

Transportation Impact Study Addendum

PROPOSED RESIDENTIAL DEVELOPMENT

Coscorp Joshua Creek
OAKVILLE, ONTARIO

January 2024
Project No: NT-22-128

520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8

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nexTrans
CONSULTING ENGINEERS

NextEng Consulting Group Inc.

January 30, 2024

Attention: Tom Baskerville

Rampen Holding Inc.
6625 Kitimat Road, Unit 58
Mississauga, ON L5N 6J1

**Re: Transportation Impact Study Addendum
Proposed Residential Development – Draft Plan of Subdivision
Part of Lot 10 Concession 1, Town of Oakville
Our Project No. NT-22-128**

NexTrans Consulting Engineers (a Division of NextEng Consulting Group Inc.) is pleased to present the enclosed Transportation Impact Study Addendum for the above noted site in support of a proposed draft plan of subdivision for a proposed residential development. The purpose of this Study Addendum is to address the Town's comment on the second submission.

The proposed residential development is located south of Burnhamthorpe Road E, north of Dundas Street East between Eighth Line and Ninth Line in the North Oakville East Secondary Plan, in the Town of Oakville. The subject site is currently vacant. The proposed residential development consists of a total 188 residential dwelling units, with 132 single-detached and 56 street townhouse units. The proposed development access is provided via internal public streets connecting to Mattamy Joshua Creek Phase 3, and eventually to Burnhamthorpe Road E via future proposed draft plan of subdivisions to the north. Under the interim conditions, the anticipated traffic from the proposed development will be routing primarily to and from Dundas Street via John McKay Boulevard, Meadowridge Drive and William Cutmore Boulevard, as well as Eighth Line via Wheat Boom Drive. The proposed development will also protect for future Street C and Street A extensions to the west and north, respectively.

This transportation impact study addendum has been prepared in consistent with the previous submissions, the Town of Oakville and the Region of Halton Transportation Impact Study guidelines, as well as the background transportation studies conducted in the area. The Study concludes that the proposed development can adequately be accommodated by the existing and future transportation network, future transit services for the area, as well as the recommended measures identified in this report.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NexTrans Consulting Engineers

A Division of NextEng Consulting Group Inc.

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Report Submission Record

Identification	Date	Description of issued and/or revision
Final Report	January 30, 2024	For Final Submission

TOWN OF OAKVILLE COMMENTS (SECOND SUBMISSION)

The following comments were received from the Town of Oakville and appropriate responses are provided below:

Planning Services

1. Please submit the revised Preliminary On-Street Parking Plan (i.e. separate from Figure 26 in the TIS) showing the parking space locations, rather than a count along the street – the Plan states +/- 115 spaces, whereas Figure 26 states 26 spaces, which is a substantial difference:

Response: Noted. A separate on-street parking plan has been provided.

2. Matters to be Addressed from the June 26, 2023 Planning and Development Council Meeting (to be included in future Recommendation Report):
 - a. details on the Village Square including the facilities to be provided.
 - b. explanation of the optional Natural Heritage System linkage.
 - c. details about the overall traffic plan and timing, and use of a temporary turning circle and future connection to Burnhamthorpe Road.
 - d. details about access/servicing to the subject lands through abutting lands.

Response: Noted.

Sustainable Transportation

3. Please ensure linkages from the road directly onto the proposed off-road trail in the North Oakville Trails Plan. Please ensure a minimum of 4metres in width.
 - a. Please indicate bicycling facilities, path as per Figure 6.1 of Design Brief. Please refer to OTM book 18 for details. Please indicate where the cycle parking will be located at the village square.

Response: Noted and has been provided in the Design Brief.

4. TDM

- a. [Circ. 1 Acknowledged] – Please indicate on-street parking details of proposed roads associated with future cycle lanes.

Response: Noted and no further action is required.

- b. [Circ. 2] – Please include in your TIS under TDM measures, a monitoring program/report to include surveys, and details information on the available modes of travel and within the first year of occupancy to promote sustainable choices in travel. This program will be reviewed with town staff and may be repeated to determine if any changes to the TDM measures are justified.

Response: The Town staff requested a monitoring program/report to include surveys, and detailed information on the available modes of travel and within the first year of occupancy to promote sustainable travel choices. Given that the proposed development will be developed in phases, as well as the context of the North Oakville Secondary Plan and adjacent developments, a monitoring program is not required for the following reasons:

- The TDM programs and measures for the proposed development are limited to the implementation of sidewalks, bike lanes, trail connections and potentially future bus stops. As these infrastructures will be completed for each phase of the proposed development, there is no other metric to be monitored as part of the TDM monitoring program;

- The proposed development will provide an information package (in a letter/brochure) to the residents at the sale office that includes community map, cycling map and transit service map. This information is sufficient for the residents to use;
- A monitoring program/report will require a survey at a minimum of 50% occupancy and at 100% occupancy for the entire development. Given that the proposed development will be developed in various phases, survey results will not be representative as conditions will change after each survey;
- Given that the proposed development is located within a larger development area, it is difficult to pinpoint the effectiveness of a specific TDM measure provided by the subject development. The TDM measures will work as a whole for the entire community; and
- Based on our experience, this requirement is more appropriate for a high-rise development or a standalone development because it can be monitored at the main entrances. With a larger development area such as a secondary plan like this, it is more appropriate that the monitoring program to be carried out by the Town of the Region as part of a comprehensive TDM outreach program.

It should be noted that the following TDM incentives are recommended for the proposed residential development, based on NexTrans' review of the development area context. Therefore, these measures are sufficient for the proposed development and address the Town's concerns:

- Support the Region and the Town on their active and public transit initiatives;
- Provide sidewalks on both sides of the internal roadways;
- Reduce pavement width and lane width where possible to prevent speeding and minimize pedestrian and cyclist crossing distance at intersections and midblock areas; and
- Provide information package for new residents in a form of a letter. The information package letter will include links to Oakville Transit schedules, GO Transit schedules, community amenity maps and cycling maps. The Information Package can be distributed at the sale office in form of a letter.

Sustainable Transportation

5. Site Plan

- a. [Circ. 2] – Staff acknowledges that the proposed development will be collaborating with the adjacent development “Mattamy - Joshua Creek Phase 3” for the distribution of trips and road network, please note that access to 86 through 132 will not be accessible until the full completion of the road network for “Mattamy - Joshua Creek Phase 3B”.

Response: Noted.

- b. [Circ. 1] – Staff has no site plan comments at this time.

Response: Noted.

6. Traffic Impact Assessment/Study

Comments based on TIS dated July 11, 2023 (NexTrans)

- a. [Circ. 2] – General – Please address any outstanding comments identified in Circ. 1.

Response: Noted. All Circulation 1 comments have been addressed below and in this Study Addendum.

- b. [Circ. 2] – General – Please ensure that all comments addressed in the comment matrix for Circ. 1 are applied in the body of the report addendum.

Response: Noted and have been reflected in this Study Addendum.

- c. [Circ. 2] – Figure 3 – Please provide a box to indicate the connection to Burnhamthorpe with respect to the actual road network, rather than to have it floating in the figure.

Response: Noted and have been provided in this Study Update.

- d. [Circ. 2] – Section 7.2 – Please provide detail support for the recommendation of an “All-way Stop Control” at Street A/Street C. Also, please confirm that this recommendation is consistent with recommendations as outlined by “Mattamy - Joshua Creek Phase 3B” report.

Response: All-way Stop Control at Street A/Street C is recommended based on the following reasons and justifications:

- **Reason 1:** This is consistent with the Traffic Impact Study prepared by GHD for “Mattamy – Joshua Creek Phase 3B” dated April, 2022.
- **Reason 2:** This is an intersection of two avenues/transit corridors as identified in the NOE Secondary Plan Transportation Plan (Figure 4). All-way stop will allow pedestrians to cross at all four legs of the intersections to access the future transit stops at all four corners of the intersection.

Based on the reasons noted above, this comment is fully addressed.

- e. [Circ. 2] – Section 7.4 – Please ensure that the dimensions on the on-street parking is consistent with the details provided in the comment matrix.

Response: Noted and have been reflected in the Study Update and **Figure 26** of this Study Update. NexTrans also provides a large scale on-street parking plan as requested.

Comments based on TIS dated July 4, 2022 (NexTrans)

- a. [Circ. 1 – Addressed] – As per the Pre-consultation requirements, an approved Scope of Work from the Region of Halton/Town of Oakville was required. Please provide a copy of the approved scope of work from either the Region/Town in the Appendix.

Response: Noted. No further actions are required.

- b. [Circ. 1 - Addressed] – All reports submitted for review should be finalized, signed and stamped by a Professional Engineer.

Response: Noted. No further actions are required.

- c. [Circ. 1] – Executive Summary

- i. [Not Addressed] – Proposed Development: The proposed development should not rely strictly on connection to “Mattamy Joshua Creek Phase 3” development for access as the it is unclear when the road network will be completed. The development land boundaries onto Burnhamthorpe Road, please provide information for access onto Burnhamthorpe Road. – Please clearly identify the road access anticipated to be utilized for connection to Mattamy Joshua Creek Phase 3 as Phase 3 has been split into two phases A & B.

Response: As clearly indicated in Submission 2 July, 2023 Transportation Impact Study Update, the proposed draft plan of subdivision limit does not abut Burnhamthorpe Road E. The parcel of land that abuts Burnhamthorpe Road E is not part of the proposed development and it currently has existing uses (i.e. Joshua Creek Heritage Art Centre). This use will remain and will not be redeveloped at this time. Therefore, a connection to Burnhamthorpe Road W will not be possible as part of the proposed draft plan of subdivision.

As all subdivisions in the North Oakville East Secondary Plan will be built in phases, this proposed draft plan of subdivision is no different from the other draft plan of subdivisions in the area, including the Mattamy – Joshua Creek Phase proposed development.

The proposed development access will be coordinated with the Mattamy – Joshua Creek Phase 3. As illustrated in the proposed draft plan of subdivision, access to the proposed development is not possible without coordination with the adjacent subdivisions.

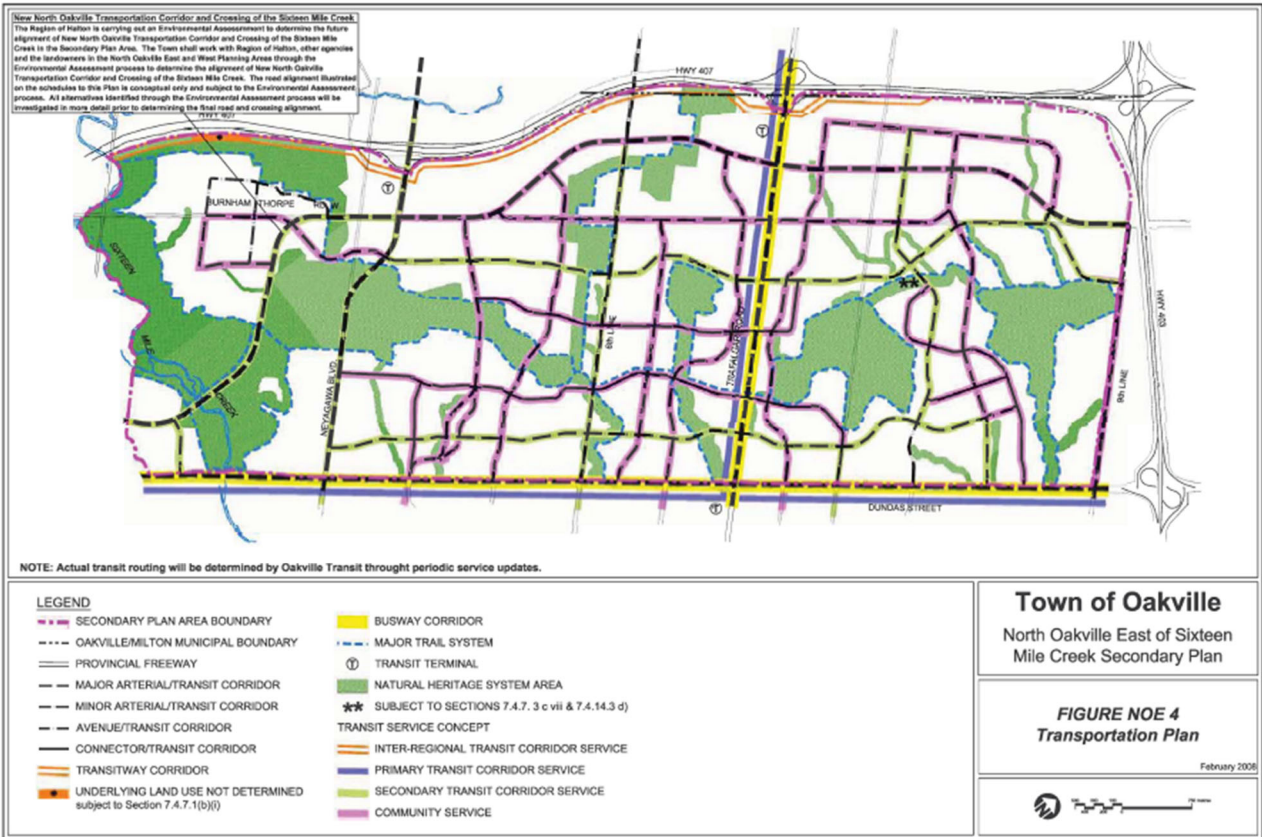
To further address this comment, a 5-year horizon post full build-out of the proposed development, the analysis has been reflected for 2032 horizon (assumed full build-out of the proposed development in 2027). Furthermore, the location of the Street A extension is provided in the location shown on the NOESP, the Master Plan and the Burnhamthorpe EA. Therefore, this comment has been fully addressed.

- ii. **[Not Addressed]** – Auto- Mode Assessment: Please include support to the statement made. “This critical movement will be addressed through the completion of William Halton Parkway and Burnhamthorpe Road E in the future.”

Response: It should be noted that the majority of the critical movements for the intersections along Dundas Street E is due to heavy through traffic volumes on Dundas Street E during both the morning and afternoon peak hours. As Dundas Street E will only have 6-lane cross-section with turning lanes at the intersections, there are limited east-west capacity, as the capacity is also a function of the traffic signals along Dundas Street W. It is obvious that Dundas Street needs a relief from parallel east-west corridors north and south of Dundas Street E. Based on the assessment noted above, the following is the background information that supports the statement noted above:

- **Reason 1:** based on Figure E1 below, which is an excerpt from the North Oakville East Secondary Plan Figure 4 (Transportation Plan), William Halton Parkway will be extended from Ninth Line to Tremaine Road. William Halton Parkway is under jurisdiction of the Halton Region, which is designated as major arterial/transit corridor. As this major arterial/transit corridor is running parallel to Dundas Street from east of Hwy 403 to Tremaine Road, it will provide additional east-west capacity for the northern part of the Secondary Plan, as well as it will provide some relief to Dundas Street in the east-west direction.
- **Reason 2:** The existing Burnhamthorpe Road W is designated as avenue/transit corridor that connects William Halton Parkway from the east (west of Ninth Line) to William Halton Parkway to the west (east of Neyagawa Boulevard). Once Burnhamthorpe Road W is fully improved and urbanized, it will provide additional east-west capacity for the northern part of the Secondary Plan and also including Dundas Street W.
- **Reason 3:** There are also other east-west avenue/transit corridor and connector/transit corridor roads north of Dundas Street E, these roads will also provide additional east-west capacity and relief to Dundas Street E, especially local school trips and discretionary trips. In addition, with more east-west and north-south connector roads, residents will have more choices to travel and will not need to use or wait at an congested intersection.
- **Reason 4:** The analysis is conservative that we did not discount for any diversion of auto trips to transit trips in the area in the future. It is anticipated that with better transit services in the future in the NOE Secondary Plan and in the area, there will be close to 18% of the car traffic will be diverted to transit for many reasons such as high gas price and automobile capital cost, and there are more efficient ways to travel. This 18% transit modal split was explained in the previous version of the Study. As the Region recently completed the 4-lane cross-section extension of William Halton Parkway from 6th Line to Neyagawa Boulevard (November, 2023), some of the east-west traffic is starting to use this road more.

Figure E1 – NOE Secondary Plan Proposed Transportation Plan



i. [Addressed] – Please include in this section, the study horizons for the proposed development.

Response: Noted. No further actions are required.

d. [Circ. 1 – Not Addressed] – Introduction: Please identify phases for anticipated access to proposed development. – Phases for access was not identified.

Response: It is NexTrans’ understanding that the proposed Mattamy Subdivision only has a draft approval and zoning for Phase 3A, which provides one road access to the proposed development (Rampen) along Street E. As the proposed development currently only has allocation for the southerly portion of their development to proceed (Phase 1) with approximately 76 units, therefore, the proposed development Phase 1 will only have access via Street E, as illustrated in Figure E2. It is anticipated that the proposed development Phase 2 will proceed immediately with the proposed Mattamy Phase 3B as soon as the allocation is approved.

As indicated in this Study Update, the entire proposed development is only expected to generate a total of 119 two-way auto trips (33 inbound and 87 outbound) and 159 two-way auto trips (98 inbound and 61 outbound) during the morning and afternoon peak hours, respectively. Therefore, the proposed 76 units for Phase 1 is expected to generate less than half of the total numbers of trips, or 60 two-way auto trips (16 inbound and 44 outbound) and 80 two-way auto trips (49 inbound and 31 outbound) during the morning and afternoon peak hours, respectively. Our review indicates that Street E will be able to handle these small traffic volumes during the peak hours.

For the remaining phases of the proposed development, as noted throughout this Study Addendum and some of the responses provided above, the proposed development access will be coordinated with the rest of Mattamy – Joshua Creek Phase 3. As illustrated in the proposed draft plan of subdivision, access to the proposed development is not possible without coordination with the adjacent subdivisions.

Therefore, the analysis conducted in the previous Transportation Impact Studies and this Study Addendum assess only the access options to connect to Mattamy – Joshua Creek Phase 3 proposed subdivision.

To address this comment further, a 5-year horizon post full build-out of the proposed development, the analysis has been reflected for 2032 horizon (assumed full build-out of the proposed development in 2027). Furthermore, the location of the Street A extension is provided in the location shown on the NOESP, the Master Plan and the Burnhamthorpe EA. **Figure E3** illustrates the potential road network phasing for the proposed development. Therefore, this comment has been fully addressed.

Figure E2 – Proposed Development Phasing and Allocation

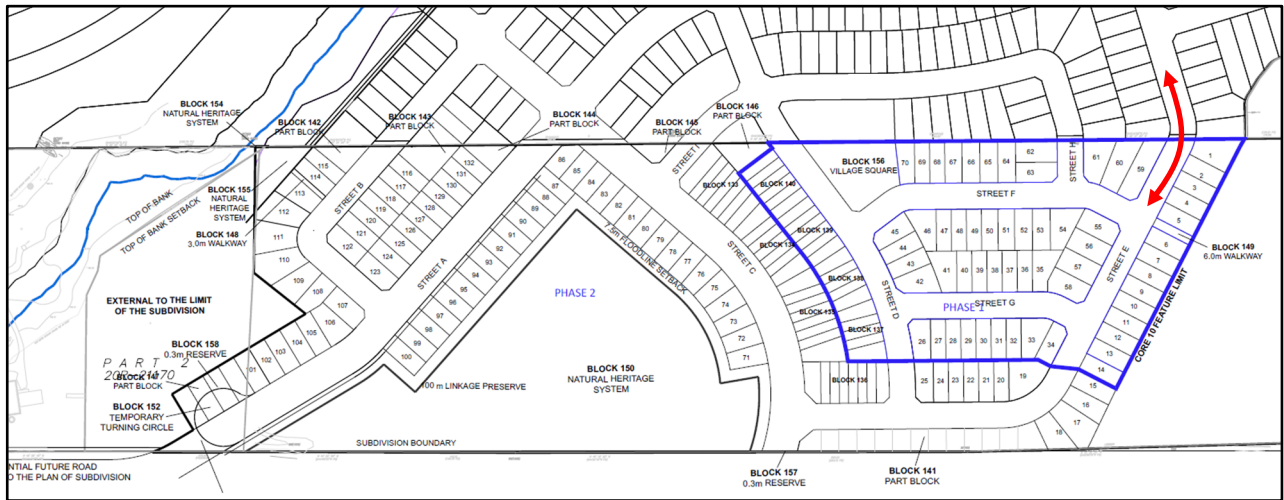
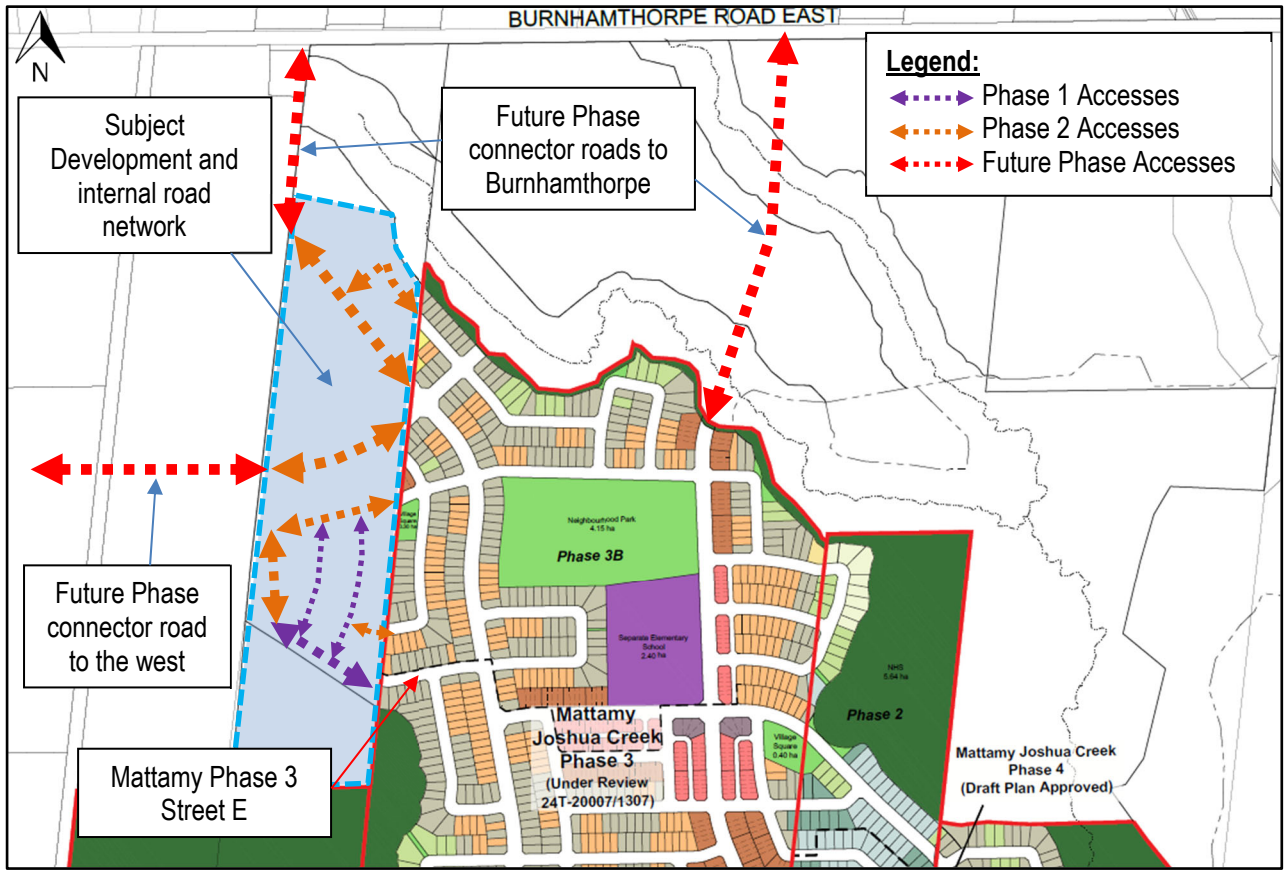


Figure E3 – Potential Access Phasing



e. [Circ. 1] – Section 2.0 Existing Condition Assessment:

- ii. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.
- iii. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.
- iv. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.
- v. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.
- vi. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.
- vii. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.
- viii. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.
- ix. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.
- x. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.
- xi. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.

Response: Noted. No further actions are required.

f. [Circ. 1] – Section 4.0 Future Background Conditions

- xii. [Not Addressed] – Section 4.1: The proposed development is anticipated to be built by 2024, however Joshua Creek Phase 3 is anticipating a 2027 build-out year. Please clarify how the horizon of the developments are anticipated to align.

Response: As the Town staff has requested a 5-year horizon post full build-out of the proposed development, the analysis has been reflected for 2032 horizon (assumed full build-out of the proposed development in 2027). Therefore, this comment has been fully addressed.

- xiii. [Not Addressed] – Section 4.1: A five-year horizon should be completed post build-out. – Although, the Halton TIS guideline request for 5-year post study, this development is unique and staff requests a study horizon of 5 years post build-out.

Response: To address this comment, a 5-year horizon post full build-out of the proposed development, the analysis has been reflected for 2032 horizon (assumed full build-out of the proposed development in 2027). Therefore, this comment has been fully addressed.

- xiv. [Addressed] – Section 4.5: Please clarify how all the subdivision intersections along Dundas Street E are “operating at acceptable level of service” when the intersections are operating over the critical capacity of 0.85. – please include in the body of the addendum report.

- xv. [Addressed] – Figure 11: Please confirm that these volumes were obtained from the respective TIA reports identifies and are the summation of all background development site traffic.
- xvi. [Addressed] – Figure 12: Please confirm that these volumes were obtained from the GHD.
Response: Noted. No further actions are required.
- g. [Circ. 1] – Section 5.0 Site Traffic
 - xvii. [Addressed] – Non-modal split: Please provide confirmation that Regional Staff supports 18% non-auto modal split for the area.
 - xviii. [Addressed] – Figure 14: Please clarify the distribution of the site trips, provide details as to why there were no trip distributed via William Cutmore Boulevard.
Response: Noted. No further actions are required.
- h. [Circ. 1] – Section 6.0 Future Total Traffic
 - xix. [Addressed] – Section 6.1: Please clarify most of the subdivision intersections along Dundas Street E are operating at acceptable level of service when the intersections are operating over the critical capacity of 0.85.
Response: Noted. No further actions are required.
- i. [Circ. 1] – Section 7.0 Draft Plan of Subdivision Review
 - xx. [Addressed] – Section 7.4: Please verify the width for on-street parking stall. It is typically not the width of a bicycle route.
 - xxi. [Addressed] – Section 7.4: Since there is an approximate number of on-street parking identified on the site concept plan, please provide a summary of the total amount of anticipated on-street parking for the subdivision. Please note that 17m ROW do not allow for parking on both sides.
Response: Noted. No further actions are required.
- j. [Circ. 1 – Addressed] – Staff requires a sensitivity analysis report for the redistribution of trips to Burnhamthorpe Road based on the North Oakville Secondary Plan. Traffic counts will be required at the intersections of Burnhamthorpe Road & Trafalgar Road and Burnhamthorpe Road & Ninth Line.
Response: Noted. No further actions are required.
- k. [Circ. 1 – Addressed] – Appendix
 - xxii. Please identify the intersection under review that is provided in the future capacity analysis.
Response: Noted. No further actions are required.

EXECUTIVE SUMMARY

NexTrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by Rampen Holding Inc. (the 'Client') to undertake a Transportation Impact Study Addendum in support of a proposed draft plan of subdivision for a proposed residential development. The proposed residential development is located south of Burnhamthorpe Road E, north of Dundas Street East between Eighth Line and Ninth Line in the North Oakville East Secondary Plan, in the Town of Oakville.

The transportation impact study is prepared in accordance with the Town of Oakville and the Region of Halton Transportation Impact Study guidelines, and consistent with background transportation studies conducted in the area. NexTrans has submitted a study term of reference for this Study Update. It should be noted that as the Town has provided comprehensive comments in the original TIS submitted, therefore, these are similar or more comprehensive than an approved scope of work as mentioned in the comment above. Nextrans has addressed all of the Town's comments in this Study Addendum.

NexTrans acknowledged that some of the information from this Study has utilized and referenced from the GHD Traffic Impact Study dated April, 2022 prepared on behalf of Mattamy Joshua Creek Phase 3 proposed plan of subdivision with permission from GHD and Mattamy. This is to ensure consistency.

The purposes of this Addendum Study are to provide responses and additional analysis as requested by the Town staff on the second submission (**Appendix H**).

Proposed Development

The subject site is currently vacant. The proposed residential development consists of a total 188 residential dwelling units, with 132 single-detached and 56 street townhouse units. Therefore, the currently development proposal only has 7 more units than the previous assessment. It is anticipated that this small increase will not impact the previous assessments and recommendations.

Proposed Development Access

As indicated in Submission 2 July, 2023 Transportation Impact Study Update, the proposed draft plan of subdivision limit does not abut Burnhamthorpe Road E. The parcel of land that abuts Burnhamthorpe Road E is not part of the proposed development and it currently has existing uses (i.e. Joshua Creek Heritage Art Centre). This use will remain and will not be redeveloped at this time. Therefore, a connection to Burnhamthorpe Road W will not be possible as part of the proposed draft plan of subdivision.

It is NexTrans' understanding that the proposed Mattamy Subdivision only has a draft approval and zoning for Phase 3A, which provides one road access to the proposed development (Rampen) along Street E. As the proposed development currently only has allocation for the southerly portion of their development to proceed (Phase 1) with approximately 76 units, therefore, the proposed development Phase 1 will only have access via Street E. It is anticipated that the proposed development Phase 2 will proceed immediately with the proposed Mattamy Phase 3B as soon as the allocation is approved.

As indicated in this Study Update, the entire proposed development is only expected to generate a total of 119 two-way auto trips (33 inbound and 87 outbound) and 159 two-way auto trips (98 inbound and 61 outbound) during the morning and afternoon peak hours, respectively. Therefore, the proposed 76 units for Phase 1 is expected to generate less than half of the total numbers of trips, or 60 two-way auto trips (16 inbound and 44 outbound) and 80 two-way auto trips (49 inbound and 31 outbound) during the morning and afternoon peak hours, respectively. Our review indicates that Street E will be able to handle these small traffic volumes during the peak hours.

For the remaining phases of the proposed development, the proposed development access will be coordinated with the rest of Mattamy – Joshua Creek Phase 3 and other Mattamy phases. As all subdivisions in the North Oakville East Secondary Plan will be built in phases, this proposed draft plan of subdivision is no different from the other draft plan of

subdivisions in the area, including the Mattamy – Joshua Creek Phase proposed development. Ultimately, the proposed development access is provided via internal public streets connecting to Mattamy Joshua Creek Phase 3 and other proposed draft plan of subdivisions, and eventually to Burnhamthorpe Road E via future proposed draft plan of subdivisions to the north. The proposed development will protect for future Street C and Street A extensions to the west and north, respectively. Therefore, the proposed development will coordinate with Mattamy – Joshua Creek Phase 3 and other Mattamy proposed draft plan of subdivisions to provide appropriate and coordinated access for the proposed development.

Under the interim conditions where the proposed draft plans of subdivision to the north are not completed, the anticipated traffic from the proposed development will be routing primarily to and from Dundas Street via John McKay Boulevard, Meadowridge Drive and William Cutmore Boulevard, as well as Eighth Line via Wheat Boom Drive.

As part of this analysis, a 5-year horizon post full build-out of the proposed development, the analysis has been reflected for 2032 horizon (assumed full build-out of the proposed development in 2027). Furthermore, the location of the Street A extension is provided in the location shown on the NOESP, the Master Plan and the Burnhamthorpe EA. **Figure 2B** of this Study Addendum illustrates the Joshua Creek Phase 3 composite plan for overall illustration of the future access connections and road phasing between all subdivisions.

Capacity Analysis

The proposed development is expected to generate a total of 119 two-way auto trips (33 inbound and 87 outbound) and 159 two-way auto trips (98 inbound and 61 outbound) during the morning and afternoon peak hours, respectively.

Auto Mode Assessment

Based on the intersection capacity analysis, under the existing conditions, all intersections considered in the analysis are expected to operate at acceptable levels of service. However, NexTrans acknowledges that the eastbound through movement (morning peak hour) and westbound through movement (afternoon peak hour) at the Ninth Line/Dundas Street E intersection are critical movements with v/c greater than 0.85. This is due to the heavy through traffic volumes in this direction coming from Highway 403 and Mississauga. This type of movement is typical at any major arterial intersections in the Great Toronto Area and in the Region of Halton. It is expected that with the completion of the full road network identified in the North Oakville Secondary Plan, this fine grid road network will provide much needed east-west capacity for the entire area. Given that any physical improvements at this time would be throw away costs due to on-going transportation network improvements in the area, NexTrans does not recommend any improvements at this time.

Based on the intersection capacity analysis, under the future background and total traffic conditions, the analysis the analysis indicates that the majority of the movements for the signalized intersections along Dundas Street E are expected to operate at acceptable levels of service. However, NexTrans acknowledges that there is a number of critical movements with v/c ratios are greater than 0.85, mostly for the through movements along Dundas Street W due to heavy through traffic volume using Dundas Street E during the morning and afternoon peak hours. This can be explained based on the following:

- The compounded growth rate of 2% per annum or over 18% growth from 2023 to 2032 is an overestimate of the traffic in the area given that additional background development application traffic is also included in the analysis
- The Secondary Plan Area fine grid road network is not completed at this time and under this horizon year
- Once the complete road network identified in the Secondary Plan Area is completed, it is expected that the traffic will not be concentrating at the critical movements. This means that residents will have more travel choices instead of concentrating at one intersection
- Especially with the completion of the north-south collector roads such as Meadowridge Drive and John McKay Blvd, the traffic from the proposed draft plans of subdivision can use Burnhamthorpe Road E and William Halton Parkway instead of Dundas Street W
- It is expected that with the future improvements on Burnhamthorpe Road E, the North Oakville Secondary Plan subdivision east-west road south of Burnhamthorpe Road E, as well as the completion of William Halton Parkway,

it will provide much needed east-west capacity for the area. As the Town staff is asking for more support and clarification on this statement, the following are the reasons to support this statement:

- Reason 1: based on the North Oakville East Secondary Plan Figure 4 (Transportation Plan), William Halton Parkway will be extended from Ninth Line to Tremaine Road. William Halton Parkway is under jurisdiction of the Halton Region, which is designated as major arterial/transit corridor. As this major arterial/transit corridor is running parallel to Dundas Street from east of Hwy 403 to Tremaine Road, it will provide additional east-west capacity for the northern part of the Secondary Plan, as well as it will provide some relief to Dundas Street in the east-west direction.
- Reason 2: The existing Burnhamthorpe Road W is designated as avenue/transit corridor that connects William Halton Parkway from the east (west of Ninth Line) to William Halton Parkway to the west (east of Neyagawa Boulevard). Once Burnhamthorpe Road W is fully improved and urbanized, it will provide additional east-west capacity for the northern part of the Secondary Plan and also including Dundas Street E.
- Reason 3: There are also other east-west avenue/transit corridor and connector/transit corridor roads north of Dundas Street E, these roads will also provide additional east-west capacity and relief to Dundas Street E, especially local school trips and discretionary trips. In addition, with more east-west and north-south connector roads, residents will have more choices to travel and will not need to use or wait at a congested intersection.
- Reason 4: The analysis is conservative that we did not discount for any diversion of auto trips to transit trips in the area in the future. It is anticipated that with better transit services in the future in the NOE Secondary Plan and in the area, there will be close to 18% of the car traffic will be diverted to transit for many reasons such as high gas price and automobile capital cost, and there are more efficient ways to travel. This 18% transit modal split was explained in the previous version of the Study.
- The intersection of Dundas Street E/Ninth Line is expected to operate at or over capacity. This is due to the heavy through traffic volumes in this direction coming from Highway 403 and Mississauga. However, this type of movement is typical at any major arterial intersections in the Great Toronto Area and in the Region of Halton, especially there is only one interchange with Hwy 403 in this area. Therefore, some of the east-west capacity will be improved as part of the future improvements on Burnhamthorpe Road E and completion of William Halton Parkway, based on the reasons noted above. As the Region recently completed the 4-lane cross-section extension of William Halton Parkway from 6th Line to Neyagawa Boulevard (November, 2023), some of the east-west traffic is starting to use this road more. Based on this assessment and provision, NexTrans does not recommend any physical improvements to be implemented under this horizon year for the intersections located along Dundas Street E. NexTrans recommends that the Region and the Town monitor these intersections in the future and make appropriate signal timing adjustments in the interim conditions. A monitoring program is also required in the future once all the road network is completed to ensure that signal timing and lane configurations are appropriate for the area.

It should be noted that the proposed development has negligible or no impacts on the existing and future intersections along Dundas Street E. The internal intersections are also expected to have minimum traffic volumes and delay or queue.

Auto Mode Assessment Sensitivity Analysis

The Town of Oakville has requested that a sensitivity analysis be undertaken for Burnhamthorpe Road E, which includes the intersections Trafalgar Road/Burnhamthorpe Road and Burnhamthorpe Road E/William Halton Parkway. To address this comment, NexTrans has obtained the turning movement counts for these two intersections on Wednesday June 7, 2023 from Spectrum.

