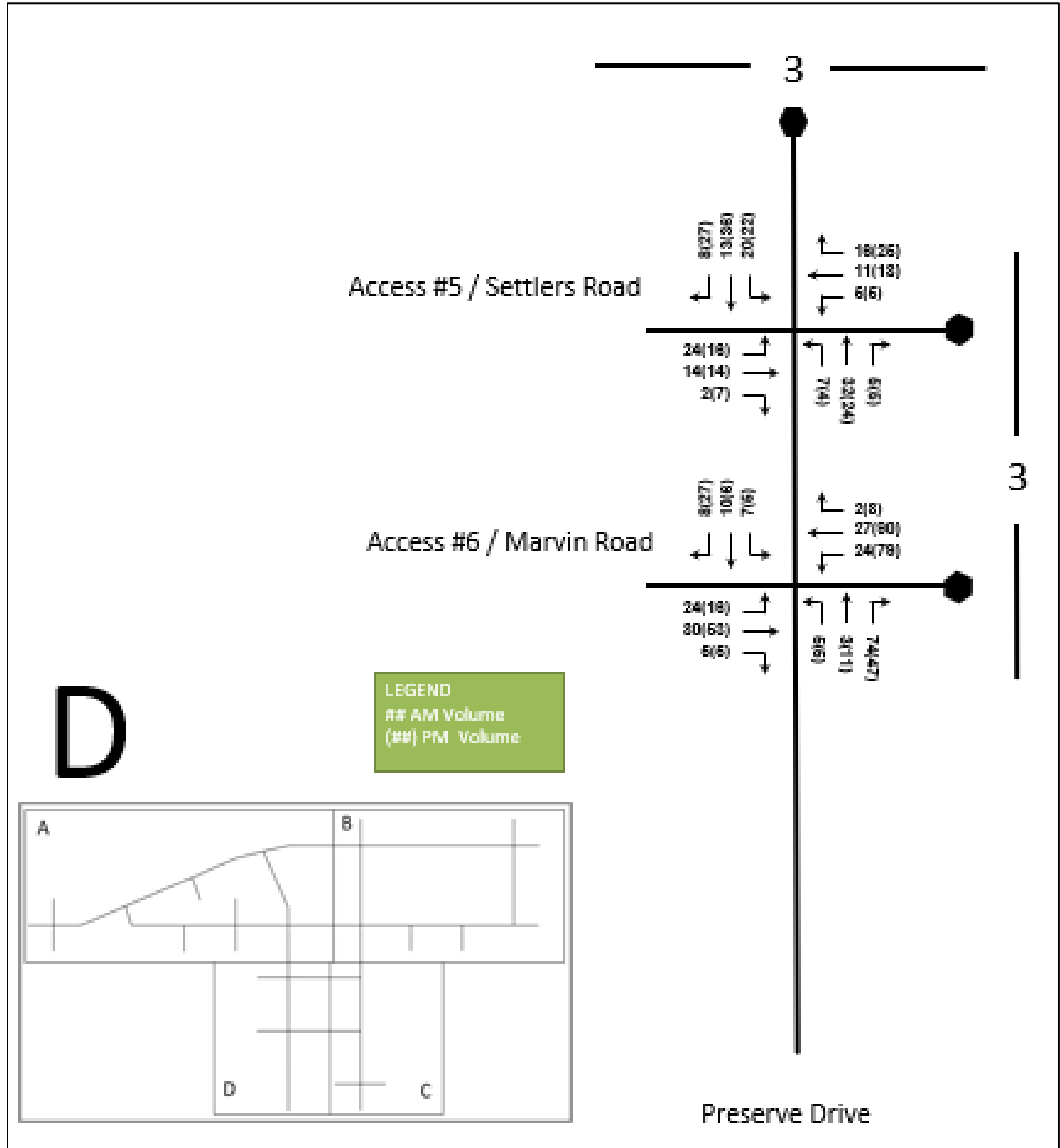


Figure 30: 2030 Traffic Assignment (Sheet D)



# Appendix F

ITE Internal Capture Rates

**Table 6.2 Unconstrained Internal Person Trip Capture Rates  
for Trip Destinations within a Mixed-Use Development**

		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Retail	4%	31%
	From Restaurant	14%	30%
	From Cinema/Entertainment	0%	6%
	From Residential	3%	57%
	From Hotel	3%	0%
To RETAIL	From Office	32%	8%
	From Restaurant	8%	50%
	From Cinema/Entertainment	0%	4%
	From Residential	17%	10%
	From Hotel	4%	2%
To RESTAURANT	From Office	23%	2%
	From Retail	50%	29%
	From Cinema/Entertainment	0%	3%
	From Residential	20%	14%
	From Hotel	6%	5%
To CINEMA/ENTERTAINMENT	From Office	0%	1%
	From Retail	0%	26%
	From Restaurant	0%	32%
	From Residential	0%	0%
	From Hotel	0%	0%
To RESIDENTIAL	From Office	0%	4%
	From Retail	2%	46%
	From Restaurant	5%	16%
	From Cinema/Entertainment	0%	4%
	From Hotel	0%	0%
To HOTEL	From Office	0%	0%
	From Retail	0%	17%
	From Restaurant	4%	71%
	From Cinema/Entertainment	0%	1%
	From Residential	0%	12%

Source: Bochner, B., K. Hooper, B. Sperry, and R. Dunphy. NCHRP Report 684: *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. Washington, DC: Transportation Research Board, Tables 101 and 102, 2011.



**Table 6.1 Unconstrained Internal Person Trip Capture Rates  
for Trip Origins within a Mixed-Use Development**

		WEEKDAY	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Retail	28%	20%
	To Restaurant	63%	4%
	To Cinema/Entertainment	0%	0%
	To Residential	1%	2%
	To Hotel	0%	0%
From RETAIL	To Office	29%	2%
	To Restaurant	13%	29%
	To Cinema/Entertainment	0%	4%
	To Residential	14%	26%
	To Hotel	0%	5%
From RESTAURANT	To Office	31%	3%
	To Retail	14%	41%
	To Cinema/Entertainment	0%	8%
	To Residential	4%	18%
	To Hotel	3%	7%
From CINEMA/ENTERTAINMENT	To Office	0%	2%
	To Retail	0%	21%
	To Restaurant	0%	31%
	To Residential	0%	8%
	To Hotel	0%	2%
From RESIDENTIAL	To Office	2%	4%
	To Retail	1%	42%
	To Restaurant	20%	21%
	To Cinema/Entertainment	0%	0%
	To Hotel	0%	3%
From HOTEL	To Office	75%	0%
	To Retail	14%	16%
	To Restaurant	9%	68%
	To Cinema/Entertainment	0%	0%
	To Residential	0%	2%

Source: Bochner, B., K. Hooper, B. Sperry, and R. Dunphy. NCHRP Report 684: *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. Washington, DC: Transportation Research Board, Tables 99 and 100, 2011.

# Appendix G

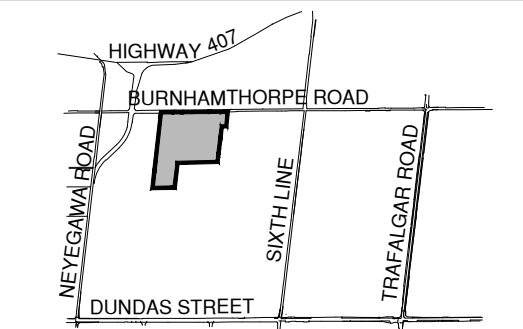
Parking Concept Plan

S:\Korsiak & Company\REMINGTON\Eno - North Oakville\Parking Plan\2021-10\Eno North Oakville - Parking Plan - Oct 12 21.ec.dwg

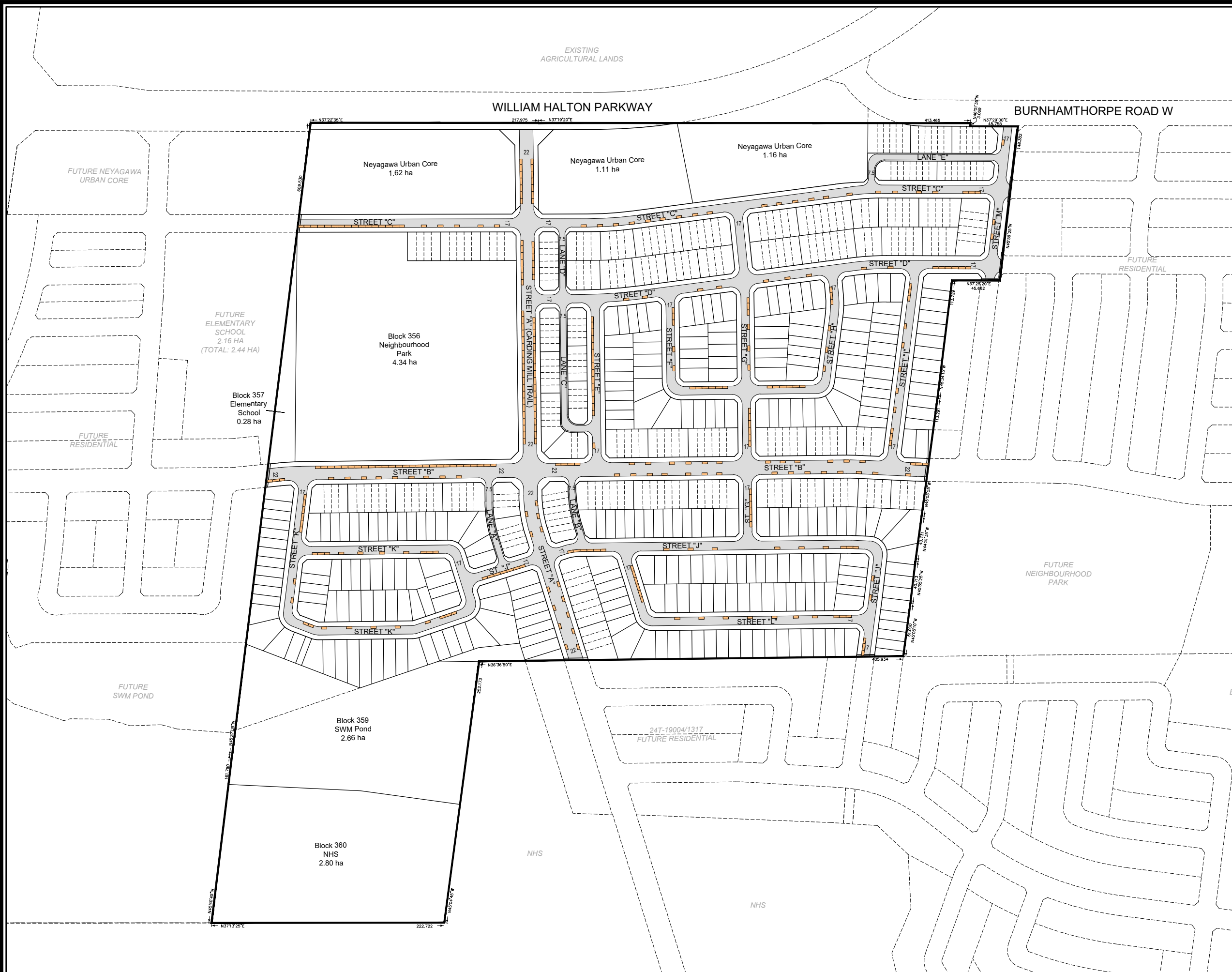
# PRELIMINARY ON-STREET PARKING ANALYSIS

Remington Eno  
PART OF LOT 17, 18 and 19  
CONCESSION 1, NORTH OF DUNDAS STREET

GEOGRAPHIC TOWNSHIP OF TRAFALGAR  
NOW IN THE  
TOWN OF OAKVILLE  
REGIONAL MUNICIPALITY OF HALTON

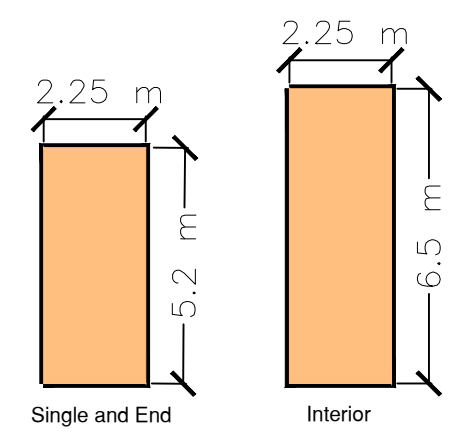


KEY MAP  
N.T.S. SUBJECT PROPERTY



- ± 353 On-street parking spaces\*
- ± 601 Residential units
- ± 0.59 Visitor parking space/ unit

TYPICAL ON-STREET PARKING SPACE\*\*



\* Subject to adjustment during detailed engineering design  
\*\* Per North Oakville Parking Strategy



SCALE 1:3500  
October 13, 2021

**KORSIAK** Urban Planning  
206-277 Lakeshore Road East  
Oakville, Ontario L6J 1H9  
T: 905-257-0227  
info@korsiak.com



# Appendix H

Traffic Control Signal Warrants

Settlers Road West at Carding Mill Trail  
 Future Total 2026

**Justification #7**

Justification	Description	Minimum Requirement		Minimum Requirement		Compliance		Signal	
		1 Lane Highway		2 or More Lanes		Sectional			Entire %
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	96	13%	13%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	46	27%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	50	7%	7%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	17	23%		

Notes

1. Refer to OTM Book 12, pg 88, Nov 2007
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4
4. T-intersection factor corrected, applies only to 1B

Settlers Road West at Carding Mill Trail  
 Future Total 2031

**Justification #7**

Justification	Description	Minimum Requirement		Minimum Requirement		Compliance		Signal	
		1 Lane Highway		2 or More Lanes		Sectional			Entire %
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	89	12%	12%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	43	25%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	47	6%	6%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	16	21%		

Notes

1. Refer to OTM Book 12, pg 88, Nov 2007
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4
4. T-intersection factor corrected, applies only to 1B

William Halton Parkway at Site Access #2  
 Future Total 2026

**Justification #7**

Justification	Description	Minimum Requirement		Minimum Requirement		Compliance		Signal	
		1 Lane Highway		2 or More Lanes		Sectional			Entire %
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	2728	455%	83%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	99	83%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	2662	444%	79%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	40	79%		

Notes

1. Refer to OTM Book 12, pg 88, Nov 2007
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4
4. T-intersection factor corrected, applies only to 1B

check OTM book 12

William Halton Parkway at Site Access #2  
 Future Total 2031

**Justification #7**

Justification	Description	Minimum Requirement		Minimum Requirement		Compliance		Signal	
		1 Lane Highway		2 or More Lanes		Sectional			Entire %
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	2738	456%	77%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	92	77%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	2676	446%	73%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	37	73%		

Notes

1. Refer to OTM Book 12, pg 88, Nov 2007
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4
4. T-intersection factor corrected, applies only to 1B



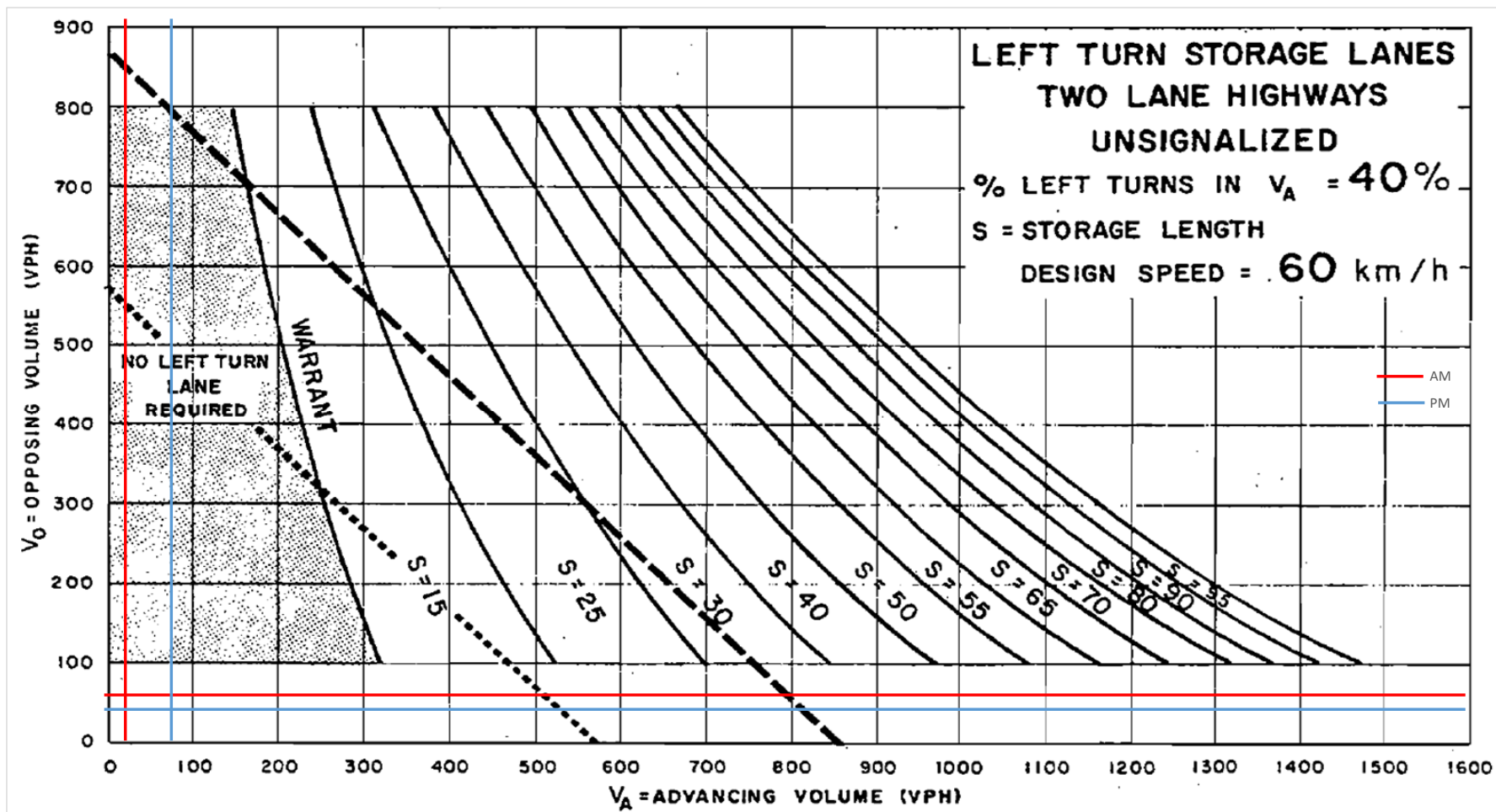
# Appendix I

Left Turn Lane Warrants

Settlers Road West @ Carding Mill Trail

2026 Future Total

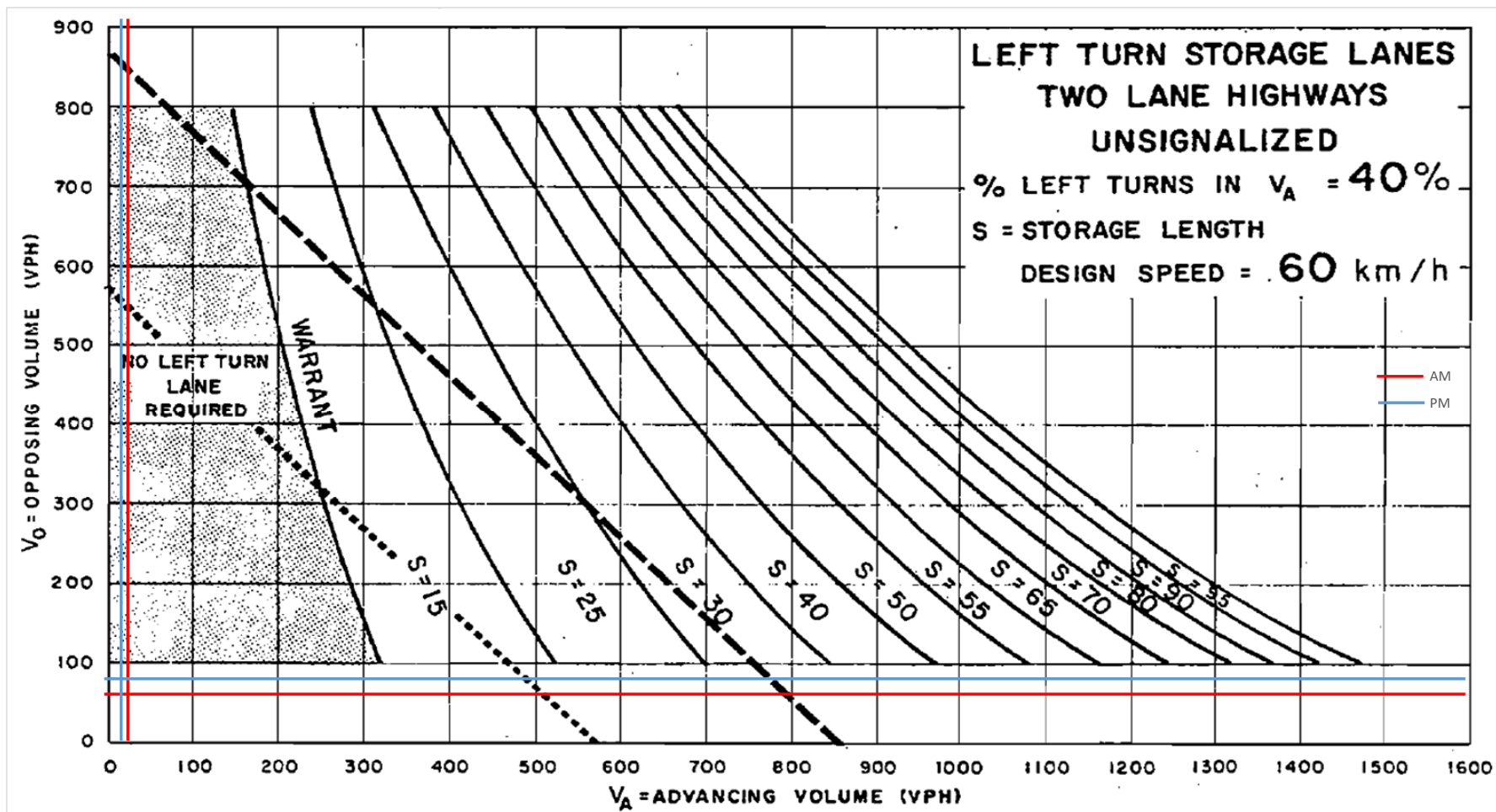
Design Speed	Eastbound Left	Yes													%Left Turn	Volume Advancing	Volume Opposing
60 km/h		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
AM			20	5			43	14	14	14		5	5	48	80.0%	25	57
PM			63	16			29	10	10	10		16	16	45	79.7%	79	39



Settlers Road West @ Carding Mill Trail

2026 Future Total

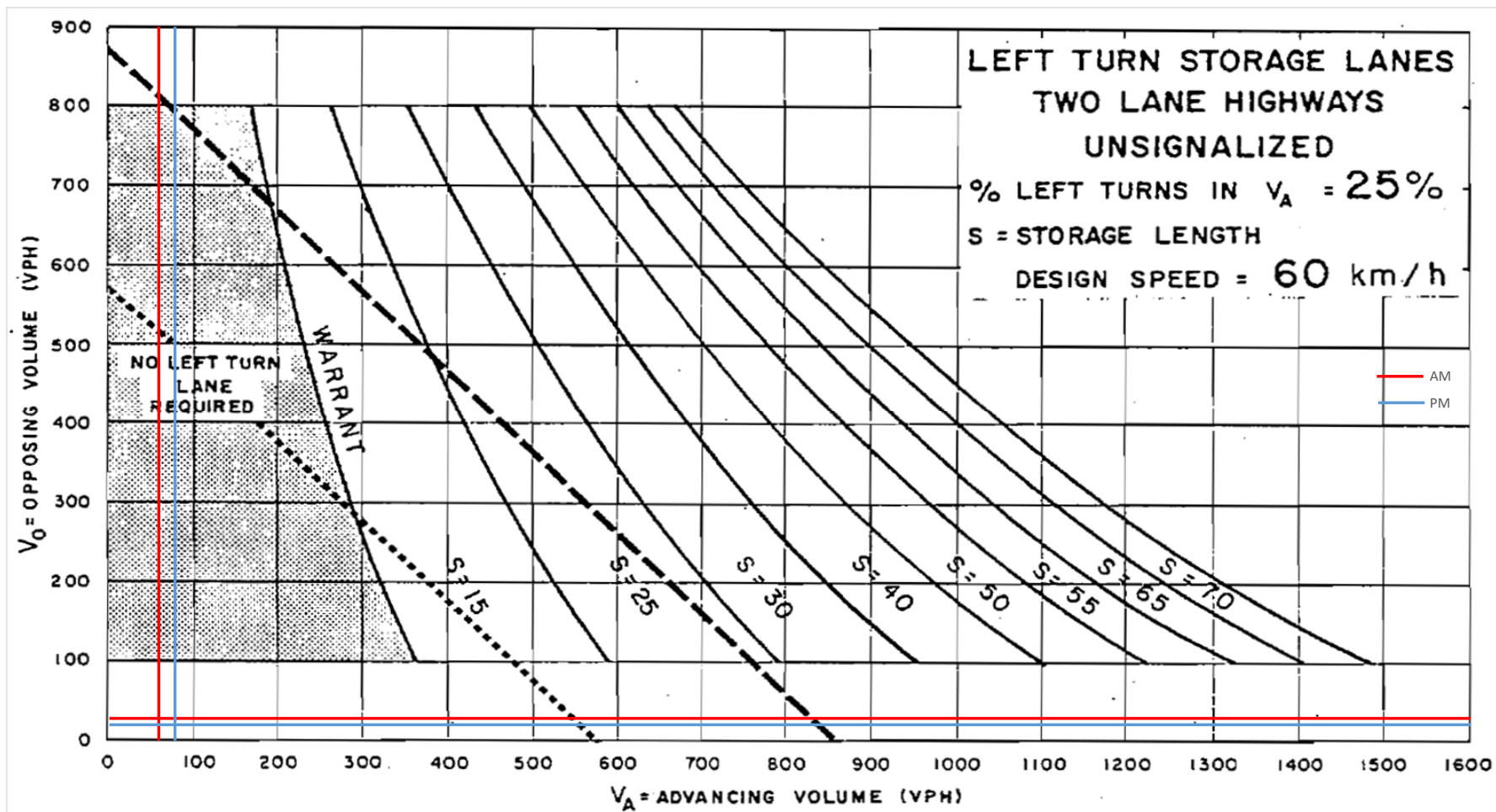
Design Speed	Northbound Left												Yes				
60 km/h		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing	
AM		20	5			43	14	14	14		5	5	48	50.0%	28	58	
PM		63	16			29	10	10	10		16	16	45	50.0%	20	77	



Settlers Road West @ Carding Mill Trail

2026 Future Total

Design Speed	Southbound Left									Yes				%Left Turn	Volume Advancing	Volume Opposing
60 km/h	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
AM	20	5				43	14	14	14		5	5	48	8.6%	58	28
PM	63	16				29	10	10	10		16	16	45	20.8%	77	20

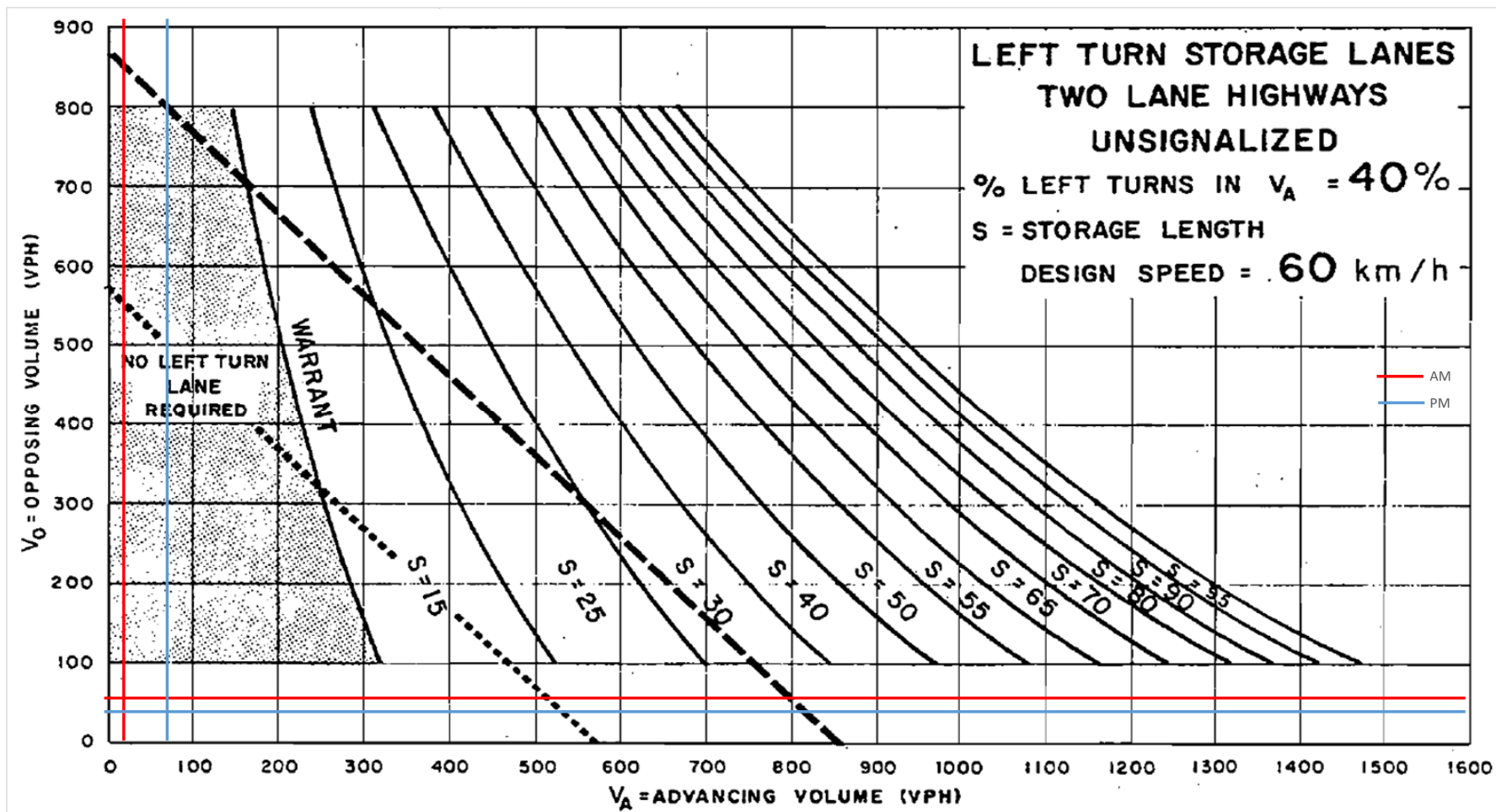


Settlers Road West @ Carding Mill Trail

2031 Future Total

Design Speed	Eastbound Left	Yes													%Left Turn	Volume Advancing	Volume Opposing
60 km/h		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
AM		18	5				40	13	13	13		5	5	45	78.3%	23	53
PM		59	15				27	9	9	9		15	15	42	79.7%	74	36