The analysis indicates that under the existing conditions, both intersections are currently operating well with no critical movements or long delay. Under the 2032 future background conditions, the signalized intersection of Trafalgar Road/Burnhamthorpe Road E is expected to operate well with no critical movements or long delay. However, the northbound at the unsignalized of Burnhamthorpe Road E/William Halton Parkway is expected to operate slightly over

capacity during the morning peak hour. This is due to higher northbound right turn movement from Burnhamthorpe Road E to William Halton Parkway. Under the 2032 future total conditions, the signalized intersection of Trafalgar Road/Burnhamthorpe Road E is expected to operate well with no critical movements or long delay. However, similar to the 2032 future background conditions, the northbound at the unsignalized of Burnhamthorpe Road E/William Halton Parkway is expected to operate over capacity during the morning peak hour. This is due to higher northbound right turn movement from Burnhamthorpe Road E to William Halton Parkway.

Active Transportation Mode Assessment

Walking Mode Assessment

Under the existing conditions, there are no sidewalks in the subject site as it is not yet built. However, external to the site, sidewalks are available on the established sides of the street such as Dundas Street E, Eighth Line, Postridge Drive, Trafalgar Road, Prince Michael Drive, Meadowridge Drive and Ninth Line. This sidewalk network is complete and appropriate for the existing communities; however, the future communities will need similar complete sidewalk network.

It is NexTrans' understanding that sidewalks will be provided on both sides of all internal streets within the North Oakville Secondary Plan to facilitate pedestrians. Therefore, in the future, a complete sidewalk network will be provided and constructed by the proposed developments in the area. For an illustration of the big picture in the Joshua's Meadows Community, **Figure 21** of this Study illustrates the Town of Oakville Proposed Pedestrian Network Phasing (*excerpt from the Town of Oakville 2017 ATMP, Map 8*). On this basis, sidewalks will be provided on all of the proposed internal roads within the subject development, as per the Town of Oakville requirements and standards.

Cycling Mode Assessment

External to the site, there are dedicated cycling routes along Ninth Line south of Dundas Street E. There are also multi-use trails along Dundas Street E in the vicinity of the study area. It is NexTrans' understanding that a complete active transportation network (sidewalk and cycling facilities) will be constructed as part of the North Oakville Secondary Plan communities in the future.

Similar to the walking network, it is NexTrans' understanding that cycling facilities will be constructed in phases, as per the Town's proposed cycling network phasing and priority projects. For an illustration of the big picture in the Joshua's Meadows Community, **Figure 22** of this Study illustrates the Town of Oakville Proposed Cycling Network Phasing and Priority Projects (*excerpt from the Town of Oakville 2017 ATMP, Map 9*), with **Figure 23** of this Study illustrating the North Oakville Trails Plan (Updated as of 2019). On this basis, the proposed development will support the Town's initiative with regards to the cycling facility, where appropriate. However, given that the proposed development only consists of local roads, therefore, no cycling lanes are provided. This is similar to the Mattamy – Joshua Creek Phase 3 proposed subdivision. The proposed speed limit will be posted at 40 km/h, which is suitable for shared on-street cycling.

Transit Mode Assessment

The area is current serviced by several Oakville Transit Bus Routes 1 Trafalgar, 24 South Common, 20 Northridge and 5/5A Dundas.

As indicated, the proposed development is expected to generate much lower numbers of total trips, including transit trips compared to other developments in the area, the proposed development transit ridership can be accommodated by the existing transit service, as well as the future proposed transit service in the area without additional improvements beyond what already been planned for the area.

Based on NexTrans' review of the future proposed future transit network to the Joshua's Meadows Community, there will be:

- Primary transit routes running along Burnhamthorpe Road E, Postridge Drive, Meadowridge Drive and Eighth Line

- Secondary transit routes running along Prince Michael Drive, Wheat Boom Drive, and new east-west collector road south of Burnhamthorpe Road E; and
- Inter-regional transit route along Highway 407

As the proposed development will be located close to the future primary route on Burnhamthorpe Road E, and secondary routes on the future east-west road and Prince Michael Drive, therefore, proposed development will have good transit service in the future.

Transportation Demand Management Measures and Incentives

The Report identifies and recommends appropriate Transportation Demand Management measures and incentives to support active transportation and transit, to meet the objectives and requirements of the Town and the Region. These potential measures are included in Section 8 of this Study.

Study Conclusions and Recommendations

Based on the findings of this Study, the following recommendations are provided:

- The Town approves the proposed draft plan of subdivision as it has negligible impacts on the existing and future transportation network in the area;
- The proposed development building sidewalks along both sides of the internal subdivision streets;
- The proposed development implements the TDM measures and incentives identified in this report to support active transportation and transit and to reduce the numbers of single-occupant-vehicle trips to and from the proposed development;
- Minimize pavement and lane width where possible to facilitate pedestrian/cyclist crossing; and
- No additional physical improvements for the area at this time to accommodate the proposed development, under the future background and future total conditions.

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APPENDICES

Appendix A – Existing Traffic Data

Appendix B – Existing Traffic Level of Service Calculations

Appendix C – Background Developments

Appendix D – Future Background Traffic Level of Service Calculations

Appendix E – 2016 TTS Data Analysis

Appendix F – Future Total Traffic Level of Service Calculations

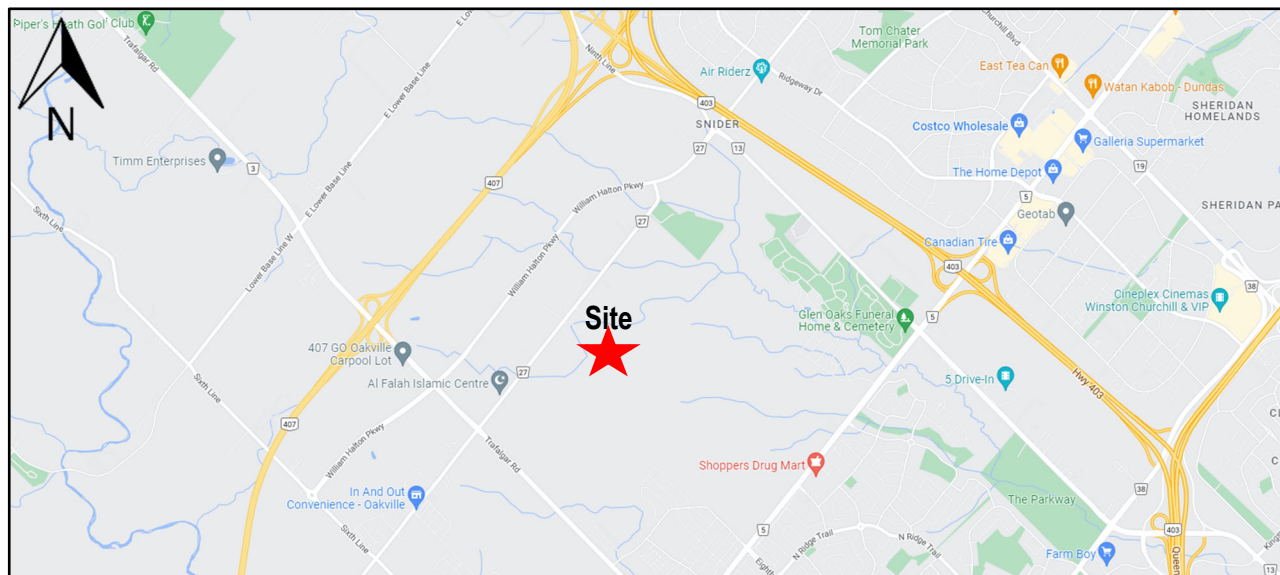
Appendix G – Sensitivity Analysis

Appendix H – Town of Oakville Comments

1.0 INTRODUCTION

NexTrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by Rampen Holding Inc. (the 'Client') to undertake a Transportation Impact Study Addendum in support of a proposed draft plan of subdivision for a proposed residential development. The proposed residential development is located south of Burnhamthorpe Road E, north of Dundas Street East between Eighth Line and Ninth Line in the North Oakville East Secondary Plan, in the Town of Oakville. The location of the proposed development is illustrated in **Figure 1**. This transportation impact study and the previous Study dated July, 2022 are prepared in accordance with the Town of Oakville and the Region of Halton Transportation Impact Study guidelines, and consistent with background transportation studies conducted in the area. A Study terms of reference has been submitted to the Town. NexTrans acknowledged that some of the information from this Study, have utilized and referenced from the GHD Traffic Impact Study dated April, 2022 that was prepared on behalf of Mattamy Joshua Creek Phase 3 proposed draft plan of subdivision with permission from GHD and Mattamy. This is to ensure consistency. NexTrans has submitted a study term of reference for the Submission 2 Study Addendum. The purposes of this Addendum Study are to provide responses and additional analysis as requested by the Town staff on the second submission.

Figure 1 – Proposed Development Location



Source: Google Map

The subject site is currently vacant. The proposed residential development consists of a total 188 residential dwelling units, with 132 single-detached and 56 street townhouse units. Therefore, the currently development proposal only has 7 more units than the previous assessment. It is anticipated that this small increase will not impact the previous assessments and recommendations.

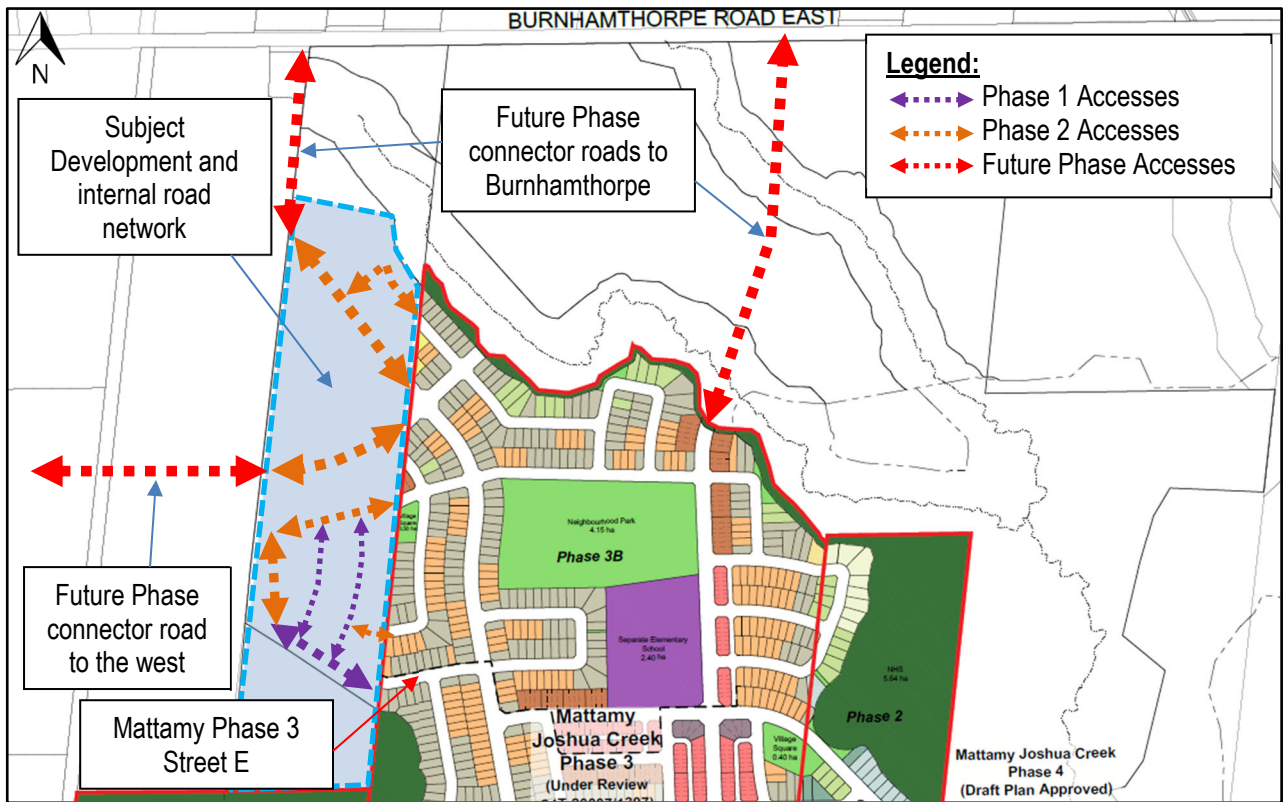
As indicated in Submission 2 July, 2023 Transportation Impact Study Update, the proposed draft plan of subdivision limit does not abut Burnhamthorpe Road E. The parcel of land that abuts Burnhamthorpe Road E is not part of the proposed development and it currently has existing uses (i.e. Joshua Creek Heritage Art Centre). This use will remain and will not be redeveloped at this time. Therefore, a connection to Burnhamthorpe Road W will not be possible as part of the proposed draft plan of subdivision. It is NexTrans' understanding that the proposed Mattamy Subdivision only has a draft approval and zoning for Phase 3A, which provides one road access to the proposed development (Rampen) along Street E. As the proposed development currently only has allocation for the southerly portion of their development to proceed (Phase 1) with approximately 76 units, therefore, the proposed development Phase 1 will only have access via Street E. It is anticipated that the proposed development Phase 2 will proceed immediately with the proposed Mattamy Phase 3B as soon as the allocation is approved. For the remaining phases of the proposed development, the proposed development access will be coordinated with the rest of Mattamy – Joshua Creek Phase 3 and other Mattamy phases. As all subdivisions in the North Oakville East Secondary Plan will be built in phases, this proposed draft plan of subdivision is

no different from the other draft plan of subdivisions in the area, including the Mattamy – Joshua Creek Phase proposed development. Ultimately, the proposed development access is provided via internal public streets connecting to Mattamy Joshua Creek Phase 3 and other proposed draft plan of subdivisions, and eventually to Burnhamthorpe Road E via future proposed draft plan of subdivisions to the north. The proposed development will protect for future Street C and Street A extensions to the west and north, respectively. Therefore, the proposed development will coordinate with Mattamy – Joshua Creek Phase 3 and other Mattamy proposed draft plan of subdivisions to provide appropriate and coordinated access for the proposed development. Under the interim conditions where the proposed draft plans of subdivision to the north are not completed, the anticipated traffic from the proposed development will be routing primarily to and from Dundas Street via John McKay Boulevard, Meadowridge Drive and William Cutmore Boulevard, as well as Eighth Line via Wheat Boom Drive. As part of this analysis, a 5-year horizon post full build-out of the proposed development, the analysis has been reflected for 2032 horizon (assumed full build-out of the proposed development in 2027). Furthermore, the location of the Street A extension is provided in the location shown on the NOESP, the Master Plan and the Burnhamthorpe EA. **Figure 2A** illustrates the proposed development site plan, with **Figure 2B** illustrates the Joshua Creek Phase 3 composite plan for overall illustration of the future access connections and road phasing between all subdivisions.

Figure 2A – Proposed Subject Draft Plan of Subdivision



Figure 2B – Proposed Joshua Creek Phase 3 Draft Plan of Subdivision and Road Phasing



2.0 EXISTING CONDITION ASSESSMENT

2.1. Existing Road Network

As indicated, the proposed residential development is located south of Burnhamthorpe Road E, north of Dundas Street East between Eighth Line and Ninth Line in the North Oakville East Secondary Plan, in the Town of Oakville. The description of the existing road network in the study area is summarized in **Table 1** below.

Table 1 – Summary of the Existing Road Network in the Study Area (as of July, 2023)

Road Name	Jurisdiction	Number of Lanes	Road Type	Sidewalk/Cycling
Dundas Street E	Halton Region	5	Major Arterial	Sidewalk on south side only
Eighth Line	Town of Oakville	4 south of Dundas St and 2 north of Dundas St	Collector Road	Sidewalk on both sides of the street south of Dundas/north side is under construction
Wheat Boom Drive	Town of Oakville	2	Collector Road	Sidewalk on both sides of the street/under construction
Meadowridge Drive	Town of Oakville	2	Minor Collector	Sidewalk on both sides of the street
William Cutmore Boulevard	Town of Oakville	2	Minor Collector	Under construction
Ninth Line	Halton Region	4	Major Arterial	No sidewalk north of Dundas Street, sidewalk on the east side south of Dundas Street and bicycle lanes
Prince Michael Drive	Town of Oakville	2	Major Collector	Under construction

Figure 3 illustrates the existing lane configurations and traffic control devices for the intersections considered in the analysis.

2.2. Existing and Previously Proposed Active Transportation Network and Assessment

As the proposed development draft plan of subdivision is not yet built, there are no active transportation facilities available at this time.

Area Pedestrian Facilities

Under the existing conditions, sidewalks are available on the established sides of the street such as Dundas Street E, Eighth Line, Postridge Drive, Trafalgar Road, Prince Michael Drive, Meadowridge Drive and Ninth Line.

As other streets are currently under construction, sidewalks will be available once these streets are completed as part of the proposed developments in the North Oakville Secondary Plan.

Area Cycling Facilities

Currently, there are dedicated cycling routes along Ninth Line south of Dundas Street E. There are also multi-use trails along Dundas Street E in the vicinity of the study area. It is NexTrans' understanding that a complete active transportation network (sidewalk and cycling facilities) will be constructed as part of the North Oakville Secondary Plan communities in the future.

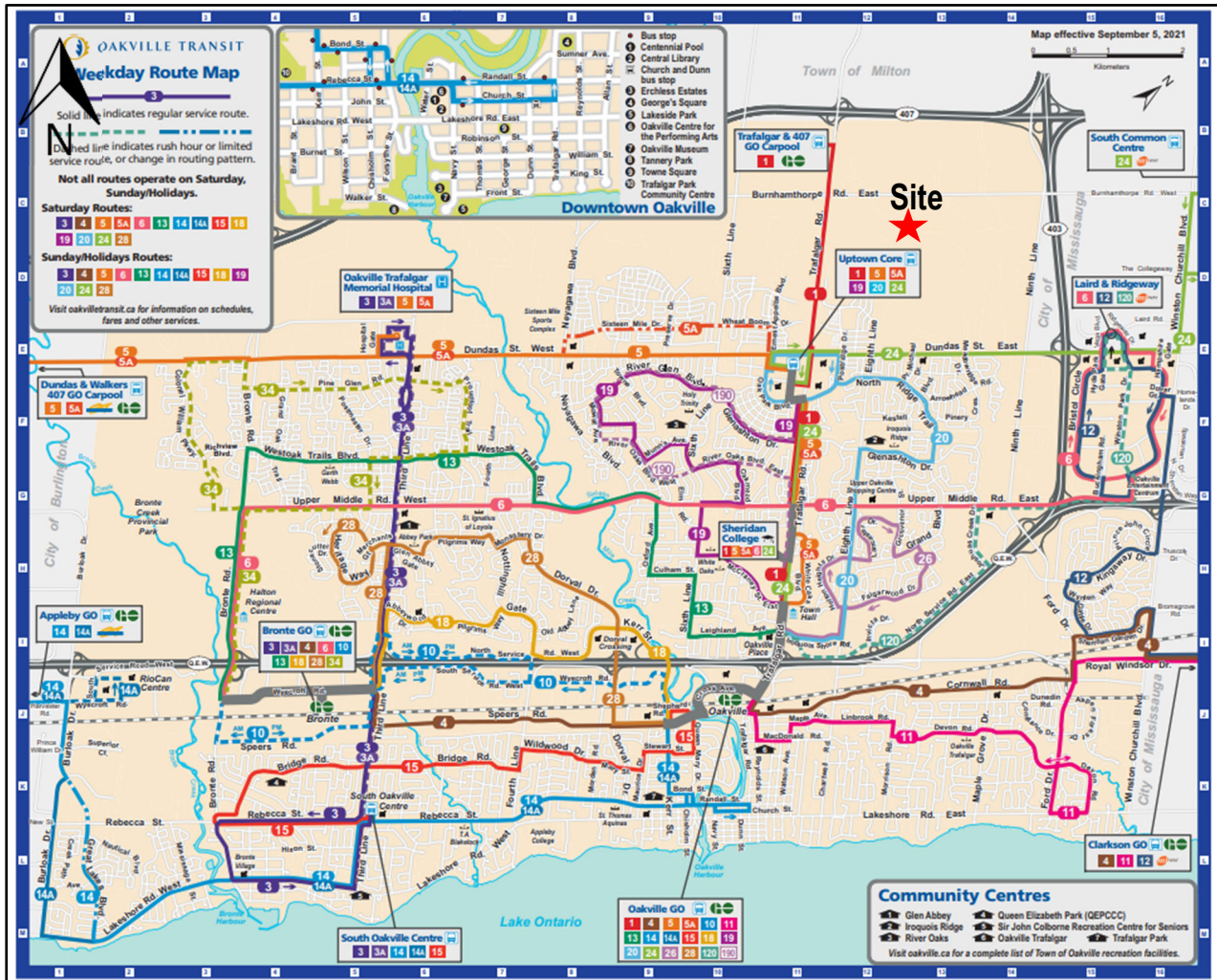
2.3. Existing Oakville Transit System

The area is current serviced by several existing Oakville Transit Bus Routes 1 Trafalgar, 24 South Common, 20 Northridge and Dundas Route 5/5A. **Figure 4** illustrates the existing Oakville Transit System.

Below are the bus route descriptions based on the information provided on the Oakville Transit Website (<https://www.oakvilletransit.ca/schedules-and-maps.html>):

- Route 1 Trafalgar** – The Trafalgar Route travels generally in the north-south direction from Oakville GO Train Station to Highway 407 GO Oakville Carpool Lot. This service runs early in the morning until after midnight during the weekday. The service frequency is approximately 60-minute all day.
- Route 20 Northridge** – The Northridge route travels north - south and east-west from Oakville GO Train Station to Walmart Supercentre located south-west of the Trafalgar Road/Dundas Street E intersection. This service runs 7 days a week from the early morning until 11 pm. The service frequency is approximately 30-minute during the weekday peak periods and approximately 60-minute during the weekend.
- Route 24 South Common** – The South Common route travels north - south and east-west from Oakville GO Train Station to South Common Centre in the City of Mississauga located near Erin Mills Parkway and Burnhamthorpe Road W. This service runs 7 days a week from the early morning until midnight. The service frequency is approximately 15-minute during the weekday peak periods and approximately 30-minute during the weekend.
- Route 5/5A Dundas** – The Dundas route travels north - south and east-west from Oakville GO Train Station to Dundas/407 GO Carpool. This service runs 7 days a week from the early morning until midnight. The service frequency is approximately 15-minute during the weekday peak periods and approximately 30-minute during the weekend.

Figure 4 – Existing Oakville Transit Network



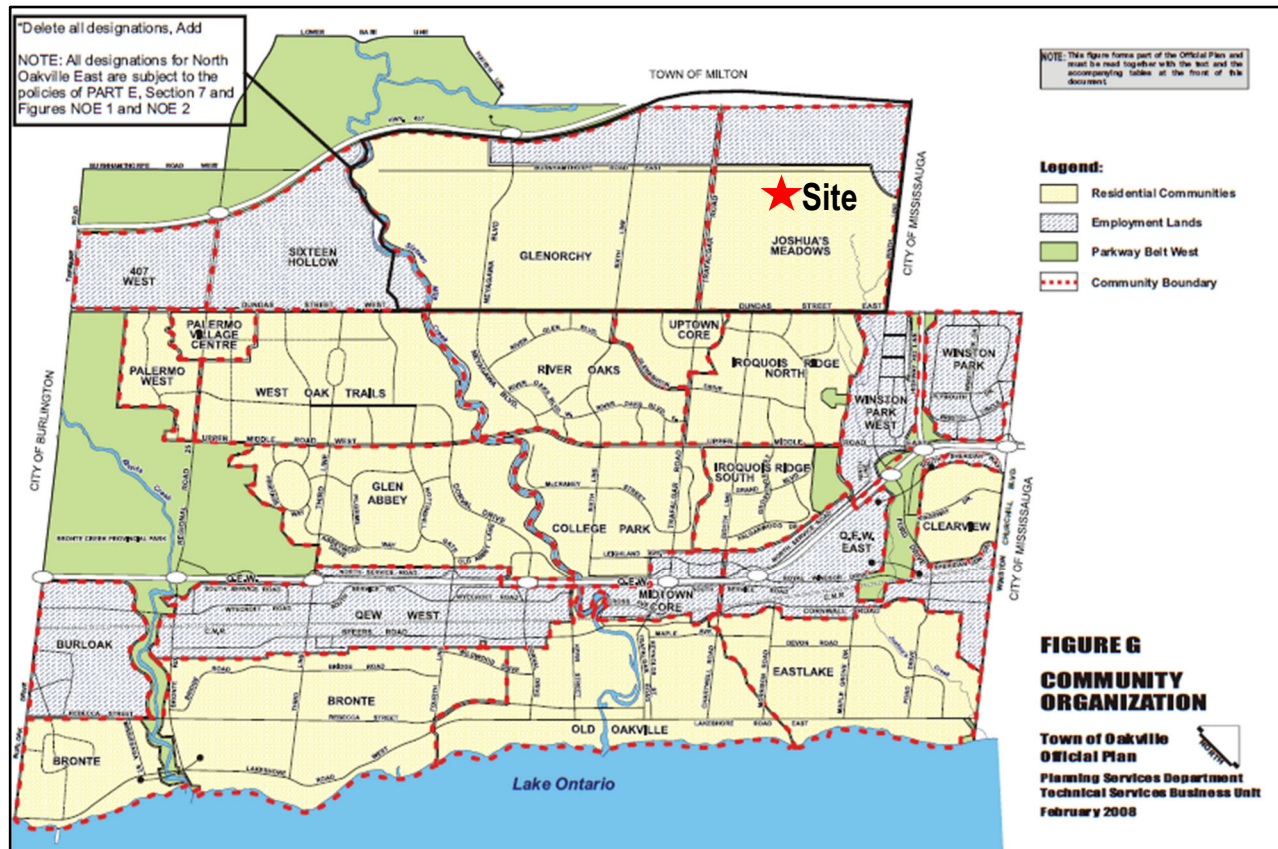
Source: Oakville Transit website

2.3. Existing Area Context

NexTrans has conducted a comprehensive review of the area. The proposed development is located within the approved North Oakville East Secondary Plan, Joshua’s Meadows residential community bounded by Dundas Street E to the south, Burnhamthorpe Road E to the north, Trafalgar Road to the west and Ninth Line to the east, in the Town of Oakville.

This area will be built into a vibrant community with complete network of sidewalk and cycling facilities, along with future Oakville Transit service extension to the area. **Figure 5** illustrates the North Oakville East Secondary Plan Community Organization (OPA No. 272, February 2008).

Figure 5 – North Oakville East Secondary Plan



Source: North Oakville East Secondary Plan Figure G

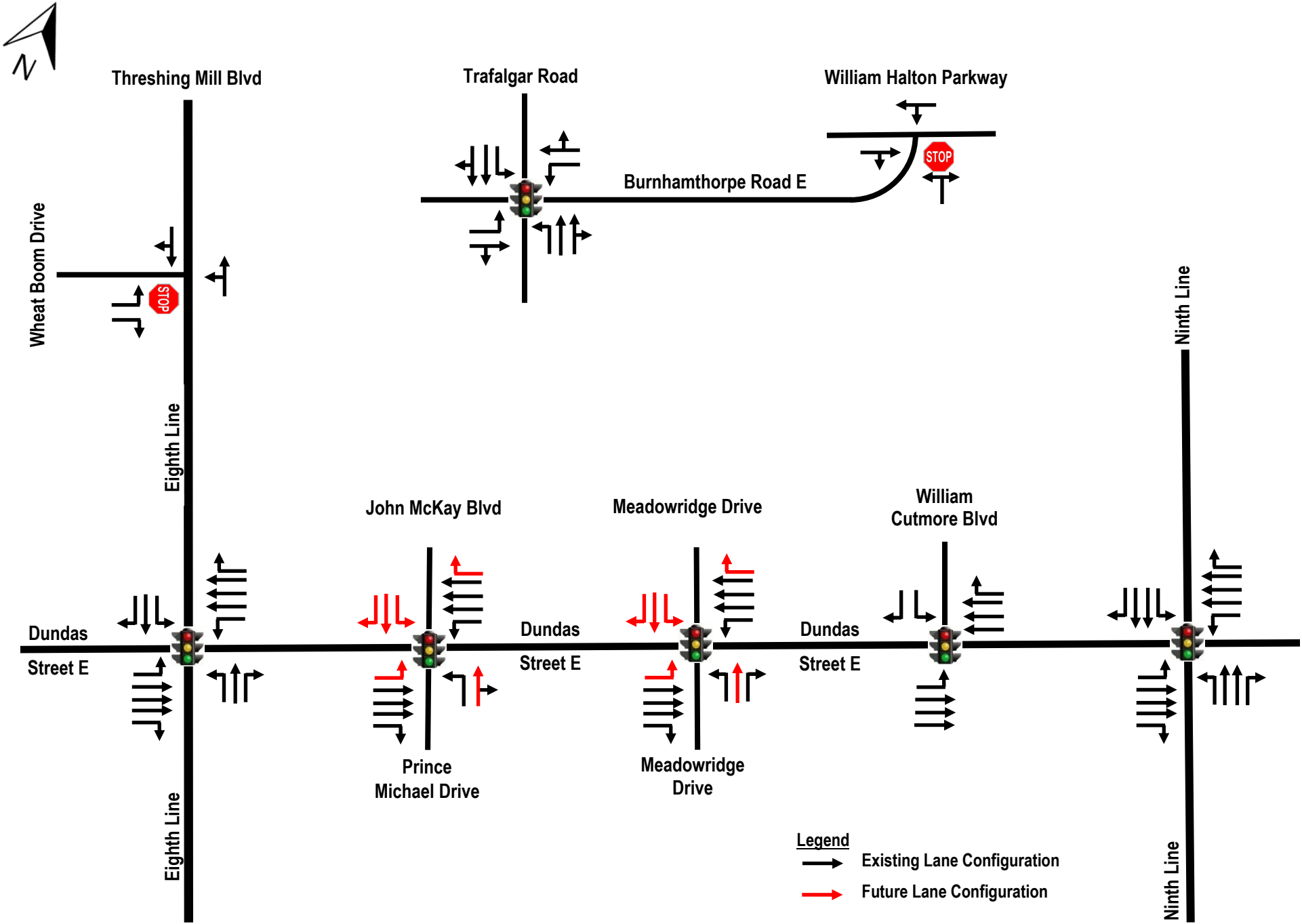
2.4. Existing Traffic Volumes

NexTrans has reviewed all of the background traffic impact studies prepared in the general area. Recently, GHD has prepared a Traffic Impact Study dated April, 2022 in support of Mattamy Joshua Creek Phase 3 proposed residential development located immediately to the east of the subject site.

NexTrans has obtained the latest turning movement counts conducted on Tuesday May 9, 2023 and Wednesday June 7, 2023 for the study area intersections. The Turning movement counts are summarized in **Appendix A**. The existing volumes are illustrated in **Figure 6**.

2.5. Existing Condition Assessment

The existing volumes in **Figure 6** were analyzed using Synchro Version 11 software. The methodology of the software follows the procedures described and outlined in the Highway Capacity Manual, HCM 2000, published by the Transportation Research Board. It should be noted that the printouts for unsignalized intersections are based on HCM



Not to Scale



Threshing Mill Blvd

Ninth Line

Wheat Boom Drive

Eighth Line

John McKay Blvd

Meadowridge Drive

William Cutmore Blvd

Dundas

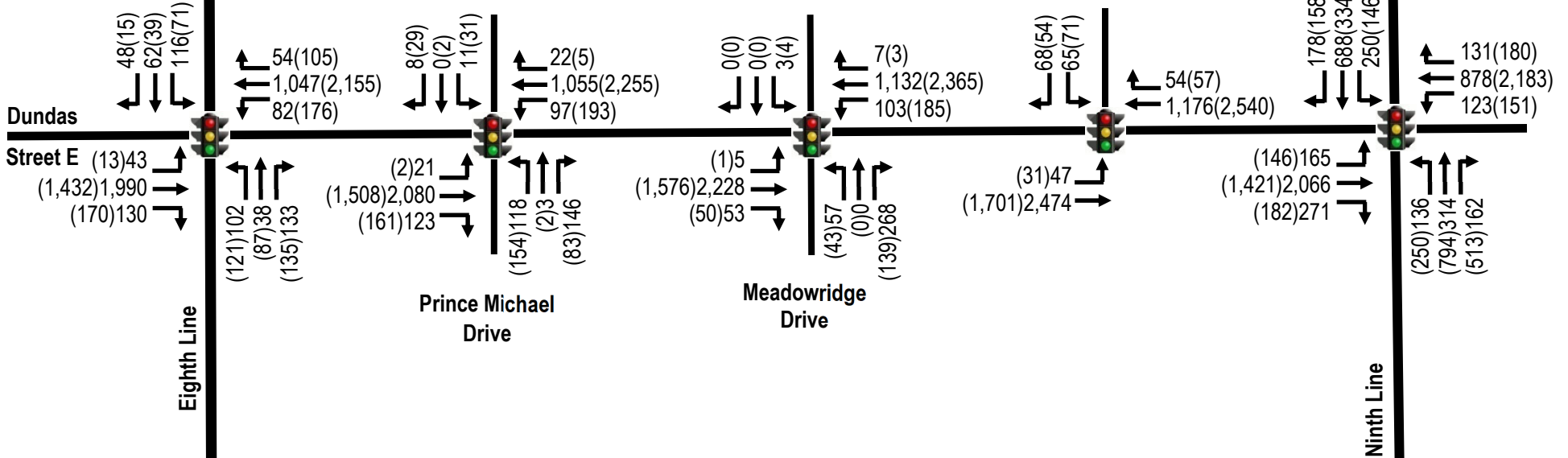
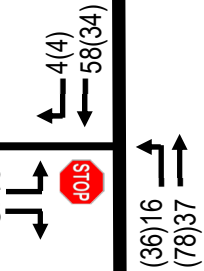
Street E

Eighth Line

Prince Michael Drive

Meadowridge Drive

Ninth Line



Not to Scale



Legend

XX AM Peak Hour (XX) PM Peak Hour



Existing Stop Sign



Existing Signalized Intersection

Figure 6 - Existing Traffic Volumes (2023 Actual Counts)

outputs and the results for signalized intersections are based on Synchro so that queues and more detailed information can be provided. The results are provided in **Appendix B** and summarized in **Table 2**.

2.6. Finding Summary

Based on the intersection capacity analysis, under the existing traffic conditions, all intersections considered in the analysis are operating at acceptable levels of service.

However, NexTrans acknowledges that the eastbound through movement (morning peak hour) and westbound through movement (afternoon peak hour) at the Ninth Line/Dundas Street E intersection are critical movements with v/c greater than 0.85. This is due to the heavy through traffic volumes in this direction coming from Highway 403 and Mississauga. However, this type of movement is typical at any major arterial intersections in the Great Toronto Area and in the Region of Halton. It is expected that with the completion of the full road network identified in the North Oakville Secondary Plan, this fine grid road network will provide much needed east-west capacity for the entire area.

Given that any physical improvements at this time would be throw away costs due to on-going transportation network improvements in the area, NexTrans does not recommend any improvements at this time.