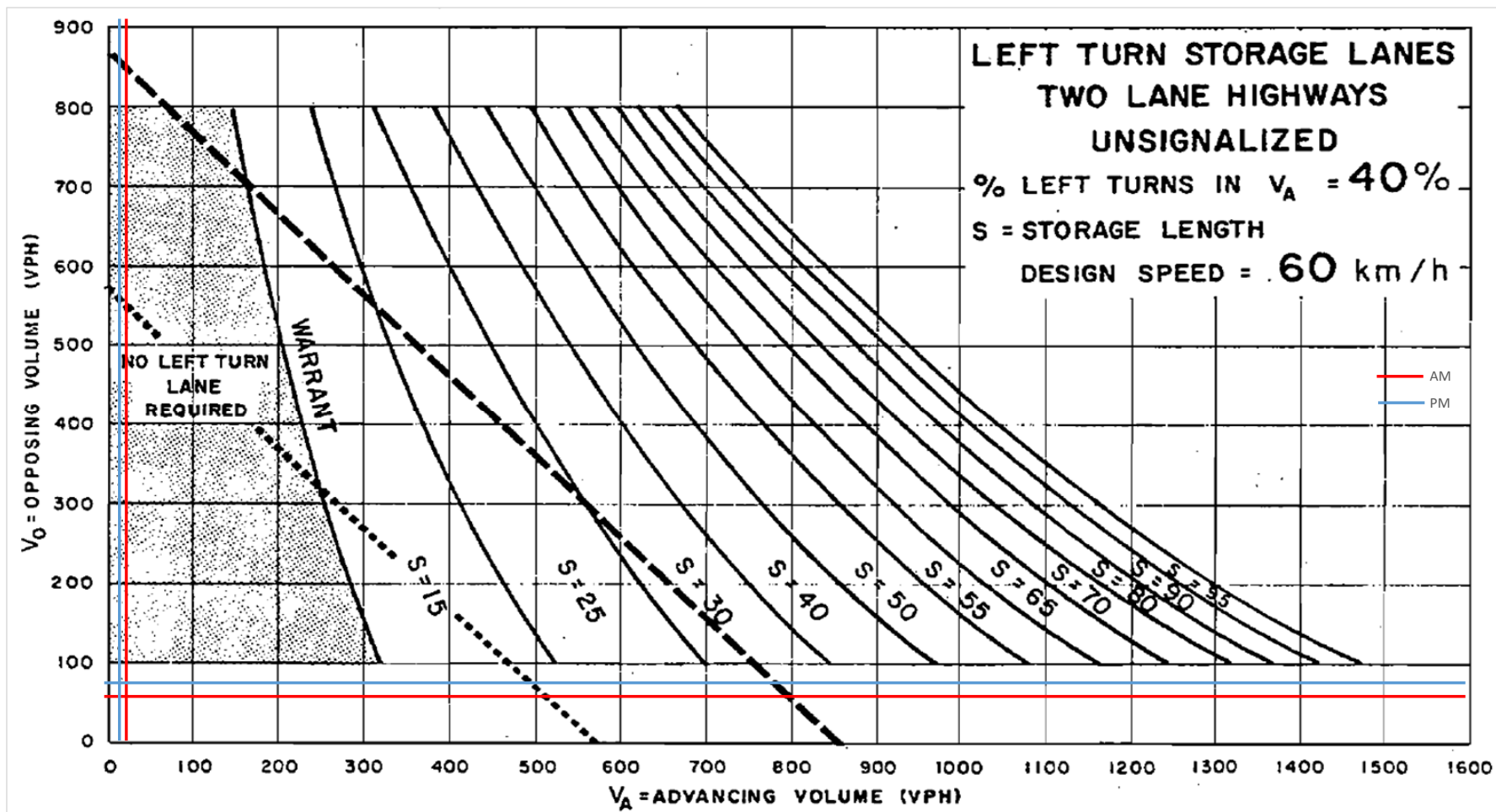




Settlers Road West @ Carding Mill Trail

2031 Future Total

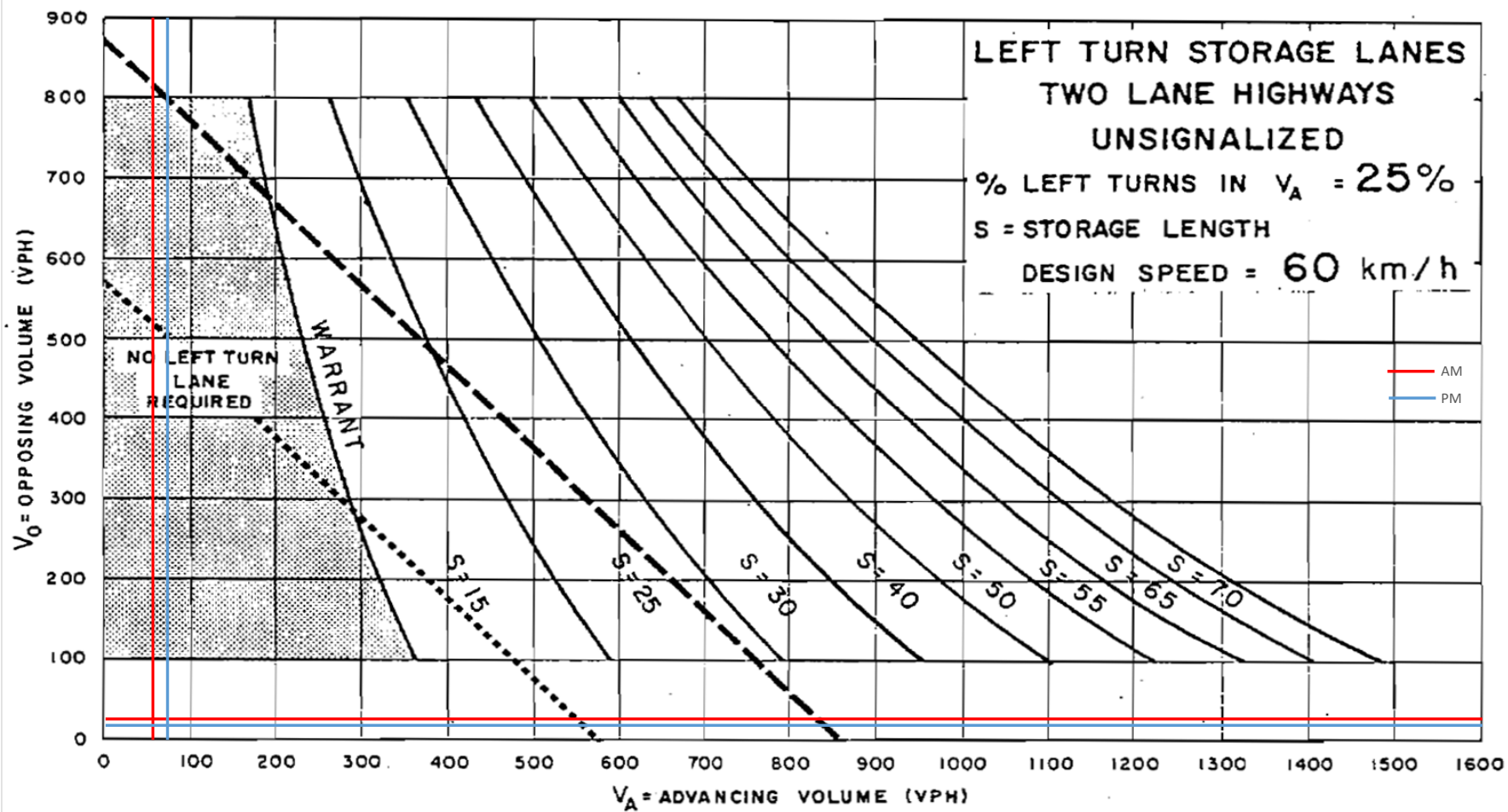
Design Speed	Northbound Left												Yes				
60 km/h		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing	
AM		18	5			40	13	13	13		5	5	45	50.0%	26	55	
PM		59	15			27	9	9	9		15	15	42	50.0%	18	72	



Settlers Road West @ Carding Mill Trail

2031 Future Total

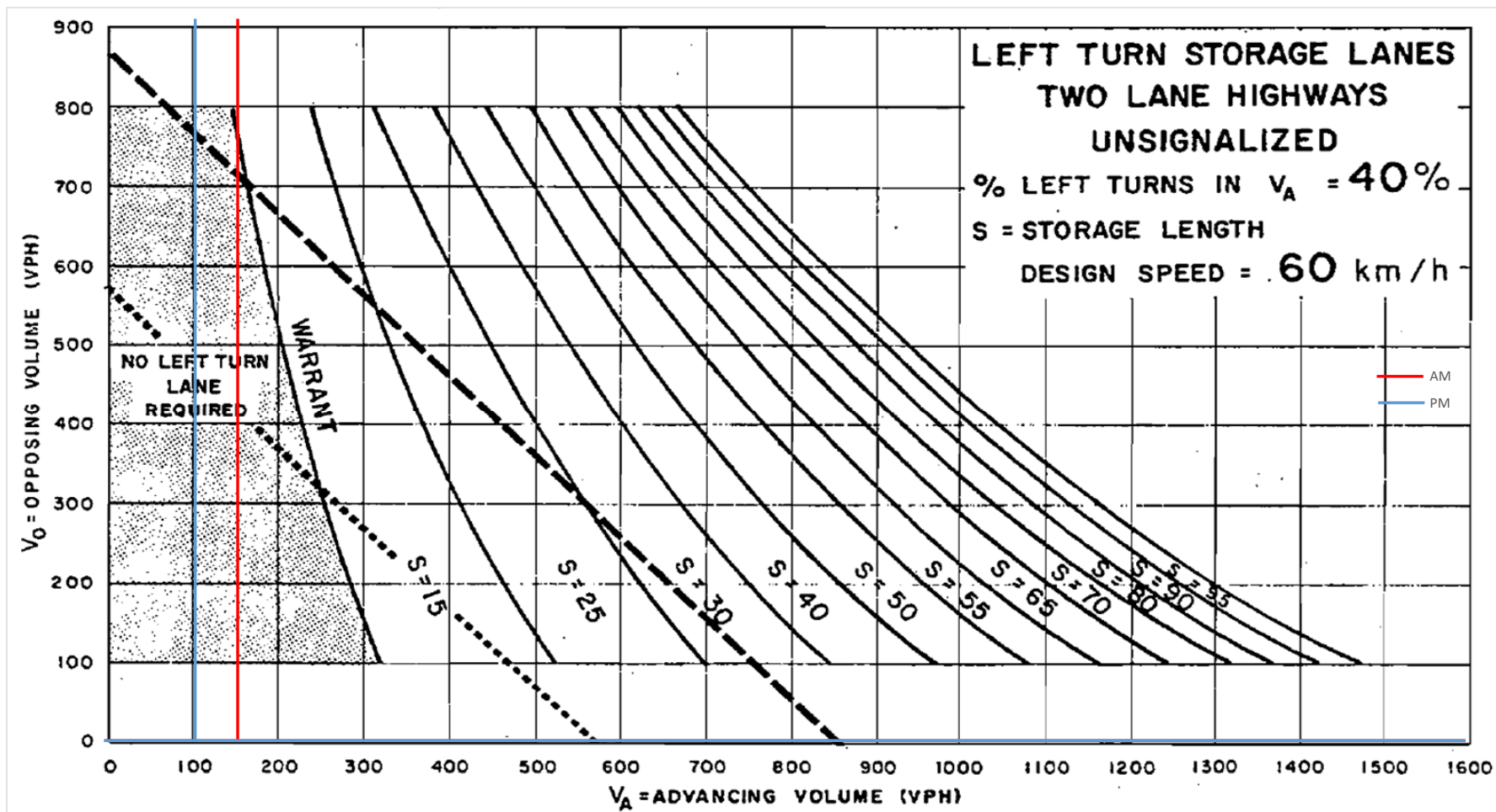
Design Speed	Southbound Left	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	Yes	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing	
60 km/h																		
	AM	18	5				40	13	13	13			5	5	45	9.1%	55	26
	PM	59	15				27	9	9	9			15	15	42	20.8%	72	18



William Halton Parkway @ Carding Mill Trail

2026 Future Total

Design Speed	Northbound Left	EBL	EBT	EBR	WBL	WBT	WBR	Yes	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
60 km/h																	
	AM			2560	29	29	2570			57		100			36.3%	157	0
	PM			2635	95	95	2634			39		68			36.4%	107	0

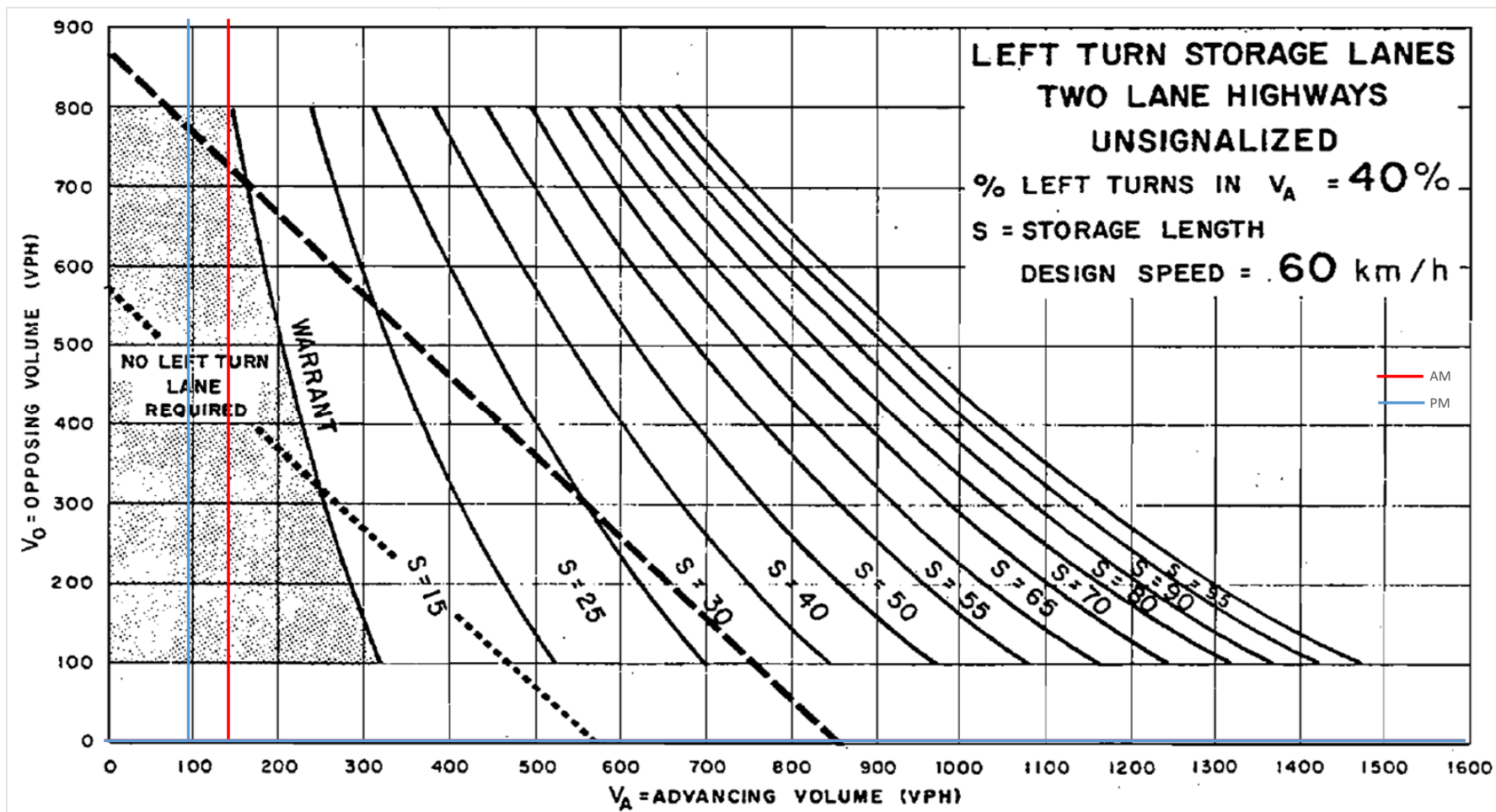


William Halton Parkway @ Carding Mill Trail

2031 Future Total

Design Speed 60 km/h	Northbound Left						Yes						%Left Turn	Volume Advancing	Volume Opposing
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
AM		2589	27	27	2581		53		93				36.3%	146	0
PM		2648	88	88	2657		36		63				36.4%	99	0





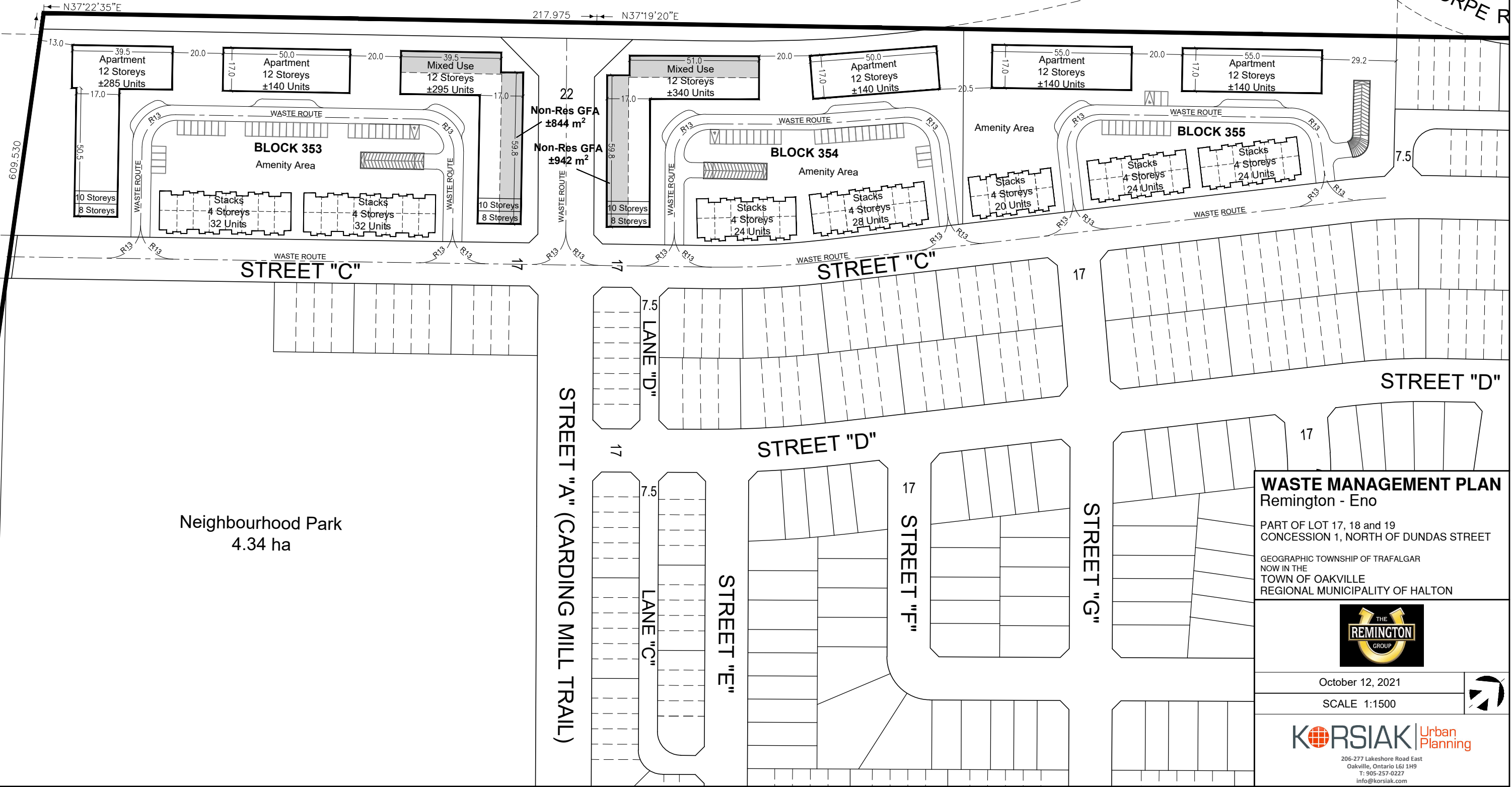
# Appendix J

High Density Block Waste Route

EXISTING  
AGRICULTURAL LANDS

WILLIAM HALTON PARKWAY

BURNHAMTHORPE R



**WASTE MANAGEMENT PLAN**  
Remington - Eno

PART OF LOT 17, 18 and 19  
CONCESSION 1, NORTH OF DUNDAS STREET

GEOGRAPHIC TOWNSHIP OF TRAFALGAR  
NOW IN THE  
TOWN OF OAKVILLE  
REGIONAL MUNICIPALITY OF HALTON



October 12, 2021

SCALE 1:1500

**KORSIAK** Urban  
Planning

206-277 Lakeshore Road East  
Oakville, Ontario L6J 1H9  
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# Appendix K

Heavy Vehicle % Calculations

[1] Burnhamthorpe Road at Neyagawa Boulevard													
AM													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
HV Volume	9	2	2	4	11	2	1	4	9	0	6	0	
Total Volume	171	529	281	32	227	58	39	65	130	212	82	12	
HV%	5%	0%	1%	13%	5%	3%	3%	6%	7%	0%	7%	0%	
PM													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
HV Volume	1	5	3	1	1	0	0	1	0	0	1	3	
Total Volume	40	187	233	17	420	9	3	32	40	276	25	35	
HV%	3%	3%	1%	6%	0%	0%	0%	3%	0%	0%	4%	9%	

[10] Sixth Line at Burnhamthorpe Road													
AM													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
HV Volume	1	2	2	8	6	1	4	1	3	1	6	0	
Total Volume	9	167	243	132	194	91	94	263	24	55	195	15	
HV%	11%	1%	1%	6%	3%	1%	4%	0%	13%	2%	3%	0%	
PM													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
HV Volume	3	1	2	1	1	0	1	2	0	0	1	0	
Total Volume	29	242	87	24	124	115	105	182	11	91	205	118	
HV%	10%	0%	2%	4%	1%	0%	1%	1%	0%	0%	0%	0%	

























[24] Neyagawa Boulevard at Settlers Road West													
AM													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
HV Volume	1	17			5	0	0		0				
Total Volume	68	306			262	5	8		31				
HV%	1%	6%	#DIV/0!	#DIV/0!	2%	0%	0%	#DIV/0!	0%	#DIV/0!	#DIV/0!	#DIV/0!	
PM													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
HV Volume	0	2			0	0	0		0				
Total Volume	28	220			295	2	2		14				
HV%	0%	1%	#DIV/0!	#DIV/0!	0%	0%	0%	#DIV/0!	0%	#DIV/0!	#DIV/0!	#DIV/0!	

# Appendix L

2021 Existing Conditions Synchro Worksheets

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Burnhamthorpe Road

2021 Existing AM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	68	135	221	85	12	178	550	292	33	236	60
Future Volume (vph)	41	68	135	221	85	12	178	550	292	33	236	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3406	1509	1770	3374	1583	1719	3539	1599	1597	3438	1568
Flt Permitted	0.694			0.514			0.547			0.426		
Satd. Flow (perm)	1280	3406	1509	957	3374	1583	990	3539	1599	716	3438	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			147			81			317			124
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		427.0			207.4			334.9			381.2	
Travel Time (s)		25.6			12.4			20.1			22.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	7%	2%	7%	2%	5%	2%	1%	13%	5%	3%
Adj. Flow (vph)	45	74	147	240	92	13	193	598	317	36	257	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	74	147	240	92	13	193	598	317	36	257	65
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8		5	2		1	6	

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Burnhamthorpe Road

2021 Existing AM  
Remington Eno










Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	40.4	40.4	40.4	11.0	40.4	40.4	11.0	37.4	37.4	11.0	37.4	37.4
Total Split (s)	37.0	37.0	37.0	15.0	52.0	52.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (%)	37.0%	37.0%	37.0%	15.0%	52.0%	52.0%	11.0%	37.0%	37.0%	11.0%	37.0%	37.0%
Maximum Green (s)	30.6	30.6	30.6	11.0	45.6	45.6	7.0	30.6	30.6	7.0	30.6	30.6
Yellow Time (s)	3.7	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.7	2.7	2.7	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	4.0	6.4	6.4	4.0	6.4	6.4	4.0	6.4	6.4
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	3.0	0.2	0.2
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	27.0	27.0	27.0		27.0	27.0		24.0	24.0		24.0	24.0
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0		0	0
Act Effct Green (s)	10.7	10.7	10.7	28.1	25.7	25.7	63.7	54.8	54.8	56.9	47.4	47.4
Actuated g/C Ratio	0.11	0.11	0.11	0.28	0.26	0.26	0.64	0.55	0.55	0.57	0.47	0.47
v/c Ratio	0.33	0.20	0.50	0.67	0.11	0.03	0.27	0.31	0.31	0.08	0.16	0.08
Control Delay	47.9	41.9	13.3	40.4	28.5	0.1	7.9	11.3	1.6	7.8	16.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	41.9	13.3	40.4	28.5	0.1	7.9	11.3	1.6	7.8	16.0	0.3
LOS	D	D	B	D	C	A	A	B	A	A	B	A
Approach Delay		27.1			35.7			7.9			12.3	
Approach LOS		C			D			A			B	
Queue Length 50th (m)	8.7	7.4	0.0	41.1	7.6	0.0	12.6	22.1	0.1	2.4	14.8	0.0
Queue Length 95th (m)	19.6	14.1	17.9	62.7	13.6	0.0	19.2	27.9	7.9	6.5	25.6	0.8
Internal Link Dist (m)		403.0			183.4			310.9			357.2	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	391	1042	563	357	1538	765	704	1940	1019	469	1629	808
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.07	0.26	0.67	0.06	0.02	0.27	0.31	0.31	0.08	0.16	0.08

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	73 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	15.7
Intersection LOS:	B
Intersection Capacity Utilization:	55.3%
ICU Level of Service:	B
Analysis Period (min):	15



















Splits and Phases: 1: Neyagawa Boulevard & Burnhamthorpe Road

 Ø1 11 s	 Ø2 (R) 37 s	 Ø3 15 s	 Ø4 37 s
 Ø5 11 s	 Ø6 (R) 37 s	 Ø8 52 s	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2021 Existing AM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	274	25	57	203	16	9	174	253	137	202	95
Future Volume (vph)	98	274	25	57	203	16	9	174	253	137	202	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.992			0.922			0.971	
Flt Protected		0.988			0.990			0.999			0.984	
Satd. Flow (prot)	0	1805	0	0	1816	0	0	1713	0	0	1750	0
Flt Permitted		0.988			0.990			0.999			0.984	
Satd. Flow (perm)	0	1805	0	0	1816	0	0	1713	0	0	1750	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		1172.3			376.8			423.6			523.0	
Travel Time (s)		70.3			22.6			19.1			23.5	
Confl. Peds. (#/hr)	2						2					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	13%	2%	3%	2%	11%	2%	2%	6%	3%	2%
Adj. Flow (vph)	107	298	27	62	221	17	10	189	275	149	220	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	432	0	0	300	0	0	474	0	0	472	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	89.7%						ICU Level of Service E					
Analysis Period (min)	15											

Intersection	
Intersection Delay, s/veh	111.7
Intersection LOS	F






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	98	274	25	57	203	16	9	174	253	137	202	95
Future Vol, veh/h	98	274	25	57	203	16	9	174	253	137	202	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	2	13	2	3	2	11	2	2	6	3	2
Mvmt Flow	107	298	27	62	221	17	10	189	275	149	220	103
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	106.7	46.9	130.6	138.5
HCM LOS	F	E	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	25%	21%	32%
Vol Thru, %	40%	69%	74%	47%
Vol Right, %	58%	6%	6%	22%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	436	397	276	434
LT Vol	9	98	57	137
Through Vol	174	274	203	202
RT Vol	253	25	16	95
Lane Flow Rate	474	432	300	472
Geometry Grp	1	1	1	1
Degree of Util (X)	1.165	1.089	0.803	1.185
Departure Headway (Hd)	9.796	10.188	11.056	9.946
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	374	358	330	368
Service Time	7.796	8.188	9.056	7.946
HCM Lane V/C Ratio	1.267	1.207	0.909	1.283
HCM Control Delay	130.6	106.7	46.9	138.5
HCM Lane LOS	F	F	E	F
HCM 95th-tile Q	17	14.1	6.7	17.5

Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2021 Existing AM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	31	0	0	0	68	1012	0	0	587	5
Future Volume (vph)	8	0	31	0	0	0	68	1012	0	0	587	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	0.0		0.0	70.0		0.0	80.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	15.0			7.5			40.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.850									0.999	
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1583	0	0	1863	0	1770	3406	0	1863	3536	0
Flt Permitted	0.757						0.377					
Satd. Flow (perm)	1410	1583	0	0	1863	0	702	3406	0	1863	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		205										1
Link Speed (k/h)		50			50			60				60
Link Distance (m)		242.5			41.6			186.4				334.9
Travel Time (s)		17.5			3.0			11.2				20.1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	6%	2%	2%	2%	2%
Adj. Flow (vph)	10	0	38	0	0	0	83	1234	0	0	716	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	38	0	0	0	0	83	1234	0	0	722	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lanes, Volumes, Timings  
 24: Neyagawa Boulevard & Settlers Road West