Table 2 – 2023 Existing Levels of Service

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Dundas Street E/ Eighth Line (signalized)	Overall	B (0.60)	15		B (0.59)	13		
	EB – L	A (0.15)	5	6	A (0.06)	4	3	~115
	EB – T	B (0.60)	13	143	B (0.44)	12	98	~300
	EB – R	A (0.13)	3	12	A (0.16)	2	10	~75
	WB – L	A (0.35)	8	12	C (0.49)	20	43	~155
	WB – T	A (0.32)	9	79	A (0.59)	8	86	~585
	WB – R	A (0.05)	3	10	A (0.09)	4	9	~85
	NB – L	E (0.54)	60	43	E (0.59)	62	50	~45
	NB – T	D (0.15)	47	19	D (0.30)	49	36	~255
	NB – R	B (0.40)	14	21	B (0.40)	13	21	~30
	SB – L	E (0.57)	61	48	D (0.39)	54	32	~45
	SB – T	D (0.23)	49	28	D (0.14)	46	19	~310
SB – R	A (0.24)	8	7	A (0.05)	0	0	~25	
Dundas Street E/ Prince Michael Drive/ John McKay Blvd (signalized)	Overall	A (0.62)	10		B (0.75)	20		
	EB – L	A (0.07)	5	3	A (0.01)	8	0	~120
	EB – T	A (0.62)	9	207	A (0.48)	8	36	~585
	EB – R	A (0.12)	1	10	A (0.17)	1	1	~75
	WB – L	C (0.43)	34	30	B (0.62)	20	39	~125
	WB – T	A (0.29)	3	17	C (0.63)	25	225	~570
	WB – R	A (0.02)	0	0	A (0.00)	0	0	~85
	NB – L	E (0.57)	61	49	E (0.75)	75	70	~65
	NB – TR	B (0.46)	12	20	B (0.31)	14	16	~225
	SB – L	D (0.07)	43	7	D (0.11)	41	16	~15
	SB – T	A (0.00)	0	0	D (0.01)	39	3	~195
	SB – R	A (0.03)	0	0	A (0.08)	0	0	~15
Dundas Street E/ Meadowridge Drive (signalized)	Overall	A (0.82)	8		B (0.58)	12		
	EB – L	A (0.03)	2	0	A (0.01)	4	0	~80
	EB – T	A (0.66)	4	13	B (0.43)	19	169	~570
	EB – R	A (0.05)	0	0	A (0.04)	7	10	~80
	WB – L	C (0.50)	24	18	B (0.55)	17	24	~140
	WB – T	A (0.31)	3	7	A (0.58)	5	232	~335
	WB – R	A (0.01)	0	0	A (0.00)	0	0	~70
	NB – L	D (0.30)	53	28	E (0.31)	60	23	~25
	NB – T	A (0.00)	0	0	A (0.00)	0	0	~215
	NB – R	D (0.82)	49	78	B (0.53)	20	25	~25
	SB – L	D (0.03)	48	4	D (0.04)	55	5	~15
	SB – T	A (0.00)	0	0	A (0.00)	0	0	~175
SB – R	A (0.00)	0	0	A (0.00)	0	0	~15	

Dundas Street E/ William Cutmore Blvd (signalized)	Overall	A (0.60)	9		A (0.62)	62		
	EB – L	A (0.15)	5	6	B (0.21)	12	11	~100
	EB – T	B (0.60)	11	243	A (0.40)	10	146	~335
	WB – T	A (0.30)	2	18	A (0.62)	4	28	~500
	WB – R	A (0.04)	0	0	A (0.05)	0	0	~85
	SB – L	E (0.44)	65	32	E (0.47)	66	34	~45
	SB – R	B (0.39)	19	15	B (0.30)	18	13	~30
Dundas Street E/ Ninth Line (signalized)	Overall	C (0.89)	27		D (1.00)	39		
	EB – L	A (0.41)	10	23	D (0.72)	54	59	~225
	EB – T	C (0.89)	25	240	B (0.66)	20	49	~500
	EB – R	A (0.34)	6	22	A (0.25)	5	7	~85
	WB – L	C (0.56)	32	39	C (0.68)	35	49	~230
	WB – T	C (0.41)	24	75	E (1.00)	55	266	~255
	WB – R	A (0.17)	4	13	A (0.25)	9	25	~85
	NB – L	D (0.64)	41	38	C (0.59)	32	65	~160
	NB – T	D (0.36)	40	48	D (0.74)	45	123	~485
	NB – R	A (0.32)	9	20	D (0.92)	53	167	~130
	SB – L	D (0.65)	38	67	D (0.64)	36	39	~130
	SB – T	D (0.77)	50	107	C (0.32)	35	49	~810
	SB – R	A (0.34)	9	22	A (0.27)	8	19	~55
Eighth Line/Threshing Mill Blvd/ Wheat Boom Dr (unsignalized)	EB – LTR	A (0.03)	9	1	A (0.03)	9	1	~30
	NB – TL	A (0.01)	2	0	A (0.02)	2	1	~300
	SB – TR	A (0.04)	0	0	A (0.02)	0	0	~300

2.7. Potential Mitigation Measures

Based on the finding summary noted above and given that the entire transportation network in the area is still evolving in the next 10 years, therefore, no improvements to the existing road network are recommended at this time given that any temporary improvements will be throw away costs. This will not be fair for such a small development and potentially become a barrier to provide housing supply to the Town and the Region.

3.0 TRANSPORTATION PLANNING CONTEXT IN THE AREA

3.1. Existing Land Use Context and Amenities

As indicated, the proposed development is located within the approved North Oakville East Secondary Plan, Joshua’s Meadows residential community bounded by Dundas Street E to the south, Burnhamthorpe Road E to the north, Trafalgar Road to the west and Ninth Line to the east, in the Town of Oakville. This area will be built into a vibrant community with complete network of sidewalk and cycling facilities, along with future Oakville Transit service extension to the area.

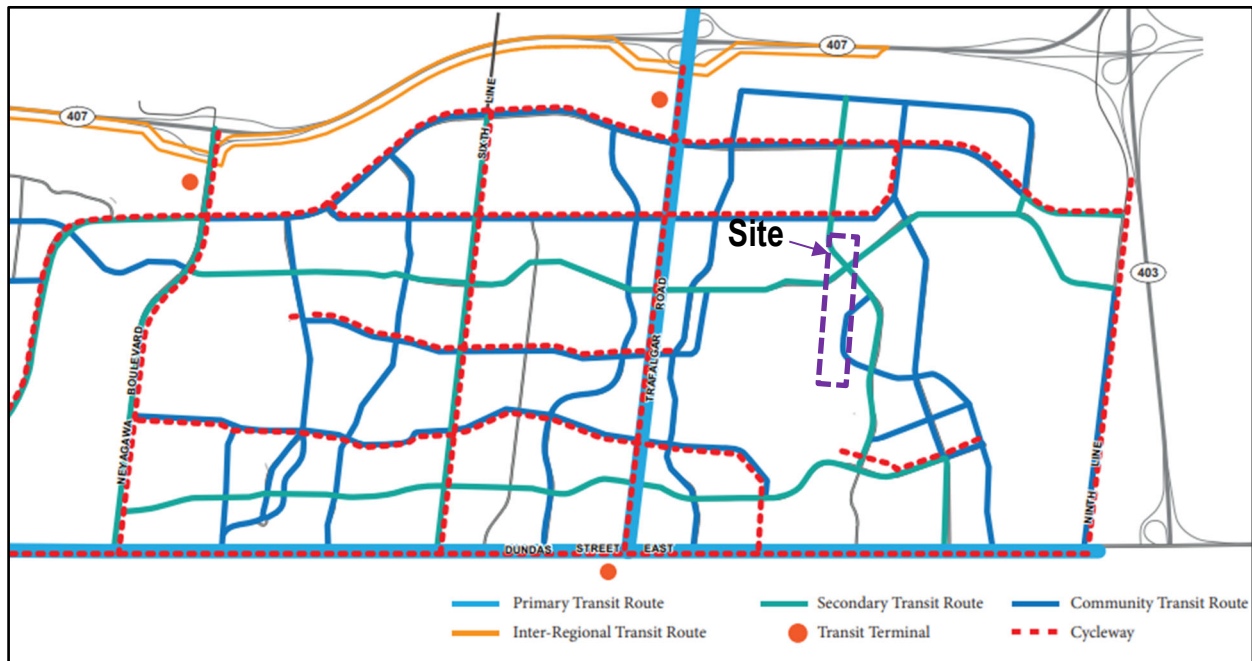
As the proposed residential development consists of a total 181 residential dwelling units, with 129 single-detached and 52 street townhouse units, the proposed development is compatible and consistent with other proposed background developments in the immediate area within the Joshua’s Meadows community.

3.2. Transportation Planning Context

As the community is building through different phases, the road network, active transportation network and transit network will also be built at different phases. This is a typical process through-out the Greater Toronto and Hamilton Area.

However, once completed, the area will have a complete fine grid transportation network consists of transit, active transportation and road network. **Figure 7** illustrates the proposed North Oakville East Secondary Plan Area transportation network.

Figure 7 – North Oakville East Secondary Plan Transportation Network



Source: *The New Communities of Oakville Brochure (Prepared by the Town of Oakville)*

4.0 FUTURE BACKGROUND CONDITIONS

4.1. Analysis Horizon

The Town staff, through Circulation 2 comments, indicates that the Joshua Creek Phase 3 subdivision is anticipated to be fully built-out by 2027 and how the proposed development access can be accommodated through Joshua Creek Phase 3 subdivision. In addition, the Town staff also asked to include a 5-year horizon analysis post build-out of the proposed development.

To address these comments, a 5-year horizon post full build-out of the proposed development and Joshua Creek Phase 3 subdivision will be reflected in the updated analysis. Therefore, 2032 horizon (5-year from 2027 anticipated completion) has been included in the analysis.

4.2. Future Background Corridor Growth

Based on the Town of Oakville and Halton Region’s requirements, a 2% per annum compounded growth rate will be applied to the 2023 existing traffic volumes (actual turning movement counts) to estimate the 2032 horizon traffic volumes.

This is equivalent to more than 18% total growth from 2023 to 2032 due to compounded growth rate. This is a quite significant growth and most likely is an over estimate of the traffic in the area as growth should be tapered off as new developments are completed.

Figure 8 illustrates the 2032 background through corridor growth.

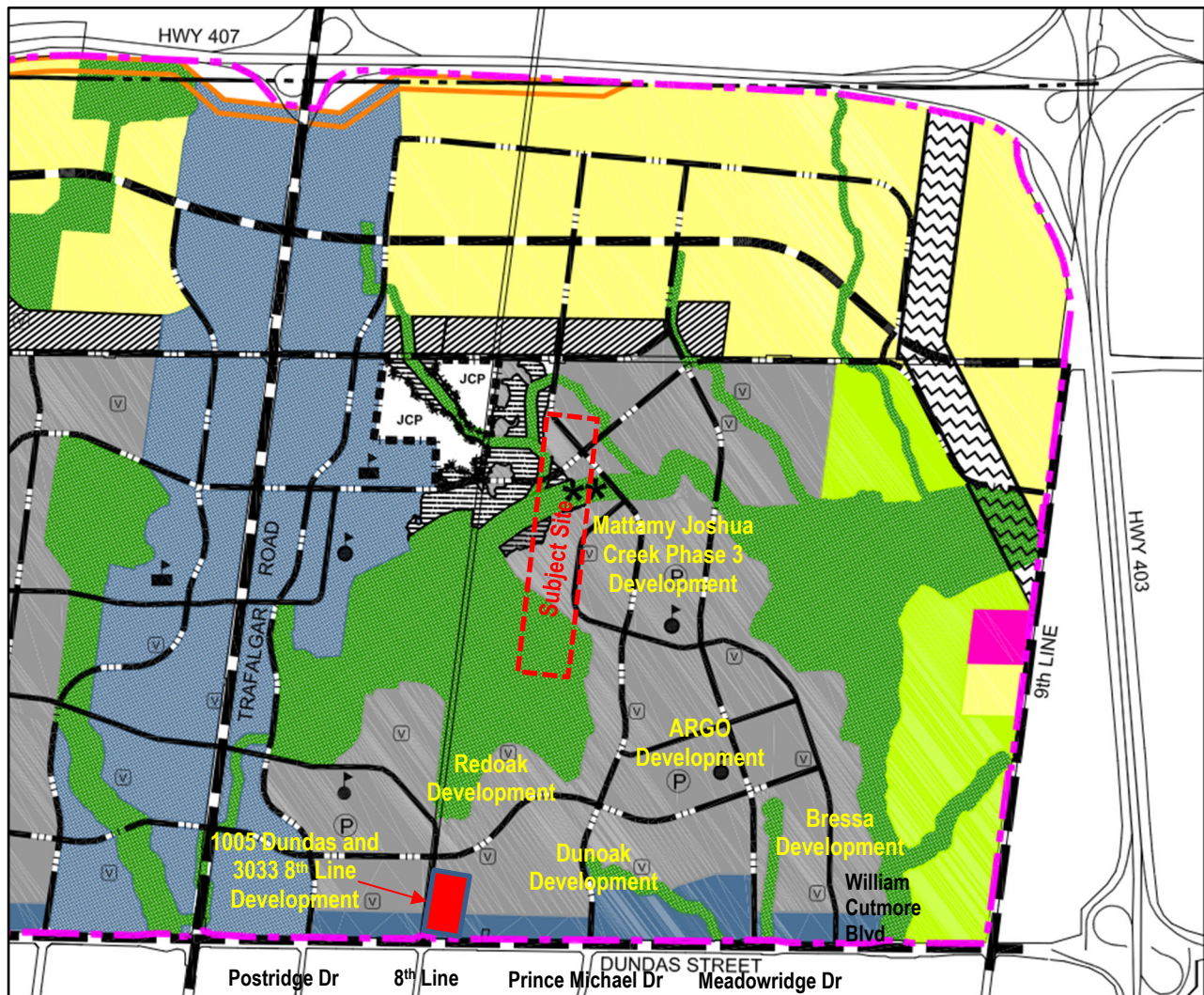
4.3. Background Development Applications

Based on NexTrans’ review of the proposed active development applications in the area, using the Town’s development application website for Ward 7 (<https://www.oakville.ca/business/planning-applications-ward-7.html>), as well as other background traffic impact studies such as GHD TIS dated April 2022 for the Mattamy Joshua Creek Phase 3, the following background developments have been identified and will be included in the analysis:

- Mattamy Joshua Creek Phase 3 proposed residential development with 306 townhouse units and 709 single-detached homes – GHD TIS dated April, 2022
- ARGO Land Development in the Joshua Creek Residential Subdivision in North Oakville proposed residential development with 103 single-detached homes, 90 townhouse units and 12 mid-rise units - CGH Transportation Inc. TIS dated December, 2019 and Addendum dated November, 2021
- Dunoak and Bressa Draft Plans Proposed Residential Developments - GHD TIS dated July, 2020
- Proposed Redoak/Capoak Residential Development – GHD TIS dated November, 2021
- 1005 Dundas Street East and 3033 Eighth Line - Paradigm Transportation Solutions Limited.

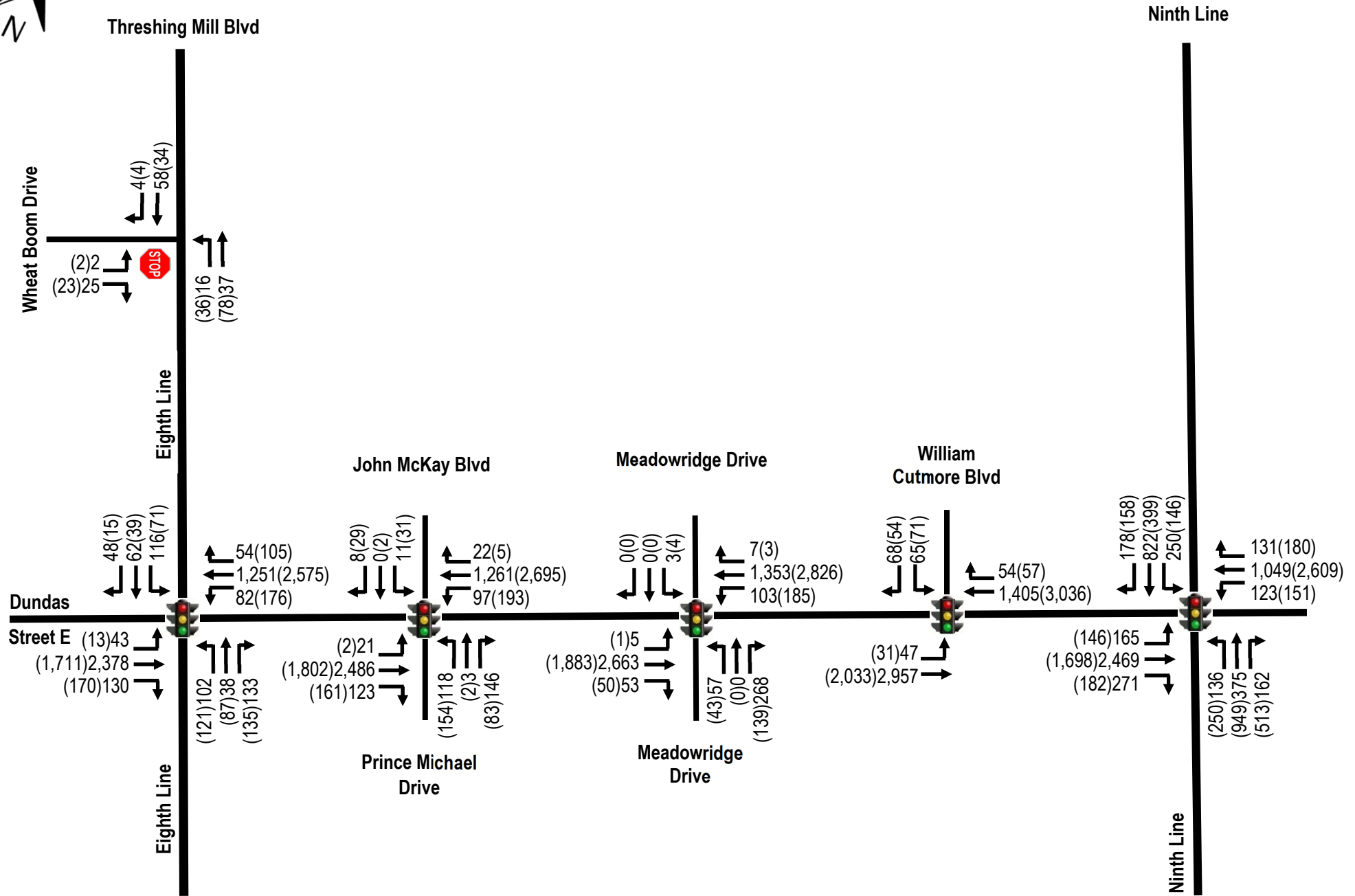
Figure 9 illustrates the active background developments in the study area.

Figure 9 – Active Background Development General Locations



Source: Figure Now 2 & NOE 2 Land Use Plan – North Oakville Secondary Plan

Table 3 summarizes the proposed background development trip generation estimates based on these background development traffic impact studies, with Figures 10 and 11 illustrating background development traffic volumes obtained from GHD Study. The detailed TIS traffic volume information is included in Appendix C.



Not to Scale

Legend

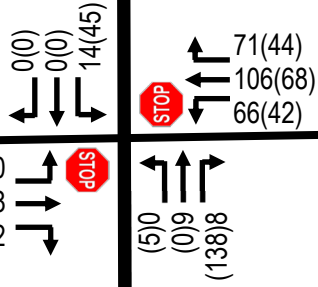
XX AM Peak Hour (XX) PM Peak Hour Existing Stop Sign Existing Signalized Intersection

Figure 8 – Background Corridor Growth (2032 Horizon Year)



Threshing Mill Blvd

Wheat Boom Drive



Wheat Boom Drive

Eighth Line

John McKay Blvd

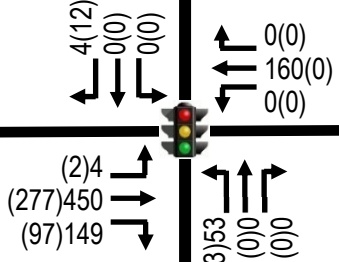
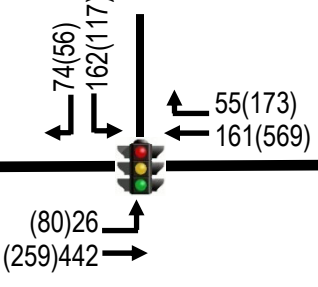
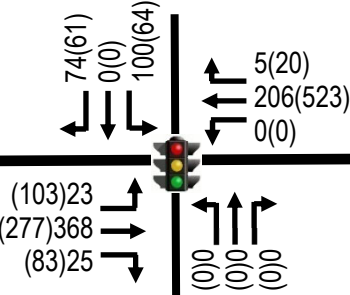
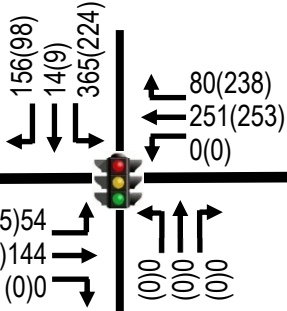
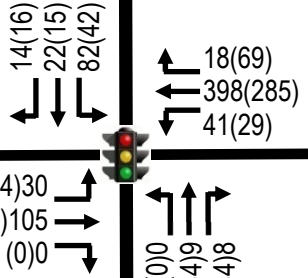
Meadowridge Drive

William Cutmore Blvd

Ninth Line

Dundas

Street E



Prince Michael Drive

Meadowridge Drive

Eighth Line

Ninth Line

Not to Scale

Legend

XX AM Peak Hour (XX) PM Peak Hour

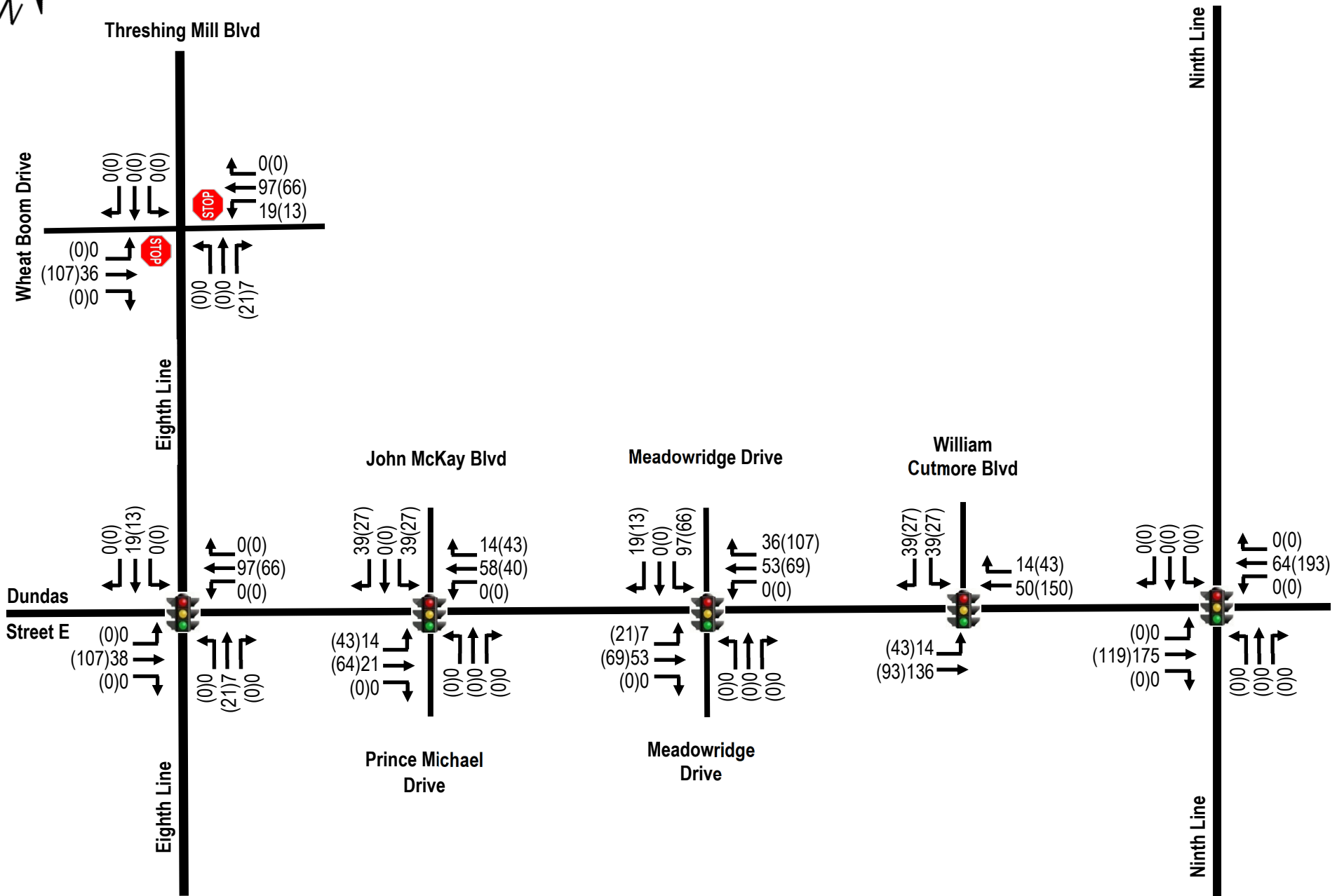


Stop Sign



Signalized Intersection

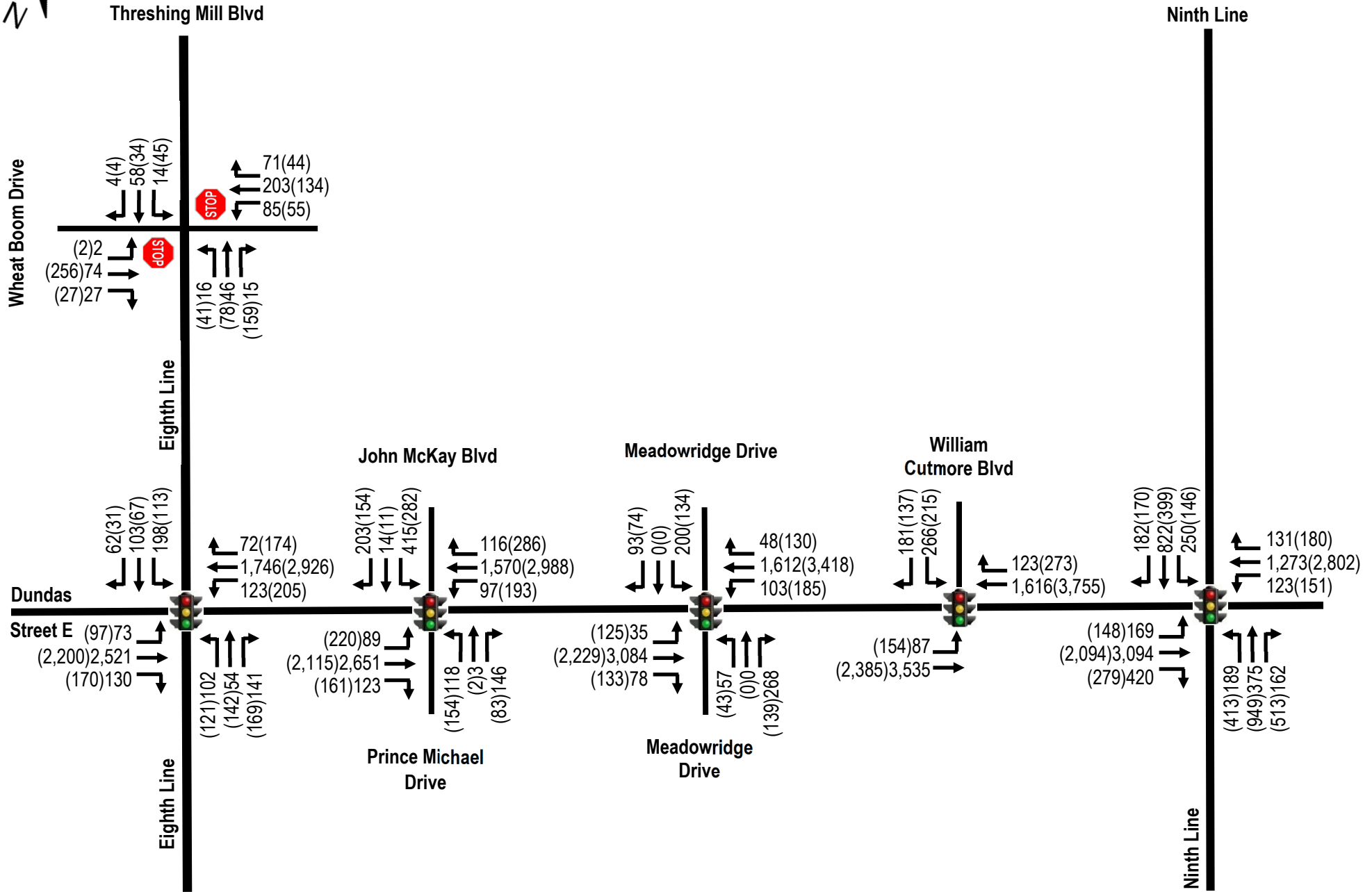
Figure 10 – Background Development Traffic Volumes (Argo, Redoak, Dunoak, Bressa and 1005 Dundas/3033 8th Line)



Not to Scale

Legend

Figure 11 – Background Development Traffic Volumes (Mattamy Joshua Creek Phase 3 – Adjacent to Subject Site)



Not to Scale

Legend

XX AM Peak Hour (XX) PM Peak Hour



Existing Stop Sign



Existing Signalized Intersection

Figure 12 – 2032 Future Background Traffic Volumes

Table 3 – Active Background Development Site Traffic Generation

Proposed Active Background Developments in the Study Area	Morning Peak Hour			Afternoon Peak Hour		
	In	Out	Total	In	Out	Total
Mattamy Joshua Creek Phase 3 – Residential Subdivision	143	389	532	429	265	694
ARGO Land Development – Joshua Creek Residential Subdivision	140	453	593	494	290	784
Dunoak Residential Developments	137	431	568	418	264	682
Redoak/Capoak Residential Development	114	355	469	362	220	582
1005 Dundas Street East and 1033 Eighth Line	19	58	77	60	40	100

4.4. Future Background Condition Assessment

The estimated 2032 future background traffic volumes are illustrated in **Figure 12** (future background traffic growth traffic volumes + background development traffic volumes) and were analyzed using Synchro Version 11 software. The detailed calculations are provided in **Appendix D** and summarized in **Table 4**.

Table 4 – 2032 Future Background Levels of Service

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Dundas Street E/ Eighth Line (signalized)	Overall	C (0.85)	25		C (0.89)	24		
	EB – L	B (0.44)	18	18	C (0.45)	26	27	~115
	EB – T	C (0.85)	26	300	C (0.77)	24	209	~300
	EB – R	A (0.14)	7	19	A (0.19)	5	18	~75
	WB – L	B (0.52)	20	34	D (0.57)	36	46	~155
	WB – T	C (0.60)	20	161	B (0.89)	19	133	~585
	WB – R	A (0.08)	7	15	A (0.17)	7	10	~85
	NB – L	D (0.43)	48	39	E (0.57)	59	49	~45
	NB – T	D (0.15)	39	22	D (0.46)	52	53	~255
	NB – R	B (0.34)	12	22	C (0.49)	23	36	~30
	SB – L	E (0.70)	59	72	E (0.75)	78	49	~45
	SB – T	D (0.27)	42	37	D (0.22)	46	28	~310
SB – R	A (0.25)	10	11	A (0.11)	1	1	~25	
Dundas Street E/ Prince Michael Drive/ John McKay Blvd (signalized)	Overall	C (1.16)	34		C (1.05)	33		
	EB – L	D (0.77)	43	32	E (0.95)	73	82	~120
	EB – T	D (1.00)	35	322	B (0.74)	10	67	~585
	EB – R	A (0.15)	1	1	A (0.18)	2	6	~75
	WB – L	D (0.51)	41	33	D (0.77)	40	35	~125
	WB – T	A (0.54)	8	56	D (1.05)	43	358	~570
	WB – R	A (0.13)	0	0	A (0.31)	2	9	~85
	NB – L	E (0.62)	65	51	E (0.76)	76	70	~65
	NB – TR	C (0.55)	28	36	B (0.31)	14	16	~225
	SB – L	F (1.16)	135	167	F (0.93)	85	130	~15
	SB – T	C (0.02)	30	8	D (0.03)	39	8	~195
	SB – R	C (0.45)	30	56	B (0.34)	10	21	~15
Dundas Street E/ Meadowridge Drive (signalized)	Overall	C (1.63)	23		C (0.98)	34		
	EB – L	A (0.36)	8	2	E (0.82)	57	33	~80
	EB – T	A (0.94)	10	59	C (0.64)	23	227	~570
	EB – R	A (0.08)	0	0	A (0.12)	4	7	~80
	WB – L	C (0.51)	34	23	D (0.89)	39	27	~140
	WB – T	A (0.46)	3	9	D (0.98)	39	315	~335
	WB – R	A (0.06)	0	0	A (0.16)	5	6	~70
	NB – L	D (0.26)	51	28	D (0.21)	51	23	~25
	NB – T	A (0.00)	0	0	A (0.00)	0	0	~215
	NB – R	D (0.77)	52	81	C (0.46)	25	34	~25
	SB – L	F (1.63)	357	130	F (0.90)	107	76	~15
	SB – T	A (0.00)	0	0	A (0.00)	0	0	~175
SB – R	C (0.33)	22	24	B (0.27)	12	14	~15	
Dundas Street E/ William Cutmore Blvd (signalized)	Overall	C (1.05)	24		D (1.07)	47		
	EB – L	B (0.53)	18	16	F (0.98)	83	71	~100
EB – T	C (0.92)	26	326	B (0.61)	19	208	~335	

	WB – T	A (0.44)	3	25	E (1.07)	62	63	~500
	WB – R	A (0.11)	0	0	A (0.25)	0	0	~85
	SB – L	F (1.05)	121	136	F (0.91)	94	106	~45
	SB – R	D (0.72)	51	65	F (0.50)	109	37	~30
	Overall	F (1.40)	110		F (1.31)	87		
Dundas Street E/ Ninth Line (signalized)	EB – L	C (0.63)	24	28	D (0.74)	55	56	~225
	EB – T	F (1.40)	212	453	D (0.99)	37	246	~500
	EB – R	B (0.54)	18	50	A (0.38)	5	13	~85
	WB – L	D (0.61)	36	44	D (0.77)	52	62	~230
	WB – T	C (0.62)	30	118	F (1.31)	174	393	~255
	WB – R	A (0.18)	4	13	B (0.26)	12	31	~85
	NB – L	F (0.96)	81	76	F (1.02)	84	160	~160
	NB – T	D (0.38)	37	55	D (0.86)	50	154	~485
	NB – R	A (0.29)	9	21	D (0.91)	53	173	~130
	SB – L	C (0.64)	35	65	D (0.76)	50	56	~130
	SB – T	D (0.82)	49	130	C (0.37)	35	58	~810
	SB – R	B (0.33)	12	28	B (0.30)	12	27	~55
Eighth Line/ Threshing Mill Blvd/ Wheat Boom Drive (unsignalized)	EB – L	B (0.00)	14	0	C (0.01)	17	0	~30
	EB – TR	B (0.14)	11	4	C (0.58)	22	29	~30
	WB – LTR	C (0.51)	15	24	C (0.55)	23	26	~100
	NB – LTR	A (0.01)	2	0	A (0.03)	1	1	~300
	SB – LTR	A (0.01)	1	0	A (0.03)	4	1	~300

4.5. Finding Summary

Based on the intersection capacity analysis, under the future background traffic conditions, the analysis the analysis indicates that the majority of the movements for the signalized intersections along Dundas Street E are expected to operate at acceptable levels of service. However, NexTrans acknowledges that there is a number of critical movements with v/c ratios are greater than 0.85, mostly for the through movements along Dundas Street E due to heavy through traffic volume using Dundas Street E during the morning and afternoon peak hours. This can be explained based on the following:

- The compounded growth rate of 2% per annum or over 18% growth from 2023 to 2032 is an overestimate of the traffic in the area given that additional background development application traffic is also included in the analysis
- The Secondary Plan Area fine grid road network is not completed at this time and under this horizon year
- Once the complete road network identified in the Secondary Plan Area is completed, it is expected that the traffic will not be concentrating at the critical movements. This means that residents will have more travel choices instead of concentrating at one intersection
- Especially with the completion of the north-south collector roads such as Meadowridge Drive and John McKay Blvd, the traffic from the proposed draft plans of subdivision can use Burnhamthorpe Road E and William Halton Parkway instead of Dundas Street E
- It is expected that with the future improvements on Burnhamthorpe Road E, the North Oakville Secondary Plan subdivision east-west road south of Burnhamthorpe Road E, as well as the completion of William Halton Parkway, it will provide much needed east-west capacity for the area. As the Town staff is asking for more support and clarification on this statement, the following are the reasons to support this statement:
 - Reason 1: based on the North Oakville East Secondary Plan Figure 4 (Transportation Plan), William Halton Parkway will be extended from Ninth Line to Tremaine Road. William Halton Parkway is under jurisdiction of the Halton Region, which is designated as major arterial/transit corridor. As this major arterial/transit corridor is running parallel to Dundas Street from east of Hwy 403 to Tremaine Road, it will provide additional east-west capacity for the northern part of the Secondary Plan, as well as it will provide some relief to Dundas Street in the east-west direction.
 - Reason 2: The existing Burnhamthorpe Road W is designated as avenue/transit corridor that connects William Halton Parkway from the east (west of Ninth Line) to William Halton Parkway to the west (east of Neyagawa Boulevard). Once Burnhamthorpe Road W is fully improved and urbanized, it will provide

- additional east-west capacity for the northern part of the Secondary Plan and also including Dundas Street E.
- **Reason 3:** There are also other east-west avenue/transit corridor and connector/transit corridor roads north of Dundas Street E, these roads will also provide additional east-west capacity and relief to Dundas Street E, especially local school trips and discretionary trips. In addition, with more east-west and north-south connector roads, residents will have more choices to travel and will not need to use or wait at a congested intersection.
 - **Reason 4:** The analysis is conservative that we did not discount for any diversion of auto trips to transit trips in the area in the future. It is anticipated that with better transit services in the future in the NOE Secondary Plan and in the area, there will be close to 18% of the car traffic will be diverted to transit for many reasons such as high gas price and automobile capital cost, and there are more efficient ways to travel. This 18% transit modal split was explained in the previous version of the Study.
 - The intersection of Dundas Street E/Ninth Line is expected to operate at or over capacity. This is due to the heavy through traffic volumes in this direction coming from Highway 403 and Mississauga. However, this type of movement is typical at any major arterial intersections in the Great Toronto Area and in the Region of Halton, especially there is only one interchange with Hwy 403 in this area. Therefore, some of the east-west capacity will be improved as part of the future improvements on Burnhamthorpe Road E and completion of William Halton Parkway, based on the reasons noted above. As the Region recently completed the 4-lane cross-section extension of William Halton Parkway from 6th Line to Neyagawa Boulevard (November, 2023), some of the east-west traffic is starting to use this road more.

4.6. Potential Mitigation Measures

As indicated above, the reasons for the critical movements outlined in the analysis are due to the uncompleted fine grid network identified in the Secondary Plan and heavy through traffic along Dundas Street W during the morning and afternoon peak hours. In addition, currently Dundas Street E carries the majority of the east-west traffic. It is expected that with the future improvements on Burnhamthorpe Road E, the North Oakville Secondary Plan subdivision east-west road south of Burnhamthorpe Road E, it will provide much needed east-west capacity for the area. These reasons have been indicated in Section 4.5 above, as per the Town staff request.