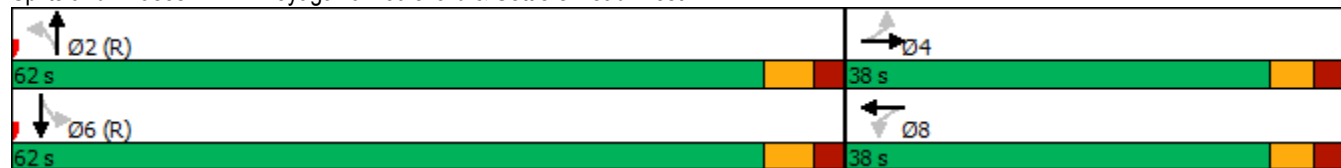
2021 Existing AM  
 Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	36.4	36.4		36.4	36.4		29.0	29.0		39.0	39.0	
Total Split (s)	38.0	38.0		38.0	38.0		62.0	62.0		62.0	62.0	
Total Split (%)	38.0%	38.0%		38.0%	38.0%		62.0%	62.0%		62.0%	62.0%	
Maximum Green (s)	31.6	31.6		31.6	31.6		56.0	56.0		56.0	56.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	3.1		3.1	3.1		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4			6.4		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		0.2	0.2		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	10.0	10.0					86.6	86.6			86.6	
Actuated g/C Ratio	0.10	0.10					0.87	0.87			0.87	
v/c Ratio	0.07	0.11					0.14	0.42			0.24	
Control Delay	42.2	0.6					3.0	3.2			2.2	
Queue Delay	0.0	0.0					0.0	0.0			0.0	
Total Delay	42.2	0.6					3.0	3.2			2.2	
LOS	D	A					A	A			A	
Approach Delay		9.3						3.2			2.2	
Approach LOS		A						A			A	
Queue Length 50th (m)	1.9	0.0					3.4	37.1			22.4	
Queue Length 95th (m)	6.5	0.0					6.5	40.2			15.2	
Internal Link Dist (m)		218.5			17.6			162.4			310.9	
Turn Bay Length (m)	40.0						70.0					
Base Capacity (vph)	445	640					607	2948			3061	
Starvation Cap Reductn	0	0					0	0			0	
Spillback Cap Reductn	0	0					0	0			0	
Storage Cap Reductn	0	0					0	0			0	
Reduced v/c Ratio	0.02	0.06					0.14	0.42			0.24	

Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	59 (59%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.42
Intersection Signal Delay:	3.0
Intersection LOS:	A
Intersection Capacity Utilization:	64.1%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West



Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Burnhamthorpe Road

2021 Existing PM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	33	42	287	26	36	42	195	242	18	437	9
Future Volume (vph)	3	33	42	287	26	36	42	195	242	18	437	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3505	1583	1770	3471	1482	1752	3505	1583	1703	3539	1583
Flt Permitted	0.738			0.488			0.464			0.619		
Satd. Flow (perm)	1375	3505	1583	909	3471	1482	856	3505	1583	1110	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124			81			263			124
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		427.0			207.4			334.9			381.2	
Travel Time (s)		25.6			12.4			20.1			22.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	4%	9%	3%	3%	2%	6%	2%	2%
Adj. Flow (vph)	3	36	46	312	28	39	46	212	263	20	475	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	36	46	312	28	39	46	212	263	20	475	10
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8		5	2		1		6

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & Burnhamthorpe Road

2021 Existing PM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	40.4	40.4	40.4	11.0	40.4	40.4	11.0	37.4	37.4	11.0	37.4	37.4
Total Split (s)	32.0	32.0	32.0	13.0	45.0	45.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (%)	32.0%	32.0%	32.0%	13.0%	45.0%	45.0%	11.0%	44.0%	44.0%	11.0%	44.0%	44.0%
Maximum Green (s)	25.6	25.6	25.6	9.0	38.6	38.6	7.0	37.6	37.6	7.0	37.6	37.6
Yellow Time (s)	3.7	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.7	2.7	2.7	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	4.0	6.4	6.4	4.0	6.4	6.4	4.0	6.4	6.4
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	3.0	0.2	0.2
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	27.0	27.0	27.0		27.0	27.0		24.0	24.0		24.0	24.0
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0		0	0
Act Effct Green (s)	10.0	10.0	10.0	22.8	20.4	20.4	67.7	62.4	62.4	66.7	60.1	60.1
Actuated g/C Ratio	0.10	0.10	0.10	0.23	0.20	0.20	0.68	0.62	0.62	0.67	0.60	0.60
v/c Ratio	0.02	0.10	0.17	1.08	0.04	0.11	0.07	0.10	0.24	0.03	0.22	0.01
Control Delay	41.0	41.8	1.4	110.4	30.2	1.5	5.6	7.8	1.4	5.8	11.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	41.8	1.4	110.4	30.2	1.5	5.6	7.8	1.4	5.8	11.0	0.0
LOS	D	D	A	F	C	A	A	A	A	A	B	A
Approach Delay		19.9			93.3			4.4			10.6	
Approach LOS		B			F			A			B	
Queue Length 50th (m)	0.6	3.5	0.0	-58.7	2.3	0.0	2.9	7.8	0.0	1.2	26.2	0.0
Queue Length 95th (m)	3.4	8.6	0.0	#120.7	6.1	1.6	4.5	8.5	4.4	3.7	36.2	0.0
Internal Link Dist (m)		403.0			183.4			310.9			357.2	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	352	897	497	290	1339	621	642	2187	1086	782	2127	1001
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.09	1.08	0.02	0.06	0.07	0.10	0.24	0.03	0.22	0.01

Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	94 (94%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.08
Intersection Signal Delay:	30.0
Intersection LOS:	C
Intersection Capacity Utilization:	54.9%
ICU Level of Service:	A
Analysis Period (min):	15



Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & Burnhamthorpe Road

2021 Existing PM  
 Remington Eno

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

Splits and Phases: 1: Neyagawa Boulevard & Burnhamthorpe Road

↙ Ø1	↕ Ø2 (R)	↙ Ø3	↗ Ø4
11 s	44 s	13 s	32 s
↙ Ø5	↕ Ø6 (R)	↙ Ø8	
11 s	44 s	45 s	

Lanes, Volumes, Timings  
 10: Sixth Line & Burnhamthorpe Road

2021 Existing PM  
 Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	109	189	11	95	213	123	30	252	91	25	129	120
Future Volume (vph)	109	189	11	95	213	123	30	252	91	25	129	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.961			0.967			0.941	
Flt Protected		0.983			0.989			0.996			0.995	
Satd. Flow (prot)	0	1822	0	0	1770	0	0	1783	0	0	1741	0
Flt Permitted		0.983			0.989			0.996			0.995	
Satd. Flow (perm)	0	1822	0	0	1770	0	0	1783	0	0	1741	0
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		1172.3			376.8			423.6			523.0	
Travel Time (s)		70.3			22.6			19.1			23.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	10%	2%	2%	4%	2%	2%
Adj. Flow (vph)	118	205	12	103	232	134	33	274	99	27	140	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	335	0	0	469	0	0	406	0	0	297	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.3%
ICU Level of Service	B
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	65.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	109	189	11	95	213	123	30	252	91	25	129	120
Future Vol, veh/h	109	189	11	95	213	123	30	252	91	25	129	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	10	2	2	4	2	2
Mvmt Flow	118	205	12	103	232	134	33	274	99	27	140	130
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	43.6	100.6	66.4	33.7
HCM LOS	E	F	F	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	35%	22%	9%
Vol Thru, %	68%	61%	49%	47%
Vol Right, %	24%	4%	29%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	373	309	431	274
LT Vol	30	109	95	25
Through Vol	252	189	213	129
RT Vol	91	11	123	120
Lane Flow Rate	405	336	468	298
Geometry Grp	1	1	1	1
Degree of Util (X)	0.963	0.825	1.094	0.73
Departure Headway (Hd)	8.929	9.275	8.41	9.293
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	409	393	431	393
Service Time	6.929	7.275	6.487	7.293
HCM Lane V/C Ratio	0.99	0.855	1.086	0.758
HCM Control Delay	66.4	43.6	100.6	33.7
HCM Lane LOS	F	E	F	D
HCM 95th-tile Q	11.2	7.5	15.9	5.7

Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2021 Existing PM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↔		↖	↕		↖	↗	
Traffic Volume (vph)	2	0	14	0	0	0	28	477	0	0	764	2
Future Volume (vph)	2	0	14	0	0	0	28	477	0	0	764	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	0.0		0.0	70.0		0.0	80.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	15.0			7.5			40.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.850										
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1583	0	0	1863	0	1770	3539	0	1863	3539	0
Flt Permitted							0.353					
Satd. Flow (perm)	1863	1583	0	0	1863	0	658	3539	0	1863	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		125										
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		242.5			41.6			186.4			334.9	
Travel Time (s)		17.5			3.0			11.2			20.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	2	0	14	0	0	0	29	492	0	0	788	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	14	0	0	0	0	29	492	0	0	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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings  
 24: Neyagawa Boulevard & Settlers Road West

2021 Existing PM  
 Remington Eno

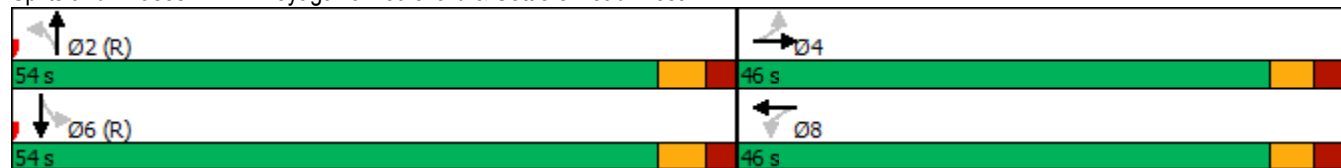


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	36.4	36.4		36.4	36.4		29.0	29.0		29.0	29.0	
Total Split (s)	46.0	46.0		46.0	46.0		54.0	54.0		54.0	54.0	
Total Split (%)	46.0%	46.0%		46.0%	46.0%		54.0%	54.0%		54.0%	54.0%	
Maximum Green (s)	39.6	39.6		39.6	39.6		48.0	48.0		48.0	48.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	3.1		3.1	3.1		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4			6.4		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	10.0	10.0					91.0	91.0				91.0
Actuated g/C Ratio	0.10	0.10					0.91	0.91				0.91
v/c Ratio	0.01	0.05					0.05	0.15				0.25
Control Delay	41.0	0.4					2.2	1.6				1.0
Queue Delay	0.0	0.0					0.0	0.0				0.0
Total Delay	41.0	0.4					2.2	1.6				1.0
LOS	D	A					A	A				A
Approach Delay		5.4						1.6				1.0
Approach LOS		A						A				A
Queue Length 50th (m)	0.4	0.0					0.0	0.0				0.0
Queue Length 95th (m)	2.6	0.0					3.1	15.0				m12.0
Internal Link Dist (m)		218.5			17.6			162.4				310.9
Turn Bay Length (m)	40.0						70.0					
Base Capacity (vph)	737	702					599	3222				3222
Starvation Cap Reductn	0	0					0	0				0
Spillback Cap Reductn	0	0					0	0				0
Storage Cap Reductn	0	0					0	0				0
Reduced v/c Ratio	0.00	0.02					0.05	0.15				0.25

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	85 (85%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.25
Intersection Signal Delay:	1.3
Intersection LOS:	A
Intersection Capacity Utilization:	41.9%
ICU Level of Service:	A
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West



# Appendix M

William Halton Parkway at Neyagawa Boulevard Geometry Confirmation

**From:** [Williamson, John](#)  
**To:** [Viktoriya Zaytseva](#); [Collum, David](#)  
**Cc:** [Mark Crockford](#)  
**Subject:** RE: William Halton Parkway at Neyagawa Boulevard - Final Intersection Design - RFI  
**Date:** March 24, 2021 9:28:34 AM  
**Attachments:** [image001.png](#)

---

Good morning Viktoriya,

The intersection of William Halton Parkway and Neyagawa Boulevard is completed. My project, east of the intersection, will be tying into what is currently there, and will be two lanes in each direction.

Regards,  
John.

**John Williamson**  
**Senior Project Advisor**  
Engineering & Construction  
Public Works  
**Halton Region**  
905-825-6000, ext. 7904 | 1-866-442-5866



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---

**From:** Viktoriya Zaytseva [mailto:viktoriya.zaytseva@cghtransportation.com]  
**Sent:** Tuesday, March 23, 2021 11:19 AM  
**To:** Collum, David <David.Collum@halton.ca>; Williamson, John <John.Williamson@halton.ca>  
**Cc:** Mark Crockford <mark.crockford@cghtransportation.com>  
**Subject:** William Halton Parkway at Neyagawa Boulevard - Final Intersection Design - RFI

**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.

Good morning David and John,

CGH is preparing a TIS for a site in North Oakville, south of future William Halton Parkway, and approximately 500 metres east of Neyagawa Boulevard.



Through responses to our Terms of Reference by Halton Region staff, we've been referred to you to confirm the final design of William Halton Parkway and Neyagawa Boulevards intersection. In particular, we are looking to confirm the number of lanes on each approach and storage lengths for any auxiliary turning lanes.

Thank you beforehand for your help,

Kind regards,

Viktoriya Zaytseva



Viktoriya Zaytseva

**CGH Transportation Inc.**

P: 437-221-1343

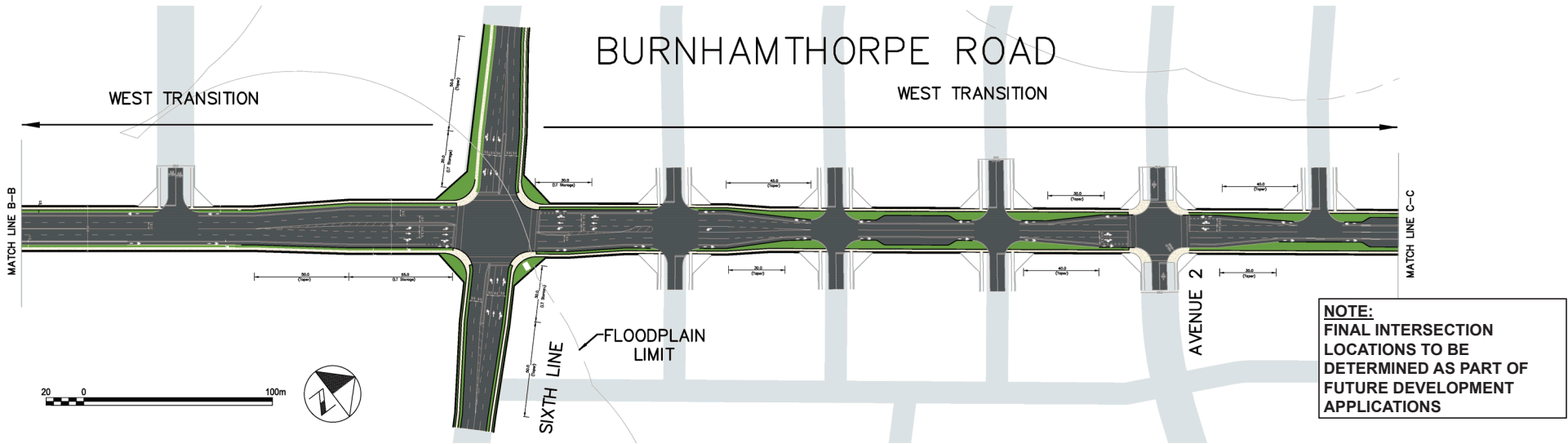
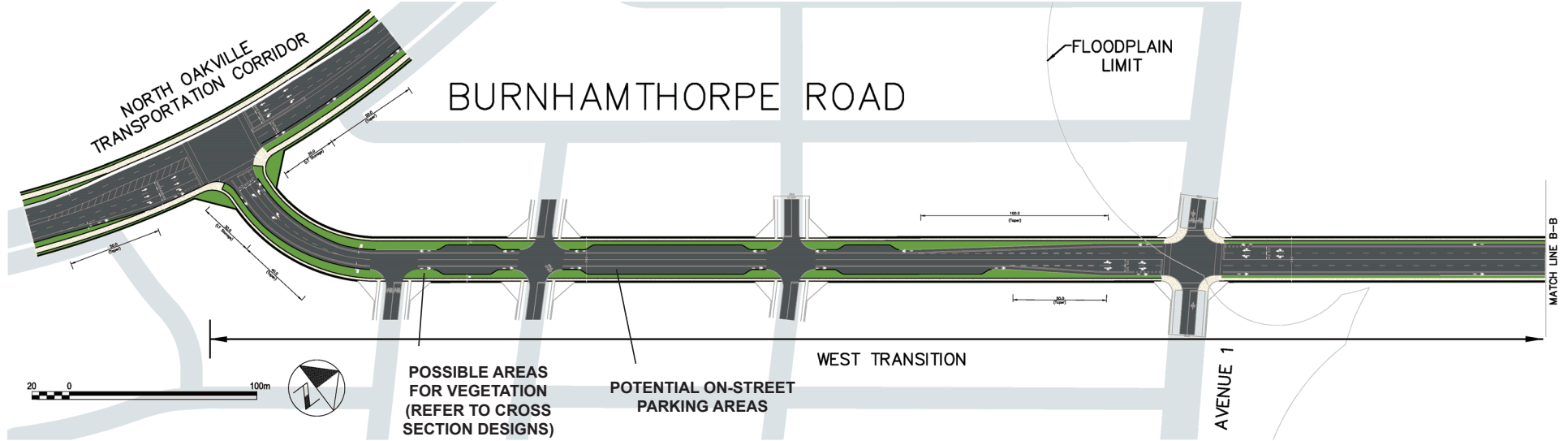
E: [viktoriya.zaytseva@cghtransportation.com](mailto:viktoriya.zaytseva@cghtransportation.com)

# Appendix N

Burnhamthorpe Road Character Study and Municipal Class EA

# Preliminary Preferred Alternative: Plan View

BURNHAMTHORPE ROAD  
CHARACTER STUDY



# Appendix O

2026 Future Background Conditions Synchro Worksheets

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Background AM  
Remington Eno

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	2148	149	310	2224	42	219	622	337	48	264	66
Future Volume (vph)	45	2148	149	310	2224	42	219	622	337	48	264	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3406	1509	1770	3374	1583	1719	3539	1599	1597	3438	1568
Flt Permitted	0.131			0.116			0.551			0.279		
Satd. Flow (perm)	242	3406	1509	216	3374	1583	997	3539	1599	469	3438	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124			81			352			124
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	7%	2%	7%	2%	5%	2%	1%	13%	5%	3%
Adj. Flow (vph)	49	2335	162	337	2417	46	238	676	366	52	287	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	2335	162	337	2417	46	238	676	366	52	287	72
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8		5	2		1		6

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Background AM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	40.4	40.4	40.4	11.0	40.4	40.4	11.5	37.4	37.4	11.5	37.4	37.4
Total Split (s)	37.0	37.0	37.0	15.0	52.0	52.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (%)	37.0%	37.0%	37.0%	15.0%	52.0%	52.0%	11.0%	37.0%	37.0%	11.0%	37.0%	37.0%
Maximum Green (s)	30.6	30.6	30.6	11.0	45.6	45.6	7.0	30.6	30.6	7.0	30.6	30.6
Yellow Time (s)	3.7	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.7	2.7	2.7	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	4.0	6.4	6.4	4.0	6.4	6.4	4.0	6.4	6.4
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	3.0	0.2	0.2
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	27.0	27.0	27.0		27.0	27.0		24.0	24.0		24.0	24.0
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0		0	0
Act Effct Green (s)	30.6	30.6	30.6	48.0	45.6	45.6	40.8	32.8	32.8	40.0	30.6	30.6
Actuated g/C Ratio	0.31	0.31	0.31	0.48	0.46	0.46	0.41	0.33	0.33	0.40	0.31	0.31
v/c Ratio	0.66	2.24	0.30	1.23	1.57	0.06	0.52	0.58	0.48	0.20	0.27	0.13
Control Delay	73.9	583.2	9.5	155.8	285.3	1.2	20.7	27.9	5.0	18.2	27.2	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.9	583.2	9.5	155.8	285.3	1.2	20.7	27.9	5.0	18.2	27.2	1.3
LOS	E	F	A	F	F	A	C	C	A	B	C	A
Approach Delay		536.9			265.0			20.0			21.5	
Approach LOS		F			F			B			C	
Queue Length 50th (m)	8.7	~407.5	5.5	~68.0	~370.2	0.0	21.2	62.0	18.6	6.0	23.2	0.0
Queue Length 95th (m)	#29.5	#451.5	21.0	#124.2	#414.0	2.3	36.0	81.6	29.2	13.3	34.4	2.3
Internal Link Dist (m)		409.0			175.8			303.6			253.5	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	74	1042	547	274	1538	765	457	1160	760	266	1052	565
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	2.24	0.30	1.23	1.57	0.06	0.52	0.58	0.48	0.20	0.27	0.13

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	73 (73%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	145
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	2.24
Intersection Signal Delay:	304.6
Intersection LOS:	F
Intersection Capacity Utilization:	118.5%
ICU Level of Service:	H
Analysis Period (min):	15

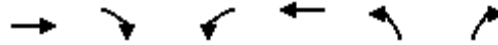
- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway

↙ Ø1	↕ Ø2 (R)	↙ Ø3	↘ Ø4
11 s	37 s	15 s	37 s
↙ Ø5	↕ Ø6 (R)	↙ Ø8	
11 s	37 s	52 s	

Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

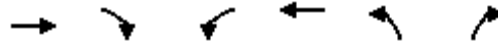
2026 Future Background AM  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2134	168	2	2127	322	6
Future Volume (vph)	2134	168	2	2127	322	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	30.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			50.0		40.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.049		0.950	
Satd. Flow (perm)	3539	1583	91	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		57				7
Link Speed (k/h)	60			60	60	
Link Distance (m)	272.7			591.4	424.3	
Travel Time (s)	16.4			35.5	25.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2320	183	2	2312	350	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2320	183	2	2312	350	7
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8



Lanes, Volumes, Timings  
 2: Burnhamthorpe Road & William Halton Parkway



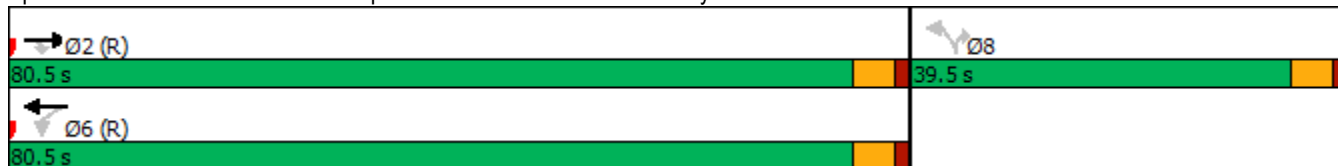
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.1	33.1	33.1	33.1	39.5	39.5
Total Split (s)	80.5	80.5	80.5	80.5	39.5	39.5
Total Split (%)	67.1%	67.1%	67.1%	67.1%	32.9%	32.9%
Maximum Green (s)	75.4	75.4	75.4	75.4	34.0	34.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.4	1.4	1.4	1.4	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	81.2	81.2	81.2	81.2	28.2	28.2
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.24	0.24
v/c Ratio	0.97	0.17	0.03	0.97	0.84	0.02
Control Delay	32.0	5.9	10.0	31.4	61.9	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	5.9	10.0	31.4	61.9	17.8
LOS	C	A	A	C	E	B
Approach Delay	30.1			31.4	61.0	
Approach LOS	C			C	E	
Queue Length 50th (m)	264.4	10.2	0.2	261.6	82.5	0.0
Queue Length 95th (m)	#371.1	21.8	1.4	#368.9	112.9	3.8
Internal Link Dist (m)	248.7			567.4	400.3	
Turn Bay Length (m)		30.0	30.0		30.0	
Base Capacity (vph)	2395	1090	61	2395	501	453
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	0.97	0.17	0.03	0.97	0.70	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 32.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 85.7%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Burnhamthorpe Road & William Halton Parkway



Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2026 Future Background AM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	104	33	127	109	29	31	376	348	155	312	42
Future Volume (vph)	43	104	33	127	109	29	31	376	348	155	312	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	30.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			25.0			50.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				1.00							
Frt		0.964			0.968			0.928			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3325	0	1770	3390	0	1626	3284	0	1703	3446	0
Flt Permitted	0.657			0.537			0.524			0.279		
Satd. Flow (perm)	1199	3325	0	1000	3390	0	897	3284	0	500	3446	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			32			240			19	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			163.7			507.3			449.2	
Travel Time (s)		29.8			9.8			30.4			27.0	
Confl. Peds. (#/hr)	2						2					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	13%	2%	3%	2%	11%	2%	2%	6%	3%	2%
Adj. Flow (vph)	47	113	36	138	118	32	34	409	378	168	339	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	149	0	138	150	0	34	787	0	168	385	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2026 Future Background AM  
Remington Eno



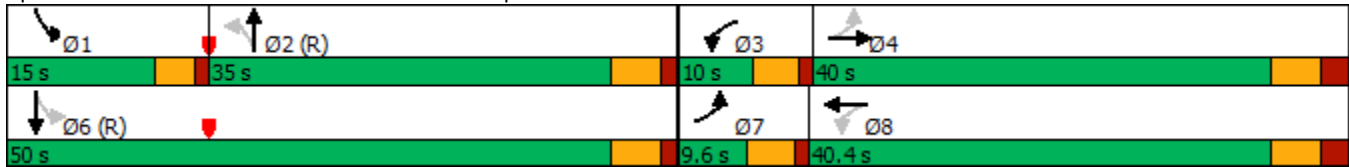
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	40.0		9.5	40.0		33.1	33.1		9.5	33.1	
Total Split (s)	9.6	40.0		10.0	40.4		35.0	35.0		15.0	50.0	
Total Split (%)	9.6%	40.0%		10.0%	40.4%		35.0%	35.0%		15.0%	50.0%	
Maximum Green (s)	5.1	34.0		5.5	34.4		29.9	29.9		11.0	44.9	
Yellow Time (s)	3.5	3.7		3.5	3.7		3.7	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.3		1.0	2.3		1.4	1.4		1.0	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	6.0		4.5	6.0		5.1	5.1		4.0	5.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		27.0			27.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)		0			0		0	0			0	
Act Effct Green (s)	15.4	8.8		17.9	13.1		56.7	56.7		71.2	70.1	
Actuated g/C Ratio	0.15	0.09		0.18	0.13		0.57	0.57		0.71	0.70	
v/c Ratio	0.22	0.46		0.62	0.32		0.07	0.40		0.36	0.16	
Control Delay	34.5	36.8		48.7	33.7		11.9	9.3		7.1	5.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.5	36.8		48.7	33.7		11.9	9.3		7.1	5.2	
LOS	C	D		D	C		B	A		A	A	
Approach Delay		36.2			40.9			9.4			5.8	
Approach LOS		D			D			A			A	
Queue Length 50th (m)	7.9	11.6		24.5	12.1		2.9	28.5		9.5	11.4	
Queue Length 95th (m)	17.4	21.1		41.4	21.6		9.0	50.2		18.0	18.4	
Internal Link Dist (m)		472.4			139.7			483.3			425.2	
Turn Bay Length (m)	55.0			30.0			30.0			30.0		
Base Capacity (vph)	212	1154		221	1187		508	1967		494	2420	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.22	0.13		0.62	0.13		0.07	0.40		0.34	0.16	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 16.0  
 Intersection LOS: B

Intersection Capacity Utilization 57.7% ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 10: Sixth Line & Burnhamthorpe Road



Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2026 Future Background AM  
Remington Eno



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	31	68	1117	648	5
Future Volume (vph)	8	31	68	1117	648	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0	0.0	70.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	15.0		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.999	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3406	3536	0
Flt Permitted	0.950		0.351			
Satd. Flow (perm)	1770	1583	654	3406	3536	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		38			1	
Link Speed (k/h)	50			60	60	
Link Distance (m)	242.4			254.4	327.6	
Travel Time (s)	17.5			15.3	19.7	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%
Adj. Flow (vph)	10	38	83	1362	790	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	38	83	1362	796	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	

Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2026 Future Background AM  
Remington Eno



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0	15.0	15.0	
Minimum Split (s)	36.4	36.4	29.0	29.0	29.0	
Total Split (s)	38.0	38.0	62.0	62.0	62.0	
Total Split (%)	38.0%	38.0%	62.0%	62.0%	62.0%	
Maximum Green (s)	31.6	31.6	56.0	56.0	56.0	
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	
All-Red Time (s)	3.1	3.1	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.4	6.4	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	23.0	23.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	10.0	10.0	86.6	86.6	86.6	
Actuated g/C Ratio	0.10	0.10	0.87	0.87	0.87	
v/c Ratio	0.06	0.20	0.15	0.46	0.26	
Control Delay	41.6	16.1	3.1	3.5	2.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	41.6	16.1	3.1	3.5	2.5	
LOS	D	B	A	A	A	
Approach Delay	21.4			3.5	2.5	
Approach LOS	C			A	A	
Queue Length 50th (m)	1.9	0.0	3.5	43.7	28.4	
Queue Length 95th (m)	6.5	8.3	6.6	46.5	m23.6	
Internal Link Dist (m)	218.4			230.4	303.6	
Turn Bay Length (m)	40.0		70.0			
Base Capacity (vph)	559	526	566	2948	3061	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.07	0.15	0.46	0.26	
<b>Intersection Summary</b>						
Area Type:	Other					
Cycle Length:	100					
Actuated Cycle Length:	100					
Offset:	59 (59%), Referenced to phase 2:NBT and 6:SBT, Start of Green					
Natural Cycle:	75					
Control Type:	Actuated-Coordinated					
Maximum v/c Ratio:	0.46					
Intersection Signal Delay:	3.5			Intersection LOS: A		
Intersection Capacity Utilization	54.2%			ICU Level of Service A		
Analysis Period (min)	15					

m Volume for 95th percentile queue is metered by upstream signal.

























Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West





Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Background PM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	2261	46	400	2181	59	64	227	318	60	491	10
Future Volume (vph)	3	2261	46	400	2181	59	64	227	318	60	491	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3505	1583	1770	3471	1482	1752	3505	1583	1703	3539	1583
Flt Permitted	0.156			0.135			0.397			0.599		
Satd. Flow (perm)	291	3505	1583	251	3471	1482	732	3505	1583	1074	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124			81			346			124
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	4%	9%	3%	3%	2%	6%	2%	2%
Adj. Flow (vph)	3	2458	50	435	2371	64	70	247	346	65	534	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	2458	50	435	2371	64	70	247	346	65	534	11
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8		5	2		1		6

Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & William Halton Parkway

2026 Future Background PM  
 Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	5	2	2	1	6	6
<b>Switch Phase</b>												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	40.4	40.4	40.4	11.0	40.4	40.4	11.5	37.4	37.4	11.5	37.4	37.4
Total Split (s)	32.0	32.0	32.0	13.0	45.0	45.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (%)	32.0%	32.0%	32.0%	13.0%	45.0%	45.0%	11.0%	44.0%	44.0%	11.0%	44.0%	44.0%
Maximum Green (s)	25.6	25.6	25.6	9.0	38.6	38.6	7.0	37.6	37.6	7.0	37.6	37.6
Yellow Time (s)	3.7	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.7	2.7	2.7	1.0	2.7	2.7	1.0	2.7	2.7	1.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	4.0	6.4	6.4	4.0	6.4	6.4	4.0	6.4	6.4
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	3.0	0.2	0.2
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	27.0	27.0	27.0		27.0	27.0		24.0	24.0		24.0	24.0
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0		0	0
Act Effct Green (s)	25.6	25.6	25.6	41.0	38.6	38.6	47.8	39.8	39.8	47.8	39.8	39.8
Actuated g/C Ratio	0.26	0.26	0.26	0.41	0.39	0.39	0.48	0.40	0.40	0.48	0.40	0.40
v/c Ratio	0.04	2.74	0.10	1.82	1.77	0.10	0.17	0.18	0.41	0.12	0.38	0.02
Control Delay	30.0	805.1	0.4	406.0	374.4	3.5	11.6	19.1	5.1	13.2	23.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	805.1	0.4	406.0	374.4	3.5	11.6	19.1	5.1	13.2	23.0	0.0
LOS	C	F	A	F	F	A	B	B	A	B	C	A
Approach Delay		788.2			370.9			11.0			21.6	
Approach LOS		F			F			B			C	
Queue Length 50th (m)	0.5	~451.4	0.0	~118.4	~382.2	0.0	7.0	17.5	0.0	6.5	41.4	0.0
Queue Length 95th (m)	2.9	#495.0	0.0	#180.3	#426.2	6.1	14.3	26.6	33.8	13.6	56.2	0.0
Internal Link Dist (m)		409.0			175.8			303.6			253.5	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	74	897	497	239	1339	621	421	1394	838	557	1408	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	2.74	0.10	1.82	1.77	0.10	0.17	0.18	0.41	0.12	0.38	0.02

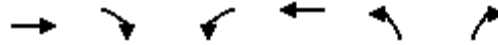
<b>Intersection Summary</b>	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	94 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	145
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	2.74
Intersection Signal Delay:	460.5
Intersection LOS:	F
Intersection Capacity Utilization:	121.4%
ICU Level of Service:	H
Analysis Period (min):	15

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

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway

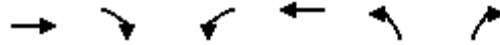
↙ Ø1	↖ Ø2 (R)	↙ Ø3	↗ Ø4
11 s	44 s	13 s	32 s
↙ Ø5	↖ Ø6 (R)	↙ Ø8	
11 s	44 s	45 s	

Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2140	243	7	2145	323	4
Future Volume (vph)	2140	243	7	2145	323	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	30.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			50.0		40.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.049		0.950	
Satd. Flow (perm)	3539	1583	91	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		83				4
Link Speed (k/h)	60			60	60	
Link Distance (m)	272.7			591.4	410.6	
Travel Time (s)	16.4			35.5	24.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2326	264	8	2332	351	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2326	264	8	2332	351	4
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8

Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway



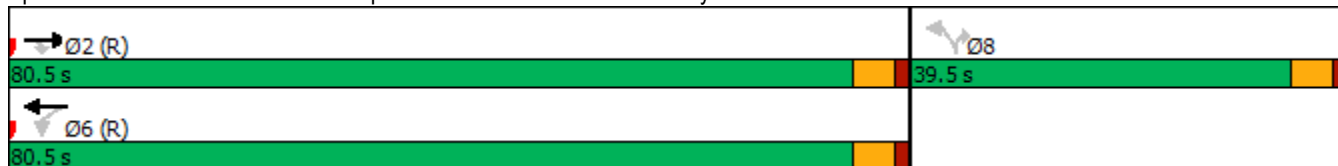
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.1	33.1	33.1	33.1	39.5	39.5
Total Split (s)	80.5	80.5	80.5	80.5	39.5	39.5
Total Split (%)	67.1%	67.1%	67.1%	67.1%	32.9%	32.9%
Maximum Green (s)	75.4	75.4	75.4	75.4	34.0	34.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.4	1.4	1.4	1.4	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	81.2	81.2	81.2	81.2	28.2	28.2
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.24	0.24
v/c Ratio	0.97	0.24	0.13	0.97	0.84	0.01
Control Delay	32.6	6.2	14.9	33.1	61.9	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	6.2	14.9	33.1	61.9	19.8
LOS	C	A	B	C	E	B
Approach Delay	29.9			33.0	61.4	
Approach LOS	C			C	E	
Queue Length 50th (m)	267.0	15.3	0.7	269.0	82.7	0.0
Queue Length 95th (m)	#372.7	30.6	3.9	#374.1	113.2	2.9
Internal Link Dist (m)	248.7			567.4	386.6	
Turn Bay Length (m)		30.0	30.0		30.0	
Base Capacity (vph)	2394	1097	61	2394	501	451
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	0.97	0.24	0.13	0.97	0.70	0.01

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	130
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	33.4
Intersection LOS:	C
Intersection Capacity Utilization:	86.0%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	

Queue shown is maximum after two cycles.

Splits and Phases: 2: Burnhamthorpe Road & William Halton Parkway



Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2026 Future Background PM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	68	36	193	158	143	54	442	135	40	371	85
Future Volume (vph)	30	68	36	193	158	143	54	442	135	40	371	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	30.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			25.0			50.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00								
Frt		0.948			0.929			0.965			0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3340	0	1770	3288	0	1641	3415	0	1736	3440	0
Flt Permitted	0.554			0.462			0.462			0.392		
Satd. Flow (perm)	1032	3340	0	860	3288	0	798	3415	0	716	3440	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			155			47			32	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		510.4			161.7			507.3			449.2	
Travel Time (s)		30.6			9.7			30.4			27.0	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	10%	2%	2%	4%	2%	2%
Adj. Flow (vph)	33	74	39	210	172	155	59	480	147	43	403	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	113	0	210	327	0	59	627	0	43	495	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2026 Future Background PM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	40.0		9.5	40.0		33.1	33.1		33.1	33.1	
Total Split (s)	11.0	40.0		17.0	46.0		43.0	43.0		43.0	43.0	
Total Split (%)	11.0%	40.0%		17.0%	46.0%		43.0%	43.0%		43.0%	43.0%	
Maximum Green (s)	6.5	34.0		12.5	40.0		37.9	37.9		37.9	37.9	
Yellow Time (s)	3.5	3.7		3.5	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.3		1.0	2.3		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	6.0		4.5	6.0		5.1	5.1		5.1	5.1	
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		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		27.0			27.0		21.0	21.0		21.0	21.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	15.4	7.7		25.9	17.8		64.5	64.5		64.5	64.5	
Actuated g/C Ratio	0.15	0.08		0.26	0.18		0.64	0.64		0.64	0.64	
v/c Ratio	0.16	0.39		0.63	0.46		0.11	0.28		0.09	0.22	
Control Delay	29.5	32.6		40.0	22.0		8.1	7.7		8.0	7.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.5	32.6		40.0	22.0		8.1	7.7		8.0	7.4	
LOS	C	C		D	C		A	A		A	A	
Approach Delay		31.9			29.0			7.7			7.4	
Approach LOS		C			C			A			A	
Queue Length 50th (m)	5.1	7.6		36.0	17.0		4.2	24.3		3.0	18.6	
Queue Length 95th (m)	12.4	16.1		56.4	30.4		10.3	35.7		8.0	28.0	
Internal Link Dist (m)		486.4			137.7			483.3			425.2	
Turn Bay Length (m)	55.0			30.0			30.0			30.0		
Base Capacity (vph)	209	1161		336	1408		515	2219		461	2231	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.10		0.63	0.23		0.11	0.28		0.09	0.22	

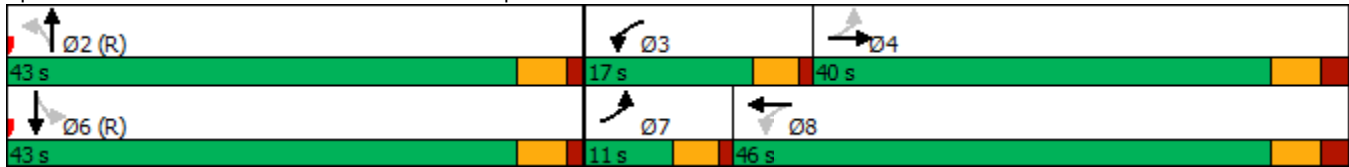
Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 15.5  
 Intersection LOS: B



Intersection Capacity Utilization 53.6% ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 10: Sixth Line & Burnhamthorpe Road



Lanes, Volumes, Timings  
 24: Neyagawa Boulevard & Settlers Road West



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	14	28	527	844	2
Future Volume (vph)	2	14	28	527	844	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0	0.0	70.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	15.0		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3539	0
Flt Permitted	0.950		0.274			
Satd. Flow (perm)	1770	1583	510	3539	3539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		17				
Link Speed (k/h)	50			60	60	
Link Distance (m)	242.4			254.4	327.6	
Travel Time (s)	17.5			15.3	19.7	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	2	17	34	643	1029	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	17	34	643	1031	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4	2			

Lanes, Volumes, Timings  
 24: Neyagawa Boulevard & Settlers Road West

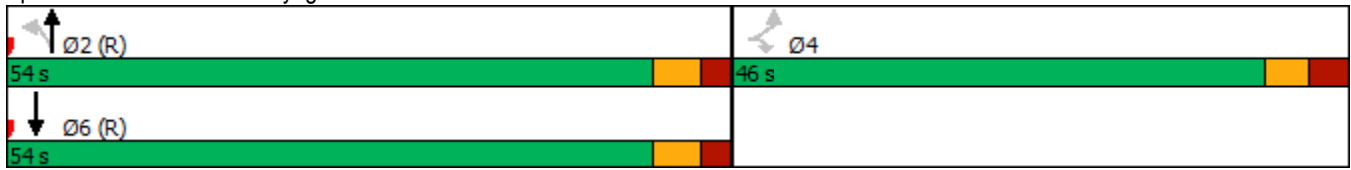


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0	15.0	15.0	
Minimum Split (s)	36.4	36.4	29.0	29.0	29.0	
Total Split (s)	46.0	46.0	54.0	54.0	54.0	
Total Split (%)	46.0%	46.0%	54.0%	54.0%	54.0%	
Maximum Green (s)	39.6	39.6	48.0	48.0	48.0	
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	
All-Red Time (s)	3.1	3.1	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.4	6.4	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	23.0	23.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	10.0	10.0	91.0	91.0	91.0	
Actuated g/C Ratio	0.10	0.10	0.91	0.91	0.91	
v/c Ratio	0.01	0.10	0.07	0.20	0.32	
Control Delay	41.0	19.6	2.4	1.7	1.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	41.0	19.6	2.4	1.7	1.2	
LOS	D	B	A	A	A	
Approach Delay	21.9			1.7	1.2	
Approach LOS	C			A	A	
Queue Length 50th (m)	0.4	0.0	0.0	0.0	0.5	
Queue Length 95th (m)	2.5	5.9	3.2	17.7	m14.8	
Internal Link Dist (m)	218.4			230.4	303.6	
Turn Bay Length (m)	40.0		70.0			
Base Capacity (vph)	700	637	464	3222	3222	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.00	0.03	0.07	0.20	0.32	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 80 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.32  
 Intersection Signal Delay: 1.6  
 Intersection LOS: A  
 Intersection Capacity Utilization 42.1%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.



































Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West



Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Background Improvements AM

Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	  	  		  	  			 			 	
Traffic Volume (vph)	45	2148	149	310	2224	42	219	622	337	48	264	66
Future Volume (vph)	45	2148	149	310	2224	42	219	622	337	48	264	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	4893	1509	3433	4848	1583	1719	3539	1599	1597	3438	1568
Flt Permitted	0.950			0.950			0.540			0.209		
Satd. Flow (perm)	3400	4893	1509	3433	4848	1583	977	3539	1599	351	3438	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			66			130			100
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	7%	2%	7%	2%	5%	2%	1%	13%	5%	3%
Adj. Flow (vph)	49	2335	162	337	2417	46	238	676	366	52	287	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	2335	162	337	2417	46	238	676	366	52	287	72
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Background Improvements AM  
Remington Eno



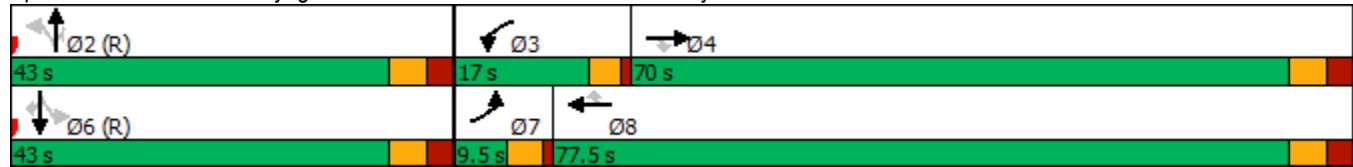
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	7.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	9.5	40.4	40.4	11.0	40.4	40.4	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (s)	9.5	70.0	70.0	17.0	77.5	77.5	43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	7.3%	53.8%	53.8%	13.1%	59.6%	59.6%	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%
Maximum Green (s)	5.0	63.6	63.6	13.0	71.1	71.1	36.6	36.6	36.6	36.6	36.6	36.6
Yellow Time (s)	3.5	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.4	6.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0	24.0	24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	5.0	63.6	63.6	13.0	73.0	73.0	36.6	36.6	36.6	36.6	36.6	36.6
Actuated g/C Ratio	0.04	0.49	0.49	0.10	0.56	0.56	0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.38	0.98	0.20	0.98	0.89	0.05	0.87	0.68	0.67	0.53	0.30	0.14
Control Delay	69.5	46.1	6.9	102.5	30.6	1.6	73.9	45.6	33.1	61.8	37.7	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	46.1	6.9	102.5	30.6	1.6	73.9	45.6	33.1	61.8	37.7	3.3
LOS	E	D	A	F	C	A	E	D	C	E	D	A
Approach Delay		44.1			38.8			47.3			34.7	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	6.8	219.8	6.8	47.5	207.6	0.0	61.1	85.4	57.3	11.9	32.0	0.0
Queue Length 95th (m)	13.9	#262.8	19.5	#79.2	233.6	3.5	#110.6	107.5	94.4	#30.0	45.0	6.1
Internal Link Dist (m)		409.0			175.8			303.6			253.5	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	130	2393	795	343	2722	917	275	996	543	98	967	513
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.98	0.20	0.98	0.89	0.05	0.87	0.68	0.67	0.53	0.30	0.14

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.98
Intersection Signal Delay:	42.0
Intersection LOS:	D
Intersection Capacity Utilization:	99.4%
ICU Level of Service:	F
Analysis Period (min):	15

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




































Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway



Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Background Improvements PM

Remington Eno

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  		  	  			 			 	 	
Traffic Volume (vph)	3	2261	46	400	2181	59	64	227	318	60	491	10	
Future Volume (vph)	3	2261	46	400	2181	59	64	227	318	60	491	10	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0	
Storage Lanes	2		1	2		1	1		1	1		1	
Taper Length (m)	100.0			100.0			75.0			100.0			
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt			0.850			0.850			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	3433	5036	1583	3433	4988	1482	1752	3505	1583	1703	3539	1583	
Flt Permitted	0.950			0.950			0.251			0.566			
Satd. Flow (perm)	3433	5036	1583	3433	4988	1482	463	3505	1583	1015	3539	1583	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			100			66			178			100	
Link Speed (k/h)		60			60			60			60		
Link Distance (m)		433.0			199.8			327.6			277.5		
Travel Time (s)		26.0			12.0			19.7			16.7		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	3%	2%	2%	4%	9%	3%	3%	2%	6%	2%	2%	
Adj. Flow (vph)	3	2458	50	435	2371	64	70	247	346	65	534	11	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	3	2458	50	435	2371	64	70	247	346	65	534	11	
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)		7.2			7.2			3.6			3.6		
Link Offset(m)		0.0			0.0			0.0			0.0		
Crosswalk Width(m)		4.8			4.8			4.8			4.8		
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (k/h)	25		15	25		15	25		15	25		15	
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	
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	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	
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	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4		
Detector 2 Size(m)		0.6			0.6			0.6			0.6		
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	7	4		3	8			2			6		



Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Background Improvements PM

Remington Eno



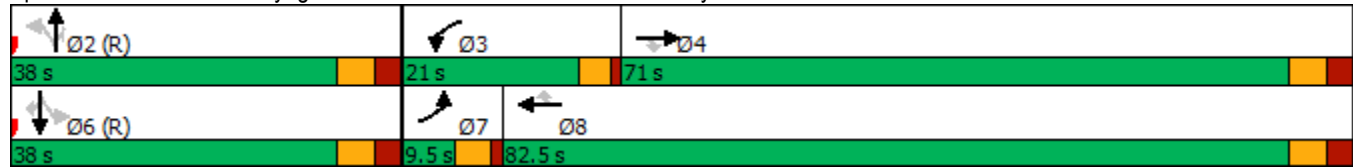
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	7.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	9.5	40.4	40.4	11.0	40.4	40.4	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (s)	9.5	71.0	71.0	21.0	82.5	82.5	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	7.3%	54.6%	54.6%	16.2%	63.5%	63.5%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%
Maximum Green (s)	5.0	64.6	64.6	17.0	76.1	76.1	31.6	31.6	31.6	31.6	31.6	31.6
Yellow Time (s)	3.5	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.4	6.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0	24.0	24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	5.0	64.6	64.6	17.0	83.7	83.7	31.6	31.6	31.6	31.6	31.6	31.6
Actuated g/C Ratio	0.04	0.50	0.50	0.13	0.64	0.64	0.24	0.24	0.24	0.24	0.24	0.24
v/c Ratio	0.02	0.98	0.06	0.97	0.74	0.07	0.62	0.29	0.67	0.26	0.62	0.02
Control Delay	60.7	46.6	0.1	92.0	18.0	2.5	69.9	41.2	28.0	43.3	47.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	46.6	0.1	92.0	18.0	2.5	69.9	41.2	28.0	43.3	47.6	0.1
LOS	E	D	A	F	B	A	E	D	C	D	D	A
Approach Delay		45.7			28.9			37.3			46.3	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	0.4	232.4	0.0	61.0	141.3	0.0	16.9	28.7	41.2	14.3	67.9	0.0
Queue Length 95th (m)	2.2	#276.3	0.0	#95.1	197.5	6.0	#40.2	41.3	76.9	28.5	87.7	0.0
Internal Link Dist (m)		409.0			175.8			303.6			253.5	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	132	2502	836	448	3211	977	112	851	519	246	860	460
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.98	0.06	0.97	0.74	0.07	0.63	0.29	0.67	0.26	0.62	0.02

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.98
Intersection Signal Delay:	37.7
Intersection LOS:	D
Intersection Capacity Utilization:	100.5%
ICU Level of Service:	G
Analysis Period (min):	15

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

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway




































# Appendix P

2031 Future Background Conditions Operational Analysis

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Background AM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  	  			 			 	
Traffic Volume (vph)	50	2144	165	329	2215	43	237	684	369	52	291	73
Future Volume (vph)	50	2144	165	329	2215	43	237	684	369	52	291	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	4893	1509	3433	4848	1583	1719	3539	1599	1597	3438	1568
Flt Permitted	0.950			0.950			0.513			0.173		
Satd. Flow (perm)	3400	4893	1509	3433	4848	1583	928	3539	1599	291	3438	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121			66			147			100
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	7%	2%	7%	2%	5%	2%	1%	13%	5%	3%
Adj. Flow (vph)	54	2330	179	358	2408	47	258	743	401	57	316	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	2330	179	358	2408	47	258	743	401	57	316	79
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Background AM  
Remington Eno



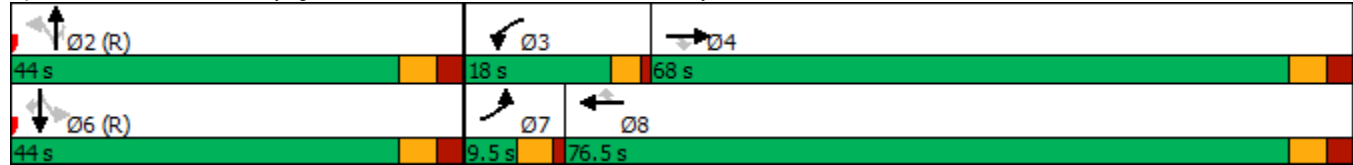
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	7.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	9.5	40.4	40.4	11.0	40.4	40.4	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (s)	9.5	68.0	68.0	18.0	76.5	76.5	44.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	7.3%	52.3%	52.3%	13.8%	58.8%	58.8%	33.8%	33.8%	33.8%	33.8%	33.8%	33.8%
Maximum Green (s)	5.0	61.6	61.6	14.0	70.1	70.1	37.6	37.6	37.6	37.6	37.6	37.6
Yellow Time (s)	3.5	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.4	6.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0	24.0	24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	5.0	61.6	61.6	14.0	72.0	72.0	37.6	37.6	37.6	37.6	37.6	37.6
Actuated g/C Ratio	0.04	0.47	0.47	0.11	0.55	0.55	0.29	0.29	0.29	0.29	0.29	0.29
v/c Ratio	0.42	1.01	0.23	0.97	0.90	0.05	0.96	0.73	0.71	0.68	0.32	0.15
Control Delay	70.9	54.1	7.7	97.5	31.8	1.7	92.2	46.4	33.4	80.7	37.3	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.9	54.1	7.7	97.5	31.8	1.7	92.2	46.4	33.4	80.7	37.3	4.3
LOS	E	D	A	F	C	A	F	D	C	F	D	A
Approach Delay		51.2			39.7			51.1				37.0
Approach LOS		D			D			D				D
Queue Length 50th (m)	7.4	~228.2	8.4	50.3	210.0	0.0	68.6	95.0	62.5	13.6	35.1	0.0
Queue Length 95th (m)	14.8	#269.5	22.4	#82.3	236.1	3.6	#124.8	118.5	102.1	#38.1	48.7	7.9
Internal Link Dist (m)		409.0			175.8			303.6				253.5
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	130	2318	778	369	2685	906	268	1023	566	84	994	524
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.01	0.23	0.97	0.90	0.05	0.96	0.73	0.71	0.68	0.32	0.15

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.01
Intersection Signal Delay:	45.8
Intersection LOS:	D
Intersection Capacity Utilization:	101.6%
ICU Level of Service:	G
Analysis Period (min):	15

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

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway



Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

2031 Future Background AM  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2128	172	2	2125	321	6
Future Volume (vph)	2128	172	2	2125	321	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	30.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			50.0		40.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.049		0.950	
Satd. Flow (perm)	3539	1583	91	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		59				7
Link Speed (k/h)	60			60	60	
Link Distance (m)	272.7			591.4	424.3	
Travel Time (s)	16.4			35.5	25.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2313	187	2	2310	349	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2313	187	2	2310	349	7
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8

Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.1	33.1	33.1	33.1	39.5	39.5
Total Split (s)	80.5	80.5	80.5	80.5	39.5	39.5
Total Split (%)	67.1%	67.1%	67.1%	67.1%	32.9%	32.9%
Maximum Green (s)	75.4	75.4	75.4	75.4	34.0	34.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.4	1.4	1.4	1.4	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	81.3	81.3	81.3	81.3	28.1	28.1
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.23	0.23
v/c Ratio	0.96	0.17	0.03	0.96	0.84	0.02
Control Delay	31.4	5.8	10.0	31.2	61.7	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	5.8	10.0	31.2	61.7	17.8
LOS	C	A	A	C	E	B
Approach Delay	29.5			31.1	60.9	
Approach LOS	C			C	E	
Queue Length 50th (m)	262.0	10.4	0.2	261.1	82.3	0.0
Queue Length 95th (m)	#368.9	22.0	1.4	#368.4	112.2	3.8
Internal Link Dist (m)	248.7			567.4	400.3	
Turn Bay Length (m)		30.0	30.0		30.0	
Base Capacity (vph)	2397	1091	61	2397	501	453
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	0.96	0.17	0.03	0.96	0.70	0.02

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	130
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.96
Intersection Signal Delay:	32.4
Intersection LOS:	C
Intersection Capacity Utilization:	85.4%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	



Queue shown is maximum after two cycles.

Splits and Phases: 2: Burnhamthorpe Road & William Halton Parkway



Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Background AM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	107	32	130	115	31	29	481	376	171	355	46
Future Volume (vph)	43	107	32	130	115	31	29	481	376	171	355	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	30.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			25.0			50.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				1.00							
Frt		0.965			0.968			0.934			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3332	0	1770	3390	0	1626	3306	0	1703	3449	0
Flt Permitted	0.651			0.555			0.499			0.219		
Satd. Flow (perm)	1188	3332	0	1034	3390	0	854	3306	0	393	3449	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			34			203			18	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			163.7			507.3			449.2	
Travel Time (s)		29.8			9.8			30.4			27.0	
Confl. Peds. (#/hr)	2						2					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	13%	2%	3%	2%	11%	2%	2%	6%	3%	2%
Adj. Flow (vph)	47	116	35	141	125	34	32	523	409	186	386	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	151	0	141	159	0	32	932	0	186	436	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Background AM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	40.0		9.5	40.0		33.1	33.1		9.5	33.1	
Total Split (s)	9.6	40.0		9.6	40.0		35.2	35.2		15.2	50.4	
Total Split (%)	9.6%	40.0%		9.6%	40.0%		35.2%	35.2%		15.2%	50.4%	
Maximum Green (s)	5.1	34.0		5.1	34.0		30.1	30.1		11.2	45.3	
Yellow Time (s)	3.5	3.7		3.5	3.7		3.7	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.3		1.0	2.3		1.4	1.4		1.0	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	6.0		4.5	6.0		5.1	5.1		4.0	5.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		27.0			27.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)		0			0		0	0			0	
Act Effct Green (s)	15.6	9.0		17.4	12.9		55.2	55.2		71.4	70.3	
Actuated g/C Ratio	0.16	0.09		0.17	0.13		0.55	0.55		0.71	0.70	
v/c Ratio	0.22	0.45		0.65	0.34		0.07	0.49		0.44	0.18	
Control Delay	34.6	36.9		50.7	34.1		13.2	12.2		8.3	5.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.6	36.9		50.7	34.1		13.2	12.2		8.3	5.3	
LOS	C	D		D	C		B	B		A	A	
Approach Delay		36.3			41.9			12.2			6.2	
Approach LOS		D			D			B			A	
Queue Length 50th (m)	7.9	11.9		25.2	12.8		2.9	43.7		10.6	13.2	
Queue Length 95th (m)	17.4	21.4		#42.6	22.6		9.1	72.6		19.8	20.8	
Internal Link Dist (m)		472.4			139.7			483.3			425.2	
Turn Bay Length (m)	55.0			30.0			30.0			30.0		
Base Capacity (vph)	213	1155		217	1175		471	1915		444	2428	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.22	0.13		0.65	0.14		0.07	0.49		0.42	0.18	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.65  
 Intersection Signal Delay: 17.0  
 Intersection LOS: B

Lanes, Volumes, Timings  
 10: Sixth Line & Burnhamthorpe Road









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Intersection Capacity Utilization 62.5% ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 10: Sixth Line & Burnhamthorpe Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15.2 s	35.2 s	9.6 s	40 s
 Ø5 (R)		 Ø7	 Ø8
50.4 s		9.6 s	40 s

Lanes, Volumes, Timings  
 24: Neyagawa Boulevard & Settlers Road West



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	31	68	1234	716	5
Future Volume (vph)	8	31	68	1234	716	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0	0.0	70.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	15.0		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.999	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3406	3536	0
Flt Permitted	0.950		0.322			
Satd. Flow (perm)	1770	1583	600	3406	3536	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		38			1	
Link Speed (k/h)	50			60	60	
Link Distance (m)	242.4			254.4	327.6	
Travel Time (s)	17.5			15.3	19.7	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%
Adj. Flow (vph)	10	38	83	1505	873	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	38	83	1505	879	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	

Lanes, Volumes, Timings  
 24: Neyagawa Boulevard & Settlers Road West

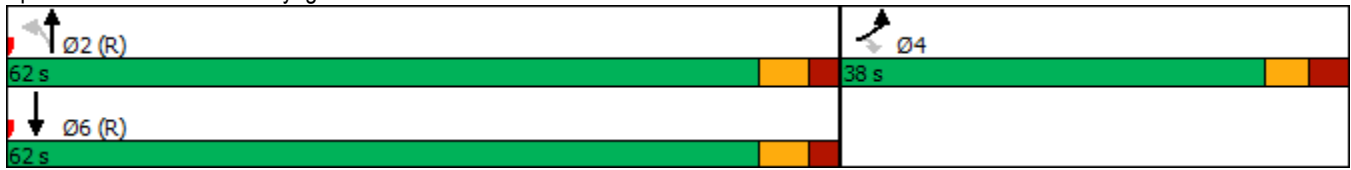
2031 Future Background AM  
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0	15.0	15.0	
Minimum Split (s)	36.4	36.4	29.0	29.0	29.0	
Total Split (s)	38.0	38.0	62.0	62.0	62.0	
Total Split (%)	38.0%	38.0%	62.0%	62.0%	62.0%	
Maximum Green (s)	31.6	31.6	56.0	56.0	56.0	
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	
All-Red Time (s)	3.1	3.1	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.4	6.4	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	23.0	23.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	10.0	10.0	86.6	86.6	86.6	
Actuated g/C Ratio	0.10	0.10	0.87	0.87	0.87	
v/c Ratio	0.06	0.20	0.16	0.51	0.29	
Control Delay	41.6	16.1	3.3	3.8	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	41.6	16.1	3.3	3.8	2.6	
LOS	D	B	A	A	A	
Approach Delay	21.4			3.8	2.6	
Approach LOS	C			A	A	
Queue Length 50th (m)	1.9	0.0	3.5	51.8	22.4	
Queue Length 95th (m)	6.5	8.3	6.8	54.5	25.3	
Internal Link Dist (m)	218.4			230.4	303.6	
Turn Bay Length (m)	40.0		70.0			
Base Capacity (vph)	559	526	519	2948	3061	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.07	0.16	0.51	0.29	

























Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	59 (59%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	3.7
Intersection Capacity Utilization	56.1%
Analysis Period (min)	15
Intersection LOS:	A
ICU Level of Service	B

Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West



Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Background PM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	2251	51	426	2175	62	67	249	343	59	541	11
Future Volume (vph)	4	2251	51	426	2175	62	67	249	343	59	541	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3433	4988	1482	1752	3505	1583	1703	3539	1583
Flt Permitted	0.950			0.950			0.196			0.533		
Satd. Flow (perm)	3433	5036	1583	3433	4988	1482	362	3505	1583	955	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100			66			190			100
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	4%	9%	3%	3%	2%	6%	2%	2%
Adj. Flow (vph)	4	2447	55	463	2364	67	73	271	373	64	588	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	2447	55	463	2364	67	73	271	373	64	588	12
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	



Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & William Halton Parkway

2031 Future Background PM  
 Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	7.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	9.5	40.4	40.4	11.0	40.4	40.4	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (s)	9.5	70.6	70.6	22.0	83.1	83.1	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (%)	7.3%	54.3%	54.3%	16.9%	63.9%	63.9%	28.8%	28.8%	28.8%	28.8%	28.8%	28.8%
Maximum Green (s)	5.0	64.2	64.2	18.0	76.7	76.7	31.0	31.0	31.0	31.0	31.0	31.0
Yellow Time (s)	3.5	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.4	6.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0	24.0	24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	5.0	64.2	64.2	18.0	84.3	84.3	31.0	31.0	31.0	31.0	31.0	31.0
Actuated g/C Ratio	0.04	0.49	0.49	0.14	0.65	0.65	0.24	0.24	0.24	0.24	0.24	0.24
v/c Ratio	0.03	0.98	0.07	0.97	0.73	0.07	0.85	0.32	0.71	0.28	0.70	0.03
Control Delay	60.8	47.2	0.5	88.5	12.1	2.5	111.0	42.2	30.3	44.5	50.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	47.2	0.5	88.5	12.1	2.5	111.0	42.2	30.3	44.5	50.3	0.1
LOS	E	D	A	F	B	A	F	D	C	D	D	A
Approach Delay		46.2			24.1			43.0				48.9
Approach LOS		D			C			D				D
Queue Length 50th (m)	0.5	231.7	0.0	68.5	82.1	0.4	18.9	31.9	46.2	14.2	76.7	0.0
Queue Length 95th (m)	2.6	#275.8	0.9	m#78.3	m129.8	m1.1	#49.8	45.3	84.6	28.4	97.9	0.0
Internal Link Dist (m)		409.0			175.8			303.6				253.5
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	132	2487	832	475	3234	983	86	835	522	227	843	453
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.98	0.07	0.97	0.73	0.07	0.85	0.32	0.71	0.28	0.70	0.03

**Intersection Summary**

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 36.7

Intersection LOS: D







Intersection Capacity Utilization 102.4%

ICU Level of Service G

Analysis Period (min) 15

- # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway

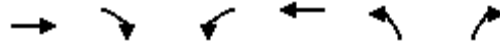
 Ø2 (R) 37.4 s	 Ø3 22 s	 Ø4 70.6 s
 Ø6 (R) 37.4 s	 Ø7 9.5 s	 Ø8 83.1 s

Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2137	233	6	2141	329	4
Future Volume (vph)	2137	233	6	2141	329	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	30.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			50.0		40.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.045		0.950	
Satd. Flow (perm)	3539	1583	84	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		79				4
Link Speed (k/h)	60			60	60	
Link Distance (m)	272.7			591.4	410.6	
Travel Time (s)	16.4			35.5	24.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2323	253	7	2327	358	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2323	253	7	2327	358	4
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8

Lanes, Volumes, Timings  
 2: Burnhamthorpe Road & William Halton Parkway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.1	33.1	33.1	33.1	39.5	39.5
Total Split (s)	90.5	90.5	90.5	90.5	39.5	39.5
Total Split (%)	69.6%	69.6%	69.6%	69.6%	30.4%	30.4%
Maximum Green (s)	85.4	85.4	85.4	85.4	34.0	34.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.4	1.4	1.4	1.4	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	89.3	89.3	89.3	89.3	30.1	30.1
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.23	0.23
v/c Ratio	0.96	0.23	0.12	0.96	0.88	0.01
Control Delay	21.9	1.1	14.2	30.6	69.9	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	1.1	14.2	30.6	69.9	22.0
LOS	C	A	B	C	E	C
Approach Delay	19.9			30.5	69.4	
Approach LOS	B			C	E	
Queue Length 50th (m)	349.5	5.0	0.6	288.8	92.1	0.0
Queue Length 95th (m)	m#364.6	m8.1	3.4	#385.8	#130.7	3.0
Internal Link Dist (m)	248.7			567.4	386.6	
Turn Bay Length (m)		30.0	30.0		30.0	
Base Capacity (vph)	2430	1112	57	2430	462	416
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	0.96	0.23	0.12	0.96	0.77	0.01

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 28.0  
 Intersection LOS: C  
 Intersection Capacity Utilization 86.2%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Burnhamthorpe Road & William Halton Parkway

 Ø2 (R) 90.5 s	 Ø8 39.5 s
 Ø6 (R) 90.5 s	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Background PM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	78	35	202	169	157	54	493	144	42	470	90
Future Volume (vph)	31	78	35	202	169	157	54	493	144	42	470	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	30.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			25.0			50.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00								
Frt		0.954			0.928			0.966			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3363	0	1770	3284	0	1641	3419	0	1736	3454	0
Flt Permitted	0.539			0.462			0.401			0.361		
Satd. Flow (perm)	1004	3363	0	860	3284	0	693	3419	0	660	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			171			44			25	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		510.4			161.7			507.3			449.2	
Travel Time (s)		30.6			9.7			30.4			27.0	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	10%	2%	2%	4%	2%	2%
Adj. Flow (vph)	34	85	38	220	184	171	59	536	157	46	511	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	123	0	220	355	0	59	693	0	46	609	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Background PM  
Remington Eno



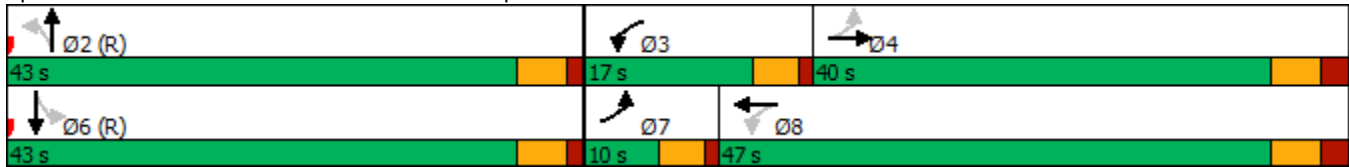
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	40.0		9.5	40.0		33.1	33.1		33.1	33.1	
Total Split (s)	10.0	40.0		17.0	47.0		43.0	43.0		43.0	43.0	
Total Split (%)	10.0%	40.0%		17.0%	47.0%		43.0%	43.0%		43.0%	43.0%	
Maximum Green (s)	5.5	34.0		12.5	41.0		37.9	37.9		37.9	37.9	
Yellow Time (s)	3.5	3.7		3.5	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.3		1.0	2.3		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	6.0		4.5	6.0		5.1	5.1		5.1	5.1	
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		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		27.0			27.0		21.0	21.0		21.0	21.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	15.0	8.0		26.1	18.6		64.3	64.3		64.3	64.3	
Actuated g/C Ratio	0.15	0.08		0.26	0.19		0.64	0.64		0.64	0.64	
v/c Ratio	0.18	0.41		0.66	0.47		0.13	0.31		0.11	0.27	
Control Delay	29.6	33.6		41.0	21.2		8.6	8.1		8.4	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.6	33.6		41.0	21.2		8.6	8.1		8.4	8.0	
LOS	C	C		D	C		A	A		A	A	
Approach Delay		32.8			28.8			8.2			8.0	
Approach LOS		C			C			A			A	
Queue Length 50th (m)	5.2	8.7		37.7	18.0		4.3	28.2		3.3	24.7	
Queue Length 95th (m)	12.6	17.5		58.4	31.8		10.7	41.0		8.8	36.2	
Internal Link Dist (m)		486.4			137.7			483.3			425.2	
Turn Bay Length (m)	55.0			30.0			30.0			30.0		
Base Capacity (vph)	192	1168		338	1447		445	2214		424	2230	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.11		0.65	0.25		0.13	0.31		0.11	0.27	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 15.5  
 Intersection LOS: B

Intersection Capacity Utilization 55.8%      ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 10: Sixth Line & Burnhamthorpe Road





Lanes, Volumes, Timings  
 24: Neyagawa Boulevard & Settlers Road West



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	14	28	581	931	2
Future Volume (vph)	2	14	28	581	931	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0	0.0	70.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	15.0		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3539	0
Flt Permitted	0.950		0.244			
Satd. Flow (perm)	1770	1583	455	3539	3539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		17				
Link Speed (k/h)	50			60	60	
Link Distance (m)	242.4			254.4	327.6	
Travel Time (s)	17.5			15.3	19.7	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	2	17	34	709	1135	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	17	34	709	1137	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4	2			

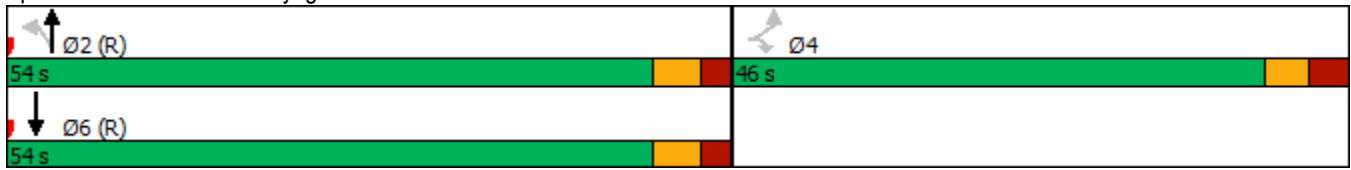
Lanes, Volumes, Timings  
 24: Neyagawa Boulevard & Settlers Road West



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0	15.0	15.0	
Minimum Split (s)	36.4	36.4	29.0	29.0	29.0	
Total Split (s)	46.0	46.0	54.0	54.0	54.0	
Total Split (%)	46.0%	46.0%	54.0%	54.0%	54.0%	
Maximum Green (s)	39.6	39.6	48.0	48.0	48.0	
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	
All-Red Time (s)	3.1	3.1	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.4	6.4	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	23.0	23.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effect Green (s)	10.0	10.0	91.0	91.0	91.0	
Actuated g/C Ratio	0.10	0.10	0.91	0.91	0.91	
v/c Ratio	0.01	0.10	0.08	0.22	0.35	
Control Delay	41.0	19.6	2.5	1.7	2.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	41.0	19.6	2.5	1.7	2.2	
LOS	D	B	A	A	A	
Approach Delay	21.9			1.8	2.2	
Approach LOS	C			A	A	
Queue Length 50th (m)	0.4	0.0	0.0	0.0	0.0	
Queue Length 95th (m)	2.5	5.9	3.3	19.7	35.1	
Internal Link Dist (m)	218.4			230.4	303.6	
Turn Bay Length (m)	40.0		70.0			
Base Capacity (vph)	700	637	414	3222	3222	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.00	0.03	0.08	0.22	0.35	

Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	80 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.35
Intersection Signal Delay:	2.2
Intersection Capacity Utilization:	44.5%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West




































# Appendix Q

2026 Total Future Conditions Synchro Worksheets

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Total AM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  	  			 			 	
Traffic Volume (vph)	45	2173	154	310	2281	42	248	622	337	53	264	66
Future Volume (vph)	45	2173	154	310	2281	42	248	622	337	53	264	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	4893	1509	3433	4848	1583	1719	3539	1599	1597	3438	1568
Flt Permitted	0.950			0.950			0.542			0.216		
Satd. Flow (perm)	3400	4893	1509	3433	4848	1583	981	3539	1599	363	3438	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			66			131			100
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	7%	2%	7%	2%	5%	2%	1%	13%	5%	3%
Adj. Flow (vph)	49	2362	167	337	2479	46	270	676	366	58	287	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	2362	167	337	2479	46	270	676	366	58	287	72
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Total AM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	7.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	9.5	40.4	40.4	11.0	40.4	40.4	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (s)	9.5	69.0	69.0	17.0	76.5	76.5	44.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	7.3%	53.1%	53.1%	13.1%	58.8%	58.8%	33.8%	33.8%	33.8%	33.8%	33.8%	33.8%
Maximum Green (s)	5.0	62.6	62.6	13.0	70.1	70.1	37.6	37.6	37.6	37.6	37.6	37.6
Yellow Time (s)	3.5	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.4	6.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0	24.0	24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	5.0	62.6	62.6	13.0	72.0	72.0	37.6	37.6	37.6	37.6	37.6	37.6
Actuated g/C Ratio	0.04	0.48	0.48	0.10	0.55	0.55	0.29	0.29	0.29	0.29	0.29	0.29
v/c Ratio	0.38	1.00	0.21	0.98	0.92	0.05	0.95	0.66	0.66	0.56	0.29	0.14
Control Delay	69.5	52.9	7.5	102.5	34.1	1.7	88.8	44.3	31.9	62.1	36.8	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	52.9	7.5	102.5	34.1	1.7	88.8	44.3	31.9	62.1	36.8	3.2
LOS	E	D	A	F	C	A	F	D	C	E	D	A
Approach Delay		50.2			41.6			50.0			34.5	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	6.8	~229.4	7.7	47.5	222.6	0.0	71.6	84.4	56.3	13.3	31.6	0.0
Queue Length 95th (m)	13.9	#272.3	20.8	#79.2	#251.0	3.6	#128.4	106.2	93.0	#33.3	44.5	6.1
Internal Link Dist (m)		409.0			175.8			303.6			253.5	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	130	2356	785	343	2685	906	283	1023	555	104	994	524
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	1.00	0.21	0.98	0.92	0.05	0.95	0.66	0.66	0.56	0.29	0.14

Intersection Summary

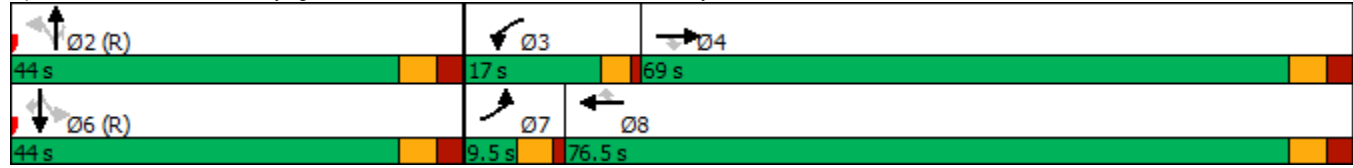
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	45.8
Intersection LOS:	D
Intersection Capacity Utilization:	99.9%
ICU Level of Service:	F
Analysis Period (min):	15

Lanes, Volumes, Timings  
 1: Neyagawa Boulevard & William Halton Parkway

2026 Future Total AM  
 Remington Eno

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

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway



Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

2026 Future Total AM  
Remington Eno

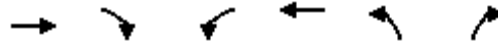


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2191	211	2	2137	342	6
Future Volume (vph)	2191	211	2	2137	342	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	30.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			50.0		40.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.050		0.950	
Satd. Flow (perm)	3539	1583	93	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		70				6
Link Speed (k/h)	60			60	60	
Link Distance (m)	272.7			591.4	424.3	
Travel Time (s)	16.4			35.5	25.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2382	229	2	2323	372	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2382	229	2	2323	372	7
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8



Lanes, Volumes, Timings  
 2: Burnhamthorpe Road & William Halton Parkway

2026 Future Total AM  
 Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.1	33.1	33.1	33.1	39.5	39.5
Total Split (s)	80.5	80.5	80.5	80.5	39.5	39.5
Total Split (%)	67.1%	67.1%	67.1%	67.1%	32.9%	32.9%
Maximum Green (s)	75.4	75.4	75.4	75.4	34.0	34.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.4	1.4	1.4	1.4	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	80.1	80.1	80.1	80.1	29.3	29.3
Actuated g/C Ratio	0.67	0.67	0.67	0.67	0.24	0.24
v/c Ratio	1.01	0.21	0.03	0.98	0.86	0.02
Control Delay	41.8	6.4	10.0	35.7	62.7	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	6.4	10.0	35.7	62.7	19.7
LOS	D	A	A	D	E	B
Approach Delay	38.7			35.7	61.9	
Approach LOS	D			D	E	
Queue Length 50th (m)	~330.4	13.8	0.2	277.0	87.5	0.2
Queue Length 95th (m)	#387.6	26.9	1.4	#371.6	120.8	4.0
Internal Link Dist (m)	248.7			567.4	400.3	
Turn Bay Length (m)		30.0	30.0		30.0	
Base Capacity (vph)	2361	1079	62	2361	501	452
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	1.01	0.21	0.03	0.98	0.74	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 39.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 88.3%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 2: Burnhamthorpe Road & William Halton Parkway

2026 Future Total AM  
 Remington Eno

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

Splits and Phases: 2: Burnhamthorpe Road & William Halton Parkway

 Ø2 (R) 80.5 s	 Ø8 39.5 s
 Ø6 (R) 80.5 s	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2026 Future Total AM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	147	33	127	129	29	31	376	348	155	312	42
Future Volume (vph)	43	147	33	127	129	29	31	376	348	155	312	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	30.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			25.0			50.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				1.00							
Frt		0.972			0.972			0.928			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3373	0	1770	3404	0	1626	3284	0	1703	3446	0
Flt Permitted	0.643			0.525			0.524			0.274		
Satd. Flow (perm)	1173	3373	0	978	3404	0	897	3284	0	491	3446	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			30			240			19	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			163.7			507.3			449.2	
Travel Time (s)		29.8			9.8			30.4			27.0	
Confl. Peds. (#/hr)	2						2					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	13%	2%	3%	2%	11%	2%	2%	6%	3%	2%
Adj. Flow (vph)	47	160	36	138	140	32	34	409	378	168	339	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	196	0	138	172	0	34	787	0	168	385	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2026 Future Total AM  
Remington Eno










Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	40.0		9.5	40.0		33.1	33.1		9.5	33.1	
Total Split (s)	9.6	40.0		10.0	40.4		35.0	35.0		15.0	50.0	
Total Split (%)	9.6%	40.0%		10.0%	40.4%		35.0%	35.0%		15.0%	50.0%	
Maximum Green (s)	5.1	34.0		5.5	34.4		29.9	29.9		11.0	44.9	
Yellow Time (s)	3.5	3.7		3.5	3.7		3.7	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.3		1.0	2.3		1.4	1.4		1.0	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	6.0		4.5	6.0		5.1	5.1		4.0	5.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		27.0			27.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)		0			0		0	0			0	
Act Effct Green (s)	17.0	10.4		19.4	14.6		55.1	55.1		69.6	68.5	
Actuated g/C Ratio	0.17	0.10		0.19	0.15		0.55	0.55		0.70	0.68	
v/c Ratio	0.21	0.52		0.59	0.33		0.07	0.41		0.37	0.16	
Control Delay	32.7	40.7		45.1	34.1		12.9	10.0		7.9	5.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.7	40.7		45.1	34.1		12.9	10.0		7.9	5.7	
LOS	C	D		D	C		B	B		A	A	
Approach Delay		39.1			39.0			10.1			6.4	
Approach LOS		D			D			B			A	
Queue Length 50th (m)	7.8	17.2		24.0	14.4		3.0	30.0		10.1	12.2	
Queue Length 95th (m)	16.9	27.8		40.3	24.3		9.4	52.5		19.4	19.6	
Internal Link Dist (m)		472.4			139.7			483.3			425.2	
Turn Bay Length (m)	55.0			30.0			30.0			30.0		
Base Capacity (vph)	228	1165		233	1190		494	1917		481	2366	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.17		0.59	0.14		0.07	0.41		0.35	0.16	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.59  
 Intersection Signal Delay: 17.4  
 Intersection LOS: B

Intersection Capacity Utilization 58.6% ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 10: Sixth Line & Burnhamthorpe Road

 Ø1 15 s	 Ø2 (R) 35 s	 Ø3 10 s	 Ø4 40 s
 Ø6 (R) 50 s	 Ø7 9.6 s	 Ø8 40.4 s	

Lanes, Volumes, Timings  
 23: Carding Mill Trail & William Halton Parkway

2026 Future Total AM  
 Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	
Traffic Volume (vph)	2560	29	29	2570	57	100
Future Volume (vph)	2560	29	29	2570	57	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		25.0	45.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			15.0		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850			0.914	
Flt Protected			0.950		0.982	
Satd. Flow (prot)	3539	1583	1770	3539	1672	0
Flt Permitted			0.950		0.982	
Satd. Flow (perm)	3539	1583	1770	3539	1672	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	375.9			272.7	375.1	
Travel Time (s)	22.6			16.4	27.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2783	32	32	2793	62	109
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2783	32	32	2793	171	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	87.0%
ICU Level of Service	E
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	808.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	2560	29	29	2570	57	100
Future Vol, veh/h	2560	29	29	2570	57	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	450	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2783	32	32	2793	62	109

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	2815	0	4244 1392
Stage 1	-	-	-	-	2783 -
Stage 2	-	-	-	-	1461 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	134	-	~ 1 132
Stage 1	-	-	-	-	~ 33 -
Stage 2	-	-	-	-	180 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	134	-	~ 1 132
Mov Cap-2 Maneuver	-	-	-	-	~ 1 -
Stage 1	-	-	-	-	~ 33 -
Stage 2	-	-	-	-	137 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	\$ 27520.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	3	-	-	134	-
HCM Lane V/C Ratio	56.884	-	-	0.235	-
HCM Control Delay (s)	\$ 27520.1	-	-	39.9	-
HCM Lane LOS	F	-	-	E	-
HCM 95th %tile Q(veh)	23.7	-	-	0.9	-

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2026 Future Total AM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	31	138	0	66	68	1117	52	26	648	5
Future Volume (vph)	8	0	31	138	0	66	68	1117	52	26	648	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	40.0		0.0	70.0		0.0	80.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			7.5			40.0			40.0		
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
Frt		0.850			0.850			0.994			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3390	0	1770	3536	0
Flt Permitted	0.710			0.732			0.337			0.150		
Satd. Flow (perm)	1323	1583	0	1364	1583	0	628	3390	0	279	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		177			44			7			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		242.4			672.4			254.4			327.6	
Travel Time (s)		17.5			48.4			15.3			19.7	
Peak Hour Factor	0.82	0.92	0.82	0.92	0.92	0.92	0.82	0.82	0.92	0.92	0.82	0.82
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	6%	2%	2%	2%	2%
Adj. Flow (vph)	10	0	38	150	0	72	83	1362	57	28	790	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	38	0	150	72	0	83	1419	0	28	796	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	



Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2026 Future Total AM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	36.4	36.4		36.4	36.4		29.0	29.0		29.0	29.0	
Total Split (s)	37.0	37.0		37.0	37.0		63.0	63.0		63.0	63.0	
Total Split (%)	37.0%	37.0%		37.0%	37.0%		63.0%	63.0%		63.0%	63.0%	
Maximum Green (s)	30.6	30.6		30.6	30.6		57.0	57.0		57.0	57.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	3.1		3.1	3.1		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.4	16.4		16.4	16.4		71.2	71.2		71.2	71.2	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.71	0.71		0.71	0.71	
v/c Ratio	0.05	0.09		0.67	0.24		0.19	0.59		0.14	0.32	
Control Delay	32.4	0.5		53.1	18.1		7.1	9.1		8.1	6.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.4	0.5		53.1	18.1		7.1	9.1		8.1	6.3	
LOS	C	A		D	B		A	A		A	A	
Approach Delay		7.1			41.8			9.0			6.4	
Approach LOS		A			D			A			A	
Queue Length 50th (m)	1.8	0.0		29.1	4.9		4.8	64.4		1.6	27.3	
Queue Length 95th (m)	5.5	0.0		46.8	16.1		12.1	89.3		6.4	40.5	
Internal Link Dist (m)		218.4			648.4			230.4			303.6	
Turn Bay Length (m)	40.0			40.0			70.0			80.0		
Base Capacity (vph)	404	607		417	514		446	2414		198	2516	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.06		0.36	0.14		0.19	0.59		0.14	0.32	

Intersection Summary

















Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	59 (59%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	10.9
Intersection LOS:	B
Intersection Capacity Utilization:	74.7%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West



Lanes, Volumes, Timings  
25: Carding Mill Trail & Settlers Road West

2026 Future Total AM  
Remington Eno

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	20	5	0	0	43	14	14	14	0	5	5	48	
Future Volume (vph)	20	5	0	0	43	14	14	14	0	5	5	48	
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>						0.967						0.887	
Fl <sub>t</sub> Protected	0.961							0.976		0.996			
Satd. Flow (prot)	0	1790	0	0	1801	0	0	1818	0	0	1646	0	
Fl <sub>t</sub> Permitted	0.961							0.976		0.996			
Satd. Flow (perm)	0	1790	0	0	1801	0	0	1818	0	0	1646	0	
Link Speed (k/h)					50					50			
Link Distance (m)	672.4				141.3			155.6			375.1		
Travel Time (s)	48.4				10.2			11.2			27.0		
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)	22	5	0	0	47	15	15	15	0	5	5	52	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	27	0	0	62	0	0	30	0	0	62	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	3.6				3.6			0.0			0.0		
Link Offset(m)	0.0				0.0			0.0			0.0		
Crosswalk Width(m)	4.8				4.8			4.8			4.8		
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (k/h)	25		15		25		15		25		15		
Sign Control	Stop			Stop			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												

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A




































Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	5	0	0	43	14	14	14	0	5	5	48
Future Vol, veh/h	20	5	0	0	43	14	14	14	0	5	5	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	5	0	0	47	15	15	15	0	5	5	52
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	7.3	7.4	6.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	80%	0%	9%
Vol Thru, %	50%	20%	75%	9%
Vol Right, %	0%	0%	25%	83%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	25	57	58
LT Vol	14	20	0	5
Through Vol	14	5	43	5
RT Vol	0	0	14	48
Lane Flow Rate	30	27	62	63
Geometry Grp	1	1	1	1
Degree of Util (X)	0.036	0.032	0.068	0.064
Departure Headway (Hd)	4.237	4.304	3.969	3.631
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	841	828	899	979
Service Time	2.285	2.349	2.009	1.68
HCM Lane V/C Ratio	0.036	0.033	0.069	0.064
HCM Control Delay	7.4	7.5	7.3	6.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0.2	0.2

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Total PM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  	  			 		 	 	 
Traffic Volume (vph)	3	2340	62	400	2220	59	83	227	318	76	491	10
Future Volume (vph)	3	2340	62	400	2220	59	83	227	318	76	491	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3433	4988	1482	1752	3505	1583	1703	3539	1583
Flt Permitted	0.950			0.950			0.261			0.568		
Satd. Flow (perm)	3433	5036	1583	3433	4988	1482	481	3505	1583	1018	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100			66			166			100
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	4%	9%	3%	3%	2%	6%	2%	2%
Adj. Flow (vph)	3	2543	67	435	2413	64	90	247	346	83	534	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	2543	67	435	2413	64	90	247	346	83	534	11
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2026 Future Total PM  
Remington Eno



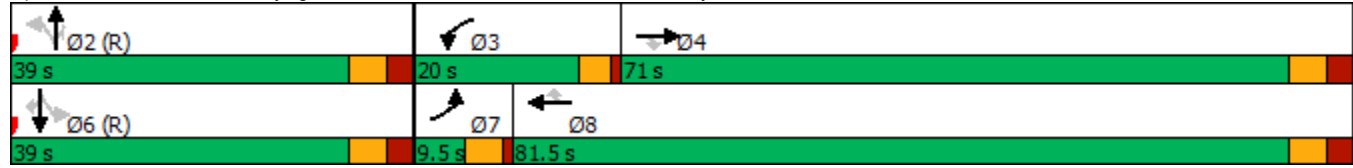
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	7.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	9.5	40.4	40.4	11.0	40.4	40.4	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (s)	9.5	71.0	71.0	20.0	81.5	81.5	39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	7.3%	54.6%	54.6%	15.4%	62.7%	62.7%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Maximum Green (s)	5.0	64.6	64.6	16.0	75.1	75.1	32.6	32.6	32.6	32.6	32.6	32.6
Yellow Time (s)	3.5	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.4	6.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0	24.0	24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	5.0	64.6	64.6	16.0	82.7	82.7	32.6	32.6	32.6	32.6	32.6	32.6
Actuated g/C Ratio	0.04	0.50	0.50	0.12	0.64	0.64	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.02	1.02	0.08	1.03	0.76	0.07	0.75	0.28	0.66	0.33	0.60	0.02
Control Delay	60.7	54.8	1.3	107.1	19.2	2.6	81.5	40.3	29.1	44.0	46.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	54.8	1.3	107.1	19.2	2.6	81.5	40.3	29.1	44.0	46.3	0.1
LOS	E	D	A	F	B	A	F	D	C	D	D	A
Approach Delay		53.4			32.0			40.1				45.2
Approach LOS		D			C			D				D
Queue Length 50th (m)	0.4	~265.0	0.0	~64.6	149.9	0.0	22.5	28.4	44.0	18.4	67.2	0.0
Queue Length 95th (m)	2.2	#293.5	3.2	#98.9	208.4	6.1	#53.1	40.9	79.7	34.6	86.8	0.0
Internal Link Dist (m)		409.0			175.8			303.6				253.5
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	132	2502	836	422	3173	966	120	878	521	255	887	471
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	1.02	0.08	1.03	0.76	0.07	0.75	0.28	0.66	0.33	0.60	0.02

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	130
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.03
Intersection Signal Delay:	42.2
Intersection LOS:	D
Intersection Capacity Utilization:	102.0%
ICU Level of Service:	G
Analysis Period (min):	15

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

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway



Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

2026 Future Total PM  
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2179	272	7	2177	386	4
Future Volume (vph)	2179	272	7	2177	386	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	30.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			50.0		40.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.051		0.950	
Satd. Flow (perm)	3539	1583	95	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		91				4
Link Speed (k/h)	60			60	60	
Link Distance (m)	272.7			591.4	410.6	
Travel Time (s)	16.4			35.5	24.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2368	296	8	2366	420	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2368	296	8	2366	420	4
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8



Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

2026 Future Total PM  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.1	33.1	33.1	33.1	39.5	39.5
Total Split (s)	80.5	80.5	80.5	80.5	39.5	39.5
Total Split (%)	67.1%	67.1%	67.1%	67.1%	32.9%	32.9%
Maximum Green (s)	75.4	75.4	75.4	75.4	34.0	34.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.4	1.4	1.4	1.4	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	77.9	77.9	77.9	77.9	31.5	31.5
Actuated g/C Ratio	0.65	0.65	0.65	0.65	0.26	0.26
v/c Ratio	1.03	0.28	0.13	1.03	0.90	0.01
Control Delay	49.7	7.2	15.1	49.4	66.3	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	7.2	15.1	49.4	66.3	19.5
LOS	D	A	B	D	E	B
Approach Delay	44.9			49.3	65.9	
Approach LOS	D			D	E	
Queue Length 50th (m)	~341.0	20.2	0.8	~340.4	98.0	0.0
Queue Length 95th (m)	#383.6	34.8	3.8	#383.3	#151.8	2.9
Internal Link Dist (m)	248.7			567.4	386.6	
Turn Bay Length (m)		30.0	30.0		30.0	
Base Capacity (vph)	2296	1059	61	2296	501	451
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	1.03	0.28	0.13	1.03	0.84	0.01

Intersection Summary


Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	130
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.03
Intersection Signal Delay:	48.5
Intersection LOS:	D
Intersection Capacity Utilization:	90.5%
ICU Level of Service:	E
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite.	