In addition, with the completion of the north-south collector roads such as Meadowridge Drive and John McKay Blvd, the traffic from the proposed draft plans of subdivision can use Burnhamthorpe Road E and William Halton Parkway for east-west travel. Based on this assessment and provision, NexTrans does not recommend any physical improvements to be implemented under this horizon year for the intersections located along Dundas Street E as there are already significant road network, transit network and infrastructure improvements in the NOE Secondary Plan Area.

NexTrans recommends that the Region and the Town monitor these intersections in the future and make appropriate signal timing adjustments in the interim conditions. A monitoring program is also required in the future once all the road network is completed to ensure that signal timing and lane configurations are appropriate for the area. It should be noted that road widening and intersection improvements such as additional turning lane and signal timing prioritize auto mode will have a direct impact on the active transportation modes. It is critical to find the right balance for all modes of transportation. Encouraging new residents in the area to use active modes of transportation and public transit will help minimize single-occupancy-vehicle trips, reduce pollution and support climate change initiative.

For demonstration purposes, NexTrans has provided potential signal timing optimization for the signalized intersections along Dundas Street E with critical movements of v/c ratios that are greater than 0.85. It should be noted that signal timing optimization is the most effective way to increase intersection capacity. It is cost effective, fast and has less interruption to the existing road network. There are many new technologies such as camera detection, loop detection and Bluetooth that can detect slow down accident and provide better signal coordination/progression. The signal optimization results are provided in **Table 5** below.

Table 5 – 2032 Future Background Levels of Service with Signal Timing Optimization

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Dundas Street E/ Prince Michael Drive/ John McKay Blvd (signalized) With signal timing optimization	Overall	D (1.06)	42		C (1.05)	32		
	EB – L	C (0.59)	31	10	E (0.95)	73	82	~120
	EB – T	E (1.06)	57	338	B (0.74)	10	67	~585
	EB – R	A (0.16)	2	1	A (0.18)	2	6	~75
	WB – L	D (0.55)	50	38	D (0.77)	40	32	~125
	WB – T	B (0.67)	19	79	D (1.05)	43	340	~570
	WB – R	A (0.15)	4	10	A (0.31)	2	7	~85
	NB – L	E (0.62)	65	51	E (0.76)	76	70	~65
	NB – TR	C (0.57)	31	38	B (0.31)	14	16	~225
	SB – L	E (0.98)	75	147	F (0.93)	85	130	~15
	SB – T	C (0.02)	27	7	D (0.03)	39	8	~195
SB – R	B (0.39)	19	44	B (0.34)	10	21	~15	
Dundas Street E/ Meadowridge Drive (signalized) With signal timing optimization	Overall	D (1.04)	37		D (1.01)	35		
	EB – L	B (0.44)	12	3	D (0.67)	39	25	~80
	EB – T	C (1.04)	32	83	C (0.65)	23	227	~570
	EB – R	A (0.08)	0	0	A (0.12)	4	7	~80
	WB – L	D (0.65)	37	41	D (0.86)	38	30	~140
	WB – T	C (0.52)	24	150	D (1.01)	44	329	~335
	WB – R	A (0.07)	8	9	A (0.16)	7	10	~70
	NB – L	D (0.28)	51	28	D (0.21)	51	22	~25
	NB – T	A (0.00)	0	0	A (0.00)	0	0	~215
	NB – R	F (0.84)	120	89	B (0.44)	20	29	~25
	SB – L	F (0.99)	155	104	F (0.89)	103	75	~15
SB – T	A (0.00)	0	0	A (0.00)	0	0	~175	
SB – R	B (0.22)	16	21	A (0.25)	8	10	~15	
Dundas Street E/ William Cutmore Blvd (signalized) With signal timing optimization	Overall	C (0.96)	33		D (1.04)	50		
	EB – L	C (0.57)	26	20	E (0.97)	80	69	~100
	EB – T	D (0.96)	42	335	B (0.60)	19	204	~335
	WB – T	A (0.46)	7	67	E (1.04)	68	423	~500
	WB – R	A (0.11)	1	5	A (0.24)	2	12	~85
	SB – L	E (0.87)	78	114	F (0.91)	96	105	~45
	SB – R	D (0.65)	45	59	F (0.50)	125	36	~30
Dundas Street E/ Ninth Line (signalized) With signal timing optimization	Overall	E (1.19)	77		E (1.17)	75		
	EB – L	C (0.68)	29	37	E (0.83)	70	85	~225
	EB – T	F (1.19)	123	475	D (0.89)	45	256	~500
	EB – R	B (0.48)	16	82	B (0.36)	11	42	~85
	WB – L	E (0.85)	77	69	E (0.83)	72	89	~230
	WB – T	C (0.52)	26	115	F (1.17)	120	437	~255
	WB – R	A (0.16)	3	11	B (0.23)	11	31	~85
	NB – L	F (0.98)	103	101	E (0.98)	78	174	~160
	NB – T	D (0.37)	45	68	E (0.81)	55	176	~485
	NB – R	C (0.31)	24	42	E (0.91)	64	205	~130
	SB – L	D (0.72)	54	85	F (0.94)	92	67	~130
	SB – T	E (0.91)	71	170	D (0.45)	52	76	~810
	SB – R	C (0.37)	22	44	C (0.36)	21	39	~55

5.0 SITE TRAFFIC

5.1. Proposed Development

The subject site is currently vacant. The proposed residential development consists of a total 188 residential dwelling units, with 132 single-detached and 56 street townhouse units. Therefore, the currently development proposal only has 7 more units than the previous assessment. It is anticipated that this small increase will not impact the previous assessments and recommendations.

For the purposes of this assessment and consistent with other background traffic impact studies prepared for other developments in the area, the *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE) and 2016 TTS information will be utilized in this Study.

5.2. Non-auto Modal Split

As the majority of the area north of Dundas Street E is still under construction, the 2016 Transportation Tomorrow Survey data for existing traffic zones north of Dundas Street will not be representative. For these reasons, the traffic zones located south of Dundas Street E will be selected for analysis as these are stable communities. **Table 5** summarizes the travel mode split information based on the review of the 2016 Transportation Tomorrow Survey data for Traffic Zones 4033 and 4035. The 2016 TTS data extraction is included in **Appendix E**.

Table 6 – Modal Split based on 2016 TTS Data for Traffic Zones

Time	Trips Made by Traffic Zones				
	Auto Driver	Auto Passenger	Transit	Cycle	Walk
AM Peak Period (6:00AM – 9:00AM)	68%	17%	7%	0%	8%
PM Peak Period (4:00PM – 7:00PM)	74%	17%	8%	0%	1%

Based on the information above, the non-auto mode of transportation (transit + walking + carpooling) accounts for near 32% during the morning peak period and 26% during the afternoon peak period. Although this is a great trend, however, the auto driver mode is still very high, which is not sustainable and does not meet the sustainable objective of the Town Official Plan policies and directions. In addition, there is none or very little bicycle trips, despite there are existing cycling facilities.

NexTrans’ review of the background traffic impact studies, especially the GHD report, and understands that the Regional staff would support some non-auto modal split for the area, potentially 10% transit, 5% active transportation and 3% transportation demand management. This was stated in the terms of reference prepared by GHD for the Joshua Creek Phase 3. However, to be conservative, **NexTrans has not used this modal split in the trip generation analysis**. Therefore, both of these provisions will address the Town’s comment to verify that the Regional staff support 18% modal split for the area.

5.3. Sit Trip Generation

The ITE Trip Generation Manual 11th Edition Land Use Codes (LUC) 201 “Single-Family Detached Housing General Urban/Suburban” and LUC 215 “Single-Family Attached Housing General Urban/Suburban” fitted curve equations have been utilized for the proposed development. The site trip generation is summarized in **Table 6**.

Table 7 – Site Traffic Trip Generation Based on ITE Trip Rates (11th Edition)

ITE Land Use	Magnitude (units)	Parameters	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Single-Family Detached Housing LUC 210 General Urban/Suburban	132	Trip Rates AM - $\ln(T) = 0.91 \cdot \ln(X) + 0.12$ PM - $\ln(T) = 0.94 \cdot \ln(X) + 0.27$	0.19	0.54	0.73	0.62	0.36	0.98
		Sub-Total Trips	25	71	96	81	48	129
Single-Family Attached Housing LUC 215 General Urban/Suburban	56	Trip Rates AM - $T = 0.52 \cdot (X) - 5.70$ PM - $T = 0.60 \cdot (X) - 3.93$	0.13	0.28	0.41	0.31	0.23	0.54
		Sub-Total Trips	7	16	23	17	13	30
Total Trips			32	87	119	98	61	159

Based on the analysis noted above, the proposed development is expected to generate a total of 119 two-way auto trips (33 inbound and 87 outbound) and 159 two-way auto trips (98 inbound and 61 outbound) during the morning and afternoon peak hours, respectively.

The analysis indicates that the proposed development is expected to generate very little auto trips, significantly less than all of the active background developments in the area.

5.4. Site Trip Distribution Based on Existing Site

The 2016 Transportation Tomorrow Survey (TTS) data was reviewed for Traffic Zones 4033 and 4035 in order to estimate the general trip distribution for the proposed development. **Table 7** summarizes the planning district/traffic zones distribution based on the 2016 TTS data, with **Table 8** summarizing the site trip assignment based on the 2016 TTS data and the existing traffic turning movement counts in the area.

Table 8 – General Trip Distribution for the Proposed Development

Oakville	Mississauga	Burlington	Milton/ Halton Hills	Toronto	Brampton	York Region	Hamilton	Niagara Region	Total
57%	18%	3%	5%	6%	2%	3%	5%	1%	100%

Table 9 – Site Trip Assignment for the Proposed Development

General Direction (To/From)	AM Peak Hour – Trip Percentage	PM Peak Hour – Trip Percentage
East	20%	20%
West	30%	30%
North	25%	25%
South	25%	25%
Total	100%	100%

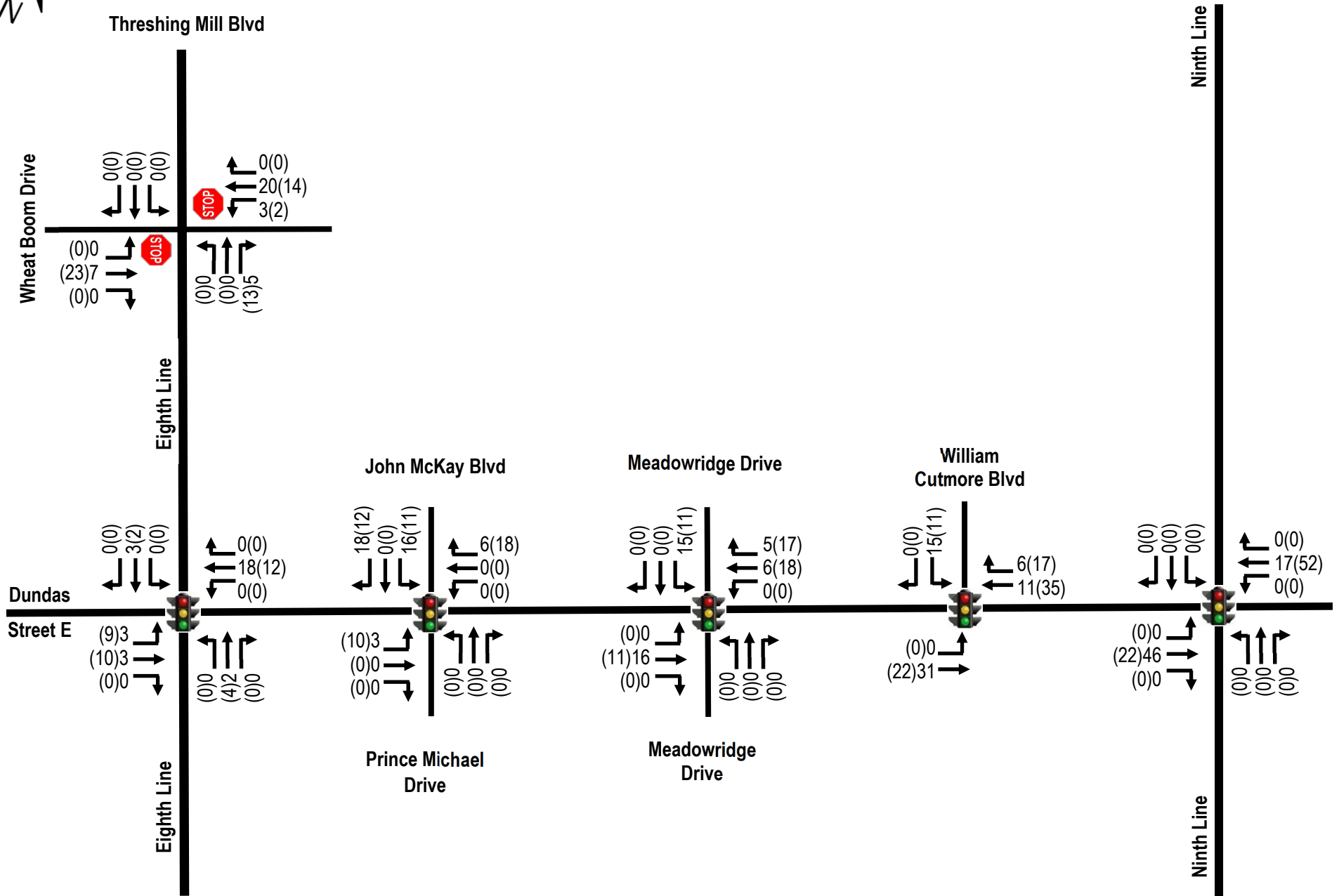
As indicated, the proposed development access is provided via internal public streets connecting to Mattamy Joshua Creek Phase 3 proposed draft plan of subdivision, and eventually to Burnhamthorpe Road E via future proposed draft plan of subdivisions to the north. Under the interim conditions where the proposed draft plans of subdivision to the north are not completed, the anticipated traffic from the proposed development will be routing primarily to and from Dundas Street via John McKay Boulevard, Meadowridge Drive and William Cutmore Boulevard, as well as Eighth Line via Wheat Boom Drive. The proposed development will also protect for future Street C and Street A extensions to the west and north, respectively.

5.5. Development Access Phasing

As indicated in Submission 2 July, 2023 Transportation Impact Study Update, the proposed draft plan of subdivision limit does not abut Burnhamthorpe Road E. The parcel of land that abuts Burnhamthorpe Road E is not part of the proposed development and it currently has existing uses (i.e. Joshua Creek Heritage Art Centre). This use will remain and will not be redeveloped at this time. Therefore, a connection to Burnhamthorpe Road W will not be possible as part of the proposed draft plan of subdivision.

It is NexTrans’ understanding that the proposed Mattamy Subdivision only has a draft approval and zoning for Phase 3A, which provides one road access to the proposed development (Rampen) along Street E. As the proposed development currently only has allocation for the southerly portion of their development to proceed (Phase 1) with approximately 76 units, therefore, the proposed development Phase 1 will only have access via Street E. It is anticipated that the proposed development Phase 2 will proceed immediately with the proposed Mattamy Phase 3B as soon as the allocation is approved.

As indicated in this Study Update, the entire proposed development is only expected to generate a total of 119 two-way auto trips (33 inbound and 87 outbound) and 159 two-way auto trips (98 inbound and 61 outbound) during the morning and afternoon peak hours, respectively. Therefore, the proposed 76 units for Phase 1 is expected to generate less than half of the total numbers of trips, or 60 two-way auto trips (16 inbound and 44 outbound) and 80 two-way auto trips (49 inbound and 31 outbound) during the morning and afternoon peak hours, respectively. Our review indicates that Street E will be able to handle these small traffic volumes during the peak hours.



Not to Scale

Legend

XX AM Peak Hour (XX) PM Peak Hour

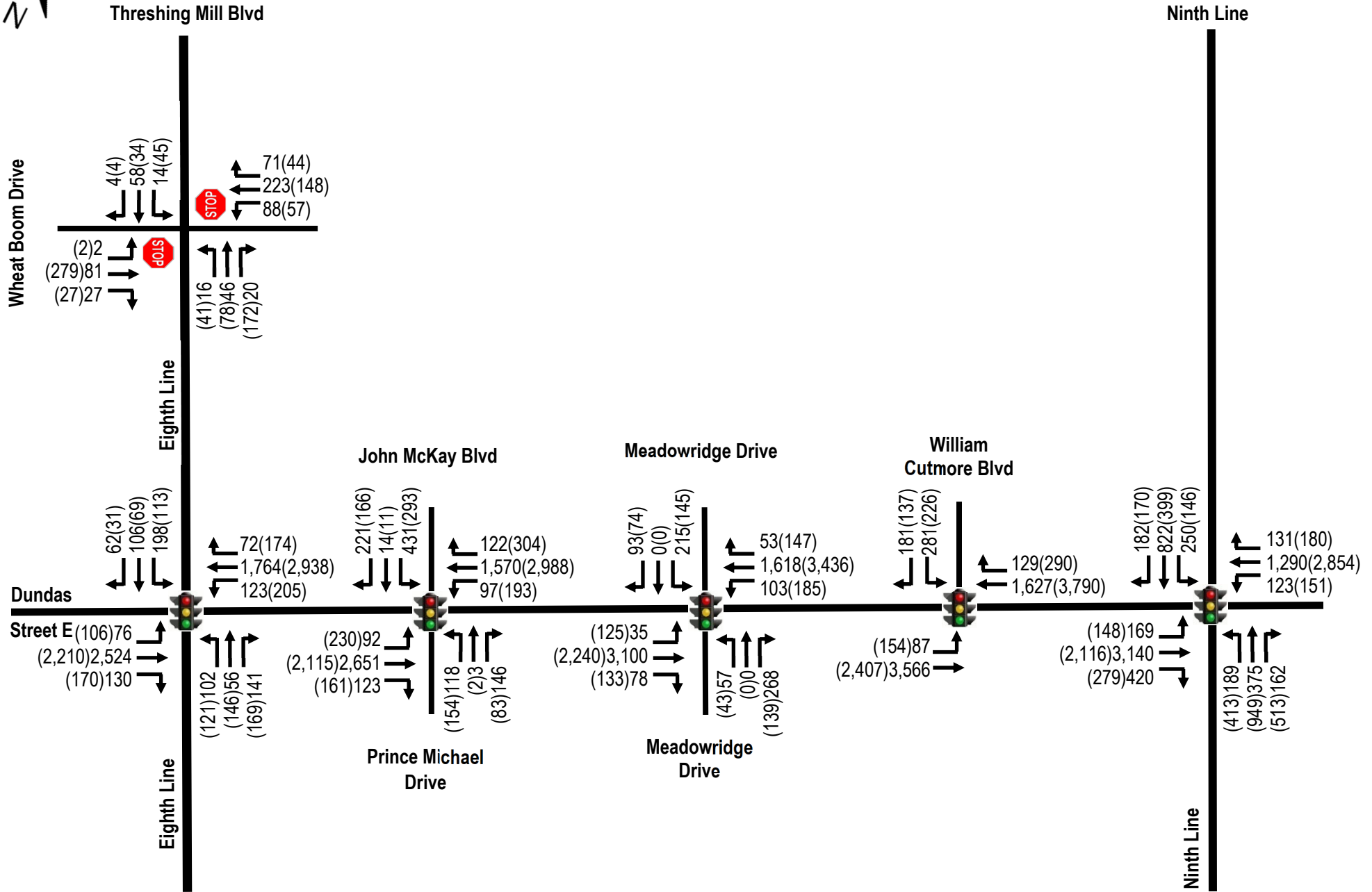


Stop Sign



Signalized Intersection

Figure 13 – Site Traffic Volumes



Not to Scale



Existing Stop Sign



Existing Signalized Intersection

Figure 14 – 2032 Future Total Traffic Volumes

For the remaining phases of the proposed development, the proposed development access will be coordinated with the rest of Mattamy – Joshua Creek Phase 3 and other Mattamy phases. As all subdivisions in the North Oakville East Secondary Plan will be built in phases, this proposed draft plan of subdivision is no different from the other draft plan of subdivisions in the area, including the Mattamy – Joshua Creek Phase proposed development. Ultimately, the proposed development access is provided via internal public streets connecting to Mattamy Joshua Creek Phase 3 and other proposed draft plan of subdivisions, and eventually to Burnhamthorpe Road E via future proposed draft plan of subdivisions to the north. The proposed development will protect for future Street C and Street A extensions to the west and north, respectively. Therefore, the proposed development will coordinate with Mattamy – Joshua Creek Phase 3 and other Mattamy proposed draft plan of subdivisions to provide appropriate and coordinated access for the proposed development.

Under the interim conditions where the proposed draft plans of subdivision to the north are not completed, the anticipated traffic from the proposed development will be routing primarily to and from Dundas Street via John McKay Boulevard, Meadowridge Drive and William Cutmore Boulevard, as well as Eighth Line via Wheat Boom Drive.

The proposed development will also protect for future Street C and Street A extensions to the west and north, respectively. As part of this analysis, a 5-year horizon post full build-out of the proposed development, the analysis has been reflected for 2032 horizon (assumed full build-out of the proposed development in 2027). Furthermore, the location of the Street A extension is provided in the location shown on the NOESP, the Master Plan and the Burnhamthorpe EA. **Figure 2B** of this Study Addendum illustrates the Joshua Creek Phase 3 composite plan for overall illustration of the future access connections and road phasing between all subdivisions.

Figure 13 illustrates the proposed development generated traffic volumes for the proposed development, based on the development access phasing noted above.

6.0 FUTURE TOTAL TRAFFIC CONDITIONS

6.1. Future Total Traffic Assessment for Auto Mode

The estimated future total traffic volumes (future background traffic volumes + site generated traffic volumes) are illustrated in **Figure 14**, and were analyzed using Synchro Version 11 software. The detailed calculations are provided in **Appendix F** and summarized in **Table 10**.

Table 10 – 2032 Future Total Levels of Service

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Dundas Street E/ Eighth Line (signalized)	Overall	C (0.86)	25		C (0.90)	24		
	EB – L	C (0.46)	22	22	C (0.47)	28	30	~115
	EB – T	C (0.86)	26	301	C (0.77)	24	210	~300
	EB – R	A (0.14)	7	19	A (0.19)	5	18	~75
	WB – L	B (0.52)	20	33	C (0.57)	35	45	~155
	WB – T	C (0.63)	22	163	B (0.90)	19	136	~585
	WB – R	A (0.08)	7	15	A (0.17)	7	10	~85
	NB – L	D (0.43)	48	39	E (0.58)	59	49	~45
	NB – T	D (0.15)	40	23	D (0.47)	52	55	~255
	NB – R	B (0.34)	12	22	C (0.49)	23	36	~30
	SB – L	E (0.70)	59	72	F (0.76)	80	49	~45
	SB – T	D (0.27)	42	38	D (0.22)	46	29	~310
	SB – R	A (0.25)	10	11	A (0.11)	1	1	~25
Dundas Street E/ Prince Michael Drive/ John McKay Blvd (signalized)	Overall	D (1.21)	36		C (1.06)	34		
	EB – L	D (0.80)	46	34	F (1.00)	83	89	~120
	EB – T	D (1.00)	35	321	B (0.74)	11	68	~585
	EB – R	A (0.15)	1	1	A (0.18)	2	5	~75
	WB – L	D (0.51)	41	33	D (0.77)	39	34	~125
	WB – T	A (0.54)	8	56	D (1.06)	46	351	~570

	WB – R	A (0.13)	0	0	A (0.33)	2	10	~85
	NB – L	E (0.62)	65	51	E (0.76)	76	70	~65
	NB – TR	C (0.56)	29	36	B (0.31)	14	16	~225
	SB – L	F (1.21)	152	177	F (0.94)	89	137	~15
	SB – T	C (0.02)	30	8	D (0.03)	39	8	~195
	SB – R	C (0.49)	32	62	B (0.36)	12	25	~15
	Overall	C (1.75)	25		D (0.99)	36		
Dundas Street E/ Meadowridge Drive (signalized)	EB – L	A (0.36)	7	2	E (0.82)	58	34	~80
	EB – T	A (0.95)	9	60	C (0.65)	23	228	~570
	EB – R	A (0.08)	0	0	A (0.12)	4	7	~80
	WB – L	C (0.51)	35	23	D (0.93)	42	28	~140
	WB – T	A (0.46)	3	9	D (0.99)	43	314	~335
	WB – R	A (0.07)	0	0	A (0.18)	5	7	~70
	NB – L	D (0.26)	51	28	D (0.20)	51	23	~25
	NB – T	A (0.00)	0	0	A (0.00)	0	0	~215
	NB – R	D (0.77)	53	81	C (0.45)	53	34	~25
	SB – L	F (1.75)	406	140	F (0.94)	114	84	~15
	SB – T	A (0.00)	0	0	A (0.00)	0	0	~175
	SB – R	C (0.33)	22	24	B (0.26)	12	14	~15
	Overall	C (1.11)	26		D (1.08)	48		
Dundas Street E/ William Cutmore Blvd (signalized)	EB – L	B (0.54)	18	16	F (1.02)	92	70	~100
	EB – T	C (0.93)	27	327	B (0.62)	20	209	~335
	WB – T	A (0.44)	3	25	E (1.08)	63	61	~500
	WB – R	A (0.11)	0	0	A (0.26)	0	0	~85
	SB – L	F (1.11)	138	146	F (0.94)	99	114	~45
	SB – R	D (0.73)	51	66	F (0.49)	112	37	~30
	Overall	F (1.42)	115		F (1.33)	91		
Dundas Street E/ Ninth Line (signalized)	EB – L	C (0.64)	25	27	D (0.74)	54	55	~225
	EB – T	F (1.42)	221	460	D (1.00)	39	251	~500
	EB – R	B (0.54)	18	48	A (0.38)	5	13	~85
	WB – L	D (0.61)	36	44	D (0.77)	52	62	~230
	WB – T	C (0.63)	30	120	F (1.33)	184	404	~255
	WB – R	A (0.18)	4	13	B (0.26)	12	31	~85
	NB – L	F (0.96)	81	76	F (1.02)	84	160	~160
	NB – T	D (0.38)	37	55	D (0.86)	50	154	~485
	NB – R	A (0.29)	9	21	D (0.91)	53	173	~130
	SB – L	C (0.64)	35	65	D (0.76)	50	56	~130
	SB – T	D (0.82)	49	130	C (0.37)	35	58	~810
	SB – R	B (0.33)	12	28	B (0.30)	12	27	~55
	Overall	F (1.42)	115		F (1.33)	91		
Eighth Line/ Threshing Mill Blvd/ Wheat Boom Drive (unsignalized)	EB – L	B (0.01)	14	0	C (0.01)	18	0	~30
	EB – TR	B (0.15)	11	4	C (0.65)	25	36	~30
	WB – LTR	C (0.55)	16	27	D (0.62)	27	32	~100
	NB – LTR	A (0.01)	2	0	A (0.03)	1	1	~300
	SB – LTR	A (0.01)	1	0	A (0.03)	4	1	~300

6.2. Finding Summary

Based on the intersection capacity analysis, under the future total traffic conditions, similar to the future background conditions, the analysis indicates that the majority of the movements for the signalized intersections along Dundas Street E are expected to operate at acceptable levels of service. However, NexTrans acknowledges that there is a number of critical movements with v/c ratios are greater than 0.85, mostly for the through movements along Dundas Street E due to heavy through traffic volume using Dundas Street E during the morning and afternoon peak hours. This can be explained based on the following:

- The compounded growth rate of 2% per annum or over 18% growth from 2023 to 2032 is an overestimate of the traffic in the area given that additional background development application traffic is also included in the analysis
- The Secondary Plan Area fine grid road network is not completed at this time and under this horizon year
- Once the complete road network identified in the Secondary Plan Area is completed, it is expected that the traffic will not be concentrating at the critical movements. This means that residents will have more travel choices instead of concentrating at one intersection

- Especially with the completion of the north-south collector roads such as Meadowridge Drive and John McKay Blvd, the traffic from the proposed draft plans of subdivision can use Burnhamthorpe Road E and William Halton Parkway instead of Dundas Street E
- It is expected that with the future improvements on Burnhamthorpe Road E, the North Oakville Secondary Plan subdivision east-west road south of Burnhamthorpe Road E, as well as the completion of William Halton Parkway, it will provide much needed east-west capacity for the area. As the Town staff is asking for more support and clarification on this statement, the following are the reasons to support this statement:
 - Reason 1: based on the North Oakville East Secondary Plan Figure 4 (Transportation Plan), William Halton Parkway will be extended from Ninth Line to Tremaine Road. William Halton Parkway is under jurisdiction of the Halton Region, which is designated as major arterial/transit corridor. As this major arterial/transit corridor is running parallel to Dundas Street from east of Hwy 403 to Tremaine Road, it will provide additional east-west capacity for the northern part of the Secondary Plan, as well as it will provide some relief to Dundas Street in the east-west direction.
 - Reason 2: The existing Burnhamthorpe Road W is designated as avenue/transit corridor that connects William Halton Parkway from the east (west of Ninth Line) to William Halton Parkway to the west (east of Neyagawa Boulevard). Once Burnhamthorpe Road W is fully improved and urbanized, it will provide additional east-west capacity for the northern part of the Secondary Plan and also including Dundas Street E.
 - Reason 3: There are also other east-west avenue/transit corridor and connector/transit corridor roads north of Dundas Street E, these roads will also provide additional east-west capacity and relief to Dundas Street E, especially local school trips and discretionary trips. In addition, with more east-west and north-south connector roads, residents will have more choices to travel and will not need to use or wait at a congested intersection.
 - Reason 4: The analysis is conservative that we did not discount for any diversion of auto trips to transit trips in the area in the future. It is anticipated that with better transit services in the future in the NOE Secondary Plan and in the area, there will be close to 18% of the car traffic will be diverted to transit for many reasons such as high gas price and automobile capital cost, and there are more efficient ways to travel. This 18% transit modal split was explained in the previous version of the Study.
- The intersection of Dundas Street E/Ninth Line is expected to operate at or over capacity. This is due to the heavy through traffic volumes in this direction coming from Highway 403 and Mississauga. However, this type of movement is typical at any major arterial intersections in the Great Toronto Area and in the Region of Halton, especially there is only one interchange with Hwy 403 in this area. Therefore, some of the east-west capacity will be improved as part of the future improvements on Burnhamthorpe Road E and completion of William Halton Parkway, based on the reasons noted above. As the Region recently completed the 4-lane cross-section extension of William Halton Parkway from 6th Line to Neyagawa Boulevard (November, 2023), some of the east-west traffic is starting to use this road more.

6.3. Potential Mitigation Measures

As indicated above, the reasons for the critical movements outlined in the analysis are due to the uncompleted fine grid network identified in the Secondary Plan and heavy through traffic along Dundas Street W during the morning and afternoon peak hours. In addition, currently Dundas Street E carries the majority of the east-west traffic. It is expected that with the future improvements on Burnhamthorpe Road E, the North Oakville Secondary Plan subdivision east-west road south of Burnhamthorpe Road E, it will provide much needed east-west capacity for the area. These reasons have been indicated in Section 4.5 above, as per the Town staff request.

In addition, with the completion of the north-south collector roads such as Meadowridge Drive and John McKay Blvd, the traffic from the proposed draft plans of subdivision can use Burnhamthorpe Road E and William Halton Parkway for east-west travel. Based on this assessment and provision, NexTrans does not recommend any physical improvements to be implemented under this horizon year for the intersections located along Dundas Street E as there are already significant road network, transit network and infrastructure improvements in the NOE Secondary Plan Area.

NexTrans recommends that the Region and the Town monitor these intersections in the future and make appropriate signal timing adjustments in the interim conditions. A monitoring program is also required in the future once all the road network is completed to ensure that signal timing and lane configurations are appropriate for the area. It should be noted that road widening and intersection improvements such as additional turning lane and signal timing prioritize auto mode will have a direct impact on the active transportation modes. It is critical to find the right balance for all modes of transportation. Encouraging new residents in the area to use active modes of transportation and public transit will help minimize single-occupancy-vehicle trips, reduce pollution and support climate change initiative.

For demonstration purposes, NexTrans has provided potential signal timing optimization for the signalized intersections along Dundas Street E with critical movements of v/c ratios that are greater than 0.85. It should be noted that signal timing optimization is the most effective way to increase intersection capacity. It is cost effective, fast and has less interruption to the existing road network. There are many new technologies such as camera detection, loop detection and Bluetooth that can detect slow down accident and provide better signal coordination/progression. The signal optimization results are provided in **Table 11** below.

Table 11 – 2032 Future Total Levels of Service

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Dundas Street E/ Prince Michael Drive/ John McKay Blvd (signalized) With signal timing optimization	Overall	D (1.05)	49		D (1.04)	40		
	EB – L	F (0.91)	102	65	F (0.96)	101	108	~120
	EB – T	E (1.05)	64	343	B (0.70)	19	162	~585
	EB – R	A (0.16)	9	19	A (0.17)	3	11	~75
	WB – L	D (0.62)	38	40	E (0.96)	63	41	~125
	WB – T	B (0.58)	20	124	D (1.04)	48	369	~570
	WB – R	A (0.14)	3	9	A (0.32)	4	17	~85
	NB – L	E (0.65)	73	55	F (0.80)	86	79	~65
	NB – TR	D (0.62)	41	46	B (0.32)	15	17	~225
	SB – L	E (0.98)	77	167	F (1.00)	106	152	~15
	SB – T	C (0.02)	29	8	D (0.03)	44	8	~195
	SB – R	C (0.44)	30	63	B (0.36)	11	24	~15
Dundas Street E/ Meadowridge Drive (signalized) With signal timing optimization	Overall	D (1.04)	46		D (0.99)	54		
	EB – L	D (0.44)	38	21	D (0.72)	42	33	~80
	EB – T	E (1.04)	59	415	C (0.63)	24	231	~570
	EB – R	A (0.08)	2	6	A (0.12)	5	14	~80
	WB – L	D (0.70)	52	45	D (0.96)	49	32	~140
	WB – T	B (0.52)	13	102	E (0.99)	77	360	~335
	WB – R	A (0.08)	2	5	A (0.18)	6	10	~70
	NB – L	E (0.32)	64	32	E (0.21)	56	24	~25
	NB – T	A (0.00)	0	0	A (0.00)	0	0	~215
	NB – R	E (0.93)	76	110	C (0.47)	28	36	~25
	SB – L	F (0.97)	104	123	F (0.99)	132	90	~15
	SB – T	A (0.00)	0	0	A (0.00)	0	0	~175
SB – R	C (0.22)	21	26	B (0.28)	14	16	~15	
Dundas Street E/ William Cutmore Blvd (signalized) With signal timing optimization	Overall	C (0.98)	32		D (1.04)	53		
	EB – L	C (0.59)	28	44	F (0.99)	86	74	~100
	EB – T	C (0.98)	39	424	B (0.60)	15	184	~335
	WB – T	A (0.46)	8	76	E (1.04)	73	454	~500
	WB – R	A (0.12)	1	6	A (0.26)	2	14	~85
	SB – L	F (0.87)	80	122	F (0.99)	116	122	~45
	SB – R	D (0.62)	47	62	F (0.50)	123	38	~30
Dundas Street E/ Ninth Line (signalized) With signal timing optimization	Overall	E (1.19)	78		E (1.11)	65		
	EB – L	C (0.70)	23	42	F (0.90)	85	88	~225
	EB – T	F (1.19)	124	482	D (0.83)	40	241	~500
	EB – R	B (0.48)	16	81	A (0.35)	10	39	~85
	WB – L	F (0.91)	91	72	F (0.95)	96	92	~230
	WB – T	C (0.52)	26	115	F (1.11)	95	421	~255
	WB – R	A (0.15)	3	11	B (0.23)	11	29	~85
	NB – L	F (0.98)	103	101	F (1.00)	82	181	~160
	NB – T	D (0.36)	44	67	D (0.78)	53	174	~485
NB – R	C (0.31)	23	42	E (0.93)	68	214	~130	

	SB – L	E (0.72)	55	85	F (0.95)	95	70	~130
	SB – T	E (0.91)	71	170	D (0.43)	51	75	~810
	SB – R	C (0.37)	22	44	C (0.36)	21	40	~55

6.4. Sensitivity Analysis

The Town of Oakville has requested that a sensitivity analysis be undertaken for Burnhamthorpe Road E, which includes the intersections Trafalgar Road/Burnhamthorpe Road and Burnhamthorpe Road E/William Halton Parkway. To address this comment, NexTrans has obtained the turning movement counts for these two intersections on Wednesday June 7, 2023 from Spectrum. **Figure 15** illustrates the existing traffic volumes.