Lanes, Volumes, Timings  
 2: Burnhamthorpe Road & William Halton Parkway

2026 Future Total PM  
 Remington Eno

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

Splits and Phases: 2: Burnhamthorpe Road & William Halton Parkway

 Ø2 (R) 80.5 s	 Ø8 39.5 s
 Ø6 (R) 80.5 s	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2026 Future Total PM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	97	36	193	221	143	54	442	135	40	371	85
Future Volume (vph)	30	97	36	193	221	143	54	442	135	40	371	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	30.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			25.0			50.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00								
Frt		0.959			0.941			0.965			0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3382	0	1770	3330	0	1641	3415	0	1736	3440	0
Flt Permitted	0.519			0.461			0.461			0.391		
Satd. Flow (perm)	967	3382	0	858	3330	0	796	3415	0	714	3440	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			155			47			32	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		510.4			161.7			507.3			449.2	
Travel Time (s)		30.6			9.7			30.4			27.0	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	10%	2%	2%	4%	2%	2%
Adj. Flow (vph)	33	105	39	210	240	155	59	480	147	43	403	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	144	0	210	395	0	59	627	0	43	495	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2026 Future Total PM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	40.0		9.5	40.0		33.1	33.1		33.1	33.1	
Total Split (s)	10.0	40.0		17.0	47.0		43.0	43.0		43.0	43.0	
Total Split (%)	10.0%	40.0%		17.0%	47.0%		43.0%	43.0%		43.0%	43.0%	
Maximum Green (s)	5.5	34.0		12.5	41.0		37.9	37.9		37.9	37.9	
Yellow Time (s)	3.5	3.7		3.5	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.3		1.0	2.3		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	6.0		4.5	6.0		5.1	5.1		5.1	5.1	
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		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		27.0			27.0		21.0	21.0		21.0	21.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	15.5	8.5		26.6	19.1		63.8	63.8		63.8	63.8	
Actuated g/C Ratio	0.16	0.08		0.27	0.19		0.64	0.64		0.64	0.64	
v/c Ratio	0.17	0.44		0.62	0.52		0.12	0.29		0.09	0.22	
Control Delay	29.0	35.4		38.9	24.8		8.6	8.0		8.4	7.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.0	35.4		38.9	24.8		8.6	8.0		8.4	7.7	
LOS	C	D		D	C		A	A		A	A	
Approach Delay		34.2			29.7			8.1			7.8	
Approach LOS		C			C			A			A	
Queue Length 50th (m)	5.0	10.8		35.5	23.7		4.3	25.1		3.1	19.1	
Queue Length 95th (m)	12.1	20.2		55.3	38.4		10.7	37.1		8.3	29.1	
Internal Link Dist (m)		486.4			137.7			483.3			425.2	
Turn Bay Length (m)	55.0			30.0			30.0			30.0		
Base Capacity (vph)	194	1175		341	1456		508	2196		455	2207	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.12		0.62	0.27		0.12	0.29		0.09	0.22	

**Intersection Summary**

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

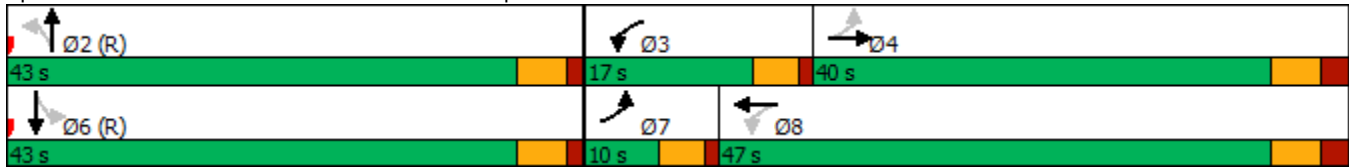
Maximum v/c Ratio: 0.62

Intersection Signal Delay: 16.8

Intersection LOS: B

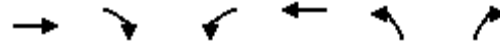
Intersection Capacity Utilization 53.6% ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 10: Sixth Line & Burnhamthorpe Road



Lanes, Volumes, Timings  
 23: Carding Mill Trail & William Halton Parkway

2026 Future Total PM  
 Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	
Traffic Volume (vph)	2635	95	95	2634	39	68
Future Volume (vph)	2635	95	95	2634	39	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		25.0	45.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			15.0		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850			0.914	
Flt Protected			0.950		0.982	
Satd. Flow (prot)	3539	1583	1770	3539	1672	0
Flt Permitted			0.950		0.982	
Satd. Flow (perm)	3539	1583	1770	3539	1672	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	375.9			272.7	375.9	
Travel Time (s)	22.6			16.4	27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2864	103	103	2863	42	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2864	103	103	2863	116	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	92.0%
ICU Level of Service	F
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	4.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	2635	95	95	2634	39	68
Future Vol, veh/h	2635	95	95	2634	39	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	450	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2864	103	103	2863	42	74

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	2967	0	4502 1432
Stage 1	-	-	-	-	2864 -
Stage 2	-	-	-	-	1638 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	117	-	~ 1 124
Stage 1	-	-	-	-	~ 29 -
Stage 2	-	-	-	-	144 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	117	-	0 124
Mov Cap-2 Maneuver	-	-	-	-	0 -
Stage 1	-	-	-	-	~ 29 -
Stage 2	-	-	-	-	~ 17 -

Approach	EB	WB	NB
HCM Control Delay, s	0	4.3	131.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	124	-	-	117	-
HCM Lane V/C Ratio	0.938	-	-	0.883	-
HCM Control Delay (s)	131.6	-	-	123	-
HCM Lane LOS	F	-	-	F	-
HCM 95th %tile Q(veh)	6.1	-	-	5.4	-

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2026 Future Total PM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	14	103	0	49	28	527	157	77	844	2
Future Volume (vph)	2	0	14	103	0	49	28	527	157	77	844	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	40.0		0.0	70.0		0.0	80.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			7.5			40.0			40.0		
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
Frt		0.850			0.850			0.968				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3426	0	1770	3539	0
Flt Permitted	0.722			0.746			0.258			0.334		
Satd. Flow (perm)	1345	1583	0	1390	1583	0	481	3426	0	622	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		95			244			54				
Link Speed (k/h)		50			50			60				60
Link Distance (m)		242.4			665.7			254.4				327.6
Travel Time (s)		17.5			47.9			15.3				19.7
Peak Hour Factor	0.82	0.92	0.82	0.92	0.92	0.92	0.82	0.82	0.92	0.92	0.82	0.82
Adj. Flow (vph)	2	0	17	112	0	53	34	643	171	84	1029	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	17	0	112	53	0	34	814	0	84	1031	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		



Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2026 Future Total PM  
Remington Eno

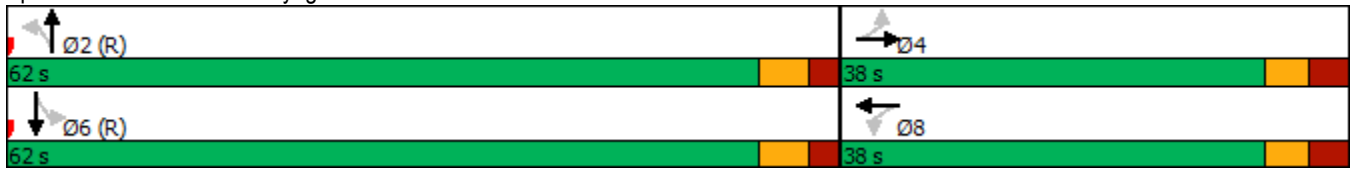


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	36.4	36.4		36.4	36.4		29.0	29.0		29.0	29.0	
Total Split (s)	38.0	38.0		38.0	38.0		62.0	62.0		62.0	62.0	
Total Split (%)	38.0%	38.0%		38.0%	38.0%		62.0%	62.0%		62.0%	62.0%	
Maximum Green (s)	31.6	31.6		31.6	31.6		56.0	56.0		56.0	56.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	3.1		3.1	3.1		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	13.9	13.9		13.9	13.9		73.7	73.7		73.7	73.7	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.74	0.74		0.74	0.74	
v/c Ratio	0.01	0.06		0.58	0.12		0.10	0.32		0.18	0.40	
Control Delay	34.0	0.4		51.8	0.6		5.4	4.9		5.9	5.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.0	0.4		51.8	0.6		5.4	4.9		5.9	5.8	
LOS	C	A		D	A		A	A		A	A	
Approach Delay		3.9			35.3			4.9			5.8	
Approach LOS		A			D			A			A	
Queue Length 50th (m)	0.4	0.0		21.8	0.0		1.6	22.7		4.3	33.8	
Queue Length 95th (m)	2.2	0.0		37.4	0.0		5.1	33.8		12.0	48.2	
Internal Link Dist (m)		218.4			641.7			230.4			303.6	
Turn Bay Length (m)	40.0			40.0			70.0			80.0		
Base Capacity (vph)	425	565		439	667		354	2539		458	2608	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.00	0.03		0.26	0.08		0.10	0.32		0.18	0.40	

Intersection Summary

















Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	80 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	7.7
Intersection Capacity Utilization	63.6%
Analysis Period (min)	15
Intersection LOS:	A
ICU Level of Service	B

Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West



Lanes, Volumes, Timings  
25: Carding Mill Trail & Settlers Road West

2026 Future Total PM  
Remington Eno

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	63	16	0	0	29	10	10	10	0	16	16	45	
Future Volume (vph)	63	16	0	0	29	10	10	10	0	16	16	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt						0.965						0.920	
Flt Protected	0.962							0.976		0.990			
Satd. Flow (prot)	0	1792	0	0	1798	0	0	1818	0	0	1697	0	
Flt Permitted	0.962							0.976		0.990			
Satd. Flow (perm)	0	1792	0	0	1798	0	0	1818	0	0	1697	0	
Link Speed (k/h)					50					50			
Link Distance (m)	665.7				142.8			193.2			375.9		
Travel Time (s)	47.9				10.3			13.9			27.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	68	17	0	0	32	11	11	11	0	17	17	49	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	85	0	0	43	0	0	22	0	0	83	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	3.6				3.6			0.0			0.0		
Link Offset(m)	0.0				0.0			0.0			0.0		
Crosswalk Width(m)	4.8				4.8			4.8			4.8		
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (k/h)	25		15		25		15		25		15		
Sign Control	Stop			Stop			Stop			Stop			
<b>Intersection Summary</b>													
Area Type:	Other												
Control Type:	Unsignalized												
Intersection Capacity Utilization	22.3%					ICU Level of Service A							
Analysis Period (min)	15												

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	63	16	0	0	29	10	10	10	0	16	16	45
Future Vol, veh/h	63	16	0	0	29	10	10	10	0	16	16	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	17	0	0	32	11	11	11	0	17	17	49
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.3	7.5	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	80%	0%	21%
Vol Thru, %	50%	20%	74%	21%
Vol Right, %	0%	0%	26%	58%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	79	39	77
LT Vol	10	63	0	16
Through Vol	10	16	29	16
RT Vol	0	0	10	45
Lane Flow Rate	22	86	42	84
Geometry Grp	1	1	1	1
Degree of Util (X)	0.026	0.103	0.047	0.09
Departure Headway (Hd)	4.321	4.308	4.028	3.863
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	817	827	879	916
Service Time	2.406	2.361	2.097	1.938
HCM Lane V/C Ratio	0.027	0.104	0.048	0.092
HCM Control Delay	7.5	7.9	7.3	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.1	0.3

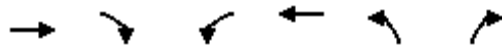
Lanes, Volumes, Timings  
23: Carding Mill Trail & William Halton Parkway

2026 Future Total AM Mitigation  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2560	29	29	2570	57	100
Future Volume (vph)	2560	29	29	2570	57	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		25.0	45.0		55.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			15.0		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.038		0.950	
Satd. Flow (perm)	3539	1583	71	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		9				6
Link Speed (k/h)	60			60	50	
Link Distance (m)	375.9			272.7	375.1	
Travel Time (s)	22.6			16.4	27.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2783	32	32	2793	62	109
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2783	32	32	2793	62	109
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8

Lanes, Volumes, Timings  
23: Carding Mill Trail & William Halton Parkway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.6	22.6	22.6	22.6	29.5	29.5
Total Split (s)	100.5	100.5	100.5	100.5	29.5	29.5
Total Split (%)	77.3%	77.3%	77.3%	77.3%	22.7%	22.7%
Maximum Green (s)	95.4	95.4	95.4	95.4	24.5	24.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.4	1.4	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.5	10.5	10.5	10.5	17.5	17.5
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	106.1	106.1	106.1	106.1	13.8	13.8
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.11	0.11
v/c Ratio	0.96	0.02	0.56	0.97	0.33	0.63
Control Delay	39.0	4.0	47.5	22.6	57.0	67.8
Queue Delay	0.0	0.0	0.0	17.9	0.0	0.0
Total Delay	39.0	4.0	47.5	40.5	57.0	67.8
LOS	D	A	D	D	E	E
Approach Delay	38.6			40.6	63.9	
Approach LOS	D			D	E	
Queue Length 50th (m)	421.5	1.7	2.3	278.4	15.7	27.0
Queue Length 95th (m)	m#434.9	m2.6	#10.5	#459.5	29.1	45.2
Internal Link Dist (m)	351.9			248.7	351.1	
Turn Bay Length (m)		25.0	45.0		55.0	
Base Capacity (vph)	2888	1293	57	2888	333	303
Starvation Cap Reductn	0	0	0	202	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.02	0.56	1.04	0.19	0.36

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 40.3  
 Intersection LOS: D  
 Intersection Capacity Utilization 85.4%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Carding Mill Trail & William Halton Parkway



Lanes, Volumes, Timings  
23: Carding Mill Trail & William Halton Parkway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2635	95	95	2634	39	68
Future Volume (vph)	2635	95	95	2634	39	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		25.0	45.0		55.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			15.0		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.039		0.950	
Satd. Flow (perm)	3539	1583	73	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		23				62
Link Speed (k/h)	60			60	50	
Link Distance (m)	375.9			272.7	375.9	
Travel Time (s)	22.6			16.4	27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2864	103	103	2863	42	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2864	103	103	2863	42	74
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2	6			8



Lanes, Volumes, Timings  
 23: Carding Mill Trail & William Halton Parkway



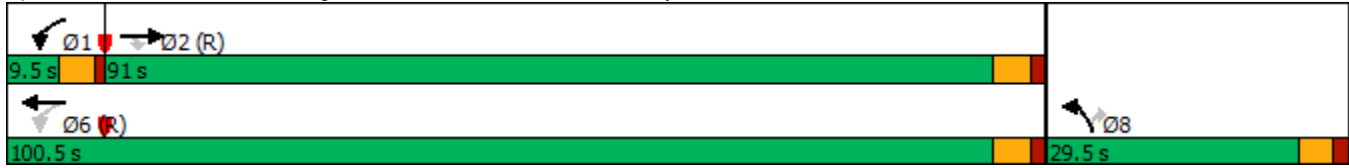
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.6	22.6	9.5	22.6	29.5	29.5
Total Split (s)	91.0	91.0	9.5	100.5	29.5	29.5
Total Split (%)	70.0%	70.0%	7.3%	77.3%	22.7%	22.7%
Maximum Green (s)	85.9	85.9	5.0	95.4	24.5	24.5
Yellow Time (s)	3.7	3.7	3.5	3.7	3.3	3.3
All-Red Time (s)	1.4	1.4	1.0	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	4.5	5.1	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.5	10.5		10.5	17.5	17.5
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	99.3	99.3	114.1	114.5	8.5	8.5
Actuated g/C Ratio	0.76	0.76	0.88	0.88	0.07	0.07
v/c Ratio	1.06	0.08	0.54	0.92	0.36	0.46
Control Delay	62.5	4.5	32.2	13.5	66.0	27.2
Queue Delay	0.0	0.0	0.0	4.1	0.0	0.0
Total Delay	62.5	4.5	32.2	17.7	66.0	27.2
LOS	E	A	C	B	E	C
Approach Delay	60.5			18.2	41.2	
Approach LOS	E			B	D	
Queue Length 50th (m)	~467.8	6.6	10.2	221.8	11.1	3.1
Queue Length 95th (m)	m#490.7	m10.0	29.8	#448.2	23.1	18.5
Internal Link Dist (m)	351.9			248.7	351.9	
Turn Bay Length (m)		25.0	45.0		55.0	
Base Capacity (vph)	2701	1214	190	3116	333	348
Starvation Cap Reductn	0	0	0	203	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.08	0.54	0.98	0.13	0.21

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 39.4  
 Intersection LOS: D  
 Intersection Capacity Utilization 91.5%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Carding Mill Trail & William Halton Parkway





































# Appendix R

2031 Total Future Conditions Synchro Worksheets

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Total AM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  	  			 		 	 	
Traffic Volume (vph)	50	2167	170	329	2268	43	264	684	369	57	291	73
Future Volume (vph)	50	2167	170	329	2268	43	264	684	369	57	291	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	4893	1509	3433	4848	1583	1719	3539	1599	1597	3438	1568
Flt Permitted	0.950			0.950			0.518			0.189		
Satd. Flow (perm)	3400	4893	1509	3433	4848	1583	937	3539	1599	318	3438	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122			66			135			100
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	7%	2%	7%	2%	5%	2%	1%	13%	5%	3%
Adj. Flow (vph)	54	2355	185	358	2465	47	287	743	401	62	316	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	2355	185	358	2465	47	287	743	401	62	316	79
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Total AM  
Remington Eno



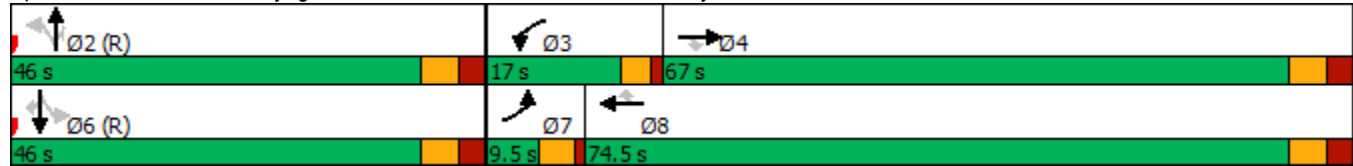
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	7.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	9.5	40.4	40.4	11.0	40.4	40.4	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (s)	9.5	67.0	67.0	17.0	74.5	74.5	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	7.3%	51.5%	51.5%	13.1%	57.3%	57.3%	35.4%	35.4%	35.4%	35.4%	35.4%	35.4%
Maximum Green (s)	5.0	60.6	60.6	13.0	68.1	68.1	39.6	39.6	39.6	39.6	39.6	39.6
Yellow Time (s)	3.5	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.4	6.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0	24.0	24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	5.0	60.6	60.6	13.0	70.0	70.0	39.6	39.6	39.6	39.6	39.6	39.6
Actuated g/C Ratio	0.04	0.47	0.47	0.10	0.54	0.54	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.42	1.03	0.24	1.04	0.94	0.05	1.01	0.69	0.69	0.65	0.30	0.14
Control Delay	70.9	62.3	8.2	101.0	23.7	0.8	100.4	43.8	32.9	71.5	35.6	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.9	62.3	8.2	101.0	23.7	0.8	100.4	43.8	32.9	71.5	35.6	4.1
LOS	E	E	A	F	C	A	F	D	C	E	D	A
Approach Delay		58.6			33.0			52.1			35.0	
Approach LOS		E			C			D			D	
Queue Length 50th (m)	7.4	~249.2	9.3	~53.6	207.7	0.0	~78.3	92.8	64.2	14.5	34.3	0.0
Queue Length 95th (m)	14.8	#278.5	24.0	m#57.7	m#231.9	m0.0	#139.1	115.7	103.3	#38.4	47.6	7.7
Internal Link Dist (m)		409.0			175.8			303.6			253.5	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	130	2280	768	343	2610	882	285	1078	580	96	1047	547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.03	0.24	1.04	0.94	0.05	1.01	0.69	0.69	0.65	0.30	0.14

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	140
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.04
Intersection Signal Delay:	45.9
Intersection LOS:	D
Intersection Capacity Utilization:	102.0%
ICU Level of Service:	G
Analysis Period (min):	15

- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway



Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

2031 Future Total AM  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2181	212	2	2134	339	6
Future Volume (vph)	2181	212	2	2134	339	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	30.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			50.0		40.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.045		0.950	
Satd. Flow (perm)	3539	1583	84	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		71				7
Link Speed (k/h)	60			60	60	
Link Distance (m)	272.7			591.4	424.3	
Travel Time (s)	16.4			35.5	25.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2371	230	2	2320	368	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2371	230	2	2320	368	7
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8

Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

2031 Future Total AM  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.1	33.1	33.1	33.1	39.5	39.5
Total Split (s)	90.5	90.5	90.5	90.5	39.5	39.5
Total Split (%)	69.6%	69.6%	69.6%	69.6%	30.4%	30.4%
Maximum Green (s)	85.4	85.4	85.4	85.4	34.0	34.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.4	1.4	1.4	1.4	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	88.8	88.8	88.8	88.8	30.6	30.6
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.24	0.24
v/c Ratio	0.98	0.21	0.04	0.96	0.88	0.02
Control Delay	21.3	5.2	9.5	31.2	70.8	19.5
Queue Delay	12.8	0.0	0.0	3.5	0.0	0.0
Total Delay	34.1	5.2	9.5	34.7	70.8	19.5
LOS	C	A	A	C	E	B
Approach Delay	31.5			34.7	69.9	
Approach LOS	C			C	E	
Queue Length 50th (m)	~265.6	9.0	0.2	293.7	94.3	0.0
Queue Length 95th (m)	m#377.4	m11.9	1.3	#383.4	#139.8	4.1
Internal Link Dist (m)	248.7			567.4	400.3	
Turn Bay Length (m)		30.0	30.0		30.0	
Base Capacity (vph)	2417	1103	57	2417	462	419
Starvation Cap Reductn	116	0	0	0	0	0
Spillback Cap Reductn	0	0	0	69	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.21	0.04	0.99	0.80	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay: 35.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 87.9%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.



Lanes, Volumes, Timings  
 2: Burnhamthorpe Road & William Halton Parkway

2031 Future Total AM  
 Remington Eno





















- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Burnhamthorpe Road & William Halton Parkway

 Ø2 (R) 90.5 s	 Ø8 39.5 s
 Ø6 (R) 90.5 s	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Total AM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	147	32	130	133	31	29	481	376	171	355	46
Future Volume (vph)	43	147	32	130	133	31	29	481	376	171	355	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	30.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			25.0			50.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				1.00							
Frt		0.973			0.972			0.934			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3378	0	1770	3404	0	1626	3306	0	1703	3449	0
Flt Permitted	0.639			0.541			0.499			0.214		
Satd. Flow (perm)	1166	3378	0	1008	3404	0	854	3306	0	384	3449	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			31			203			18	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			163.7			507.3			449.2	
Travel Time (s)		29.8			9.8			30.4			27.0	
Confl. Peds. (#/hr)	2						2					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	13%	2%	3%	2%	11%	2%	2%	6%	3%	2%
Adj. Flow (vph)	47	160	35	141	145	34	32	523	409	186	386	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	195	0	141	179	0	32	932	0	186	436	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Total AM  
Remington Eno










Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	40.0		9.5	40.0		33.1	33.1		9.5	33.1	
Total Split (s)	9.6	40.0		9.6	40.0		35.2	35.2		15.2	50.4	
Total Split (%)	9.6%	40.0%		9.6%	40.0%		35.2%	35.2%		15.2%	50.4%	
Maximum Green (s)	5.1	34.0		5.1	34.0		30.1	30.1		11.2	45.3	
Yellow Time (s)	3.5	3.7		3.5	3.7		3.7	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.3		1.0	2.3		1.4	1.4		1.0	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	6.0		4.5	6.0		5.1	5.1		4.0	5.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		27.0			27.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)		0			0		0	0			0	
Act Effct Green (s)	17.0	10.4		18.8	14.2		53.8	53.8		70.0	68.9	
Actuated g/C Ratio	0.17	0.10		0.19	0.14		0.54	0.54		0.70	0.69	
v/c Ratio	0.21	0.52		0.62	0.35		0.07	0.50		0.45	0.18	
Control Delay	33.1	40.9		47.4	34.7		14.0	12.9		8.9	5.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.1	40.9		47.4	34.7		14.0	12.9		8.9	5.7	
LOS	C	D		D	C		B	B		A	A	
Approach Delay		39.4			40.3			13.0			6.7	
Approach LOS		D			D			B			A	
Queue Length 50th (m)	7.8	17.2		24.7	15.1		3.0	45.3		11.2	14.0	
Queue Length 95th (m)	17.1	27.8		41.2	25.3		9.4	75.0		21.0	22.0	
Internal Link Dist (m)		472.4			139.7			483.3			425.2	
Turn Bay Length (m)	55.0			30.0			30.0			30.0		
Base Capacity (vph)	226	1167		228	1177		459	1873		434	2383	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.17		0.62	0.15		0.07	0.50		0.43	0.18	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	95
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	18.2
Intersection LOS:	B

Intersection Capacity Utilization 63.5% ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 10: Sixth Line & Burnhamthorpe Road

 Ø1 15.2 s	 Ø2 (R) 35.2 s	 Ø3 9.6 s	 Ø4 40 s
 Ø6 (R) 50.4 s	 Ø7 9.6 s	 Ø8 40 s	

Lanes, Volumes, Timings  
23: Carding Mill Trail & William Halton Parkway

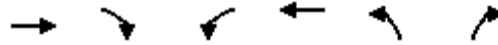
2031 Future Total AM  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2589	27	27	2581	53	93
Future Volume (vph)	2589	27	27	2581	53	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		25.0	45.0		55.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			15.0		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.037		0.950	
Satd. Flow (perm)	3539	1583	69	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		8				5
Link Speed (k/h)	60			60	50	
Link Distance (m)	375.9			272.7	375.1	
Travel Time (s)	22.6			16.4	27.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2814	29	29	2805	58	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2814	29	29	2805	58	101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8

Lanes, Volumes, Timings  
 23: Carding Mill Trail & William Halton Parkway

2031 Future Total AM  
 Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.6	22.6	22.6	22.6	29.5	29.5
Total Split (s)	100.5	100.5	100.5	100.5	29.5	29.5
Total Split (%)	77.3%	77.3%	77.3%	77.3%	22.7%	22.7%
Maximum Green (s)	95.4	95.4	95.4	95.4	24.5	24.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.4	1.4	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.5	10.5	10.5	10.5	17.5	17.5
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	106.7	106.7	106.7	106.7	13.2	13.2
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.10	0.10
v/c Ratio	0.97	0.02	0.52	0.97	0.32	0.61
Control Delay	37.0	3.2	21.6	11.9	57.5	68.0
Queue Delay	25.6	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	3.2	21.6	11.9	57.5	68.0
LOS	E	A	C	B	E	E
Approach Delay	62.0			12.0	64.2	
Approach LOS	E			B	E	
Queue Length 50th (m)	426.3	1.3	0.9	89.7	14.8	25.2
Queue Length 95th (m)	m#421.1	m2.0	m1.6	m#453.6	28.0	42.9
Internal Link Dist (m)	351.9			248.7	351.1	
Turn Bay Length (m)		25.0	45.0		55.0	
Base Capacity (vph)	2904	1300	56	2904	333	302
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	248	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.02	0.52	0.97	0.17	0.33

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 37.8  
 Intersection LOS: D  
 Intersection Capacity Utilization 85.7%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Carding Mill Trail & William Halton Parkway



Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2031 Future Total AM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	31	127	0	61	68	1234	47	24	716	5
Future Volume (vph)	8	0	31	127	0	61	68	1234	47	24	716	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	40.0		0.0	70.0		0.0	80.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			7.5			40.0			40.0		
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
Frt		0.850			0.850			0.995			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3393	0	1770	3536	0
Flt Permitted	0.714			0.732			0.306			0.124		
Satd. Flow (perm)	1330	1583	0	1364	1583	0	570	3393	0	231	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		148			33			6			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		242.4			672.4			254.4			327.6	
Travel Time (s)		17.5			48.4			15.3			19.7	
Peak Hour Factor	0.82	0.92	0.82	0.92	0.92	0.92	0.82	0.82	0.92	0.92	0.82	0.82
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	6%	2%	2%	2%	2%
Adj. Flow (vph)	10	0	38	138	0	66	83	1505	51	26	873	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	38	0	138	66	0	83	1556	0	26	879	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	



Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2031 Future Total AM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	36.4	36.4		36.4	36.4		29.0	29.0		29.0	29.0	
Total Split (s)	36.4	36.4		36.4	36.4		63.6	63.6		63.6	63.6	
Total Split (%)	36.4%	36.4%		36.4%	36.4%		63.6%	63.6%		63.6%	63.6%	
Maximum Green (s)	30.0	30.0		30.0	30.0		57.6	57.6		57.6	57.6	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	3.1		3.1	3.1		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	15.7	15.7		15.7	15.7		71.9	71.9		71.9	71.9	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.72	0.72		0.72	0.72	
v/c Ratio	0.05	0.10		0.64	0.24		0.20	0.64		0.16	0.35	
Control Delay	33.2	0.5		52.7	22.0		7.1	9.5		8.5	6.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.2	0.5		52.7	22.0		7.1	9.5		8.5	6.2	
LOS	C	A		D	C		A	A		A	A	
Approach Delay		7.4			42.8			9.3			6.2	
Approach LOS		A			D			A			A	
Queue Length 50th (m)	1.8	0.0		26.8	5.9		4.7	73.4		1.4	30.0	
Queue Length 95th (m)	5.6	0.0		44.1	16.7		12.0	99.8		6.1	43.8	
Internal Link Dist (m)		218.4			648.4			230.4			303.6	
Turn Bay Length (m)	40.0			40.0			70.0			80.0		
Base Capacity (vph)	399	578		409	498		409	2441		166	2542	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.07		0.34	0.13		0.20	0.64		0.16	0.35	

Intersection Summary

















Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	59 (59%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	10.7
Intersection LOS:	B
Intersection Capacity Utilization:	77.1%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West



Lanes, Volumes, Timings  
25: Carding Mill Trail & Settlers Road West

2031 Future Total AM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	5	0	0	40	13	13	13	0	5	5	45
Future Volume (vph)	18	5	0	0	40	13	13	13	0	5	5	45
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>					0.967							0.888
Fl <sub>t</sub> Protected		0.962						0.976				0.996
Satd. Flow (prot)	0	1792	0	0	1801	0	0	1818	0	0	1648	0
Fl <sub>t</sub> Permitted		0.962						0.976				0.996
Satd. Flow (perm)	0	1792	0	0	1801	0	0	1818	0	0	1648	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		672.4			141.3			155.6			375.1	
Travel Time (s)		48.4			10.2			11.2			27.0	
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)	20	5	0	0	43	14	14	14	0	5	5	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	57	0	0	28	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	19.4%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A



































Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	5	0	0	40	13	13	13	0	5	5	45
Future Vol, veh/h	18	5	0	0	40	13	13	13	0	5	5	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	5	0	0	43	14	14	14	0	5	5	49
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	7.3	7.4	6.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	78%	0%	9%
Vol Thru, %	50%	22%	75%	9%
Vol Right, %	0%	0%	25%	82%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	23	53	55
LT Vol	13	18	0	5
Through Vol	13	5	40	5
RT Vol	0	0	13	45
Lane Flow Rate	28	25	58	60
Geometry Grp	1	1	1	1
Degree of Util (X)	0.033	0.03	0.063	0.06
Departure Headway (Hd)	4.222	4.287	3.958	3.625
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	832	902	982
Service Time	2.268	2.327	1.994	1.67
HCM Lane V/C Ratio	0.033	0.03	0.064	0.061
HCM Control Delay	7.4	7.5	7.3	6.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0.2	0.2

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Total PM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  	  			 		 	 	
Traffic Volume (vph)	4	2324	66	426	2211	62	85	249	343	74	541	11
Future Volume (vph)	4	2324	66	426	2211	62	85	249	343	74	541	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3433	4988	1482	1752	3505	1583	1703	3539	1583
Flt Permitted	0.950			0.950			0.203			0.535		
Satd. Flow (perm)	3433	5036	1583	3433	4988	1482	374	3505	1583	959	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100			66			178			100
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	4%	9%	3%	3%	2%	6%	2%	2%
Adj. Flow (vph)	4	2526	72	463	2403	67	92	271	373	80	588	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	2526	72	463	2403	67	92	271	373	80	588	12
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Total PM  
Remington Eno



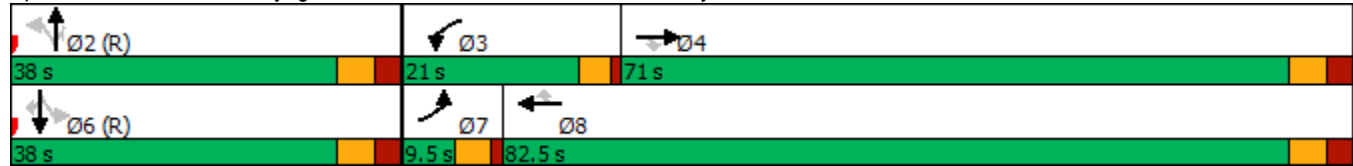
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	7.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	9.5	40.4	40.4	11.0	40.4	40.4	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (s)	9.5	71.0	71.0	21.0	82.5	82.5	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	7.3%	54.6%	54.6%	16.2%	63.5%	63.5%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%
Maximum Green (s)	5.0	64.6	64.6	17.0	76.1	76.1	31.6	31.6	31.6	31.6	31.6	31.6
Yellow Time (s)	3.5	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.4	6.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0	24.0	24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	5.0	64.6	64.6	17.0	83.7	83.7	31.6	31.6	31.6	31.6	31.6	31.6
Actuated g/C Ratio	0.04	0.50	0.50	0.13	0.64	0.64	0.24	0.24	0.24	0.24	0.24	0.24
v/c Ratio	0.03	1.01	0.09	1.03	0.75	0.07	1.02	0.32	0.72	0.34	0.68	0.03
Control Delay	60.8	53.0	1.6	95.1	10.2	1.3	150.2	41.6	31.8	45.7	49.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	53.0	1.6	95.1	10.2	1.3	150.2	41.6	31.8	45.7	49.4	0.1
LOS	E	D	A	F	B	A	F	D	C	D	D	A
Approach Delay		51.6			23.4			50.2			48.1	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	0.5	~249.9	0.0	~70.9	93.2	0.6	~25.5	31.7	49.3	17.9	76.2	0.0
Queue Length 95th (m)	2.6	#290.1	4.2	m#79.9	172.2	m1.1	#63.1	45.1	87.8	34.0	97.3	0.0
Internal Link Dist (m)		409.0			175.8			303.6			253.5	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	132	2502	836	448	3211	977	90	851	519	233	860	460
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	1.01	0.09	1.03	0.75	0.07	1.02	0.32	0.72	0.34	0.68	0.03

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 39.2  
 Intersection LOS: D  
 Intersection Capacity Utilization 103.8%  
 ICU Level of Service G  
 Analysis Period (min) 15

- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway



Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

2031 Future Total PM  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2173	260	6	2170	388	4
Future Volume (vph)	2173	260	6	2170	388	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	30.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			50.0		40.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.046		0.950	
Satd. Flow (perm)	3539	1583	86	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		87				4
Link Speed (k/h)	60			60	60	
Link Distance (m)	272.7			591.4	410.6	
Travel Time (s)	16.4			35.5	24.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2362	283	7	2359	422	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2362	283	7	2359	422	4
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8



Lanes, Volumes, Timings  
 2: Burnhamthorpe Road & William Halton Parkway

2031 Future Total PM  
 Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.1	33.1	33.1	33.1	39.5	39.5
Total Split (s)	90.5	90.5	90.5	90.5	39.5	39.5
Total Split (%)	69.6%	69.6%	69.6%	69.6%	30.4%	30.4%
Maximum Green (s)	85.4	85.4	85.4	85.4	34.0	34.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.4	1.4	1.4	1.4	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	86.4	86.4	86.4	86.4	33.0	33.0
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.25	0.25
v/c Ratio	1.00	0.26	0.12	1.00	0.94	0.01
Control Delay	18.7	3.9	14.3	41.5	77.8	22.0
Queue Delay	17.3	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	3.9	14.3	41.5	77.8	22.0
LOS	D	A	B	D	E	C
Approach Delay	32.6			41.4	77.3	
Approach LOS	C			D	E	
Queue Length 50th (m)	~271.0	8.3	0.7	~334.0	110.8	0.0
Queue Length 95th (m)	m66.8	m8.6	3.4	#394.6	#172.9	3.0
Internal Link Dist (m)	248.7			567.4	386.6	
Turn Bay Length (m)		30.0	30.0		30.0	
Base Capacity (vph)	2352	1081	57	2352	462	416
Starvation Cap Reductn	112	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	1.05	0.26	0.12	1.00	0.91	0.01

Intersection Summary



Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay: 39.9  
 Intersection LOS: D  
 Intersection Capacity Utilization 90.4%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 2: Burnhamthorpe Road & William Halton Parkway

2031 Future Total PM  
 Remington Eno





















- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Burnhamthorpe Road & William Halton Parkway

 Ø2 (R) 90.5 s	 Ø8 39.5 s
 Ø6 (R) 90.5 s	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Total PM  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	105	35	202	228	157	54	493	144	42	470	90
Future Volume (vph)	31	105	35	202	228	157	54	493	144	42	470	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	30.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			25.0			50.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00								
Frt		0.962			0.939			0.966			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3394	0	1770	3323	0	1641	3419	0	1736	3454	0
Flt Permitted	0.507			0.460			0.400			0.359		
Satd. Flow (perm)	944	3394	0	856	3323	0	691	3419	0	656	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			171			44			25	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		510.4			161.7			507.3			449.2	
Travel Time (s)		30.6			9.7			30.4			27.0	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	10%	2%	2%	4%	2%	2%
Adj. Flow (vph)	34	114	38	220	248	171	59	536	157	46	511	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	152	0	220	419	0	59	693	0	46	609	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Total PM  
Remington Eno



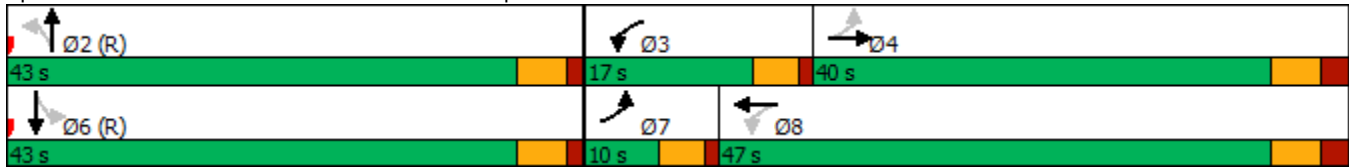
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2				6
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6		6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0		5.0
Minimum Split (s)	9.5	40.0		9.5	40.0		33.1	33.1		33.1		33.1
Total Split (s)	10.0	40.0		17.0	47.0		43.0	43.0		43.0		43.0
Total Split (%)	10.0%	40.0%		17.0%	47.0%		43.0%	43.0%		43.0%		43.0%
Maximum Green (s)	5.5	34.0		12.5	41.0		37.9	37.9		37.9		37.9
Yellow Time (s)	3.5	3.7		3.5	3.7		3.7	3.7		3.7		3.7
All-Red Time (s)	1.0	2.3		1.0	2.3		1.4	1.4		1.4		1.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.5	6.0		4.5	6.0		5.1	5.1		5.1		5.1
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		C-Max	C-Max		C-Max		C-Max
Walk Time (s)		7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)		27.0			27.0		21.0	21.0		21.0		21.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effct Green (s)	15.8	8.8		26.9	19.4		63.5	63.5		63.5		63.5
Actuated g/C Ratio	0.16	0.09		0.27	0.19		0.64	0.64		0.64		0.64
v/c Ratio	0.18	0.46		0.65	0.54		0.13	0.32		0.11		0.28
Control Delay	28.9	36.4		39.7	24.3		9.0	8.5		8.8		8.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	28.9	36.4		39.7	24.3		9.0	8.5		8.8		8.4
LOS	C	D		D	C		A	A		A		A
Approach Delay		35.0			29.6			8.5				8.4
Approach LOS		C			C			A				A
Queue Length 50th (m)	5.2	11.7		37.3	24.5		4.4	29.0		3.4		25.3
Queue Length 95th (m)	12.4	21.4		57.4	39.7		11.1	42.4		9.1		37.4
Internal Link Dist (m)		486.4			137.7			483.3				425.2
Turn Bay Length (m)	55.0			30.0			30.0			30.0		
Base Capacity (vph)	194	1179		344	1463		439	2187		416		2202
Starvation Cap Reductn	0	0		0	0		0	0		0		0
Spillback Cap Reductn	0	0		0	0		0	0		0		0
Storage Cap Reductn	0	0		0	0		0	0		0		0
Reduced v/c Ratio	0.18	0.13		0.64	0.29		0.13	0.32		0.11		0.28

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	16.7
Intersection LOS:	B

Intersection Capacity Utilization 55.8%      ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 10: Sixth Line & Burnhamthorpe Road



Lanes, Volumes, Timings  
23: Carding Mill Trail & William Halton Parkway

2031 Future Total PM  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2648	88	88	2657	36	63
Future Volume (vph)	2648	88	88	2657	36	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		25.0	45.0		55.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			15.0		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.039		0.950	
Satd. Flow (perm)	3539	1583	73	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		21				62
Link Speed (k/h)	60			60	50	
Link Distance (m)	375.9			272.7	375.9	
Travel Time (s)	22.6			16.4	27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2878	96	96	2888	39	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2878	96	96	2888	39	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2	6			8

Lanes, Volumes, Timings  
23: Carding Mill Trail & William Halton Parkway

2031 Future Total PM  
Remington Eno



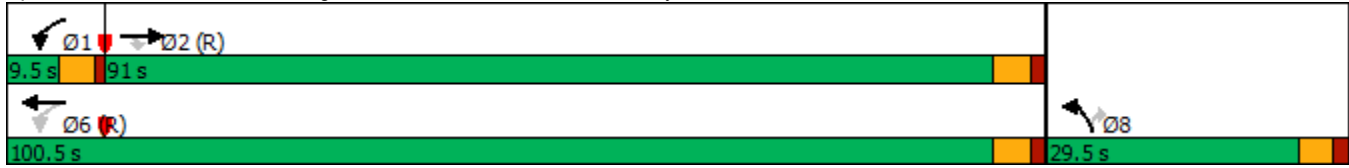
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.6	22.6	9.5	22.6	29.5	29.5
Total Split (s)	91.0	91.0	9.5	100.5	29.5	29.5
Total Split (%)	70.0%	70.0%	7.3%	77.3%	22.7%	22.7%
Maximum Green (s)	85.9	85.9	5.0	95.4	24.5	24.5
Yellow Time (s)	3.7	3.7	3.5	3.7	3.3	3.3
All-Red Time (s)	1.4	1.4	1.0	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	4.5	5.1	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.5	10.5		10.5	17.5	17.5
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	100.1	100.1	114.3	114.7	8.3	8.3
Actuated g/C Ratio	0.77	0.77	0.88	0.88	0.06	0.06
v/c Ratio	1.06	0.08	0.53	0.93	0.35	0.43
Control Delay	60.2	4.1	24.9	9.6	65.8	24.4
Queue Delay	18.8	0.0	0.0	0.0	0.0	0.0
Total Delay	79.0	4.1	24.9	9.6	65.8	24.4
LOS	E	A	C	A	E	C
Approach Delay	76.6			10.1	39.4	
Approach LOS	E			B	D	
Queue Length 50th (m)	~467.4	5.7	11.8	133.0	10.3	1.5
Queue Length 95th (m)	m#495.7	m8.7	m13.4	m143.4	22.1	16.4
Internal Link Dist (m)	351.9			248.7	351.9	
Turn Bay Length (m)		25.0	45.0		55.0	
Base Capacity (vph)	2726	1224	182	3122	333	348
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	187	0	0	0	0	3
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.08	0.53	0.93	0.12	0.20

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 43.2  
 Intersection LOS: D  
 Intersection Capacity Utilization 86.0%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Carding Mill Trail & William Halton Parkway





Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2031 Future Total PM  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	14	94	0	45	28	581	145	71	931	2
Future Volume (vph)	2	0	14	94	0	45	28	581	145	71	931	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	40.0		0.0	70.0		0.0	80.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			7.5			40.0			40.0		
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
Frt		0.850			0.850			0.973				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3444	0	1770	3539	0
Flt Permitted	0.725			0.746			0.231			0.318		
Satd. Flow (perm)	1350	1583	0	1390	1583	0	430	3444	0	592	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			208			43				
Link Speed (k/h)		50			50			60				60
Link Distance (m)		242.4			665.7			254.4				327.6
Travel Time (s)		17.5			47.9			15.3				19.7
Peak Hour Factor	0.82	0.92	0.82	0.92	0.92	0.92	0.82	0.82	0.92	0.92	0.82	0.82
Adj. Flow (vph)	2	0	17	102	0	49	34	709	158	77	1135	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	17	0	102	49	0	34	867	0	77	1137	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings  
 24: Neyagawa Boulevard & Settlers Road West

2031 Future Total PM  
 Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	36.4	36.4		36.4	36.4		29.0	29.0		29.0	29.0	
Total Split (s)	38.0	38.0		38.0	38.0		62.0	62.0		62.0	62.0	
Total Split (%)	38.0%	38.0%		38.0%	38.0%		62.0%	62.0%		62.0%	62.0%	
Maximum Green (s)	31.6	31.6		31.6	31.6		56.0	56.0		56.0	56.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	3.1		3.1	3.1		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	13.3	13.3		13.3	13.3		78.8	78.8		78.8	78.8	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.79	0.79		0.79	0.79	
v/c Ratio	0.01	0.06		0.55	0.13		0.10	0.32		0.17	0.41	
Control Delay	35.0	0.4		51.4	0.7		5.2	4.4		5.4	5.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.0	0.4		51.4	0.7		5.2	4.4		5.4	5.2	
LOS	C	A		D	A		A	A		A	A	
Approach Delay		4.1			35.0			4.4			5.2	
Approach LOS		A			C			A			A	
Queue Length 50th (m)	0.4	0.0		19.9	0.0		1.6	24.2		3.8	37.4	
Queue Length 95th (m)	2.2	0.0		35.3	0.0		5.0	35.7		10.8	52.9	
Internal Link Dist (m)		218.4			641.7			230.4			303.6	
Turn Bay Length (m)	40.0			40.0			70.0			80.0		
Base Capacity (vph)	426	550		439	642		338	2723		466	2788	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.00	0.03		0.23	0.08		0.10	0.32		0.17	0.41	

Intersection Summary

















Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	80 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	6.9
Intersection LOS:	A
Intersection Capacity Utilization:	65.5%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West



Lanes, Volumes, Timings  
25: Carding Mill Trail & Settlers Road West

2031 Future Total PM  
Remington Eno

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	59	15	0	0	27	9	9	9	0	15	15	42	
Future Volume (vph)	59	15	0	0	27	9	9	9	0	15	15	42	
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>						0.965						0.920	
Fl <sub>t</sub> Protected	0.962							0.976		0.990			
Satd. Flow (prot)	0	1792	0	0	1798	0	0	1818	0	0	1697	0	
Fl <sub>t</sub> Permitted	0.962							0.976		0.990			
Satd. Flow (perm)	0	1792	0	0	1798	0	0	1818	0	0	1697	0	
Link Speed (k/h)					50					50			
Link Distance (m)					665.7					142.8			
Travel Time (s)					47.9					10.3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	64	16	0	0	29	10	10	10	0	16	16	46	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	80	0	0	39	0	0	20	0	0	78	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	3.6							3.6		3.6			
Link Offset(m)					0.0					0.0			
Crosswalk Width(m)					4.8					4.8			
Two way Left Turn Lane													
Headway 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	
Turning Speed (k/h)	25		15		25		15		25		15		
Sign Control	Stop		Stop				Stop				Stop		
<b>Intersection Summary</b>													
Area Type:	Other												
Control Type:	Unsignalized												
Intersection Capacity Utilization	21.8%					ICU Level of Service A							
Analysis Period (min)	15												

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	59	15	0	0	27	9	9	9	0	15	15	42
Future Vol, veh/h	59	15	0	0	27	9	9	9	0	15	15	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	16	0	0	29	10	10	10	0	16	16	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0


































Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	7.3	7.5	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	80%	0%	21%
Vol Thru, %	50%	20%	75%	21%
Vol Right, %	0%	0%	25%	58%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	74	36	72
LT Vol	9	59	0	15
Through Vol	9	15	27	15
RT Vol	0	0	9	42
Lane Flow Rate	20	80	39	78
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.096	0.044	0.084
Departure Headway (Hd)	4.302	4.294	4.015	3.846
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	822	831	884	920
Service Time	2.381	2.341	2.077	1.917
HCM Lane V/C Ratio	0.024	0.096	0.044	0.085
HCM Control Delay	7.5	7.8	7.3	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.1	0.3

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Total AM - Mitigation

Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  	  			 			 	
Traffic Volume (vph)	50	2167	170	329	2268	43	264	684	369	57	291	73
Future Volume (vph)	50	2167	170	329	2268	43	264	684	369	57	291	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	4893	1509	3433	4848	1583	1719	3539	1599	1597	3438	1568
Flt Permitted	0.950			0.950			0.518			0.189		
Satd. Flow (perm)	3400	4893	1509	3433	4848	1583	937	3539	1599	318	3438	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122			66			135			100
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	7%	2%	7%	2%	5%	2%	1%	13%	5%	3%
Adj. Flow (vph)	54	2355	185	358	2465	47	287	743	401	62	316	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	2355	185	358	2465	47	287	743	401	62	316	79
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Total AM - Mitigation

Remington Eno



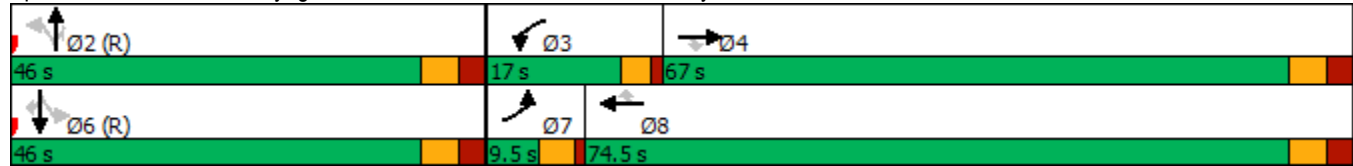
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	7.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	9.5	40.4	40.4	11.0	40.4	40.4	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (s)	9.5	67.0	67.0	17.0	74.5	74.5	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	7.3%	51.5%	51.5%	13.1%	57.3%	57.3%	35.4%	35.4%	35.4%	35.4%	35.4%	35.4%
Maximum Green (s)	5.0	60.6	60.6	13.0	68.1	68.1	39.6	39.6	39.6	39.6	39.6	39.6
Yellow Time (s)	3.5	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.4	6.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0	24.0	24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	5.0	60.6	60.6	13.0	70.0	70.0	39.6	39.6	39.6	39.6	39.6	39.6
Actuated g/C Ratio	0.04	0.47	0.47	0.10	0.54	0.54	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.42	1.03	0.24	1.04	0.94	0.05	1.01	0.69	0.69	0.65	0.30	0.14
Control Delay	70.9	62.3	8.2	116.3	27.5	1.3	100.4	43.8	32.9	71.5	35.6	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.9	62.3	8.2	116.3	27.5	1.3	100.4	43.8	32.9	71.5	35.6	4.1
LOS	E	E	A	F	C	A	F	D	C	E	D	A
Approach Delay		58.6			38.2			52.1			35.0	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	7.4	~249.2	9.3	~53.5	203.5	0.3	~78.3	92.8	64.2	14.5	34.3	0.0
Queue Length 95th (m)	14.8	#278.5	24.0	#86.1	#272.2	m1.1	#139.1	115.7	103.3	#38.4	47.6	7.7
Internal Link Dist (m)		409.0			175.8			303.6			253.5	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	130	2280	768	343	2610	882	285	1078	580	96	1047	547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.03	0.24	1.04	0.94	0.05	1.01	0.69	0.69	0.65	0.30	0.14

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.04  
 Intersection Signal Delay: 47.9  
 Intersection Capacity Utilization 102.0%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service G

- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway





Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

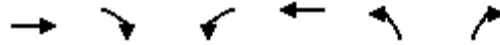
2031 Future Total AM - Mitigation  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2181	212	2	2134	339	6
Future Volume (vph)	2181	212	2	2134	339	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	30.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			50.0		40.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.045		0.950	
Satd. Flow (perm)	3539	1583	84	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		71				7
Link Speed (k/h)	60			60	60	
Link Distance (m)	185.7			591.4	424.3	
Travel Time (s)	11.1			35.5	25.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2371	230	2	2320	368	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2371	230	2	2320	368	7
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8

Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

2031 Future Total AM - Mitigation  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.1	33.1	33.1	33.1	39.5	39.5
Total Split (s)	90.5	90.5	90.5	90.5	39.5	39.5
Total Split (%)	69.6%	69.6%	69.6%	69.6%	30.4%	30.4%
Maximum Green (s)	85.4	85.4	85.4	85.4	34.0	34.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.4	1.4	1.4	1.4	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	88.8	88.8	88.8	88.8	30.6	30.6
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.24	0.24
v/c Ratio	0.98	0.21	0.04	0.96	0.88	0.02
Control Delay	20.4	0.8	9.5	31.2	70.8	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	0.8	9.5	31.2	70.8	19.5
LOS	C	A	A	C	E	B
Approach Delay	18.7			31.2	69.9	
Approach LOS	B			C	E	
Queue Length 50th (m)	~53.4	0.2	0.2	293.7	94.3	0.0
Queue Length 95th (m)	#393.2	1.7	1.3	#383.4	#139.8	4.1
Internal Link Dist (m)	161.7			567.4	400.3	
Turn Bay Length (m)		30.0	30.0		30.0	
Base Capacity (vph)	2417	1103	57	2417	462	419
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	0.98	0.21	0.04	0.96	0.80	0.02

Intersection Summary


Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay: 27.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 87.9%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 2: Burnhamthorpe Road & William Halton Parkway

2031 Future Total AM - Mitigation  
 Remington Eno

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

Splits and Phases: 2: Burnhamthorpe Road & William Halton Parkway

 Ø2 (R) 90.5 s	 Ø8 39.5 s
 Ø6 (R) 90.5 s	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Total AM - Mitigation  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	147	32	130	133	31	29	481	376	171	355	46
Future Volume (vph)	43	147	32	130	133	31	29	481	376	171	355	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	30.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			25.0			50.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				1.00							
Frt		0.973			0.972			0.934			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3378	0	1770	3404	0	1626	3306	0	1703	3449	0
Flt Permitted	0.639			0.541			0.499			0.214		
Satd. Flow (perm)	1166	3378	0	1008	3404	0	854	3306	0	384	3449	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			31			203			18	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			163.7			507.3			449.2	
Travel Time (s)		29.8			9.8			30.4			27.0	
Confl. Peds. (#/hr)	2						2					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	13%	2%	3%	2%	11%	2%	2%	6%	3%	2%
Adj. Flow (vph)	47	160	35	141	145	34	32	523	409	186	386	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	195	0	141	179	0	32	932	0	186	436	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Total AM - Mitigation  
Remington Eno










Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	40.0		9.5	40.0		33.1	33.1		9.5	33.1	
Total Split (s)	9.6	40.0		9.6	40.0		35.2	35.2		15.2	50.4	
Total Split (%)	9.6%	40.0%		9.6%	40.0%		35.2%	35.2%		15.2%	50.4%	
Maximum Green (s)	5.1	34.0		5.1	34.0		30.1	30.1		11.2	45.3	
Yellow Time (s)	3.5	3.7		3.5	3.7		3.7	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.3		1.0	2.3		1.4	1.4		1.0	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	6.0		4.5	6.0		5.1	5.1		4.0	5.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		27.0			27.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)		0			0		0	0			0	
Act Effct Green (s)	17.0	10.4		18.8	14.2		53.8	53.8		70.0	68.9	
Actuated g/C Ratio	0.17	0.10		0.19	0.14		0.54	0.54		0.70	0.69	
v/c Ratio	0.21	0.52		0.62	0.35		0.07	0.50		0.45	0.18	
Control Delay	33.1	40.9		47.4	34.7		14.0	12.9		8.9	5.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.1	40.9		47.4	34.7		14.0	12.9		8.9	5.7	
LOS	C	D		D	C		B	B		A	A	
Approach Delay		39.4			40.3			13.0			6.7	
Approach LOS		D			D			B			A	
Queue Length 50th (m)	7.8	17.2		24.7	15.1		3.0	45.3		11.2	14.0	
Queue Length 95th (m)	17.1	27.8		41.2	25.3		9.4	75.0		21.0	22.0	
Internal Link Dist (m)		472.4			139.7			483.3			425.2	
Turn Bay Length (m)	55.0			30.0			30.0			30.0		
Base Capacity (vph)	226	1167		228	1177		459	1873		434	2383	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.17		0.62	0.15		0.07	0.50		0.43	0.18	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 18.2  
 Intersection LOS: B

Intersection Capacity Utilization 63.5% ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 10: Sixth Line & Burnhamthorpe Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15.2 s	35.2 s	9.6 s	40 s
 Ø6 (R)	 Ø7	 Ø8	
50.4 s	9.6 s	40 s	

Lanes, Volumes, Timings  
23: Carding Mill Trail & William Halton Parkway

2031 Future Total AM - Mitigation  
Remington Eno

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↘	↗
Traffic Volume (vph)	2589	27	27	2581	53	93
Future Volume (vph)	2589	27	27	2581	53	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		25.0	45.0		55.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			15.0		7.5	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted			0.037		0.950	
Satd. Flow (perm)	5085	1583	69	5085	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		12				5
Link Speed (k/h)	60			60	50	
Link Distance (m)	375.9			87.7	375.1	
Travel Time (s)	22.6			5.3	27.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2814	29	29	2805	58	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2814	29	29	2805	58	101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8

Lanes, Volumes, Timings  
 23: Carding Mill Trail & William Halton Parkway

2031 Future Total AM - Mitigation  
 Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.6	22.6	22.6	22.6	29.5	29.5
Total Split (s)	100.4	100.4	100.4	100.4	29.6	29.6
Total Split (%)	77.2%	77.2%	77.2%	77.2%	22.8%	22.8%
Maximum Green (s)	95.3	95.3	95.3	95.3	24.6	24.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.4	1.4	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.5	10.5	10.5	10.5	17.5	17.5
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	106.7	106.7	106.7	106.7	13.2	13.2
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.10	0.10
v/c Ratio	0.67	0.02	0.52	0.67	0.32	0.61
Control Delay	18.7	3.0	21.6	2.8	57.5	68.0
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	18.7	3.0	21.6	2.9	57.5	68.0
LOS	B	A	C	A	E	E
Approach Delay	18.6			3.1	64.2	
Approach LOS	B			A	E	
Queue Length 50th (m)	274.9	1.2	0.9	38.8	14.8	25.2
Queue Length 95th (m)	m267.0	m1.8	m1.6	m51.7	28.0	42.9
Internal Link Dist (m)	351.9			63.7	351.1	
Turn Bay Length (m)		25.0	45.0		55.0	
Base Capacity (vph)	4172	1301	56	4172	334	303
Starvation Cap Reductn	0	0	0	433	0	0
Spillback Cap Reductn	108	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.02	0.52	0.75	0.17	0.33

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 12.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 64.2%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.