Figure 15 – Existing Traffic Volumes

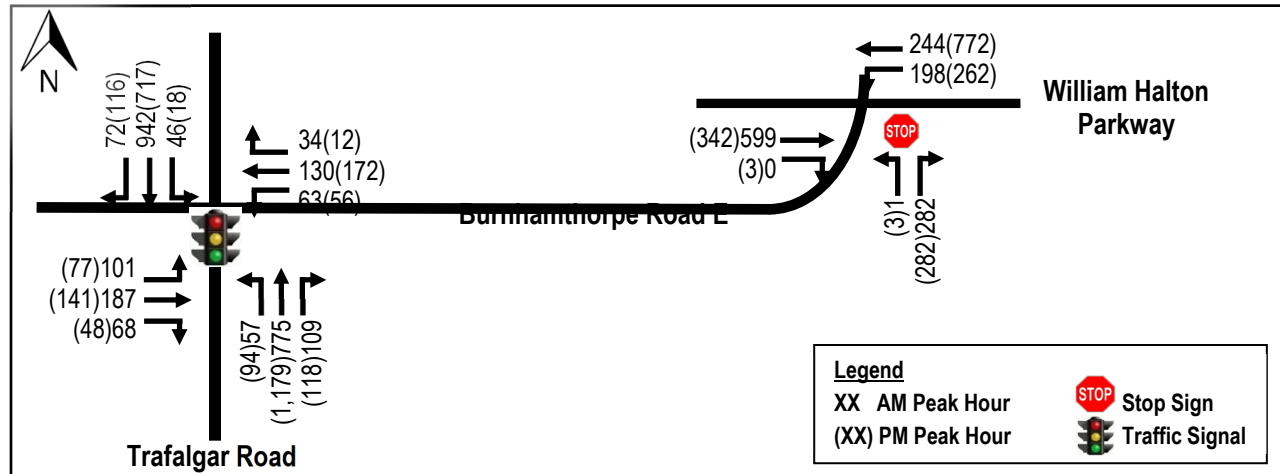


Figure 16 illustrating the 2032 background through corridor traffic grow (2% compounded).

The background development and site traffic volumes were estimated based on the following:

- 25% diversion for the Phase 3 Joshua Creek – Mattamy
- 10% diversion for the remainder of the background development
- The site traffic volumes were based on the 2016 TTS general trip distribution and assignment

The estimated traffic volumes are illustrated in the following figures:

- **Figure 16** illustrates the background through corridor growth;
- **Figure 17** illustrates background development traffic volumes;
- **Figure 18** illustrating the 2032 future background traffic volumes;
- **Figure 19** illustrating the site traffic volumes; and
- **Figure 20** illustrates the 2032 future total traffic volumes

Figure 16 – 2032 Background Through Corridor Growth

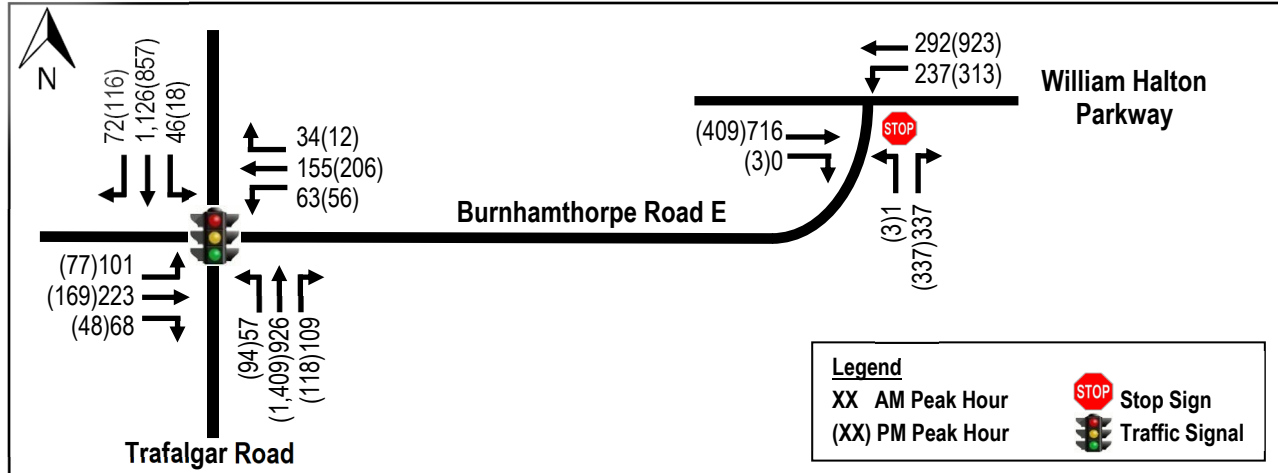


Figure 17 – 2032 Background Developments

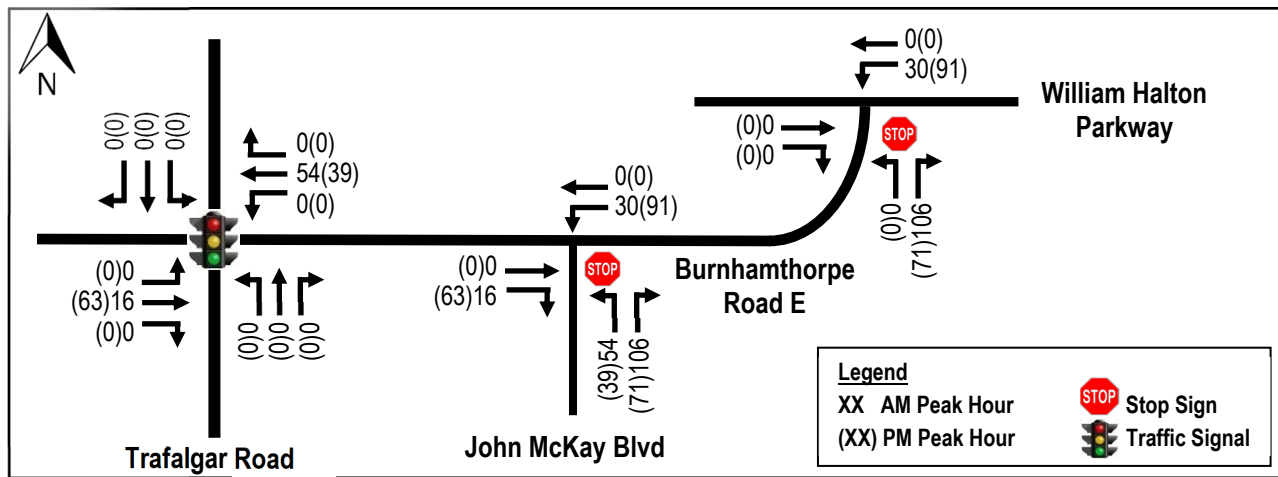


Figure 18 – 2032 Future Background Traffic Volumes

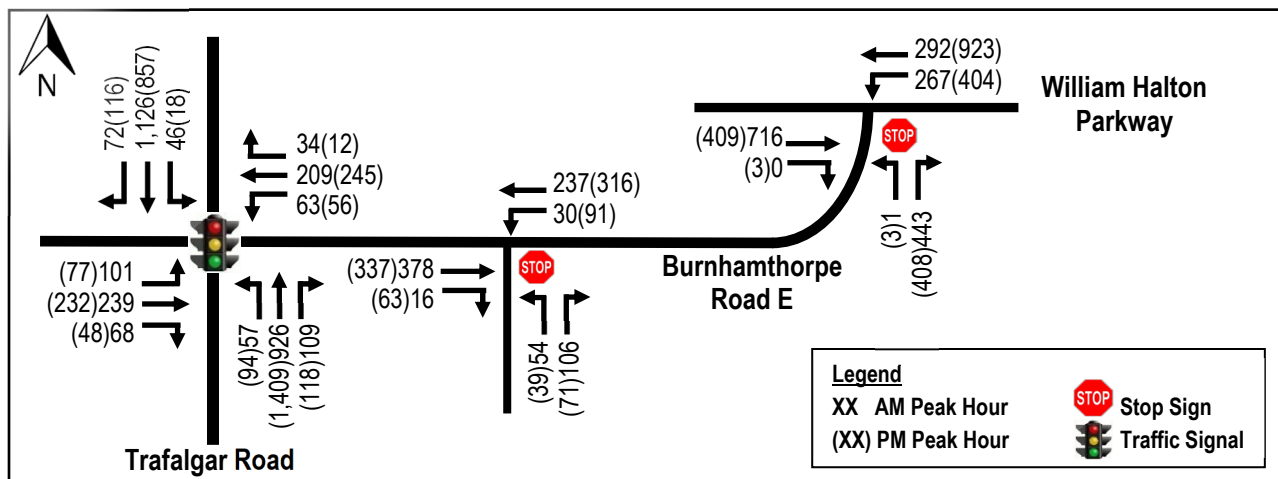


Figure 19 – Site Traffic Volumes

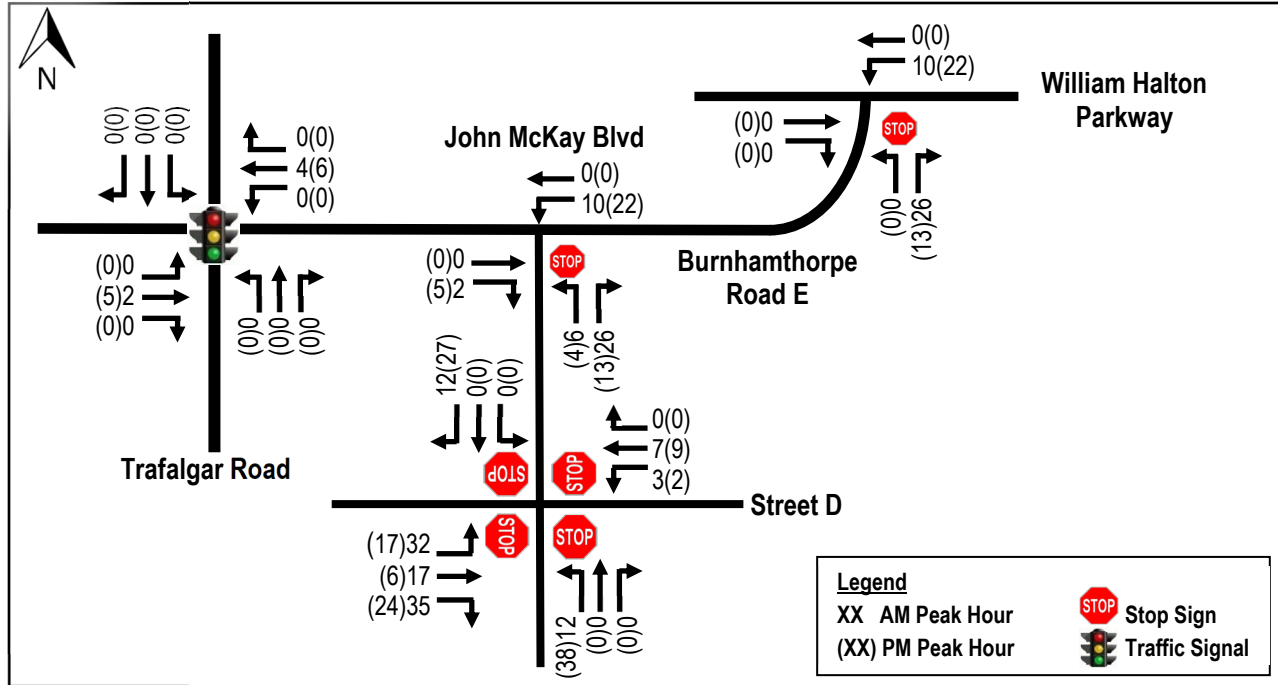
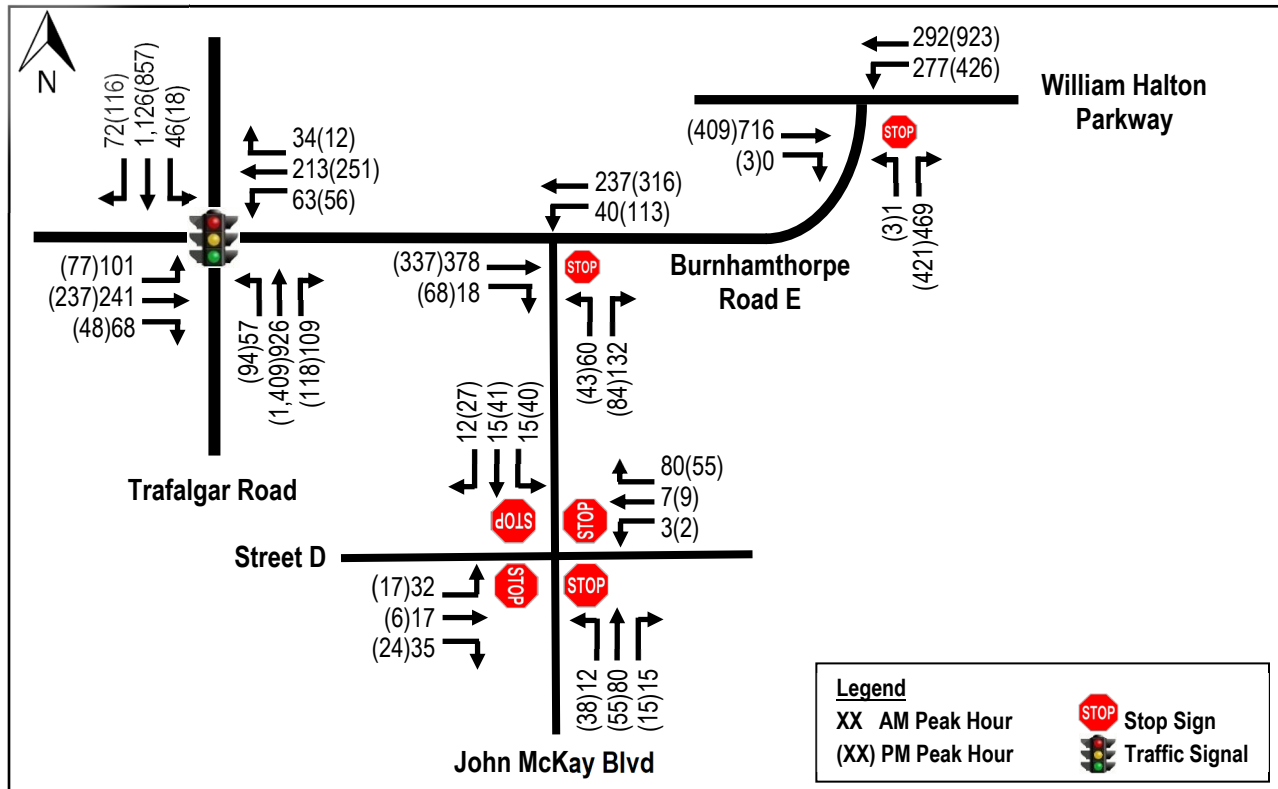


Figure 20 – 2032 Future Total Traffic Volumes



The existing, 2032 future background and future total traffic volumes were analyzed using Synchro Version 11 software. The detailed calculations are provided in **Appendix H** and summarized in **Tables 12, 13 and 14** below.

Table 12 – Existing Levels of Service Sensitivity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Trafalgar Road/ Burnhamthorpe Rd E (signalized)	Overall	C (0.70)	21		B (0.63)	18		
	EB – L	D (0.41)	41	35	D (0.39)	44	29	~30
	EB – TR	D (0.70)	47	75	D (0.63)	48	58	~300
	WB – L	C (0.21)	24	17	C (0.18)	26	17	~20
	WB – TR	C (0.31)	26	39	C (0.39)	33	48	~300
	NB – L	C (0.24)	21	20	B (0.26)	16	27	~140
	NB – TR	B (0.50)	19	107	B (0.61)	16	160	~500
	SB – L	B (0.12)	10	10	A (0.06)	8	5	~120
SB – TR	B (0.51)	13	103	A (0.37)	9	67	~500	
William Halton Pkwy/ Burnhamthorpe Rd E (unsignalized)	EB – TR	A (0.41)	0	0	A (0.22)	0	0	~300
	WB – TL	A (0.25)	6	8	A (0.23)	5	7	~300
	NB – LR	D (0.74)	33	48	C (0.48)	16	21	~300

Table 13 – 2032 Future Background Levels of Service Sensitivity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Trafalgar Road/ Burnhamthorpe Rd E (signalized)	Overall	C (0.75)	24		C (0.78)	24		
	EB – L	D (0.39)	38	34	D (0.32)	37	27	~30
	EB – TR	D (0.75)	48	90	D (0.72)	48	82	~300
	WB – L	C (0.22)	22	17	C (0.19)	23	16	~20
	WB – TR	C (0.43)	29	57	C (0.46)	31	61	~300
	NB – L	C (0.35)	29	25	C (0.36)	23	35	~140
	NB – TR	C (0.61)	23	137	C (0.78)	25	253	~500
	SB – L	B (0.15)	12	11	B (0.08)	11	6	~120
SB – TR	B (0.62)	17	137	B (0.47)	13	95	~500	
Burnhamthorpe Rd E/ John McKay Blvd (unsignalized)	EB – TR	A (0.48)	0	0	D (0.26)	0	0	~300
	WB – TL	A (0.38)	8	14	A (0.38)	10	15	~300
	NB – LR	F (1.38)	216	201	D (0.81)	34	64	~300
William Halton Pkwy/ Burnhamthorpe Rd E (unsignalized)	EB – TR	A (0.25)	0	0	A (0.26)	0	0	~300
	WB – TL	A (0.03)	1	1	A (0.09)	3	2	~300
	NB – LR	B (0.34)	16	12	C (0.28)	17	9	~300

Table 14 – 2032 Future Total Levels of Service Sensitivity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Trafalgar Road/ Burnhamthorpe Rd E (signalized)	Overall	C (0.75)	24		C (0.78)	24		
	EB – L	D (0.39)	38	34	D (0.32)	37	27	~30
	EB – TR	D (0.75)	48	91	D (0.72)	48	83	~300
	WB – L	C (0.22)	22	17	C (0.19)	22	15	~20
	WB – TR	C (0.43)	29	58	C (0.46)	31	62	~300
	NB – L	C (0.35)	29	25	C (0.36)	23	35	~140
	NB – TR	C (0.61)	23	137	C (0.78)	25	255	~500
	SB – L	B (0.15)	12	11	B (0.08)	11	6	~120
SB – TR	B (0.62)	17	137	B (0.47)	14	96	~500	
Burnhamthorpe Rd E/ John McKay Blvd (unsignalized)	EB – TR	A (0.48)	0	0	D (0.26)	0	0	~300
	WB – TL	A (0.39)	9	15	A (0.40)	10	16	~300
	NB – LR	F (1.46)	250	228	D (0.85)	39	71	~300
William Halton Pkwy/ Burnhamthorpe Rd E (unsignalized)	EB – TR	A (0.25)	0	0	A (0.26)	0	0	~300
	WB – TL	A (0.04)	2	1	A (0.11)	3	3	~300
	NB – LR	C (0.41)	17	16	C (0.33)	18	12	~300
John McKay Blvd/ Street D (unsignalized)	EB – LTR	A (0.11)	8	0	A (0.06)	8	0	~100
	WB – LTR	A (0.10)	7	0	A (0.08)	7	0	~100
	NB – LTR	A (0.14)	8	0	A (0.14)	8	0	~100
	SB – LTR	A (0.05)	8	0	A (0.14)	8	0	~100

The analysis indicates that under the existing conditions, both intersections are currently operating well with no critical movements or long delay. Under the 2032 future background conditions, the signalized intersection of Trafalgar Road/Burnhamthorpe Road E is expected to operate well with no critical movements or long delay.

However, the northbound at the unsignalized of Burnhamthorpe Road E/William Halton Parkway is expected to operate slightly over capacity during the morning peak hour. This is due to higher northbound right turn movement from Burnhamthorpe Road E to William Halton Parkway. Under the 2032 future total conditions, the signalized intersection of Trafalgar Road/Burnhamthorpe Road E is expected to operate well with no critical movements or long delay. However, similar to the 2032 future background conditions, the northbound at the unsignalized of Burnhamthorpe Road E/William Halton Parkway is expected to operate over capacity during the morning peak hour. This is due to higher northbound right turn movement from Burnhamthorpe Road E to William Halton Parkway.

In order to mitigate this operational issue at the Burnhamthorpe Road E/William Halton Parkway intersection during the morning peak hour, it is suggested that:

Interim Conditions

- A temporary traffic signal be installed at this intersection for the interim conditions; and
- No turn lanes are required until full improvements on Burnhamthorpe Road W is materialized

Ultimate Conditions

- A full traffic signal be installed at this intersection for the ultimate conditions;
- Full improvements at this are required for the build-out of the Secondary Plan with exclusive left turn and right turn lanes. The full extend of the improvements will be determined through the future developments abutting Burnhamthorpe Road E;
- Based on the findings of this Study, only an exclusive westbound left turn lane is required on William Halton Parkway, with one eastbound and one westbound through lane on William Halton Parkway. Only one northbound and one southbound lane similar to today condition are sufficient for Burnhamthorpe Road E

6.5. Active Transportation Mode Assessment

Walking Mode Assessment

Under the existing conditions, external to the subject site, sidewalks are available on the established sides of the street such as Dundas Street E, Eighth Line, Postridge Drive, Trafalgar Road, Prince Michael Drive, Meadowridge Drive and Ninth Line. This sidewalk network is complete and appropriate for the existing communities; however, the future communities will need similar complete sidewalk network. It is NexTrans' understanding that sidewalks will be provided on both sides of all internal streets within the North Oakville Secondary Plan to facilitate pedestrians. Therefore, in the future, a complete sidewalk network will be provided and constructed by the proposed developments in the area. For an illustration of the big picture in the Joshua's Meadows Community, **Figure 21** illustrates the Town of Oakville Proposed Pedestrian Network Phasing (*excerpt from the Town of Oakville 2017 ATMP, Map 8*). On this basis, sidewalks will be provided on all of the proposed internal roads within the subject development, as per the Town of Oakville requirements and standards.

Cycling Mode Assessment

Under the existing conditions, external to the subject site, there are dedicated cycling routes along Ninth Line south of Dundas Street E. There are also multi-use trails along Dundas Street E in the vicinity of the study area. It is NexTrans' understanding that a complete active transportation network (sidewalk and cycling facilities) will be constructed as part of the North Oakville Secondary Plan communities in the future. Similar to the walking network, it is NexTrans' understanding that cycling facilities will be constructed in phases, as per the Town's proposed cycling network phasing and priority projects. For an illustration of the big picture in the Joshua's Meadows Community, **Figure 22** illustrates the Town of Oakville Proposed Cycling Network Phasing and Priority Projects (*excerpt from the Town of Oakville 2017 ATMP, Map 9*), with **Figure 23** illustrating the North Oakville Trails Plan (Updated as of 2019). On this basis, the proposed development will support the Town's initiative with regards to the cycling facility, where appropriate.

Figure 21 – Town of Oakville Proposed Pedestrian Network Phasing

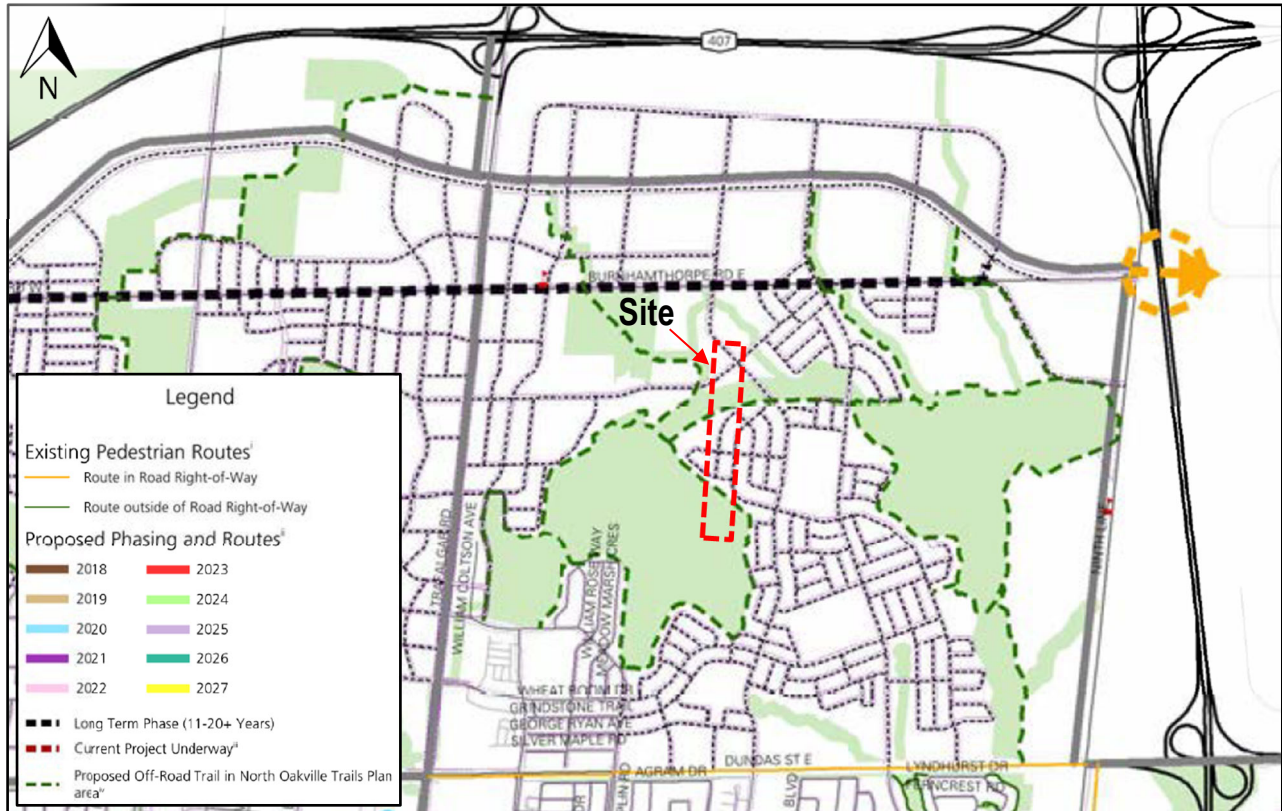


Figure 22 – Town of Oakville Proposed Cycling Network Phasing and Priority Projects

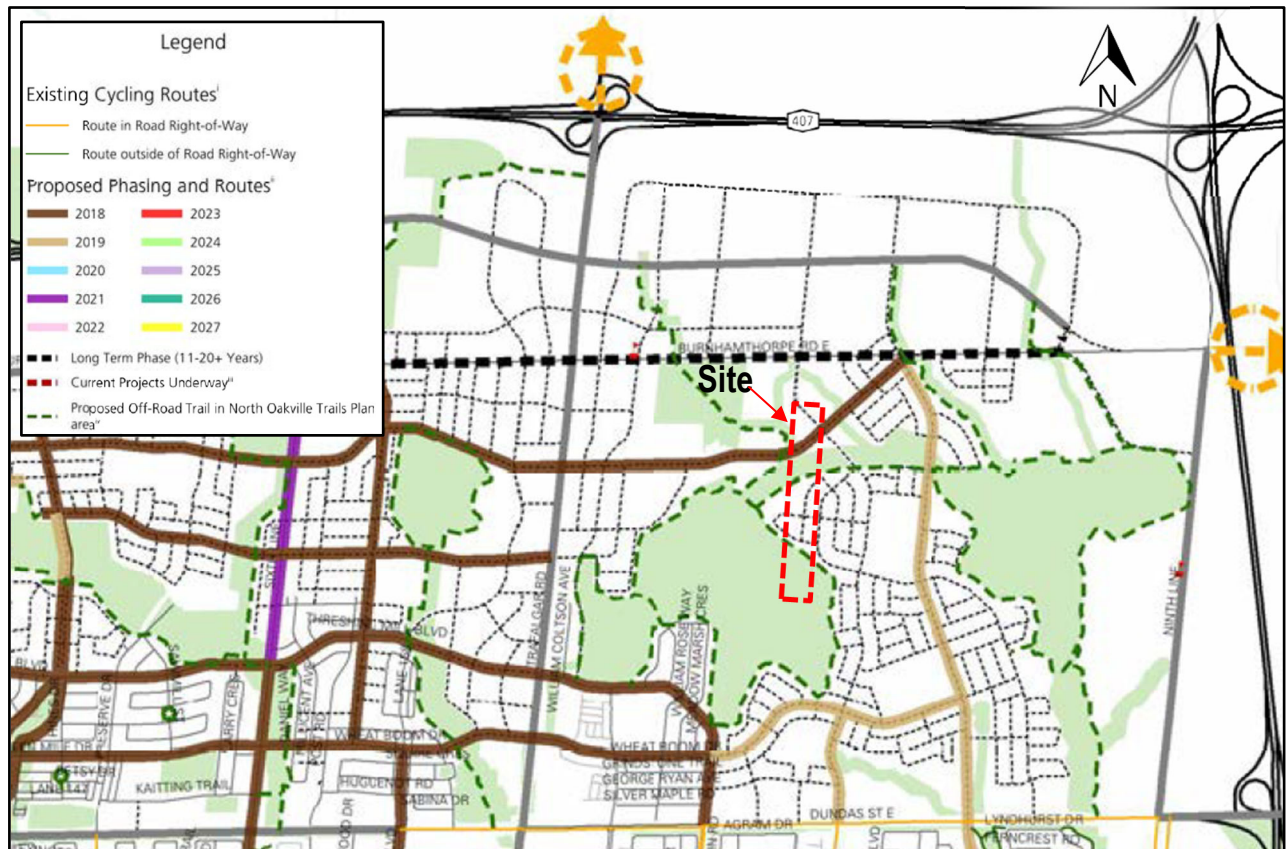
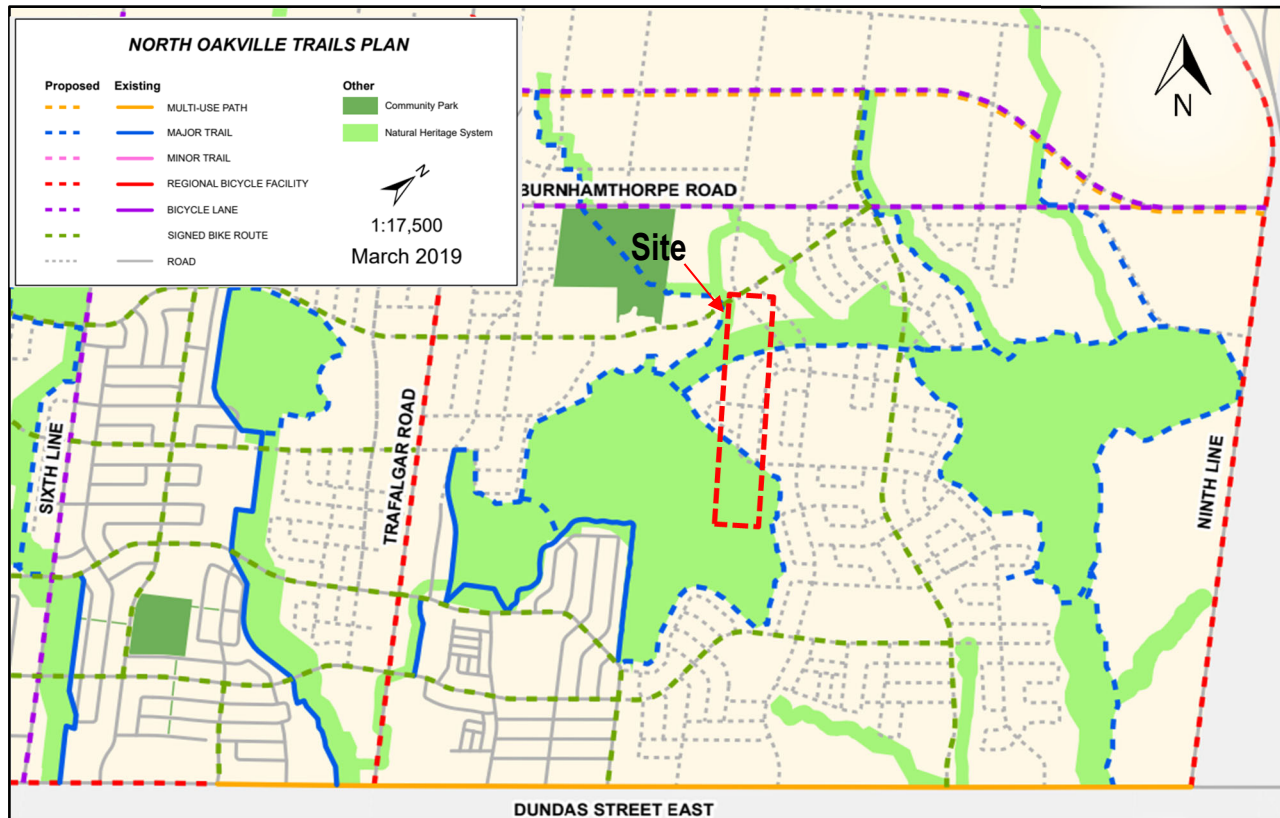


Figure 23 – North Oakville Trails Plan



Source: North Oakville Trail Plan – 2019

It should be noted that as the proposed development only consists of local roads, therefore, no cycling lanes are provided. This is similar to the Mattamy – Joshua Creek Phase 3 proposed subdivision. The proposed speed limit will be posted at 40 km/h, which is suitable for shared on-street cycling.

6.6. Transit Mode Assessment

The area is current serviced by two existing Oakville Transit Bus Routes 1 Trafalgar, 24 South Common and 20 Northridge.

As indicated, the proposed development is expected to generate 21 total two-way non-auto trips (6 inbound and 15 outbound) and 28 total two-way non-auto trips (17 inbound and 11 outbound) during the morning and afternoon peak hours, respectively. Therefore, the proposed development transit ridership can be easily accommodated by the existing transit service, as well as the future proposed transit service in the area without additional improvements beyond what already been planned for the area.

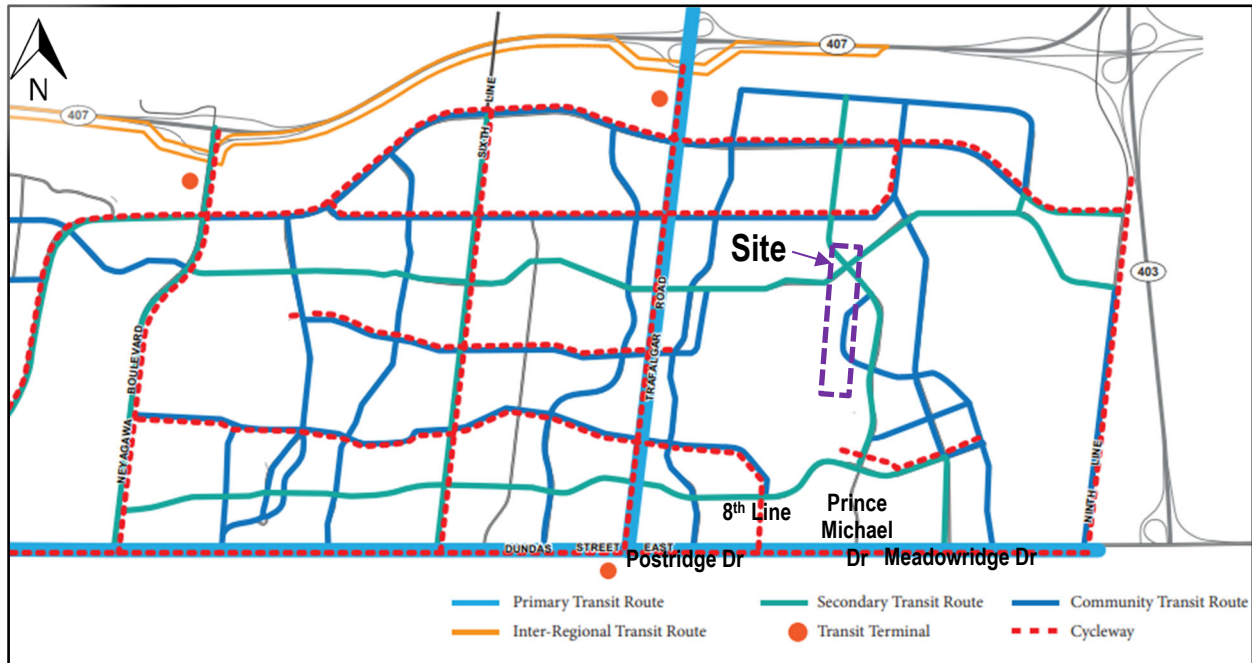
Based on NexTrans’ review of the future proposed transit network to the Joshua’s Meadows Community, there will be:

- Primary transit routes running along Burnhamthorpe Road E, Postridge Drive, Meadowridge Drive and Eighth Line
- Secondary transit routes running along Prince Michael Drive, Wheat Boom Drive, and new east-west collector road south of Burnhamthorpe Road E; and
- Inter-regional transit route along Highway 407

As the proposed development will be located close to the future primary route on Burnhamthorpe Road E, and secondary routes on the future east-west road and Prince Michael Drive, therefore, the proposed development will have good transit service in the future.

Figure 24 illustrates the contemplated North Oakville East Secondary Plan future transit network.

Figure 24 – North Oakville East Secondary Plan Future Transit Network



Source: *The New Communities of Oakville Brochure (Prepared by the Town of Oakville)*

7.0 DRAFT PLAN OF SUBDIVISION REVIEW

7.1. Solid Waste Management

Given the context of the proposed development, solid waste including organic, recycling and garbage will be picked up on the curbside, similar to the existing developments located to the south.

As the proposed development will provide all public roads within the proposed draft plan of subdivision, these public roads will be designed and constructed to the Town of Oakville standards and requirements. On this basis, vehicle turning movement templates are not required at this stage. However, if necessary, NexTrans can provide this information at the Town's discretion.

7.2. Proposed Development Access

As indicated in Submission 2 July, 2023 Transportation Impact Study Update, the proposed draft plan of subdivision limit does not abut Burnhamthorpe Road E. The parcel of land that abuts Burnhamthorpe Road E is not part of the proposed development and it currently has existing uses (i.e. Joshua Creek Heritage Art Centre). This use will remain and will not be redeveloped at this time. Therefore, a connection to Burnhamthorpe Road W will not be possible as part of the proposed draft plan of subdivision.