Splits and Phases: 23: Carding Mill Trail & William Halton Parkway



Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2031 Future Total AM - Mitigation

Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	31	127	0	61	68	1234	47	24	716	5
Future Volume (vph)	8	0	31	127	0	61	68	1234	47	24	716	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	40.0		0.0	70.0		0.0	80.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			7.5			40.0			40.0		
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
Frt		0.850			0.850			0.995			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3393	0	1770	3536	0
Flt Permitted	0.714			0.732			0.306			0.124		
Satd. Flow (perm)	1330	1583	0	1364	1583	0	570	3393	0	231	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		148			33			6			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		242.4			672.4			254.4			327.6	
Travel Time (s)		17.5			48.4			15.3			19.7	
Peak Hour Factor	0.82	0.92	0.82	0.92	0.92	0.92	0.82	0.82	0.92	0.92	0.82	0.82
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	6%	2%	2%	2%	2%
Adj. Flow (vph)	10	0	38	138	0	66	83	1505	51	26	873	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	38	0	138	66	0	83	1556	0	26	879	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2031 Future Total AM - Mitigation  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	36.4	36.4		36.4	36.4		29.0	29.0		29.0	29.0	
Total Split (s)	36.4	36.4		36.4	36.4		63.6	63.6		63.6	63.6	
Total Split (%)	36.4%	36.4%		36.4%	36.4%		63.6%	63.6%		63.6%	63.6%	
Maximum Green (s)	30.0	30.0		30.0	30.0		57.6	57.6		57.6	57.6	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	3.1		3.1	3.1		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	15.7	15.7		15.7	15.7		71.9	71.9		71.9	71.9	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.72	0.72		0.72	0.72	
v/c Ratio	0.05	0.10		0.64	0.24		0.20	0.64		0.16	0.35	
Control Delay	33.2	0.5		52.7	22.0		7.1	9.5		8.5	6.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.2	0.5		52.7	22.0		7.1	9.5		8.5	6.2	
LOS	C	A		D	C		A	A		A	A	
Approach Delay		7.4			42.8			9.3			6.2	
Approach LOS		A			D			A			A	
Queue Length 50th (m)	1.8	0.0		26.8	5.9		4.7	73.4		1.4	30.0	
Queue Length 95th (m)	5.6	0.0		44.1	16.7		12.0	99.8		6.1	43.8	
Internal Link Dist (m)		218.4			648.4			230.4			303.6	
Turn Bay Length (m)	40.0			40.0			70.0			80.0		
Base Capacity (vph)	399	578		409	498		409	2441		166	2542	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.07		0.34	0.13		0.20	0.64		0.16	0.35	

Intersection Summary

















Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	59 (59%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	10.7
Intersection LOS:	B
Intersection Capacity Utilization:	77.1%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West



Lanes, Volumes, Timings  
25: Carding Mill Trail & Settlers Road West

2031 Future Total AM - Mitigation  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	5	0	0	40	13	13	13	0	5	5	45
Future Volume (vph)	18	5	0	0	40	13	13	13	0	5	5	45
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>	0.967					0.888						
Fl <sub>t</sub> Protected	0.962						0.976			0.996		
Satd. Flow (prot)	0	1792	0	0	1801	0	0	1818	0	0	1648	0
Fl <sub>t</sub> Permitted	0.962						0.976			0.996		
Satd. Flow (perm)	0	1792	0	0	1801	0	0	1818	0	0	1648	0
Link Speed (k/h)	50				50			50		50		
Link Distance (m)	672.4				141.3			155.6		375.1		
Travel Time (s)	48.4				10.2			11.2		27.0		
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)	20	5	0	0	43	14	14	14	0	5	5	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	57	0	0	28	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	3.6				3.6			3.6		3.6		
Link Offset(m)	0.0				0.0			0.0		0.0		
Crosswalk Width(m)	4.8				4.8			4.8		4.8		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control	Stop				Stop			Stop		Stop		
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	19.4%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	5	0	0	40	13	13	13	0	5	5	45
Future Vol, veh/h	18	5	0	0	40	13	13	13	0	5	5	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	5	0	0	43	14	14	14	0	5	5	49
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	7.3	7.4	6.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	78%	0%	9%
Vol Thru, %	50%	22%	75%	9%
Vol Right, %	0%	0%	25%	82%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	23	53	55
LT Vol	13	18	0	5
Through Vol	13	5	40	5
RT Vol	0	0	13	45
Lane Flow Rate	28	25	58	60
Geometry Grp	1	1	1	1
Degree of Util (X)	0.033	0.03	0.063	0.06
Departure Headway (Hd)	4.222	4.287	3.958	3.625
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	832	902	982
Service Time	2.268	2.327	1.994	1.67
HCM Lane V/C Ratio	0.033	0.03	0.064	0.061
HCM Control Delay	7.4	7.5	7.3	6.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0.2	0.2

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Total PM - Mitigation  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	2324	66	426	2211	62	85	249	343	74	541	11
Future Volume (vph)	4	2324	66	426	2211	62	85	249	343	74	541	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3433	4988	1482	1752	3505	1583	1703	3539	1583
Flt Permitted	0.950			0.950			0.203			0.535		
Satd. Flow (perm)	3433	5036	1583	3433	4988	1482	374	3505	1583	959	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100			66			178			100
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			327.6			277.5	
Travel Time (s)		26.0			12.0			19.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	4%	9%	3%	3%	2%	6%	2%	2%
Adj. Flow (vph)	4	2526	72	463	2403	67	92	271	373	80	588	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	2526	72	463	2403	67	92	271	373	80	588	12
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	

Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Total PM - Mitigation  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	7.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	9.5	40.4	40.4	11.0	40.4	40.4	37.4	37.4	37.4	37.4	37.4	37.4
Total Split (s)	9.5	71.0	71.0	21.0	82.5	82.5	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	7.3%	54.6%	54.6%	16.2%	63.5%	63.5%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%
Maximum Green (s)	5.0	64.6	64.6	17.0	76.1	76.1	31.6	31.6	31.6	31.6	31.6	31.6
Yellow Time (s)	3.5	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	2.7	2.7	1.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.4	6.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	0.2
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0	24.0	24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	5.0	64.6	64.6	17.0	83.7	83.7	31.6	31.6	31.6	31.6	31.6	31.6
Actuated g/C Ratio	0.04	0.50	0.50	0.13	0.64	0.64	0.24	0.24	0.24	0.24	0.24	0.24
v/c Ratio	0.03	1.01	0.09	1.03	0.75	0.07	1.02	0.32	0.72	0.34	0.68	0.03
Control Delay	60.8	53.0	1.6	108.2	11.6	2.7	150.2	41.6	31.8	45.7	49.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	53.0	1.6	108.2	11.6	2.7	150.2	41.6	31.8	45.7	49.4	0.1
LOS	E	D	A	F	B	A	F	D	C	D	D	A
Approach Delay		51.6			26.6			50.2			48.1	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	0.5	~249.9	0.0	~71.0	90.0	1.5	~25.5	31.7	49.3	17.9	76.2	0.0
Queue Length 95th (m)	2.6	#290.1	4.2	#106.8	163.9	m4.0	#63.1	45.1	87.8	34.0	97.3	0.0
Internal Link Dist (m)		409.0			175.8			303.6			253.5	
Turn Bay Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Base Capacity (vph)	132	2502	836	448	3211	977	90	851	519	233	860	460
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	1.01	0.09	1.03	0.75	0.07	1.02	0.32	0.72	0.34	0.68	0.03

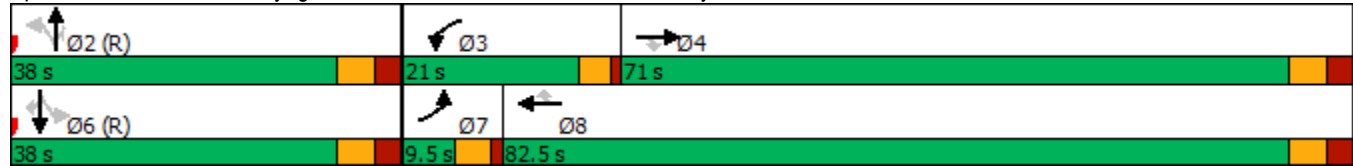
Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 40.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 103.8%  
 ICU Level of Service G  
 Analysis Period (min) 15



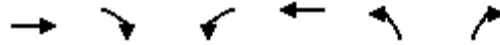
- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway



Lanes, Volumes, Timings  
2: Burnhamthorpe Road & William Halton Parkway

2031 Future Total PM - Mitigation  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2173	260	6	2170	388	4
Future Volume (vph)	2173	260	6	2170	388	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		30.0	30.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			50.0		40.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.046		0.950	
Satd. Flow (perm)	3539	1583	86	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		87				4
Link Speed (k/h)	60			60	60	
Link Distance (m)	181.0			591.4	410.6	
Travel Time (s)	10.9			35.5	24.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2362	283	7	2359	422	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2362	283	7	2359	422	4
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8

Lanes, Volumes, Timings  
 2: Burnhamthorpe Road & William Halton Parkway

2031 Future Total PM - Mitigation  
 Remington Eno




Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.1	33.1	33.1	33.1	39.5	39.5
Total Split (s)	90.5	90.5	90.5	90.5	39.5	39.5
Total Split (%)	69.6%	69.6%	69.6%	69.6%	30.4%	30.4%
Maximum Green (s)	85.4	85.4	85.4	85.4	34.0	34.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.4	1.4	1.4	1.4	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	86.4	86.4	86.4	86.4	33.0	33.0
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.25	0.25
v/c Ratio	1.00	0.26	0.12	1.00	0.94	0.01
Control Delay	26.6	0.9	14.3	41.5	77.8	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	0.9	14.3	41.5	77.8	22.0
LOS	C	A	B	D	E	C
Approach Delay	23.8			41.4	77.3	
Approach LOS	C			D	E	
Queue Length 50th (m)	~363.2	0.0	0.7	~334.0	110.8	0.0
Queue Length 95th (m)	#390.3	0.0	3.4	#394.6	#172.9	3.0
Internal Link Dist (m)	157.0			567.4	386.6	
Turn Bay Length (m)		30.0	30.0		30.0	
Base Capacity (vph)	2352	1081	57	2352	462	416
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	1.00	0.26	0.12	1.00	0.91	0.01

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay: 35.7  
 Intersection Capacity Utilization 90.4%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service E  
 ~ Volume exceeds capacity, queue is theoretically infinite.

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

Splits and Phases: 2: Burnhamthorpe Road & William Halton Parkway

 Ø2 (R) 90.5 s	 Ø8 39.5 s
 Ø6 (R) 90.5 s	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Total PM - Mitigation  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	105	35	202	228	157	54	493	144	42	470	90
Future Volume (vph)	31	105	35	202	228	157	54	493	144	42	470	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	30.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			25.0			50.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00								
Frt		0.962			0.939			0.966			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3394	0	1770	3323	0	1641	3419	0	1736	3454	0
Flt Permitted	0.507			0.460			0.400			0.359		
Satd. Flow (perm)	944	3394	0	856	3323	0	691	3419	0	656	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			171			44			25	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		510.4			161.7			507.3			449.2	
Travel Time (s)		30.6			9.7			30.4			27.0	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	10%	2%	2%	4%	2%	2%
Adj. Flow (vph)	34	114	38	220	248	171	59	536	157	46	511	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	152	0	220	419	0	59	693	0	46	609	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
10: Sixth Line & Burnhamthorpe Road

2031 Future Total PM - Mitigation  
Remington Eno



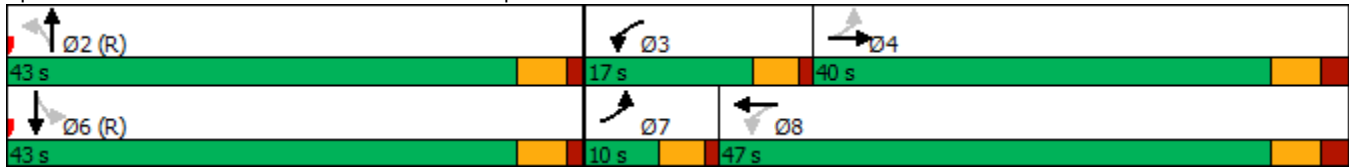
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	40.0		9.5	40.0		33.1	33.1		33.1	33.1	
Total Split (s)	10.0	40.0		17.0	47.0		43.0	43.0		43.0	43.0	
Total Split (%)	10.0%	40.0%		17.0%	47.0%		43.0%	43.0%		43.0%	43.0%	
Maximum Green (s)	5.5	34.0		12.5	41.0		37.9	37.9		37.9	37.9	
Yellow Time (s)	3.5	3.7		3.5	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.3		1.0	2.3		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	6.0		4.5	6.0		5.1	5.1		5.1	5.1	
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		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		27.0			27.0		21.0	21.0		21.0	21.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	15.8	8.8		26.9	19.4		63.5	63.5		63.5	63.5	
Actuated g/C Ratio	0.16	0.09		0.27	0.19		0.64	0.64		0.64	0.64	
v/c Ratio	0.18	0.46		0.65	0.54		0.13	0.32		0.11	0.28	
Control Delay	28.9	36.4		39.7	24.3		9.0	8.5		8.8	8.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.9	36.4		39.7	24.3		9.0	8.5		8.8	8.4	
LOS	C	D		D	C		A	A		A	A	
Approach Delay		35.0			29.6			8.5			8.4	
Approach LOS		C			C			A			A	
Queue Length 50th (m)	5.2	11.7		37.3	24.5		4.4	29.0		3.4	25.3	
Queue Length 95th (m)	12.4	21.4		57.4	39.7		11.1	42.4		9.1	37.4	
Internal Link Dist (m)		486.4			137.7			483.3			425.2	
Turn Bay Length (m)	55.0			30.0			30.0			30.0		
Base Capacity (vph)	194	1179		344	1463		439	2187		416	2202	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.13		0.64	0.29		0.13	0.32		0.11	0.28	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	16.7
Intersection LOS:	B

Intersection Capacity Utilization 55.8% ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 10: Sixth Line & Burnhamthorpe Road



Lanes, Volumes, Timings  
23: Carding Mill Trail & William Halton Parkway

2031 Future Total PM - Mitigation  
Remington Eno



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Traffic Volume (vph)	2648	88	88	2657	36	63
Future Volume (vph)	2648	88	88	2657	36	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		25.0	45.0		55.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			15.0		7.5	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted			0.038		0.950	
Satd. Flow (perm)	5085	1583	71	5085	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		29				68
Link Speed (k/h)	60			60	50	
Link Distance (m)	375.9			92.9	375.9	
Travel Time (s)	22.6			5.6	27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2878	96	96	2888	39	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2878	96	96	2888	39	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2	6			8





Splits and Phases: 23: Carding Mill Trail & William Halton Parkway



Lanes, Volumes, Timings  
24: Neyagawa Boulevard & Settlers Road West

2031 Future Total PM - Mitigation  
Remington Eno



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↕	
Traffic Volume (vph)	2	0	14	94	0	45	28	581	145	71	931	2
Future Volume (vph)	2	0	14	94	0	45	28	581	145	71	931	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	40.0		0.0	70.0		0.0	80.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			7.5			40.0			40.0		
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
Frt		0.850			0.850			0.973				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3444	0	1770	3539	0
Flt Permitted	0.725			0.746			0.231			0.318		
Satd. Flow (perm)	1350	1583	0	1390	1583	0	430	3444	0	592	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			208			43				
Link Speed (k/h)		50			50			60				60
Link Distance (m)		242.4			665.7			254.4				327.6
Travel Time (s)		17.5			47.9			15.3				19.7
Peak Hour Factor	0.82	0.92	0.82	0.92	0.92	0.92	0.82	0.82	0.92	0.92	0.82	0.82
Adj. Flow (vph)	2	0	17	102	0	49	34	709	158	77	1135	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	17	0	102	49	0	34	867	0	77	1137	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings  
 24: Neyagawa Boulevard & Settlers Road West

2031 Future Total PM - Mitigation  
 Remington Eno

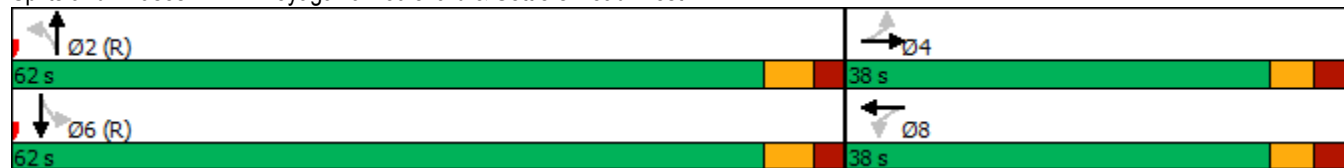


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	36.4	36.4		36.4	36.4		29.0	29.0		29.0	29.0	
Total Split (s)	38.0	38.0		38.0	38.0		62.0	62.0		62.0	62.0	
Total Split (%)	38.0%	38.0%		38.0%	38.0%		62.0%	62.0%		62.0%	62.0%	
Maximum Green (s)	31.6	31.6		31.6	31.6		56.0	56.0		56.0	56.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	3.1		3.1	3.1		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	13.3	13.3		13.3	13.3		78.8	78.8		78.8	78.8	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.79	0.79		0.79	0.79	
v/c Ratio	0.01	0.06		0.55	0.13		0.10	0.32		0.17	0.41	
Control Delay	35.0	0.4		51.4	0.7		5.2	4.4		5.4	5.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.0	0.4		51.4	0.7		5.2	4.4		5.4	5.2	
LOS	C	A		D	A		A	A		A	A	
Approach Delay		4.1			35.0			4.4			5.2	
Approach LOS		A			C			A			A	
Queue Length 50th (m)	0.4	0.0		19.9	0.0		1.6	24.2		3.8	37.4	
Queue Length 95th (m)	2.2	0.0		35.3	0.0		5.0	35.7		10.8	52.9	
Internal Link Dist (m)		218.4			641.7			230.4			303.6	
Turn Bay Length (m)	40.0			40.0			70.0			80.0		
Base Capacity (vph)	426	550		439	642		338	2723		466	2788	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.00	0.03		0.23	0.08		0.10	0.32		0.17	0.41	

Intersection Summary

















Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	80 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	6.9
Intersection LOS:	A
Intersection Capacity Utilization:	65.5%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 24: Neyagawa Boulevard & Settlers Road West



Lanes, Volumes, Timings  
25: Carding Mill Trail & Settlers Road West

2031 Future Total PM - Mitigation  
Remington Eno

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	15	0	0	27	9	9	9	0	15	15	42
Future Volume (vph)	59	15	0	0	27	9	9	9	0	15	15	42
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>	0.965					0.920						
Fl <sub>t</sub> Protected	0.962						0.976			0.990		
Satd. Flow (prot)	0	1792	0	0	1798	0	0	1818	0	0	1697	0
Fl <sub>t</sub> Permitted	0.962						0.976			0.990		
Satd. Flow (perm)	0	1792	0	0	1798	0	0	1818	0	0	1697	0
Link Speed (k/h)	50				50			50		50		
Link Distance (m)	665.7				142.8			193.2		375.9		
Travel Time (s)	47.9				10.3			13.9		27.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	16	0	0	29	10	10	10	0	16	16	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	39	0	0	20	0	0	78	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	3.6				3.6			3.6		3.6		
Link Offset(m)	0.0				0.0			0.0		0.0		
Crosswalk Width(m)	4.8				4.8			4.8		4.8		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control	Stop				Stop			Stop		Stop		
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	21.8%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	59	15	0	0	27	9	9	9	0	15	15	42
Future Vol, veh/h	59	15	0	0	27	9	9	9	0	15	15	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	16	0	0	29	10	10	10	0	16	16	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	7.3	7.5	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	80%	0%	21%
Vol Thru, %	50%	20%	75%	21%
Vol Right, %	0%	0%	25%	58%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	74	36	72
LT Vol	9	59	0	15
Through Vol	9	15	27	15
RT Vol	0	0	9	42
Lane Flow Rate	20	80	39	78
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.096	0.044	0.084
Departure Headway (Hd)	4.302	4.294	4.015	3.846
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	822	831	884	920
Service Time	2.381	2.341	2.077	1.917
HCM Lane V/C Ratio	0.024	0.096	0.044	0.085
HCM Control Delay	7.5	7.8	7.3	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.1	0.3

























# Appendix S

2031 Total Future Conditions Sensitivity Analysis



Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

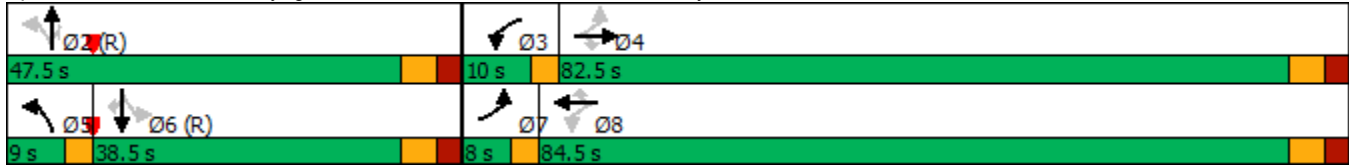
2031 Future Total Sensitivity Analysis - AM  
Sherborne Lodge

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1880	170	130	1763	43	264	684	106	57	291	73
Future Volume (vph)	50	1880	170	130	1763	43	264	684	106	57	291	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3406	1509	1770	3374	1583	1719	3539	1599	1597	3438	1568
Flt Permitted	0.052			0.050			0.436			0.226		
Satd. Flow (perm)	96	3406	1509	93	3374	1583	789	3539	1599	380	3438	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			73			73			79
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			161.7			277.5	
Travel Time (s)		26.0			12.0			9.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	7%	2%	7%	2%	5%	2%	1%	13%	5%	3%
Adj. Flow (vph)	54	2043	185	141	1916	47	287	743	115	62	316	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	2043	185	141	1916	47	287	743	115	62	316	79
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	



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

Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway



Lanes, Volumes, Timings  
23: Carding Mill Trail & William Halton Parkway

2031 Future Total Sensitivity Analysis - AM  
Sherborne Lodge

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↗
Traffic Volume (vph)	2016	27	27	1883	53	93
Future Volume (vph)	2016	27	27	1883	53	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		25.0	45.0		55.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.039		0.950	
Satd. Flow (perm)	3539	1583	73	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		11				20
Link Speed (k/h)	60			60	50	
Link Distance (m)	375.9			257.9	154.8	
Travel Time (s)	22.6			15.5	11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2191	29	29	2047	58	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2191	29	29	2047	58	101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.1	23.1	23.1	23.1	29.5	29.5
Total Split (s)	107.4	107.4	107.4	107.4	29.5	29.5
Total Split (%)	78.5%	78.5%	78.5%	78.5%	21.5%	21.5%
Maximum Green (s)	102.3	102.3	102.3	102.3	24.5	24.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.4	1.4	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.5	10.5	10.5	10.5	17.5	17.5
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	102.3	102.3	102.3	102.3	24.5	24.5
Actuated g/C Ratio	0.75	0.75	0.75	0.75	0.18	0.18
v/c Ratio	0.83	0.02	0.54	0.77	0.18	0.34
Control Delay	15.1	3.2	48.3	13.0	49.5	42.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	3.2	48.3	13.0	49.5	42.7
LOS	B	A	D	B	D	D
Approach Delay	15.0			13.5	45.2	
Approach LOS	B			B	D	
Queue Length 50th (m)	192.5	1.2	3.1	162.6	14.2	20.2
Queue Length 95th (m)	227.6	3.7	#23.5	191.6	27.8	38.6
Internal Link Dist (m)	351.9			233.9	130.8	
Turn Bay Length (m)		25.0	45.0		55.0	
Base Capacity (vph)	2644	1185	54	2644	316	299
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	0.83	0.02	0.54	0.77	0.18	0.34

**Intersection Summary**

Area Type: Other  
 Cycle Length: 136.9  
 Actuated Cycle Length: 136.9  
 Offset: 15.5 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 15.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 69.9%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

























Queue shown is maximum after two cycles.

Splits and Phases: 23: Carding Mill Trail & William Halton Parkway



Lanes, Volumes, Timings  
1: Neyagawa Boulevard & William Halton Parkway

2031 Future Total Sensitivity Analysis - PM  
Sherborne Lodge

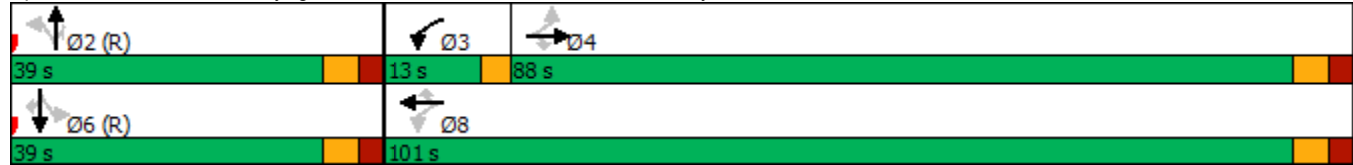
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1901	66	168	1870	62	85	249	125	74	541	11
Future Volume (vph)	4	1901	66	168	1870	62	85	249	125	74	541	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	140.0		80.0	140.0		80.0	80.0		80.0	110.0		80.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	100.0			100.0			75.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3505	1583	1770	3471	1482	1752	3505	1583	1703	3539	1583
Flt Permitted	0.049			0.047			0.220			0.534		
Satd. Flow (perm)	91	3505	1583	88	3471	1482	406	3505	1583	957	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			50			55			126			50
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		433.0			199.8			161.7			277.5	
Travel Time (s)		26.0			12.0			9.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	4%	9%	3%	3%	2%	6%	2%	2%
Adj. Flow (vph)	4	2066	72	183	2033	67	92	271	136	80	588	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	2066	72	183	2033	67	92	271	136	80	588	12
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
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	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
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	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	





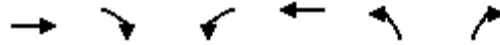
- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
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Splits and Phases: 1: Neyagawa Boulevard & William Halton Parkway



Lanes, Volumes, Timings  
23: Carding Mill Trail & William Halton Parkway

2031 Future Total Sensitivity Analysis - PM  
Sherborne Lodge



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	2012	88	88	2064	36	63
Future Volume (vph)	2012	88	88	2064	36	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		25.0	45.0		55.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.044		0.950	
Satd. Flow (perm)	3539	1583	82	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		28				68
Link Speed (k/h)	60			60	50	
Link Distance (m)	375.9			237.6	209.7	
Travel Time (s)	22.6			14.3	15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2187	96	96	2243	39	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2187	96	96	2243	39	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	0.6	2.0	2.0	0.6	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2	6			8



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.1	23.1	10.2	23.1	29.5	29.5
Total Split (s)	90.5	90.5	10.2	100.5	29.5	29.5
Total Split (%)	69.5%	69.5%	7.8%	77.2%	22.7%	22.7%
Maximum Green (s)	85.4	85.4	5.2	95.4	24.5	24.5
Yellow Time (s)	3.7	3.7	3.3	3.7	3.3	3.3
All-Red Time (s)	1.4	1.4	1.7	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.0	5.1	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.5	10.5		10.5	17.5	17.5
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	85.4	85.4	95.7	95.6	24.5	24.5
Actuated g/C Ratio	0.66	0.66	0.74	0.73	0.19	0.19
v/c Ratio	0.94	0.09	0.76	0.86	0.12	0.19
Control Delay	30.1	6.0	54.5	17.2	45.1	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	6.0	54.5	17.2	45.1	11.5
LOS	C	A	D	B	D	B
Approach Delay	29.1			18.8	23.7	
Approach LOS	C			B	C	
Queue Length 50th (m)	260.2	6.1	9.4	205.0	8.8	0.0
Queue Length 95th (m)	#315.7	12.7	#39.5	245.9	19.5	13.1
Internal Link Dist (m)	351.9			213.6	185.7	
Turn Bay Length (m)		25.0	45.0		55.0	
Base Capacity (vph)	2321	1047	127	2598	333	353
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	0.94	0.09	0.76	0.86	0.12	0.19

**Intersection Summary**

Area Type: Other  
 Cycle Length: 130.2  
 Actuated Cycle Length: 130.2  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 23.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 77.2%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 23: Carding Mill Trail & William Halton Parkway