As all subdivisions in the North Oakville East Secondary Plan will be built in phases, this proposed draft plan of subdivision is no different from the other draft plan of subdivisions in the area, including the Mattamy – Joshua Creek Phase proposed development. The proposed development access is provided via internal public streets connecting to Mattamy Joshua Creek Phase 3 proposed draft plan of subdivision, and eventually to Burnhamthorpe Road E via future proposed draft

plan of subdivisions to the north. The proposed development will protect for future Street C and Street A extensions to the west and north, respectively. Therefore, the proposed development will coordinate with Mattamy – Joshua Creek Phase 3 to provide appropriate and coordinated access for the proposed development.

Under the interim conditions where the proposed draft plans of subdivision to the north are not completed, the anticipated traffic from the proposed development will be routing primarily to and from Dundas Street via John McKay Boulevard, Meadowridge Drive and William Cutmore Boulevard, as well as Eighth Line via Wheat Boom Drive.

The proposed development will also protect for future Street C and Street A extensions to the west and north, respectively. As part of this analysis, a 5-year horizon post full build-out of the proposed development, the analysis has been reflected for 2032 horizon (assumed full build-out of the proposed development in 2027). **Figure 2B** of this Study Addendum illustrates the Joshua Creek Phase 3 composite plan for overall illustration of the future access connections and road phasing between all subdivisions.

7.3. Internal Intersection Traffic Control and Lane Configurations

As indicated above, all streets located within the proposed draft plan of subdivision will be public roads and will be constructed to the Town’s standards. Given the internal traffic volumes are estimated to be low, only basic lane configurations are required at the intersection. For example, all internal intersections will have shared left/through/right with no dedicated turning lanes. With the exception of the Street A/Street C intersection, all intersections will have stop signs on the minor approach. NexTrans suggested that the Street A/Street C intersection be equipped with all-way stop given the nature of the two main streets. All-way Stop Control at Street A/Street C is recommended based on the following reasons and justifications:

- Reason 1: This is consistent with the Traffic Impact Study prepared by GHD for “Mattamy – Joshua Creek Phase 3B” dated April, 2022.
- Reason 2: This is an intersection of two avenues/transit corridors as identified in the NOE Secondary Plan Transportation Plan (Figure 4). All-way stop will allow pedestrians to cross at all four legs of the intersections to access the future transit stops at all four corners of the intersection.

Figure 25 illustrates the proposed traffic control and lane configurations for the internal intersections.

Figure 25 – Internal Intersection Traffic Control and Lane Configurations



7.4. Traffic Calming

NexTrans recommends that the Town of Oakville consider a narrower lane width and pavement width to discourage speeding and minimize pedestrian/cycling crossing distance at intersections and midblock.

7.5. On-Street Parking Assessment

On-street parking is typically required for visitor parking. A typical on-street parking space (parallel parking) is approximately 2.25 m in width and 5.2 m in length for single or end spaces, and 2.25 m in width and 6.5 m in length for interior spaces. **Figure 26** illustrates the preliminary on-street vehicle parking space assessment for the proposed draft plan of subdivision. Based on the preliminary assessment, about ± 71 on-street parking spaces are available for the proposed development.

8.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) is a co-ordinated series of actions aimed at maximizing the people moving capability of the transportation system. Intended to reduce single-occupant auto use, potential TDM measures include: TDM supportive land use, bicycle and pedestrian programs and facilities, public transit improvements, preferential treatments for buses and ridesharing, where appropriate.

Given that the proposed development and the surrounding developments in the area are mostly low-rise, there are limited opportunities to implement aggressive TDM measures. However, some general TDM measures can still be implemented to support sustainable transportation and encourage residents to use other modes of transportation.

As the gas price is record high, along with increasing inflation, the residents will automatically be working from home, carpool or taking transit to curb the costs of living. It is the responsibility of the Region and the Town to provide options for residents, such as providing public transit and active transportation facilities.

The Town staff requested a monitoring program/report to include surveys, and detailed information on the available modes of travel and within the first year of occupancy to promote sustainable travel choices. Given that the proposed development will be developed in phases, as well as the context of the North Oakville Secondary Plan and adjacent developments, a monitoring program is not required for the following reasons:

- The TDM programs and measures for the proposed development are limited to the implementation of sidewalks, bike lanes, trail connections and potentially future bus stops. As these infrastructures will be completed for each phase of the proposed development, there is no other metric to be monitored as part of the TDM monitoring program;
- The proposed development will provide an information package (in a letter/brochure) to the residents at the sale office that includes community map, cycling map and transit service map. This information is sufficient for the residents to use;
- A monitoring program/report will require a survey at a minimum of 50% occupancy and at 100% occupancy for the entire development. Given that the proposed development will be developed in various phases, survey results will not be representative as conditions will change after each survey;
- Given that the proposed development is located within a larger development area, it is difficult to pinpoint the effectiveness of a specific TDM measure provided by the subject development. The TDM measures will work as a whole for the entire community; and
- Based on our experience, this requirement is more appropriate for a high-rise development or a standalone development because it can be monitored at the main entrances. With a larger development area such as a secondary plan like this, it is more appropriate that the monitoring program to be carried out by the Town of the Region as part of a comprehensive TDM outreach program.

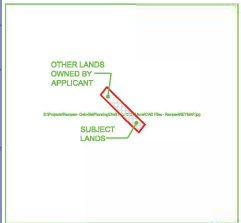
It should be noted that the following TDM incentives are recommended for the proposed residential development, based on NexTrans' review of the development area context. Therefore, these measures are sufficient for the proposed development and address the Town's concerns:



Rampen Holdings Inc.
Part of Lot 10, Concession 1,
North of Dundas Street

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

KEY PLAN N.T.S.



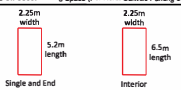
Subject Lands



Preliminary On-Street Parking Analysis

±71 On-Street Parking Spaces (subject to adjustment during detailed engineering design)

Typical On-Street Parking Space (Per North Oakville Parking Strategy)



NO.	DATE	REVISIONS:
1.	Jan 30, 2024	On-Street Parking

SITE ADDRESS: **RAMPEN - PART OF LOT 10,
CONCESSION 1
NORTH OF DUNDAS STREET
TOWN OF OAKVILLE**

nextrans
CONSULTING ENGINEERS
5040 Yonge Street, Suite 204
Aurora, Ontario L4G 1W4
Tel: 905-969-3988

TITLE: **ON-STREET PARKING**

DESIGN:	MB
DATE:	January 30, 2024
DRAWN:	S.M.
CHECKED:	R.F.
PROJECT No:	NT-22-128
DRAWING No:	

Figure 26

- Support the Region and the Town on their active and public transit initiatives;
- Provide sidewalks on both sides of the internal roadways;
- Reduce pavement width and lane width where possible to support lower speed and minimize pedestrian and cyclist crossing distance at intersections and midblock;
- Provide information package for new residents in a form of a letter. The information package letter will include links to Oakville Transit schedules, GO Transit schedules, community amenity maps and cycling maps. The Information Package can be distributed at the sale office in form of a letter.

9.0 CONCLUSIONS / FINDINGS

9.1. Study Conclusions

The findings and conclusions of the analysis are as follows:

- The proposed development is expected to generate a total of 119 two-way auto trips (33 inbound and 87 outbound) and 159 two-way auto trips (98 inbound and 61 outbound) during the morning and afternoon peak hours, respectively;
- Based on the intersection capacity analysis, under the existing conditions, all intersections considered in the analysis are expected to operate at acceptable levels of service from overall intersection operation perspective. However, NexTrans acknowledges that the eastbound through movement (during the morning peak hour) and the westbound through movement (during the afternoon peak hour) at the Dundas Street E/Ninth Line intersection have v/c ratios greater than 0.85. This is due to the heavy east-west through traffic movement along Dundas Street E, however, it is a typical condition at the major arterial in the Region and in the Town of Oakville. This critical movement will be addressed through the completion of fine grid transportation road network as part of the North Oakville East Secondary Plan.
- Based on the intersection capacity analysis, under the future total traffic conditions, similar to the future background conditions, the analysis indicates that the majority of the movements for the signalized intersections along Dundas Street E are expected to operate at acceptable levels of service. However, NexTrans acknowledges that there is a number of critical movements with v/c ratios are greater than 0.85, mostly for the through movements along Dundas Street W due to heavy through traffic volume using Dundas Street E during the morning and afternoon peak hours. This can be explained based on the following:
 - The compounded growth rate of 2% per annum or over 18% growth from 2023 to 2032 is an overestimate of the traffic in the area given that additional background development application traffic is also included in the analysis
 - The Secondary Plan Area fine grid road network is not completed at this time and under this horizon year
 - Once the complete road network identified in the Secondary Plan Area is completed, it is expected that the traffic will not be concentrating at the critical movements. This means that residents will have more travel choices instead of concentrating at one intersection
 - Especially with the completion of the north-south collector roads such as Meadowridge Drive and John McKay Blvd, the traffic from the proposed draft plans of subdivision can use Burnhamthorpe Road E and William Halton Parkway instead of Dundas Street W
 - It is expected that with the future improvements on Burnhamthorpe Road E, the North Oakville Secondary Plan subdivision east-west road south of Burnhamthorpe Road E, as well as the completion of William Halton Parkway, it will provide much needed east-west capacity for the area. As the Town staff is asking for more support and clarification on this statement, the following are the reasons to support this statement:

- Reason 1: based on the North Oakville East Secondary Plan Figure 4 (Transportation Plan), William Halton Parkway will be extended from Ninth Line to Tremaine Road. William Halton Parkway is under jurisdiction of the Halton Region, which is designated as major arterial/transit corridor. As this major arterial/transit corridor is running parallel to Dundas Street from east of Hwy 403 to Tremaine Road, it will provide additional east-west capacity for the northern part of the Secondary Plan, as well as it will provide some relief to Dundas Street in the east-west direction.
 - Reason 2: The existing Burnhamthorpe Road W is designated as avenue/transit corridor that connects William Halton Parkway from the east (west of Ninth Line) to William Halton Parkway to the west (east of Neyagawa Boulevard). Once Burnhamthorpe Road W is fully improved and urbanized, it will provide additional east-west capacity for the northern part of the Secondary Plan and also including Dundas Street E.
 - Reason 3: There are also other east-west avenue/transit corridor and connector/transit corridor roads north of Dundas Street E, these roads will also provide additional east-west capacity and relief to Dundas Street E, especially local school trips and discretionary trips. In addition, with more east-west and north-south connector roads, residents will have more choices to travel and will not need to use or wait at a congested intersection.
 - Reason 4: The analysis is conservative that we did not discount for any diversion of auto trips to transit trips in the area in the future. It is anticipated that with better transit services in the future in the NOE Secondary Plan and in the area, there will be close to 18% of the car traffic will be diverted to transit for many reasons such as high gas price and automobile capital cost, and there are more efficient ways to travel. This 18% transit modal split was explained in the previous version of the Study.
- The intersection of Dundas Street E/Ninth Line is expected to operate at or over capacity. This is due to the heavy through traffic volumes in this direction coming from Highway 403 and Mississauga. However, this type of movement is typical at any major arterial intersections in the Great Toronto Area and in the Region of Halton, especially there is only one interchange with Hwy 403 in this area. Therefore, some of the east-west capacity will be improved as part of the future improvements on Burnhamthorpe Road E and completion of William Halton Parkway, based on the reasons noted above. As the Region recently completed the 4-lane cross-section extension of William Halton Parkway from 6th Line to Neyagawa Boulevard (November, 2023), some of the east-west traffic is starting to use this road more. Based on this assessment and provision, NexTrans does not recommend any physical improvements to be implemented under this horizon year for the intersections located along Dundas Street E. NexTrans recommends that the Region and the Town monitor these intersections in the future and make appropriate signal timing adjustments in the interim conditions. A monitoring program is also required in the future once all the road network is completed to ensure that signal timing and lane configurations are appropriate for the area.
- It should be noted that the proposed development has negligible or no impacts on the existing and future intersections along Dundas Street E. The internal intersections are also expected to have minimum traffic volumes and delay or queue.
 - The area is current serviced by several existing Oakville Transit Bus Routes 1 Trafalgar, 24 South Common, 20 Northridge and Dundas Route 5/5A. The proposed development is expected to generate very little total site traffic volumes compared to other developments in the area. Therefore, the proposed development transit ridership can be easily accommodated by the existing transit service, as well as the future proposed transit service in the area without additional improvements beyond what already been planned for the area.
 - The area will also have a complete network of active transportation facility in the future as identified in the North Oakville Secondary Plan. Therefore, no improvements are required beyond the identified plans. It is recommended that all the proposed developments in the Secondary Plan work with the Town and the Region to support and implement these initiatives.

9.2. Study Recommendations

Based on the findings of this Study, the following recommendations are provided:

- The Town approves the proposed draft plan of subdivision as it has negligible impacts on the existing and future transportation network in the area;
- The proposed development building sidewalks along both sides of the internal subdivision streets;
- The proposed development implements the TDM measures and incentives identified in this report to support active transportation and transit and to reduce the numbers of single-occupant-vehicle trips to and from the proposed development;
- Minimize pavement and lane width where possible to facilitate pedestrian/cyclist crossing; and
- No additional physical improvements for the area at this time to accommodate the proposed development, under the future background and future total conditions.

Appendix A

Existing Traffic Data and Signal Timing Plans



Turning Movement Count (2 . BURNHAMTHORPE ROAD EAST & WILLIAM HALTON PARKWAY)

Start Time	E Approach WILLIAM HALTON PKWY					S Approach BURNHAMTHORPE RD E					W Approach WILLIAM HALTON PKWY					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
07:00:00	38	28	0	0	66	21	0	0	0	21	1	80	0	0	81	168	
07:15:00	59	25	0	0	84	28	0	0	0	28	1	100	0	0	101	213	
07:30:00	52	26	0	0	78	41	0	0	0	41	0	145	0	0	145	264	
07:45:00	30	28	0	0	58	54	0	0	0	54	0	151	0	0	151	263	908
08:00:00	49	41	0	0	90	69	0	0	0	69	0	172	0	0	172	331	1071
08:15:00	64	50	0	0	114	67	0	0	0	67	0	139	0	0	139	320	1178
08:30:00	73	56	0	0	129	81	0	0	0	81	0	159	0	0	159	369	1283
08:45:00	58	51	0	0	109	65	1	0	0	66	0	129	0	0	129	304	1324
09:00:00	54	26	0	0	80	48	0	0	0	48	0	92	0	0	92	220	1213
09:15:00	54	31	0	0	85	48	0	0	0	48	0	101	0	0	101	234	1127
09:30:00	59	24	0	0	83	35	2	0	0	37	0	95	0	0	95	215	973
09:45:00	60	24	0	0	84	27	0	0	0	27	0	64	0	0	64	175	844
BREAK																	
16:00:00	176	47	0	0	223	79	0	0	0	79	0	68	0	0	68	370	
16:15:00	212	63	0	0	275	74	2	0	0	76	0	71	0	0	71	422	
16:30:00	181	72	0	0	253	75	1	0	0	76	1	96	0	0	97	426	
16:45:00	204	59	0	0	263	62	0	0	0	62	2	79	0	0	81	406	1624
17:00:00	175	68	0	0	243	71	0	0	0	71	0	96	0	0	96	410	1664
17:15:00	184	54	1	0	239	79	0	0	0	79	0	102	0	0	102	420	1662
17:30:00	196	51	0	0	247	70	0	0	0	70	0	92	0	0	92	409	1645
17:45:00	146	51	0	0	197	75	1	0	0	76	0	88	0	0	88	361	1600
18:00:00	157	48	0	0	205	45	0	0	0	45	0	76	0	1	76	326	1516
18:15:00	136	43	0	0	179	52	0	0	0	52	0	90	0	0	90	321	1417
18:30:00	118	59	0	0	177	51	0	0	0	51	0	88	0	0	88	316	1324
18:45:00	85	44	0	0	129	57	0	0	0	57	0	69	0	0	69	255	1218
Grand Total	2620	1069	1	0	3690	1374	7	0	0	1381	5	2442	0	1	2447	7518	-
Approach%	71%	29%	0%	-	-	99.5%	0.5%	0%	-	-	0.2%	99.8%	0%	-	-	-	-
Totals %	34.8%	14.2%	0%	-	49.1%	18.3%	0.1%	0%	-	18.4%	0.1%	32.5%	0%	-	32.5%	-	-
Heavy	74	12	0	-	-	16	0	0	-	-	1	79	0	-	-	-	-
Heavy %	2.8%	1.1%	0%	-	-	1.2%	0%	0%	-	-	20%	3.2%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (12.18 °C)

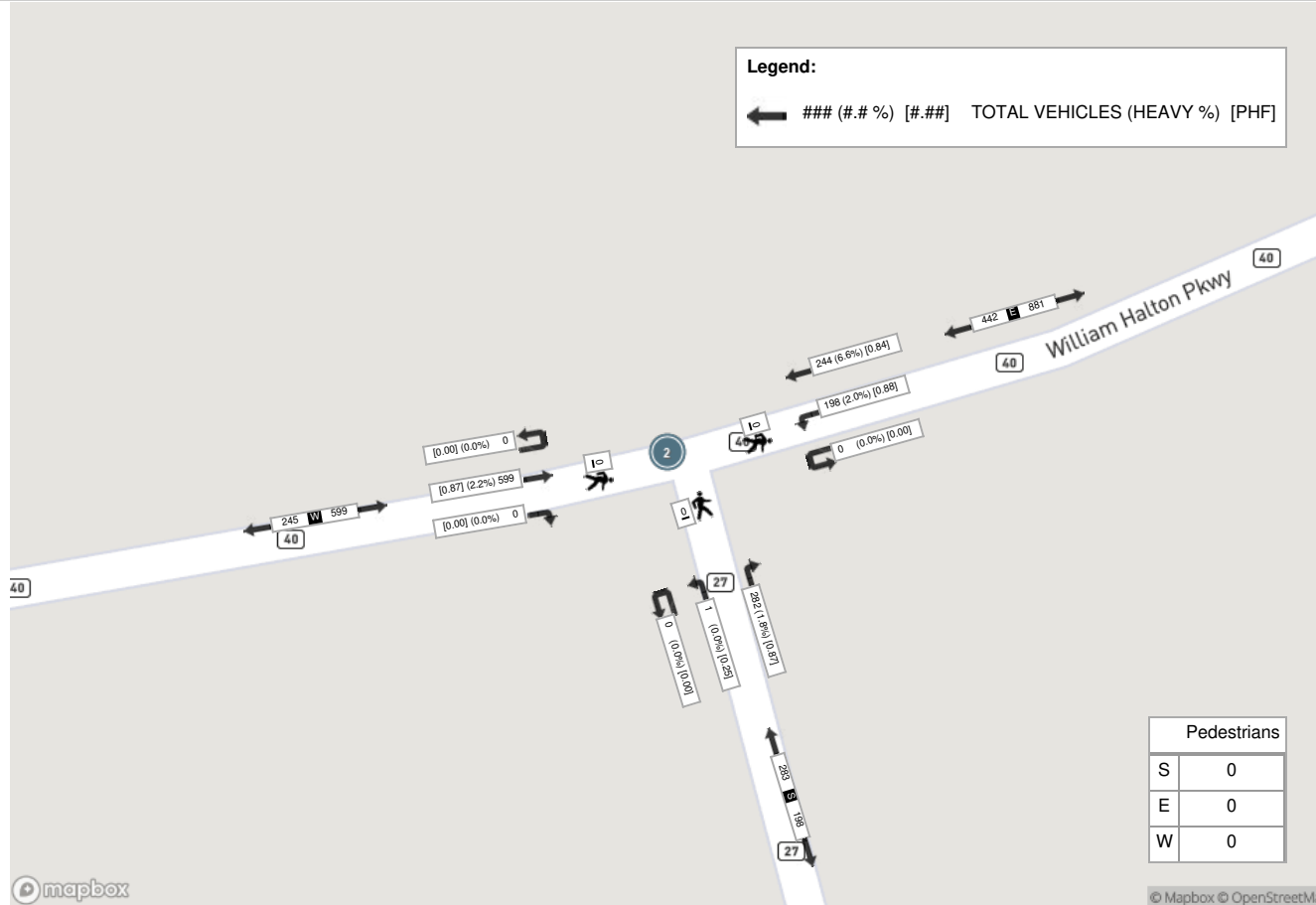
Start Time	E Approach WILLIAM HALTON PKWY					S Approach BURNHAMTHORPE RD E					W Approach WILLIAM HALTON PKWY				Int. Total (15 min)	
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds		Approach Total
08:00:00	49	41	0	0	90	69	0	0	0	69	0	172	0	0	172	331
08:15:00	64	50	0	0	114	67	0	0	0	67	0	139	0	0	139	320
08:30:00	73	56	0	0	129	81	0	0	0	81	0	159	0	0	159	369
08:45:00	58	51	0	0	109	65	1	0	0	66	0	129	0	0	129	304
Grand Total	244	198	0	0	442	282	1	0	0	283	0	599	0	0	599	1324
Approach%	55.2%	44.8%	0%	-	-	99.6%	0.4%	0%	-	-	0%	100%	0%	-	-	-
Totals %	18.4%	15%	0%	33.4%	21.3%	0.1%	0%	21.4%	0%	45.2%	0%	45.2%	0%	45.2%	-	-
PHF	0.84	0.88	0	0.86	0.87	0.25	0	0.87	0	0.87	0	0.87	0	0.87	-	-
Heavy	16	4	0	20	5	0	0	5	0	13	0	13	0	13	-	-
Heavy %	6.6%	2%	0%	4.5%	1.8%	0%	0%	1.8%	0%	2.2%	0%	2.2%	0%	2.2%	-	-
Lights	227	194	0	421	277	1	0	278	0	586	0	586	0	586	-	-
Lights %	93%	98%	0%	95.2%	98.2%	100%	0%	98.2%	0%	97.8%	0%	97.8%	0%	97.8%	-	-
Single-Unit Trucks	8	1	0	9	1	0	0	1	0	4	0	4	0	4	-	-
Single-Unit Trucks %	3.3%	0.5%	0%	2%	0.4%	0%	0%	0.4%	0%	0.7%	0%	0.7%	0%	0.7%	-	-
Buses	1	3	0	4	4	0	0	4	0	0	0	0	0	0	-	-
Buses %	0.4%	1.5%	0%	0.9%	1.4%	0%	0%	1.4%	0%	0%	0%	0%	0%	0%	-	-
Articulated Trucks	7	0	0	7	0	0	0	0	0	9	0	9	0	9	-	-
Articulated Trucks %	2.9%	0%	0%	1.6%	0%	0%	0%	0%	0%	1.5%	0%	1.5%	0%	1.5%	-	-
Bicycles on Road	1	0	0	1	0	0	0	0	0	0	0	0	0	0	-	-
Bicycles on Road %	0.4%	0%	0%	0.2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-
Pedestrians	-	-	-	0	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	0%	-	-	-	-	-	0%	-	-



Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (21.12 °C)

Start Time	E Approach WILLIAM HALTON PKWY					S Approach BURNHAMTHORPE RD E					W Approach WILLIAM HALTON PKWY				Int. Total (15 min)	
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds		Approach Total
16:15:00	212	63	0	0	275	74	2	0	0	76	0	71	0	0	71	422
16:30:00	181	72	0	0	253	75	1	0	0	76	1	96	0	0	97	426
16:45:00	204	59	0	0	263	62	0	0	0	62	2	79	0	0	81	406
17:00:00	175	68	0	0	243	71	0	0	0	71	0	96	0	0	96	410
Grand Total	772	262	0	0	1034	282	3	0	0	285	3	342	0	0	345	1664
Approach%	74.7%	25.3%	0%		-	98.9%	1.1%	0%		-	0.9%	99.1%	0%		-	-
Totals %	46.4%	15.7%	0%		62.1%	16.9%	0.2%	0%		17.1%	0.2%	20.6%	0%		20.7%	-
PHF	0.91	0.91	0		0.94	0.94	0.38	0		0.94	0.38	0.89	0		0.89	-
Heavy	9	4	0		13	7	0	0		7	0	13	0		13	-
Heavy %	1.2%	1.5%	0%		1.3%	2.5%	0%	0%		2.5%	0%	3.8%	0%		3.8%	-
Lights	763	258	0		1021	275	3	0		278	3	328	0		331	-
Lights %	98.8%	98.5%	0%		98.7%	97.5%	100%	0%		97.5%	100%	95.9%	0%		95.9%	-
Single-Unit Trucks	7	1	0		8	4	0	0		4	0	5	0		5	-
Single-Unit Trucks %	0.9%	0.4%	0%		0.8%	1.4%	0%	0%		1.4%	0%	1.5%	0%		1.4%	-
Buses	1	3	0		4	3	0	0		3	0	0	0		0	-
Buses %	0.1%	1.1%	0%		0.4%	1.1%	0%	0%		1.1%	0%	0%	0%		0%	-
Articulated Trucks	1	0	0		1	0	0	0		0	0	8	0		8	-
Articulated Trucks %	0.1%	0%	0%		0.1%	0%	0%	0%		0%	0%	2.3%	0%		2.3%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	1	0		1	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.3%	0%		0.3%	-
Pedestrians	-	-	-	0	-	-	-	0		-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	0%		-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (12.18 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (21.12 °C)





Turning Movement Count (2 . DUNDAS STREET EAST & EIGHTH LINE)

Start Time	N Approach EIGHTH LINE						E Approach DUNDAS ST E						S Approach EIGHTH LINE						W Approach DUNDAS ST E						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total			
07:00:00	10	4	9	0	0	23	14	159	3	1	0	177	20	4	14	0	2	38	13	446	3	0	2	462	700		
07:15:00	8	1	23	0	0	32	14	208	5	0	0	227	24	4	16	0	3	44	15	417	0	0	2	432	735		
07:30:00	7	3	17	0	1	27	11	198	7	0	0	216	34	6	15	0	1	55	16	481	3	2	1	502	800		
07:45:00	9	9	30	0	2	48	7	212	16	0	0	235	43	3	22	0	1	68	21	501	7	0	0	529	880	3115	
08:00:00	8	16	28	0	0	52	9	218	24	0	1	251	30	6	17	0	0	53	35	492	11	0	1	538	894	3309	
08:15:00	16	18	35	0	0	69	8	260	15	0	3	283	36	10	26	0	1	72	36	524	12	0	0	572	996	3570	
08:30:00	14	12	29	0	1	55	14	261	18	0	1	293	36	11	36	0	5	83	32	467	14	0	1	513	944	3714	
08:45:00	10	16	24	0	0	50	23	308	25	0	0	356	31	11	23	0	1	65	27	507	6	0	1	540	1011	3845	
09:00:00	7	9	17	0	2	33	15	251	19	0	1	285	35	5	14	0	3	54	21	361	9	0	2	391	763	3714	
09:15:00	11	7	20	0	0	38	5	231	23	0	0	259	15	6	15	0	1	36	35	429	12	0	0	476	809	3527	
09:30:00	4	5	9	0	0	18	7	223	13	0	2	243	26	4	21	0	3	51	37	354	10	1	2	402	714	3297	
09:45:00	4	2	16	0	0	22	9	288	23	0	0	320	18	5	16	0	2	39	19	318	12	0	0	349	730	3016	
BREAK																											
16:00:00	5	10	22	0	1	37	19	477	45	1	2	542	17	10	39	0	1	66	26	336	5	0	2	367	1012		
16:15:00	1	6	21	0	4	28	31	495	35	0	3	561	33	12	22	0	2	67	43	362	2	0	2	407	1063		
16:30:00	5	14	17	0	0	36	24	483	28	1	1	536	30	14	27	0	2	71	37	368	5	1	0	411	1054		
16:45:00	5	7	20	0	4	32	24	550	51	0	5	625	28	21	29	0	3	78	46	353	2	0	1	401	1136	4265	
17:00:00	2	5	12	0	1	19	30	521	44	0	0	595	36	21	32	0	0	89	45	378	2	0	0	425	1128	4381	
17:15:00	2	15	21	0	2	38	21	565	43	0	2	629	28	24	31	0	1	83	41	371	3	1	2	416	1166	4484	
17:30:00	6	12	18	0	3	36	30	519	38	0	2	587	43	21	29	0	6	93	38	330	5	0	3	373	1089	4519	
17:45:00	8	8	14	0	2	30	39	507	40	0	6	586	27	19	29	0	1	75	44	351	4	0	1	399	1090	4473	
18:00:00	4	7	19	0	0	30	30	461	34	0	1	525	28	18	31	0	4	77	42	323	2	1	1	368	1000	4345	
18:15:00	3	9	17	1	3	30	28	477	33	1	6	539	30	11	25	0	4	66	45	364	4	0	5	413	1048	4227	
18:30:00	3	8	18	0	1	29	28	403	30	0	3	461	20	13	35	0	8	68	44	293	2	0	3	339	897	4035	
18:45:00	2	6	14	1	3	23	25	389	33	1	4	448	24	9	22	0	0	55	45	336	6	0	0	387	913	3858	
Grand Total	154	209	470	2	30	835	465	8664	645	5	43	9779	692	268	586	0	55	1546	803	9462	141	6	32	10412	22572	-	
Approach%	18.4%	25%	56.3%	0.2%	-	-	4.8%	88.6%	6.6%	0.1%	-	-	44.8%	17.3%	37.9%	0%	-	7.7%	90.9%	1.4%	0.1%	-	-	-	-	-	
Totals %	0.7%	0.9%	2.1%	0%	3.7%	3.7%	2.1%	38.4%	2.9%	0%	43.3%	43.3%	3.1%	1.2%	2.6%	0%	6.8%	3.6%	41.9%	0.6%	0%	46.1%	-	-	-	-	
Heavy	82	7	9	0	-	-	30	320	3	0	-	-	12	7	16	0	-	13	260	60	0	-	-	-	-	-	
Heavy %	53.2%	3.3%	1.9%	0%	-	-	6.5%	3.7%	0.5%	0%	-	-	1.7%	2.6%	2.7%	0%	-	1.6%	2.7%	42.6%	0%	-	-	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (7.89 °C)

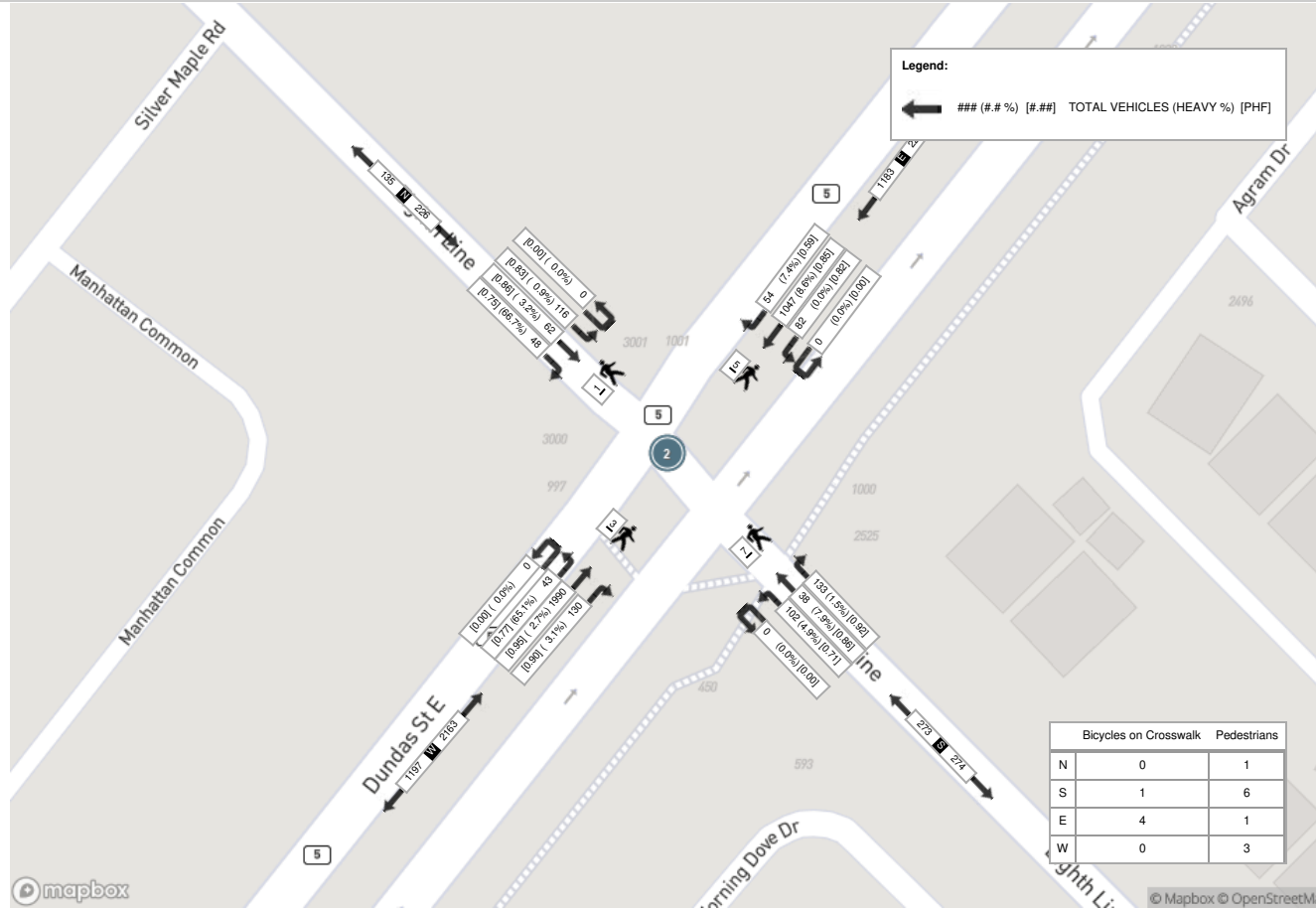
Start Time	N Approach EIGHTH LINE						E Approach DUNDAS ST E						S Approach EIGHTH LINE						W Approach DUNDAS ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	8	16	28	0	0	52	9	218	24	0	1	251	30	6	17	0	0	53	35	492	11	0	1	538	894
08:15:00	16	18	35	0	0	69	8	260	15	0	3	283	36	10	26	0	1	72	36	524	12	0	0	572	996
08:30:00	14	12	29	0	1	55	14	261	18	0	1	293	36	11	36	0	5	83	32	467	14	0	1	513	944
08:45:00	10	16	24	0	0	50	23	308	25	0	0	356	31	11	23	0	1	65	27	507	6	0	1	540	1011
Grand Total	48	62	116	0	1	226	54	1047	82	0	5	1183	133	38	102	0	7	273	130	1990	43	0	3	2163	3845
Approach%	21.2%	27.4%	51.3%	0%	-	-	4.6%	88.5%	6.9%	0%	-	-	48.7%	13.9%	37.4%	0%	-	-	6%	92%	2%	0%	-	-	
Totals %	1.2%	1.6%	3%	0%	5.9%	1.4%	27.2%	2.1%	0%	30.8%	3.5%	1%	2.7%	0%	7.1%	3.4%	51.8%	1.1%	0%	56.3%	-	-	-	-	
PHF	0.75	0.86	0.83	0	0.82	0.59	0.85	0.82	0	0.83	0.92	0.86	0.71	0	0.82	0.9	0.95	0.77	0	0.95	-	-	-	-	
Heavy	32	2	1	0	35	4	90	0	0	94	2	3	5	0	10	4	54	28	0	86	-	-	-	-	
Heavy %	66.7%	3.2%	0.9%	0%	15.5%	7.4%	8.6%	0%	0%	7.9%	1.5%	7.9%	4.9%	0%	3.7%	3.1%	2.7%	65.1%	0%	4%	-	-	-	-	
Lights	16	60	115	0	191	50	957	82	0	1089	131	35	97	0	263	126	1936	15	0	2077	-	-	-	-	
Lights %	33.3%	96.8%	99.1%	0%	84.5%	92.6%	91.4%	100%	0%	92.1%	98.5%	92.1%	95.1%	0%	96.3%	96.9%	97.3%	34.9%	0%	96%	-	-	-	-	
Single-Unit Trucks	31	0	0	0	31	3	43	0	0	46	0	0	1	0	1	0	23	28	0	51	-	-	-	-	
Single-Unit Trucks %	64.6%	0%	0%	0%	13.7%	5.6%	4.1%	0%	0%	3.9%	0%	0%	1%	0%	0.4%	0%	1.2%	65.1%	0%	2.4%	-	-	-	-	
Buses	1	2	1	0	4	1	11	0	0	12	2	3	3	0	8	3	15	0	0	18	-	-	-	-	
Buses %	2.1%	3.2%	0.9%	0%	1.8%	1.9%	1.1%	0%	0%	1%	1.5%	7.9%	2.9%	0%	2.9%	2.3%	0.8%	0%	0%	0.8%	-	-	-	-	
Articulated Trucks	0	0	0	0	0	0	36	0	0	36	0	0	1	0	1	1	16	0	0	17	-	-	-	-	
Articulated Trucks %	0%	0%	0%	0%	0%	0%	3.4%	0%	0%	3%	0%	0%	1%	0%	0.4%	0.8%	0.8%	0%	0%	0.8%	-	-	-	-	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	
Pedestrians	-	-	-	-	1	-	-	-	-	1	-	-	-	-	6	-	-	-	-	3	-	-	-	-	
Pedestrians %	-	-	-	-	6.3%	-	-	-	-	6.3%	-	-	-	-	37.5%	-	-	-	-	18.8%	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	4	-	-	-	-	1	-	-	-	-	0	-	-	-	-	
Bicycles on Crosswalk %	-	-	-	-	0%	-	-	-	-	25%	-	-	-	-	6.3%	-	-	-	-	0%	-	-	-	-	



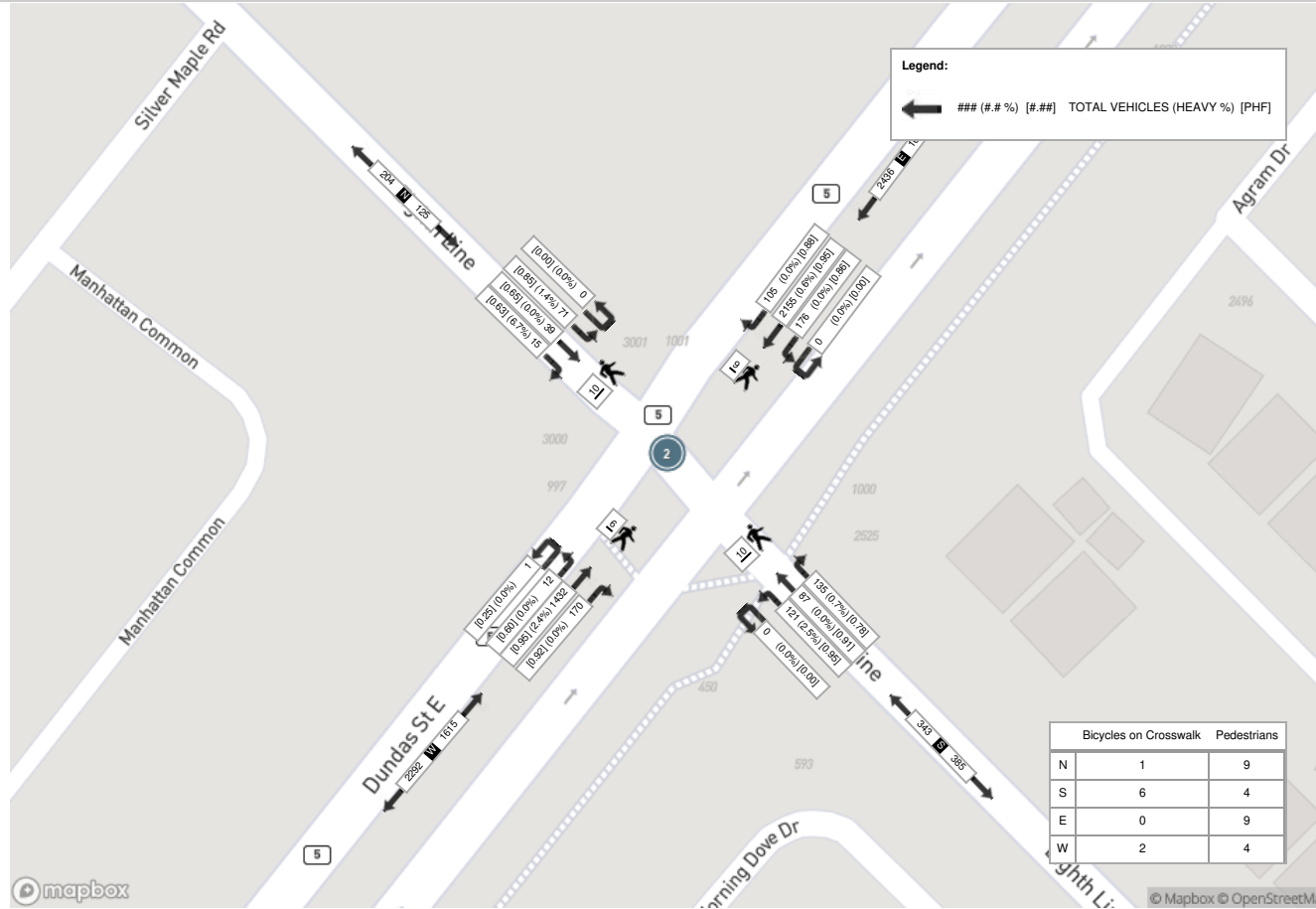
Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.91 °C)

Start Time	N Approach EIGHTH LINE						E Approach DUNDAS ST E						S Approach EIGHTH LINE						W Approach DUNDAS ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	5	7	20	0	4	32	24	550	51	0	5	625	28	21	29	0	3	78	46	353	2	0	1	401	1136
17:00:00	2	5	12	0	1	19	30	521	44	0	0	595	36	21	32	0	0	89	45	378	2	0	0	425	1128
17:15:00	2	15	21	0	2	38	21	565	43	0	2	629	28	24	31	0	1	83	41	371	3	1	2	416	1166
17:30:00	6	12	18	0	3	36	30	519	38	0	2	587	43	21	29	0	6	93	38	330	5	0	3	373	1089
Grand Total	15	39	71	0	10	125	105	2155	176	0	9	2436	135	87	121	0	10	343	170	1432	12	1	6	1615	4519
Approach%	12%	31.2%	56.8%	0%	-	-	4.3%	88.5%	7.2%	0%	-	-	39.4%	25.4%	35.3%	0%	-	-	10.5%	88.7%	0.7%	0.1%	-	-	
Totals %	0.3%	0.9%	1.6%	0%	2.8%	2.8%	2.3%	47.7%	3.9%	0%	53.9%	3%	1.9%	2.7%	0%	7.6%	3.8%	31.7%	0.3%	0%	35.7%	-	-		
PHF	0.63	0.65	0.85	0	0.82	0.82	0.88	0.95	0.86	0	0.97	0.78	0.91	0.95	0	0.92	0.92	0.95	0.6	0.25	0.95	-	-		
Heavy	1	0	1	0	2	2	0	13	0	0	13	1	0	3	0	4	0	34	0	0	34	-	-		
Heavy %	6.7%	0%	1.4%	0%	1.6%	1.6%	0%	0.6%	0%	0%	0.5%	0.7%	0%	2.5%	0%	1.2%	0%	2.4%	0%	0%	2.1%	-	-		
Lights	14	39	70	0	123	123	105	2142	176	0	2423	134	87	118	0	339	170	1398	12	1	1581	-	-		
Lights %	93.3%	100%	98.6%	0%	98.4%	98.4%	100%	99.4%	100%	0%	99.5%	99.3%	100%	97.5%	0%	98.8%	100%	97.6%	100%	100%	97.9%	-	-		
Single-Unit Trucks	1	0	1	0	2	2	0	2	0	0	2	1	0	0	0	1	0	17	0	0	17	-	-		
Single-Unit Trucks %	6.7%	0%	1.4%	0%	1.6%	1.6%	0%	0.1%	0%	0%	0.1%	0.7%	0%	0%	0%	0.3%	0%	1.2%	0%	0%	1.1%	-	-		
Buses	0	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	0	4	0	0	4	-	-		
Buses %	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0%	0.2%	0%	0%	0.8%	0%	0.3%	0%	0.3%	0%	0%	0.2%	-	-		
Articulated Trucks	0	0	0	0	0	0	0	7	0	0	7	0	0	2	0	2	0	13	0	0	13	-	-		
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.3%	0%	0%	1.7%	0%	0.6%	0%	0.9%	0%	0%	0.8%	-	-		
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-		
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-		
Pedestrians	-	-	-	-	9	-	-	-	-	-	9	-	-	-	-	4	-	-	-	-	4	-	-		
Pedestrians %	-	-	-	-	25.7%	-	-	-	-	-	25.7%	-	-	-	-	11.4%	-	-	-	-	11.4%	-	-		
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	6	-	-	-	-	2	-	-		
Bicycles on Crosswalk %	-	-	-	-	2.9%	-	-	-	-	-	0%	-	-	-	-	17.1%	-	-	-	-	5.7%	-	-		

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (7.89 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.91 °C)





Turning Movement Count (3 . DUNDAS STREET EAST & JOHN MCKAY BOULEVARD / PRINCE MICHAEL DRIVE)

Start Time	E Approach DUNDAS ST E						S Approach PRINCE MICHAEL DR					W Approach DUNDAS ST E					N Approach JOHN MCKAY BLVD					Int. Total (15 min)	Int. Total (1 hr)			
	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total	Right N:W	Thru N:S	Left N:E			UTurn N:N	Peds N:	Approach Total
07:00:00	13	173	6	0	1	192	18	0	10	0	4	28	14	449	3	0	1	466	1	0	1	0	0	2	688	
07:15:00	10	189	11	0	0	210	27	0	14	0	1	41	10	431	16	0	1	457	2	0	1	0	2	3	711	
07:30:00	9	192	12	0	0	213	34	0	20	0	0	54	15	495	5	0	0	515	2	1	4	0	2	7	789	
07:45:00	7	206	19	0	0	232	31	1	26	0	0	58	28	552	2	0	0	582	1	0	2	0	0	3	875	3063
08:00:00	5	229	23	0	0	257	39	2	25	0	0	66	27	495	8	0	1	530	2	0	4	0	0	6	859	3234
08:15:00	4	256	28	0	1	288	44	0	27	0	0	71	25	555	4	0	0	584	3	0	4	0	1	7	950	3473
08:30:00	7	260	25	1	0	293	37	1	28	0	1	66	33	512	6	0	0	551	1	0	2	0	0	3	913	3597
08:45:00	6	310	20	0	0	336	26	0	38	0	1	64	38	518	2	1	2	559	2	0	1	0	0	3	962	3684
09:00:00	6	252	29	0	0	287	24	0	35	0	2	59	24	392	4	0	0	420	4	0	4	0	0	8	774	3599
09:15:00	4	225	22	1	0	252	26	0	23	0	6	49	24	429	2	0	0	455	1	1	6	0	0	8	764	3413
09:30:00	5	223	17	0	0	245	27	0	19	0	0	46	23	356	4	0	0	383	3	0	5	0	0	8	682	3182
09:45:00	3	299	22	1	0	325	21	0	17	0	0	38	23	323	4	0	0	350	2	0	5	0	0	7	720	2940
BREAK																										
16:00:00	1	489	47	1	0	538	16	0	35	0	2	51	36	341	1	0	0	378	6	0	5	0	2	11	978	
16:15:00	2	510	49	2	2	563	18	0	32	0	4	50	30	382	1	0	0	413	5	0	3	0	2	8	1034	
16:30:00	1	478	46	2	0	527	21	0	49	0	7	70	40	362	2	1	0	405	3	1	0	0	0	4	1006	
16:45:00	1	591	63	0	2	655	16	0	47	0	9	63	38	347	0	1	0	386	2	0	11	0	2	13	1117	4135
17:00:00	2	522	43	1	0	568	21	1	30	0	1	52	40	419	0	0	0	459	21	1	6	0	0	28	1107	4264
17:15:00	2	595	35	0	1	632	19	0	40	0	4	59	38	365	0	0	0	403	4	1	9	0	1	14	1108	4338
17:30:00	0	547	48	3	0	598	27	1	37	0	2	65	45	377	1	0	0	423	2	0	5	0	0	7	1093	4425
17:45:00	0	536	46	1	0	583	24	0	39	0	6	63	39	331	0	0	0	370	1	0	5	0	0	6	1022	4330
18:00:00	2	485	49	4	0	540	24	0	37	0	1	61	38	353	1	0	0	392	4	0	3	0	0	7	1000	4223
18:15:00	6	487	44	5	0	542	29	1	46	0	6	76	36	358	2	0	0	396	2	1	6	0	0	9	1023	4138
18:30:00	0	428	41	2	2	471	18	0	37	0	13	55	26	323	1	0	2	350	1	0	1	0	1	2	878	3923
18:45:00	2	425	42	4	0	473	24	0	35	0	4	59	31	329	3	0	3	363	1	0	2	0	0	3	898	3799
Grand Total	98	8907	787	28	9	9820	611	7	746	0	74	1364	721	9794	72	3	10	10590	76	6	95	0	13	177	21951	-
Approach%	1%	90.7%	8%	0.3%	-	-	44.8%	0.5%	54.7%	0%	-	-	6.8%	92.5%	0.7%	0%	-	42.9%	3.4%	53.7%	0%	-	-	-	-	
Totals %	0.4%	40.6%	3.6%	0.1%	44.7%	2.8%	0%	3.4%	0%	6.2%	3.3%	44.6%	0.3%	0%	48.2%	0.3%	0%	0.4%	0%	0.8%	-	-	-	-	-	
Heavy	4	321	7	0	-	11	0	14	0	-	17	260	2	0	-	4	0	4	0	-	-	-	-	-	-	
Heavy %	4.1%	3.6%	0.9%	0%	-	1.8%	0%	1.9%	0%	-	2.4%	2.7%	2.8%	0%	-	5.3%	0%	4.2%	0%	-	-	-	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (7.89 °C)

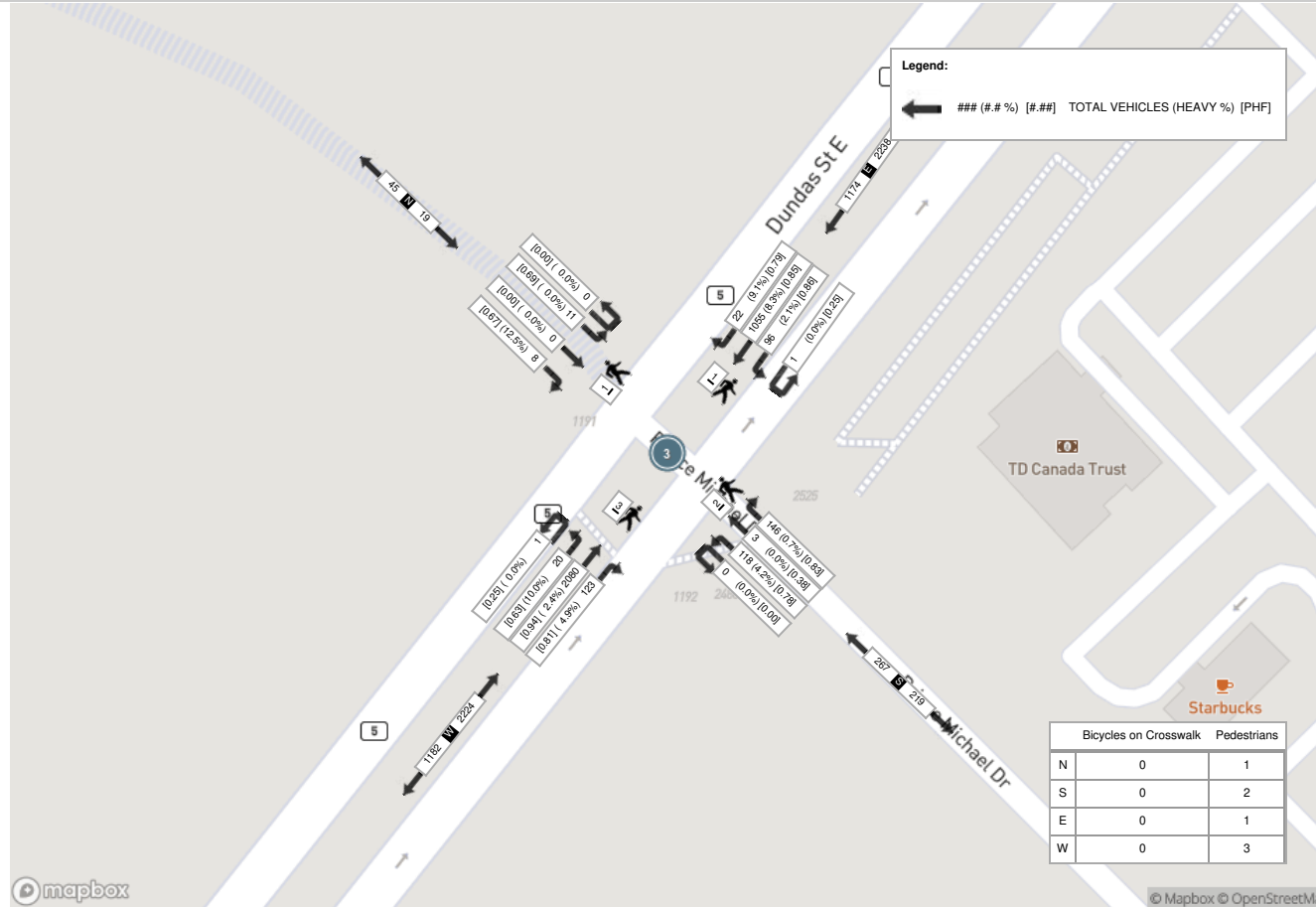
Start Time	E Approach DUNDAS ST E						S Approach PRINCE MICHAEL DR						W Approach DUNDAS ST E						N Approach JOHN MCKAY BLVD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	5	229	23	0	0	257	39	2	25	0	0	66	27	495	8	0	1	530	2	0	4	0	0	6	859
08:15:00	4	256	28	0	1	288	44	0	27	0	0	71	25	555	4	0	0	584	3	0	4	0	1	7	950
08:30:00	7	260	25	1	0	293	37	1	28	0	1	66	33	512	6	0	0	551	1	0	2	0	0	3	913
08:45:00	6	310	20	0	0	336	26	0	38	0	1	64	38	518	2	1	2	559	2	0	1	0	0	3	962
Grand Total	22	1055	96	1	1	1174	146	3	118	0	2	267	123	2080	20	1	3	2224	8	0	11	0	1	19	3684
Approach%	1.9%	89.9%	8.2%	0.1%	-	-	54.7%	1.1%	44.2%	0%	-	-	5.5%	93.5%	0.9%	0%	-	-	42.1%	0%	57.9%	0%	-	-	-
Totals %	0.6%	28.6%	2.6%	0%	-	31.9%	4%	0.1%	3.2%	0%	-	7.2%	3.3%	56.5%	0.5%	0%	-	60.4%	0.2%	0%	0.3%	0%	-	0.5%	-
PHF	0.79	0.85	0.86	0.25	-	0.87	0.83	0.38	0.78	0	-	0.94	0.81	0.94	0.63	0.25	-	0.95	0.67	0	0.69	0	-	0.68	-
Heavy	2	88	2	0	-	92	1	0	5	0	-	6	6	50	2	0	-	58	1	0	0	0	-	1	-
Heavy %	9.1%	8.3%	2.1%	0%	-	7.8%	0.7%	0%	4.2%	0%	-	2.2%	4.9%	2.4%	10%	0%	-	2.6%	12.5%	0%	0%	0%	-	5.3%	-
Lights	20	967	94	1	-	1082	145	3	113	0	-	261	117	2030	18	1	-	2166	7	0	11	0	-	18	-
Lights %	90.9%	91.7%	97.9%	100%	-	92.2%	99.3%	100%	95.8%	0%	-	97.8%	95.1%	97.6%	90%	100%	-	97.4%	87.5%	0%	100%	0%	-	94.7%	-
Single-Unit Trucks	2	44	1	0	-	47	0	0	1	0	-	1	2	20	1	0	-	23	1	0	0	0	-	1	-
Single-Unit Trucks %	9.1%	4.2%	1%	0%	-	4%	0%	0%	0.8%	0%	-	0.4%	1.6%	1%	5%	0%	-	1%	12.5%	0%	0%	0%	-	5.3%	-
Buses	0	8	0	0	-	8	1	0	4	0	-	5	3	15	0	0	-	18	0	0	0	0	-	0	-
Buses %	0%	0.8%	0%	0%	-	0.7%	0.7%	0%	3.4%	0%	-	1.9%	2.4%	0.7%	0%	0%	-	0.8%	0%	0%	0%	0%	-	0%	-
Articulated Trucks	0	36	1	0	-	37	0	0	0	0	-	0	1	15	1	0	-	17	0	0	0	0	-	0	-
Articulated Trucks %	0%	3.4%	1%	0%	-	3.2%	0%	0%	0%	0%	-	0%	0.8%	0.7%	5%	0%	-	0.8%	0%	0%	0%	0%	-	0%	-
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	-
Bicycles on Road %	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	-
Pedestrians	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-
Pedestrians %	-	-	-	-	14.3%	-	-	-	-	28.6%	-	-	-	-	-	42.9%	-	-	-	-	-	14.3%	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-
Bicycles on Crosswalk %	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-



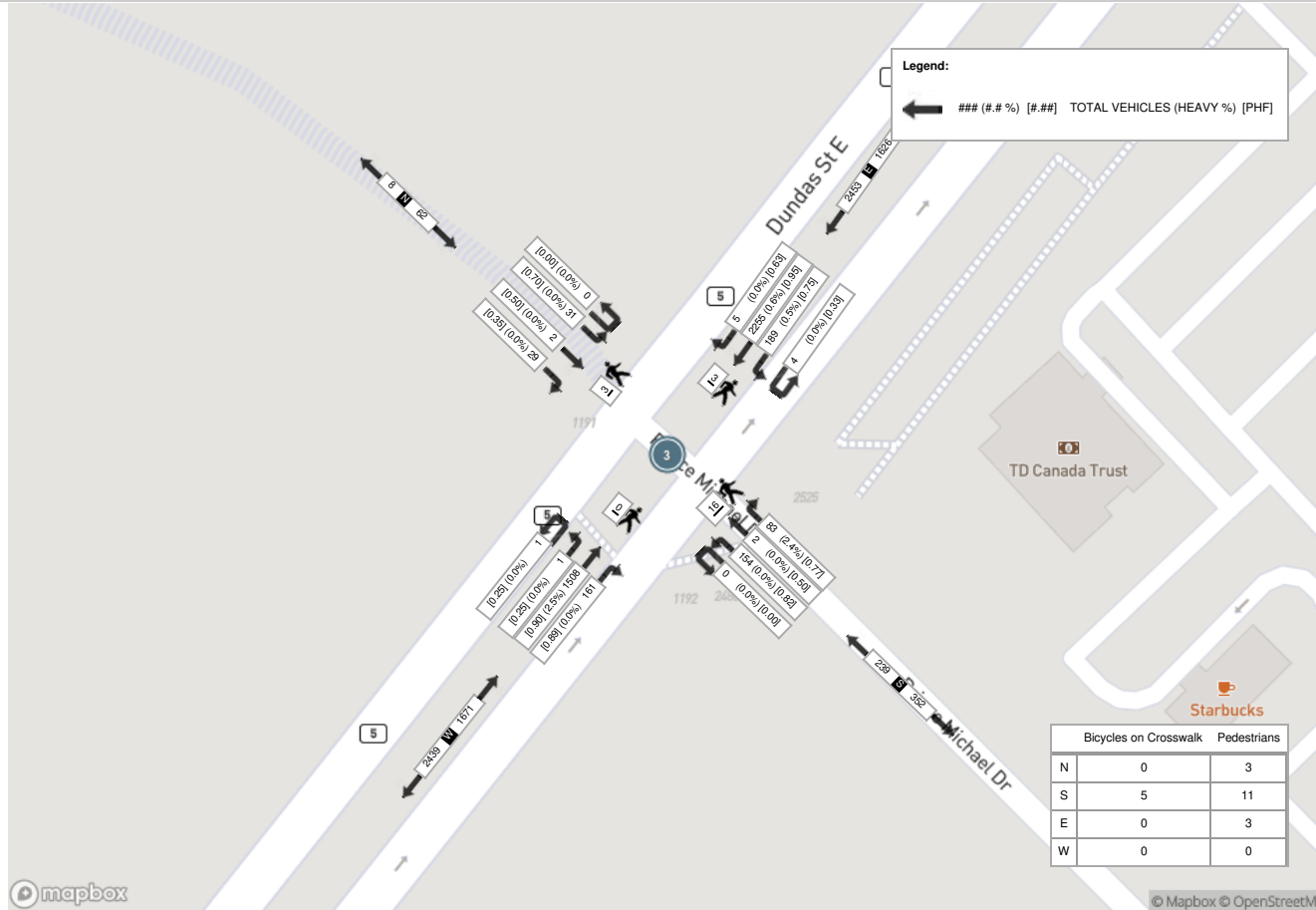
Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.91 °C)

Start Time	E Approach DUNDAS ST E						S Approach PRINCE MICHAEL DR						W Approach DUNDAS ST E						N Approach JOHN MCKAY BLVD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	1	591	63	0	2	655	16	0	47	0	9	63	38	347	0	1	0	386	2	0	11	0	2	13	1117
17:00:00	2	522	43	1	0	568	21	1	30	0	1	52	40	419	0	0	0	459	21	1	6	0	0	28	1107
17:15:00	2	595	35	0	1	632	19	0	40	0	4	59	38	365	0	0	0	403	4	1	9	0	1	14	1108
17:30:00	0	547	48	3	0	598	27	1	37	0	2	65	45	377	1	0	0	423	2	0	5	0	0	7	1093
Grand Total	5	2255	189	4	3	2453	83	2	154	0	16	239	161	1508	1	1	0	1671	29	2	31	0	3	62	4425
Approach%	0.2%	91.9%	7.7%	0.2%	-	-	34.7%	0.8%	64.4%	0%	-	-	9.6%	90.2%	0.1%	0.1%	-	-	46.8%	3.2%	50%	0%	-	-	-
Totals %	0.1%	51%	4.3%	0.1%	55.4%	1.9%	0%	3.5%	0%	5.4%	3.6%	34.1%	0%	0%	37.8%	0.7%	0%	0.7%	0%	1.4%	-	-	-	-	-
PHF	0.63	0.95	0.75	0.33	0.94	0.77	0.5	0.82	0	0.92	0.89	0.9	0.25	0.25	0.91	0.35	0.5	0.7	0	0.55	-	-	-	-	-
Heavy	0	14	1	0	15	2	0	0	0	2	0	37	0	0	37	0	0	0	0	0	0	0	0	0	-
Heavy %	0%	0.6%	0.5%	0%	0.6%	2.4%	0%	0%	0%	0.8%	0%	2.5%	0%	0%	2.2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Lights	5	2241	188	4	2438	81	2	154	0	237	160	1471	1	1	1633	29	2	31	0	62	-	-	-	-	-
Lights %	100%	99.4%	99.5%	100%	99.4%	97.6%	100%	100%	0%	99.2%	99.4%	97.5%	100%	100%	97.7%	100%	100%	100%	0%	100%	-	-	-	-	-
Single-Unit Trucks	0	3	1	0	4	2	0	0	0	2	0	19	0	0	19	0	0	0	0	0	0	0	0	0	-
Single-Unit Trucks %	0%	0.1%	0.5%	0%	0.2%	2.4%	0%	0%	0%	0.8%	0%	1.3%	0%	0%	1.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Buses	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	-
Buses %	0%	0.2%	0%	0%	0.2%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Articulated Trucks	0	7	0	0	7	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	0	0	0	0	-
Articulated Trucks %	0%	0.3%	0%	0%	0.3%	0%	0%	0%	0%	0%	0%	0.9%	0%	0%	0.8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.6%	0%	0%	0%	0.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	3	-	-	-	-	11	-	-	-	-	0	-	-	-	-	3	-	-	-	-	-
Pedestrians %	-	-	-	-	13.6%	-	-	-	-	50%	-	-	-	-	0%	-	-	-	-	13.6%	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	5	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Bicycles on Crosswalk %	-	-	-	-	0%	-	-	-	-	22.7%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (7.89 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.91 °C)





Turning Movement Count (4 . DUNDAS STREET EAST & MEADOWRIDGE DRIVE)

Start Time	N Approach MEADOWRIDGE DR						E Approach DUNDAS ST E						S Approach MEADOWRIDGE DR						W Approach DUNDAS ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	0	0	0	0	0	6	178	9	0	0	193	31	0	5	0	1	36	0	462	0	2	0	464	693	
07:15:00	1	0	2	0	1	3	4	205	13	0	0	222	35	0	2	0	0	37	2	487	0	0	0	489	751	
07:30:00	0	0	3	0	2	3	1	218	13	0	0	232	43	0	3	0	1	46	8	531	0	0	1	539	820	
07:45:00	0	0	2	0	0	2	1	229	16	0	0	246	47	0	5	0	0	52	7	592	0	0	0	599	899	3163
08:00:00	0	0	1	0	4	1	5	268	15	2	0	290	56	0	9	0	0	65	9	552	1	0	0	562	918	3388
08:15:00	0	0	1	0	3	1	0	273	29	0	0	302	71	0	9	0	0	80	15	598	0	0	0	613	996	3633
08:30:00	0	0	1	0	4	1	0	298	31	0	0	329	64	0	13	0	1	77	15	546	0	1	0	562	969	3782
08:45:00	0	0	0	0	0	0	2	293	25	1	0	321	77	0	26	0	0	103	14	532	2	1	0	549	973	3856
09:00:00	1	0	1	0	0	2	0	294	17	0	0	311	46	0	11	1	1	58	9	432	0	0	0	441	812	3750
09:15:00	0	0	0	0	0	0	2	243	17	0	0	262	38	0	1	0	0	39	5	467	0	0	0	472	773	3527
09:30:00	2	0	1	0	0	3	0	262	22	0	0	284	30	0	7	0	0	37	5	397	0	0	0	402	726	3284
09:45:00	0	0	1	0	0	1	0	325	26	0	0	351	37	0	4	0	0	41	3	326	1	0	0	330	723	3034
BREAK																										
16:00:00	1	0	2	0	0	3	1	532	39	0	0	572	28	0	12	0	0	40	16	373	0	1	0	390	1005	
16:15:00	0	0	1	0	2	1	1	544	37	1	2	583	38	0	9	0	1	47	7	405	0	0	1	412	1043	
16:30:00	1	0	1	0	0	2	0	551	38	0	0	589	36	0	7	0	2	43	14	394	0	0	0	408	1042	
16:45:00	0	0	1	0	1	1	0	596	42	1	1	639	23	0	13	0	1	36	12	366	0	0	0	378	1054	4144
17:00:00	0	0	0	0	0	0	0	572	42	1	0	615	33	0	4	0	0	37	14	435	0	0	0	449	1101	4240
17:15:00	0	0	2	0	0	2	3	615	49	0	0	667	38	0	10	0	3	48	7	364	0	0	0	371	1088	4285
17:30:00	0	0	1	0	0	1	0	582	48	2	0	632	45	0	16	0	1	61	17	411	0	1	0	429	1123	4366
17:45:00	0	0	2	0	0	2	2	572	44	0	0	618	40	0	12	0	0	52	19	339	0	1	0	359	1031	4343
18:00:00	0	0	6	0	0	6	0	554	39	0	0	593	34	0	5	0	1	39	13	397	0	0	0	410	1048	4290
18:15:00	0	0	5	0	0	5	0	491	49	0	0	540	42	0	9	0	3	51	19	368	0	0	0	387	983	4185
18:30:00	0	0	0	0	0	0	0	458	47	1	0	506	43	0	8	0	1	51	7	351	0	0	0	358	915	3977
18:45:00	0	0	1	0	0	1	0	465	52	1	0	518	30	0	3	0	1	33	6	351	0	1	2	358	910	3856
Grand Total	6	0	35	0	17	41	28	9618	759	10	3	10415	1005	0	203	1	18	1209	243	10476	4	8	4	10731	22396	-
Approach%	14.6%	0%	85.4%	0%	-	-	0.3%	92.3%	7.3%	0.1%	-	-	83.1%	0%	16.8%	0.1%	-	-	2.3%	97.6%	0%	0.1%	-	-	-	
Totals %	0%	0%	0.2%	0%	0.2%	0.2%	0.1%	42.9%	3.4%	0%	46.5%	4.5%	0%	0.9%	0%	5.4%	1.1%	46.8%	0%	0%	47.9%	-	-	-	-	
Heavy	3	0	11	0	-	-	12	334	16	0	-	-	3	0	5	0	-	-	4	270	2	0	-	-	-	
Heavy %	50%	0%	31.4%	0%	-	-	42.9%	3.5%	2.1%	0%	-	-	0.3%	0%	2.5%	0%	-	-	1.6%	2.6%	50%	0%	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (7.89 °C)

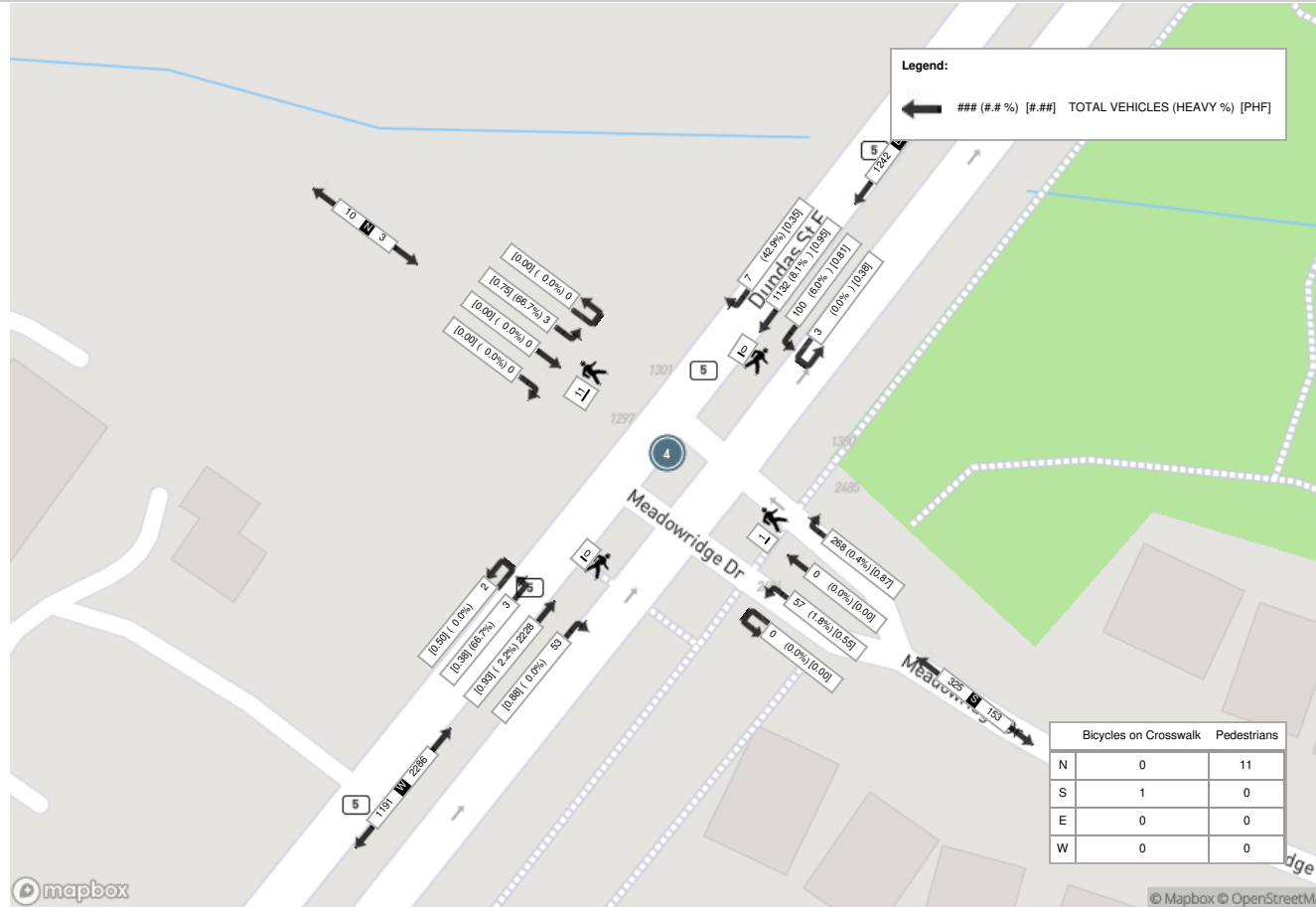
Start Time	N Approach MEADOWRIDGE DR						E Approach DUNDAS ST E						S Approach MEADOWRIDGE DR						W Approach DUNDAS ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	0	0	1	0	4	1	5	268	15	2	0	290	56	0	9	0	0	65	9	552	1	0	0	562	918
08:15:00	0	0	1	0	3	1	0	273	29	0	0	302	71	0	9	0	0	80	15	598	0	0	0	613	996
08:30:00	0	0	1	0	4	1	0	298	31	0	0	329	64	0	13	0	1	77	15	546	0	1	0	562	969
08:45:00	0	0	0	0	0	0	2	293	25	1	0	321	77	0	26	0	0	103	14	532	2	1	0	549	973
Grand Total	0	0	3	0	11	3	7	1132	100	3	0	1242	268	0	57	0	1	325	53	2228	3	2	0	2286	3856
Approach%	0%	0%	100%	0%	-	-	0.6%	91.1%	8.1%	0.2%	-	-	82.5%	0%	17.5%	0%	-	-	2.3%	97.5%	0.1%	0.1%	-	-	
Totals %	0%	0%	0.1%	0%	0.1%	0.1%	0.2%	29.4%	2.6%	0.1%	32.2%	7%	0%	1.5%	0%	8.4%	1.4%	57.8%	0.1%	0.1%	59.3%	-	-		
PHF	0	0	0.75	0	0.75	0.75	0.35	0.95	0.81	0.38	0.94	0.87	0	0.55	0	0.79	0.88	0.93	0.38	0.5	0.93	-	-		
Heavy	0	0	2	0	2	2	3	92	6	0	101	1	0	1	0	2	0	48	2	0	50	-	-		
Heavy %	0%	0%	66.7%	0%	66.7%	66.7%	42.9%	8.1%	6%	0%	8.1%	0.4%	0%	1.8%	0%	0.6%	0%	2.2%	66.7%	0%	2.2%	-	-		
Lights	0	0	1	0	1	1	4	1040	94	3	1141	267	0	56	0	323	53	2180	1	2	2236	-	-		
Lights %	0%	0%	33.3%	0%	33.3%	33.3%	57.1%	91.9%	94%	100%	91.9%	99.6%	0%	98.2%	0%	99.4%	100%	97.8%	33.3%	100%	97.8%	-	-		
Single-Unit Trucks	0	0	0	0	0	0	2	47	2	0	51	0	0	0	0	0	0	18	0	0	18	-	-		
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	28.6%	4.2%	2%	0%	4.1%	0%	0%	0%	0%	0%	0%	0.8%	0%	0%	0.8%	-	-		
Buses	0	0	0	0	0	0	0	7	3	0	10	1	0	1	0	2	0	15	0	0	15	-	-		
Buses %	0%	0%	0%	0%	0%	0%	0%	0.6%	3%	0%	0.8%	0.4%	0%	1.8%	0%	0.6%	0%	0.7%	0%	0%	0.7%	-	-		
Articulated Trucks	0	0	2	0	2	2	1	38	1	0	40	0	0	0	0	0	0	15	2	0	17	-	-		
Articulated Trucks %	0%	0%	66.7%	0%	66.7%	66.7%	14.3%	3.4%	1%	0%	3.2%	0%	0%	0%	0%	0%	0%	0.7%	66.7%	0%	0.7%	-	-		
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-		
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-		
Pedestrians	-	-	-	-	11	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-		
Pedestrians %	-	-	-	-	91.7%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-		
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-	-		
Bicycles on Crosswalk %	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	8.3%	-	-	-	-	0%	-	-	-		



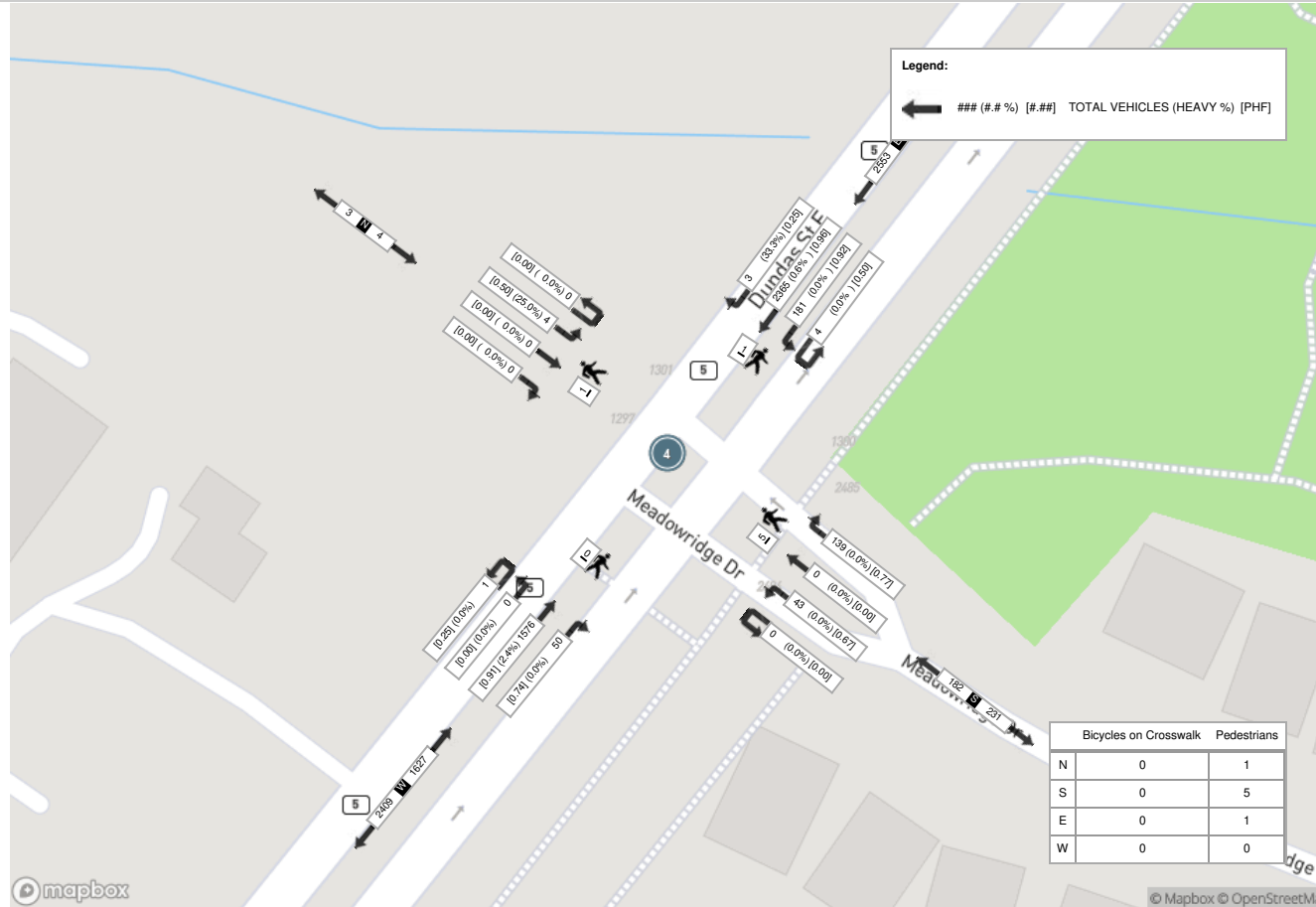
Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.91 °C)

Start Time	N Approach MEADOWRIDGE DR						E Approach DUNDAS ST E						S Approach MEADOWRIDGE DR						W Approach DUNDAS ST E						Int. Total (15 min)	
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total		
16:45:00	0	0	1	0	1	1	0	596	42	1	1	639	23	0	13	0	1	36	12	366	0	0	0	378	1054	
17:00:00	0	0	0	0	0	0	0	572	42	1	0	615	33	0	4	0	0	37	14	435	0	0	0	449	1101	
17:15:00	0	0	2	0	0	2	3	615	49	0	0	667	38	0	10	0	3	48	7	364	0	0	0	371	1088	
17:30:00	0	0	1	0	0	1	0	582	48	2	0	632	45	0	16	0	1	61	17	411	0	1	0	429	1123	
Grand Total	0	0	4	0	1	4	3	2365	181	4	1	2553	139	0	43	0	5	182	50	1576	0	1	0	1627	4366	
Approach%	0%	0%	100%	0%	-	-	0.1%	92.6%	7.1%	0.2%	-	-	76.4%	0%	23.6%	0%	-	-	3.1%	96.9%	0%	0.1%	-	-	-	-
Totals %	0%	0%	0.1%	0%	0.1%	0.1%	0.1%	54.2%	4.1%	0.1%	58.5%	58.5%	3.2%	0%	1%	0%	4.2%	4.2%	1.1%	36.1%	0%	0%	37.3%	37.3%	-	-
PHF	0	0	0.5	0	0.5	0.5	0.25	0.96	0.92	0.5	0.96	0.96	0.77	0	0.67	0	0.75	0.75	0.74	0.91	0	0.25	0.91	0.91	-	-
Heavy	0	0	1	0	1	1	1	15	0	0	16	16	0	0	0	0	0	0	0	38	0	0	38	38	-	-
Heavy %	0%	0%	25%	0%	25%	25%	33.3%	0.6%	0%	0%	0.6%	0.6%	0%	0%	0%	0%	0%	0%	0%	2.4%	0%	0%	2.3%	2.3%	-	-
Lights	0	0	3	0	3	3	2	2349	181	4	2536	2536	139	0	43	0	182	182	50	1538	0	1	1589	1589	-	-
Lights %	0%	0%	75%	0%	75%	75%	66.7%	99.3%	100%	100%	99.3%	99.3%	100%	0%	100%	0%	100%	100%	100%	97.6%	0%	100%	97.7%	97.7%	-	-
Single-Unit Trucks	0	0	0	0	0	0	0	4	0	0	4	4	0	0	0	0	0	0	0	20	0	0	20	20	-	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0%	0.2%	0.2%	0%	0%	0%	0%	0%	0%	0%	1.3%	0%	0%	1.2%	1.2%	-	-
Buses	0	0	0	0	0	0	0	4	0	0	4	4	0	0	0	0	0	0	0	4	0	0	4	4	-	-
Buses %	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0%	0.2%	0.2%	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.2%	0.2%	-	-
Articulated Trucks	0	0	1	0	1	1	1	7	0	0	8	8	0	0	0	0	0	0	0	14	0	0	14	14	-	-
Articulated Trucks %	0%	0%	25%	0%	25%	25%	33.3%	0.3%	0%	0%	0.3%	0.3%	0%	0%	0%	0%	0%	0%	0%	0.9%	0%	0%	0.9%	0.9%	-	-
Bicycles on Road	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-
Pedestrians%	-	-	-	-	14.3%	-	-	-	-	-	14.3%	-	-	-	-	-	71.4%	-	-	-	-	-	0%	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (7.89 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.91 °C)





Turning Movement Count (6 . DUNDAS STREET EAST & NINTH LINE)

Start Time	N Approach NINTH LINE						E Approach DUNDAS ST E					S Approach NINTH LINE					W Approach DUNDAS ST E					Int. Total (15 min)	Int. Total (1 hr)			
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N			UTurn W:W	Peds W:	Approach Total
07:00:00	16	58	51	0	0	125	24	184	11	0	0	219	18	31	27	0	0	76	48	377	23	0	1	448	868	
07:15:00	20	85	56	0	0	161	34	179	15	1	0	229	13	56	25	0	0	94	49	478	36	0	2	563	1047	
07:30:00	25	154	58	0	0	237	33	182	16	0	0	231	24	71	25	0	0	120	41	458	32	0	0	531	1119	
07:45:00	30	137	61	0	0	228	41	185	27	2	0	255	25	79	40	0	1	144	62	565	57	1	0	685	1312	4346
08:00:00	55	165	62	0	0	282	50	170	38	0	0	258	34	101	27	0	0	162	60	471	51	0	0	582	1284	4762
08:15:00	51	180	70	0	0	301	27	227	23	1	0	278	30	68	28	0	0	126	88	543	29	0	0	660	1365	5080
08:30:00	36	156	53	0	0	245	29	240	25	0	0	294	51	78	44	0	1	173	51	523	37	0	0	611	1323	5284
08:45:00	36	187	65	0	0	288	25	241	36	0	0	302	47	67	37	0	2	151	72	529	48	0	0	649	1390	5362
09:00:00	23	116	40	0	0	179	27	245	29	0	0	301	24	68	43	0	0	135	50	392	27	0	0	469	1084	5162
09:15:00	29	107	51	0	0	187	12	207	27	0	0	246	30	55	23	0	0	108	58	420	30	1	0	509	1050	4847
09:30:00	24	105	30	0	0	159	23	216	29	2	0	270	27	53	28	0	0	108	44	378	30	0	0	452	989	4513
09:45:00	28	87	35	0	0	150	32	296	24	0	0	352	35	34	31	0	0	100	33	323	23	0	0	379	981	4104
BREAK																										
16:00:00	33	82	41	0	0	156	45	500	24	1	0	570	86	185	54	0	1	305	51	310	38	1	1	400	1431	
16:15:00	43	90	35	1	0	169	47	479	31	1	0	558	100	196	57	0	1	353	50	360	42	0	0	452	1532	
16:30:00	38	82	48	0	1	168	47	494	32	0	0	573	118	178	64	0	0	360	45	329	34	0	0	408	1509	
16:45:00	38	81	27	0	0	146	53	548	39	1	0	641	122	180	52	0	0	354	53	352	36	0	0	441	1582	6054
17:00:00	52	89	40	0	1	181	39	499	39	0	0	577	141	228	64	0	0	433	52	335	44	0	1	431	1622	6245
17:15:00	25	70	36	0	0	131	49	604	34	0	0	687	122	189	58	0	1	369	42	374	32	0	0	448	1635	6348
17:30:00	43	94	43	0	0	180	39	532	36	2	0	609	128	197	76	0	0	401	35	360	34	0	0	429	1619	6458
17:45:00	33	54	29	0	0	116	46	502	33	2	0	583	94	159	66	0	0	319	40	341	40	0	0	421	1439	6315
18:00:00	41	79	38	0	1	158	39	473	31	0	0	543	86	142	51	3	0	282	49	362	31	0	1	442	1425	6118
18:15:00	31	81	48	0	1	160	65	470	28	0	0	563	79	131	68	0	0	278	39	331	34	0	0	404	1405	5888
18:30:00	35	73	39	0	0	147	54	450	31	0	0	535	47	93	53	0	1	193	37	334	35	0	0	406	1281	5550
18:45:00	18	79	46	0	0	143	68	409	22	1	0	500	46	84	44	0	1	174	38	308	46	0	0	392	1209	5320
Grand Total	803	2491	1102	1	4	4397	948	8532	680	14	0	10174	1527	2703	1085	3	9	5318	1187	9553	869	3	6	11612	31501	-
Approach%	18.3%	56.7%	25.1%	0%	-	-	9.3%	83.9%	6.7%	0.1%	-	-	28.7%	50.8%	20.4%	0.1%	-	10.2%	82.3%	7.5%	0%	-	-	-	-	
Totals %	2.5%	7.9%	3.5%	0%	14%	-	3%	27.1%	2.2%	0%	32.3%	-	4.8%	8.6%	3.4%	0%	16.9%	3.8%	30.3%	2.8%	0%	36.9%	-	-	-	
Heavy	18	80	29	0	-	-	27	299	20	1	-	-	65	105	48	0	-	50	229	9	0	-	-	-	-	
Heavy %	2.2%	3.2%	2.6%	0%	-	-	2.8%	3.5%	2.9%	7.1%	-	-	4.3%	3.9%	4.4%	0%	-	4.2%	2.4%	1%	0%	-	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (7.89 °C)

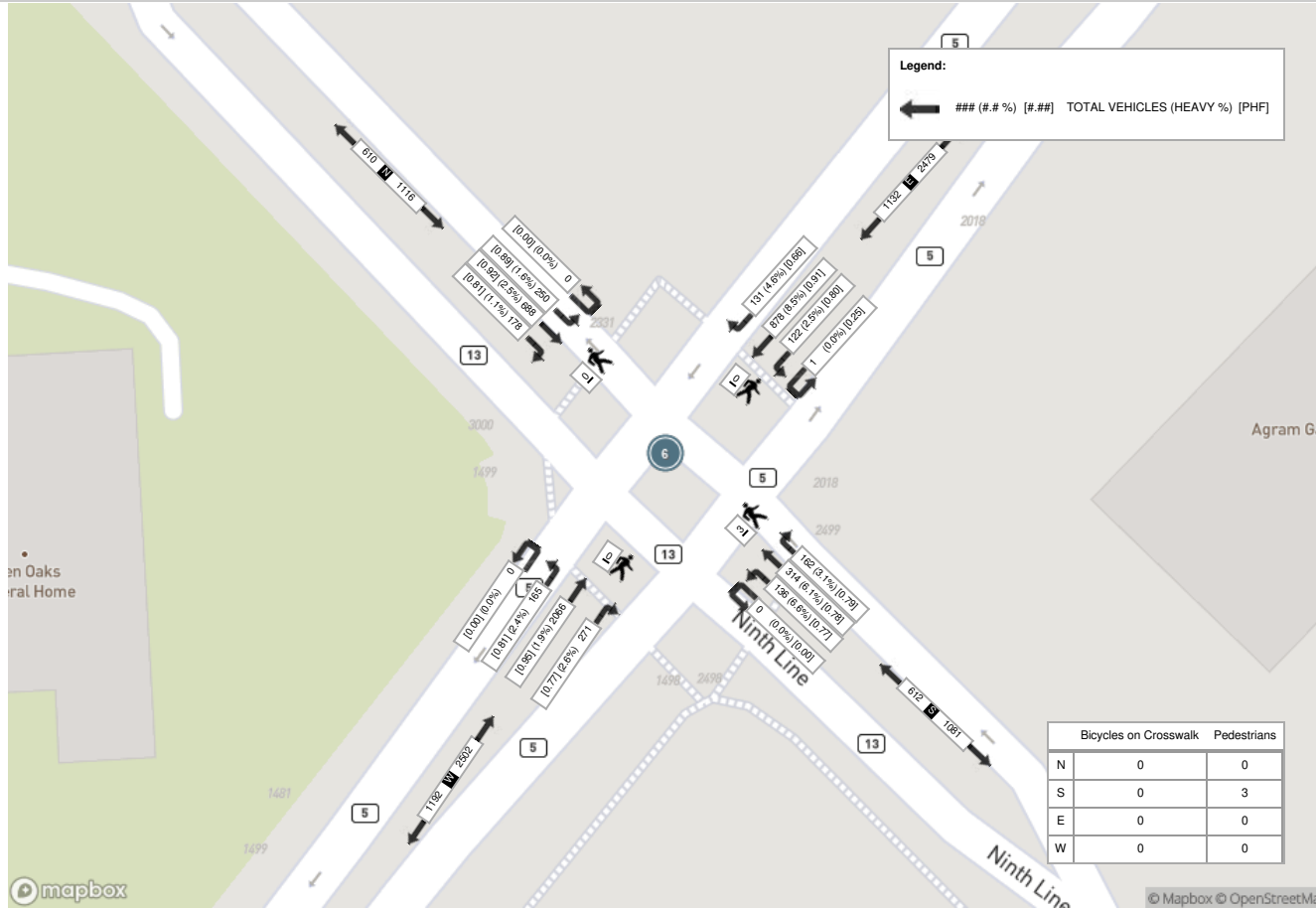
Start Time	N Approach NINTH LINE						E Approach DUNDAS ST E						S Approach NINTH LINE						W Approach DUNDAS ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	55	165	62	0	0	282	50	170	38	0	0	258	34	101	27	0	0	162	60	471	51	0	0	582	1284
08:15:00	51	180	70	0	0	301	27	227	23	1	0	278	30	68	28	0	0	126	88	543	29	0	0	660	1365
08:30:00	36	156	53	0	0	245	29	240	25	0	0	294	51	78	44	0	1	173	51	523	37	0	0	611	1323
08:45:00	36	187	65	0	0	288	25	241	36	0	0	302	47	67	37	0	2	151	72	529	48	0	0	649	1390
Grand Total	178	688	250	0	0	1116	131	878	122	1	0	1132	162	314	136	0	3	612	271	2066	165	0	0	2502	5362
Approach%	15.9%	61.6%	22.4%	0%	-	-	11.6%	77.6%	10.8%	0.1%	-	-	26.5%	51.3%	22.2%	0%	-	-	10.8%	82.6%	6.6%	0%	-	-	-
Totals %	3.3%	12.8%	4.7%	0%	20.8%	2.4%	16.4%	2.3%	0%	21.1%	3%	5.9%	2.5%	0%	11.4%	5.1%	38.5%	3.1%	0%	46.7%	-	-	-	-	-
PHF	0.81	0.92	0.89	0	0.93	0.66	0.91	0.8	0.25	0.94	0.79	0.78	0.77	0	0.88	0.77	0.95	0.81	0	0.95	-	-	-	-	-
Heavy	2	17	4	0	23	6	75	3	0	84	5	19	9	0	33	7	39	4	0	50	-	-	-	-	-
Heavy %	1.1%	2.5%	1.6%	0%	2.1%	4.6%	8.5%	2.5%	0%	7.4%	3.1%	6.1%	6.6%	0%	5.4%	2.6%	1.9%	2.4%	0%	2%	-	-	-	-	-
Lights	176	671	246	0	1093	125	803	119	1	1048	157	295	127	0	579	264	2027	161	0	2452	-	-	-	-	-
Lights %	98.9%	97.5%	98.4%	0%	97.9%	95.4%	91.5%	97.5%	100%	92.6%	96.9%	93.9%	93.4%	0%	94.6%	97.4%	98.1%	97.6%	0%	98%	-	-	-	-	-
Single-Unit Trucks	2	8	2	0	12	5	34	2	0	41	5	14	4	0	23	3	14	1	0	18	-	-	-	-	-
Single-Unit Trucks %	1.1%	1.2%	0.8%	0%	1.1%	3.8%	3.9%	1.6%	0%	3.6%	3.1%	4.5%	2.9%	0%	3.8%	1.1%	0.7%	0.6%	0%	0.7%	-	-	-	-	-
Buses	0	3	1	0	4	0	4	1	0	5	0	3	4	0	7	1	11	3	0	15	-	-	-	-	-
Buses %	0%	0.4%	0.4%	0%	0.4%	0%	0.5%	0.8%	0%	0.4%	0%	1%	2.9%	0%	1.1%	0.4%	0.5%	1.8%	0%	0.6%	-	-	-	-	-
Articulated Trucks	0	6	1	0	7	1	37	0	0	38	0	2	1	0	3	3	14	0	0	17	-	-	-	-	-
Articulated Trucks %	0%	0.9%	0.4%	0%	0.6%	0.8%	4.2%	0%	0%	3.4%	0%	0.6%	0.7%	0%	0.5%	1.1%	0.7%	0%	0%	0.7%	-	-	-	-	-
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-	-	-	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	100%	-	-	-	-	0%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-



Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.91 °C)

Start Time	N Approach NINTH LINE						E Approach DUNDAS ST E						S Approach NINTH LINE						W Approach DUNDAS ST E						Int. Total (15 min)	
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total		
16:45:00	38	81	27	0	0	146	53	548	39	1	0	641	122	180	52	0	0	354	53	352	36	0	0	441	1582	
17:00:00	52	89	40	0	1	181	39	499	39	0	0	577	141	228	64	0	0	433	52	335	44	0	1	431	1622	
17:15:00	25	70	36	0	0	131	49	604	34	0	0	687	122	189	58	0	1	369	42	374	32	0	0	448	1635	
17:30:00	43	94	43	0	0	180	39	532	36	2	0	609	128	197	76	0	0	401	35	360	34	0	0	429	1619	
Grand Total	158	334	146	0	1	638	180	2183	148	3	0	2514	513	794	250	0	1	1557	182	1421	146	0	1	1749	6458	
Approach%	24.8%	52.4%	22.9%	0%	-	-	7.2%	86.8%	5.9%	0.1%	-	-	32.9%	51%	16.1%	0%	-	-	10.4%	81.2%	8.3%	0%	-	-	-	
Totals %	2.4%	5.2%	2.3%	0%	9.9%	9.9%	2.8%	33.8%	2.3%	0%	38.9%	38.9%	7.9%	12.3%	3.9%	0%	24.1%	24.1%	2.8%	22%	2.3%	0%	27.1%	27.1%	-	
PHF	0.76	0.89	0.85	0	0.88	0.88	0.85	0.9	0.95	0.38	0.91	0.91	0.87	0.82	0	0.9	0.9	0.86	0.95	0.83	0	0	0.98	0.98	-	
Heavy	0	6	1	0	7	7	4	11	5	0	20	20	23	10	6	0	39	39	9	34	0	0	43	43	-	
Heavy %	0%	1.8%	0.7%	0%	1.1%	1.1%	2.2%	0.5%	3.4%	0%	0.8%	0.8%	4.5%	1.3%	2.4%	0%	2.5%	2.5%	4.9%	2.4%	0%	0%	2.5%	2.5%	-	
Lights	158	328	145	0	631	631	176	2172	143	3	2494	2494	490	784	244	0	1518	1518	173	1387	146	0	1706	1706	-	
Lights %	100%	98.2%	99.3%	0%	98.9%	98.9%	97.8%	99.5%	96.6%	100%	99.2%	99.2%	95.5%	98.7%	97.6%	0%	97.5%	97.5%	95.1%	97.6%	100%	0%	97.5%	97.5%	-	
Single-Unit Trucks	0	4	1	0	5	5	3	2	2	0	7	7	9	7	1	0	17	17	6	15	0	0	21	21	-	
Single-Unit Trucks %	0%	1.2%	0.7%	0%	0.8%	0.8%	1.7%	0.1%	1.4%	0%	0.3%	0.3%	1.8%	0.9%	0.4%	0%	1.1%	1.1%	3.3%	1.1%	0%	0%	1.2%	1.2%	-	
Buses	0	1	0	0	1	1	0	4	1	0	5	5	1	0	0	0	1	1	0	5	0	0	5	5	-	
Buses %	0%	0.3%	0%	0%	0.2%	0.2%	0%	0.2%	0.7%	0%	0.2%	0.2%	0.2%	0%	0%	0%	0.1%	0.1%	0%	0.4%	0%	0%	0.3%	0.3%	-	
Articulated Trucks	0	1	0	0	1	1	1	5	2	0	8	8	13	3	5	0	21	21	3	14	0	0	17	17	-	
Articulated Trucks %	0%	0.3%	0%	0%	0.2%	0.2%	0.6%	0.2%	1.4%	0%	0.3%	0.3%	2.5%	0.4%	2%	0%	1.3%	1.3%	1.6%	1%	0%	0%	1%	1%	-	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-
Pedestrians %	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	33.3%	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-
Bicycles on Crosswalk %	-	-	-	-	33.3%	-	-	-	-	0%	-	-	-	-	-	33.3%	-	-	-	-	-	0%	-	-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (7.89 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.91 °C)





Turning Movement Count (5 . DUNDAS STREET EAST & WILLIAM CUTMORE BOULEVARD)

Start Time	N Approach WILLIAM CUTMORE BLVD					E Approach DUNDAS ST E					W Approach DUNDAS ST E					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	4	5	0	0	9	18	179	0	0	197	466	14	0	0	480	686	
07:15:00	9	18	0	2	27	27	232	0	0	259	535	6	0	0	541	827	
07:30:00	11	15	0	0	26	22	211	0	1	233	566	13	0	0	579	838	
07:45:00	14	27	0	0	41	18	222	0	0	240	633	8	0	0	641	922	3273
08:00:00	26	15	0	0	41	10	271	0	0	281	606	13	0	0	619	941	3528
08:15:00	12	16	0	0	28	20	286	0	0	306	661	9	0	0	670	1004	3705
08:30:00	12	15	0	0	27	7	332	0	1	339	599	15	0	0	614	980	3847
08:45:00	18	19	0	0	37	17	287	0	0	304	608	10	0	0	618	959	3884
09:00:00	7	15	0	0	22	16	310	0	1	326	456	8	1	1	465	813	3756
09:15:00	13	18	0	0	31	16	252	0	0	268	507	10	0	0	517	816	3568
09:30:00	4	10	0	0	14	17	279	0	0	296	434	5	0	0	439	749	3337
09:45:00	7	18	0	0	25	11	335	0	0	346	344	3	0	0	347	718	3096
BREAK																	
16:00:00	7	13	0	0	20	14	563	0	0	577	400	16	1	0	417	1014	
16:15:00	11	16	0	0	27	22	598	0	2	620	435	6	3	0	444	1091	
16:30:00	14	21	0	1	35	11	574	0	1	585	429	9	0	2	438	1058	
16:45:00	15	22	0	0	37	6	624	0	0	630	390	2	1	1	393	1060	4223
17:00:00	20	15	0	1	35	17	615	0	0	632	450	8	0	2	458	1125	4334
17:15:00	13	16	0	1	29	17	625	0	0	642	402	11	0	1	413	1084	4327
17:30:00	6	18	0	0	24	17	676	0	0	693	459	9	0	1	468	1185	4454
17:45:00	5	15	0	0	20	15	554	1	1	570	378	3	0	0	381	971	4365
18:00:00	9	11	0	1	20	12	598	0	0	610	427	3	0	1	430	1060	4300
18:15:00	4	11	0	2	15	14	532	0	3	546	414	5	0	2	419	980	4196
18:30:00	6	15	0	1	21	11	520	0	0	531	388	4	0	1	392	944	3955
18:45:00	3	7	0	0	10	17	489	0	0	506	385	6	0	0	391	907	3891
Grand Total	250	371	0	9	621	372	10164	1	10	10537	11372	196	6	12	11574	22732	-
Approach%	40.3%	59.7%	0%	-	-	3.5%	96.5%	0%	-	-	98.3%	1.7%	0.1%	-	-	-	-
Totals %	1.1%	1.6%	0%	2.7%	-	1.6%	44.7%	0%	46.4%	-	50%	0.9%	0%	50.9%	-	-	-
Heavy	29	26	0	-	-	36	325	0	-	-	262	20	1	-	-	-	-
Heavy %	11.6%	7%	0%	-	-	9.7%	3.2%	0%	-	-	2.3%	10.2%	16.7%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (7.89 °C)

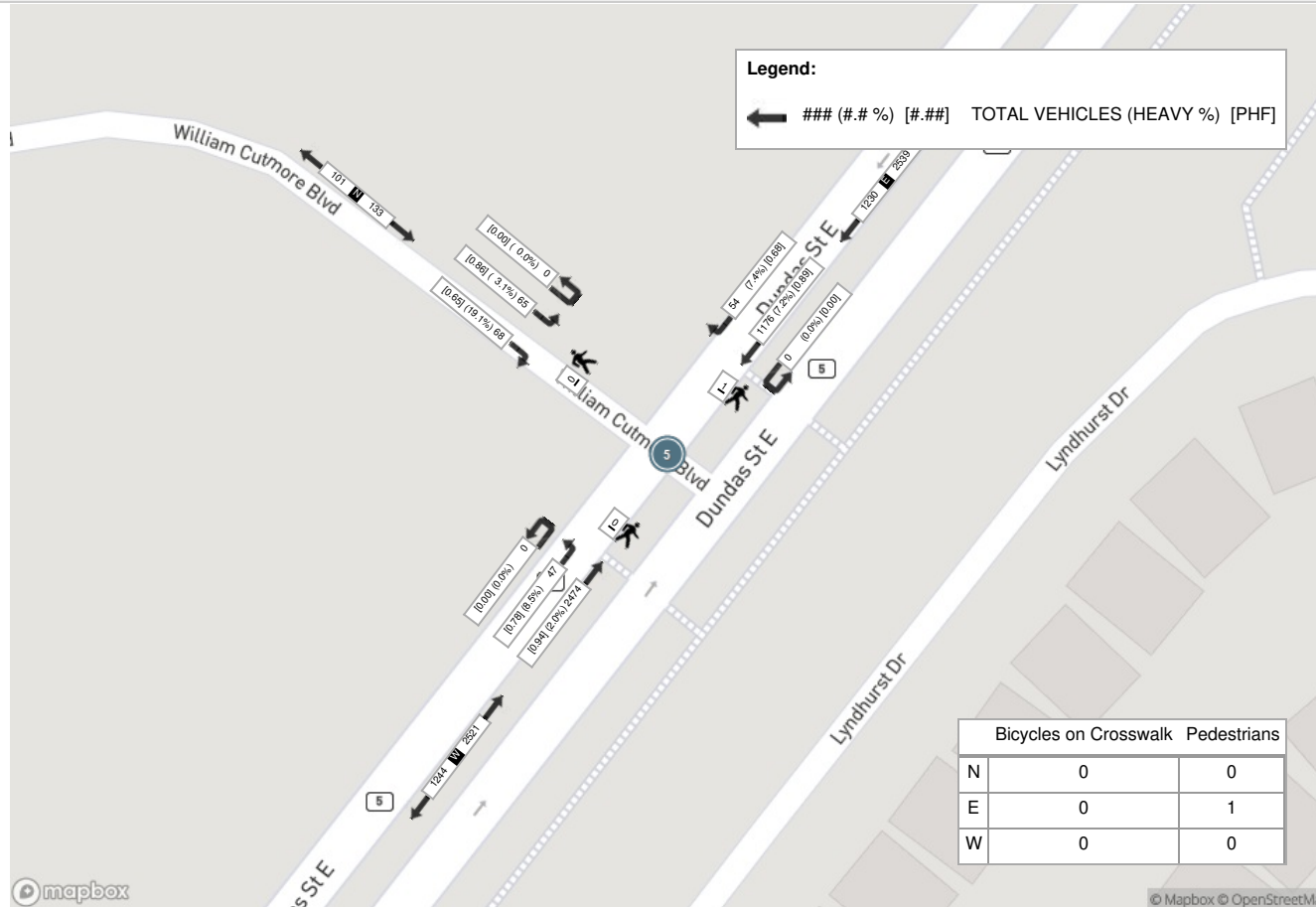
Start Time	N Approach WILLIAM CUTMORE BLVD					E Approach DUNDAS ST E					W Approach DUNDAS ST E					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	26	15	0	0	41	10	271	0	0	281	606	13	0	0	619	941
08:15:00	12	16	0	0	28	20	286	0	0	306	661	9	0	0	670	1004
08:30:00	12	15	0	0	27	7	332	0	1	339	599	15	0	0	614	980
08:45:00	18	19	0	0	37	17	287	0	0	304	608	10	0	0	618	959
Grand Total	68	65	0	0	133	54	1176	0	1	1230	2474	47	0	0	2521	3884
Approach%	51.1%	48.9%	0%	-	-	4.4%	95.6%	0%	-	-	98.1%	1.9%	0%	-	-	-
Totals %	1.8%	1.7%	0%	3.4%	1.4%	30.3%	0%	31.7%	63.7%	1.2%	0%	64.9%	-	-	-	-
PHF	0.65	0.86	0	0.81	0.68	0.89	0	0.91	0.94	0.78	0	0.94	-	-	-	-
Heavy	13	2	0	15	4	85	0	89	49	4	0	53	-	-	-	-
Heavy %	19.1%	3.1%	0%	11.3%	7.4%	7.2%	0%	7.2%	2%	8.5%	0%	2.1%	-	-	-	-
Lights	55	63	0	118	50	1091	0	1141	2425	43	0	2468	-	-	-	-
Lights %	80.9%	96.9%	0%	88.7%	92.6%	92.8%	0%	92.8%	98%	91.5%	0%	97.9%	-	-	-	-
Single-Unit Trucks	7	0	0	7	2	44	0	46	19	1	0	20	-	-	-	-
Single-Unit Trucks %	10.3%	0%	0%	5.3%	3.7%	3.7%	0%	3.7%	0.8%	2.1%	0%	0.8%	-	-	-	-
Buses	4	0	0	4	2	6	0	8	15	2	0	17	-	-	-	-
Buses %	5.9%	0%	0%	3%	3.7%	0.5%	0%	0.7%	0.6%	4.3%	0%	0.7%	-	-	-	-
Articulated Trucks	2	2	0	4	0	35	0	35	15	1	0	16	-	-	-	-
Articulated Trucks %	2.9%	3.1%	0%	3%	0%	3%	0%	2.8%	0.6%	2.1%	0%	0.6%	-	-	-	-
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	1	-	-	-	0	-	-	-	-
Pedestrians%	-	-	-	0%	-	-	-	100%	-	-	-	0%	-	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	-



Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.91 °C)

Start Time	N Approach WILLIAM CUTMORE BLVD					E Approach DUNDAS ST E					W Approach DUNDAS ST E					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	15	22	0	0	37	6	624	0	0	630	390	2	1	1	393	1060
17:00:00	20	15	0	1	35	17	615	0	0	632	450	8	0	2	458	1125
17:15:00	13	16	0	1	29	17	625	0	0	642	402	11	0	1	413	1084
17:30:00	6	18	0	0	24	17	676	0	0	693	459	9	0	1	468	1185
Grand Total	54	71	0	2	125	57	2540	0	0	2597	1701	30	1	5	1732	4454
Approach%	43.2%	56.8%	0%	-	-	2.2%	97.8%	0%	-	-	98.2%	1.7%	0.1%	-	-	-
Totals %	1.2%	1.6%	0%	2.8%	1.3%	57%	0%	58.3%	38.2%	0.7%	0%	38.9%	-	-	-	-
PHF	0.68	0.81	0	0.84	0.84	0.94	0	0.94	0.93	0.68	0.25	0.93	-	-	-	-
Heavy	2	2	0	4	1	14	0	15	39	0	0	39	-	-	-	-
Heavy %	3.7%	2.8%	0%	3.2%	1.8%	0.6%	0%	0.6%	2.3%	0%	0%	2.3%	-	-	-	-
Lights	52	69	0	121	56	2526	0	2582	1662	30	1	1693	-	-	-	-
Lights %	96.3%	97.2%	0%	96.8%	98.2%	99.4%	0%	99.4%	97.7%	100%	100%	97.7%	-	-	-	-
Single-Unit Trucks	1	0	0	1	0	3	0	3	20	0	0	20	-	-	-	-
Single-Unit Trucks %	1.9%	0%	0%	0.8%	0%	0.1%	0%	0.1%	1.2%	0%	0%	1.2%	-	-	-	-
Buses	0	0	0	0	0	4	0	4	4	0	0	4	-	-	-	-
Buses %	0%	0%	0%	0%	0%	0.2%	0%	0.2%	0.2%	0%	0%	0.2%	-	-	-	-
Articulated Trucks	1	2	0	3	1	7	0	8	15	0	0	15	-	-	-	-
Articulated Trucks %	1.9%	2.8%	0%	2.4%	1.8%	0.3%	0%	0.3%	0.9%	0%	0%	0.9%	-	-	-	-
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	0	-	-	-	-	5	-	-	-
Pedestrians%	-	-	-	14.3%	-	-	-	0%	-	-	-	-	71.4%	-	-	-
Bicycles on Crosswalk	-	-	-	1	-	-	-	0	-	-	-	-	0	-	-	-
Bicycles on Crosswalk%	-	-	-	14.3%	-	-	-	0%	-	-	-	-	0%	-	-	-

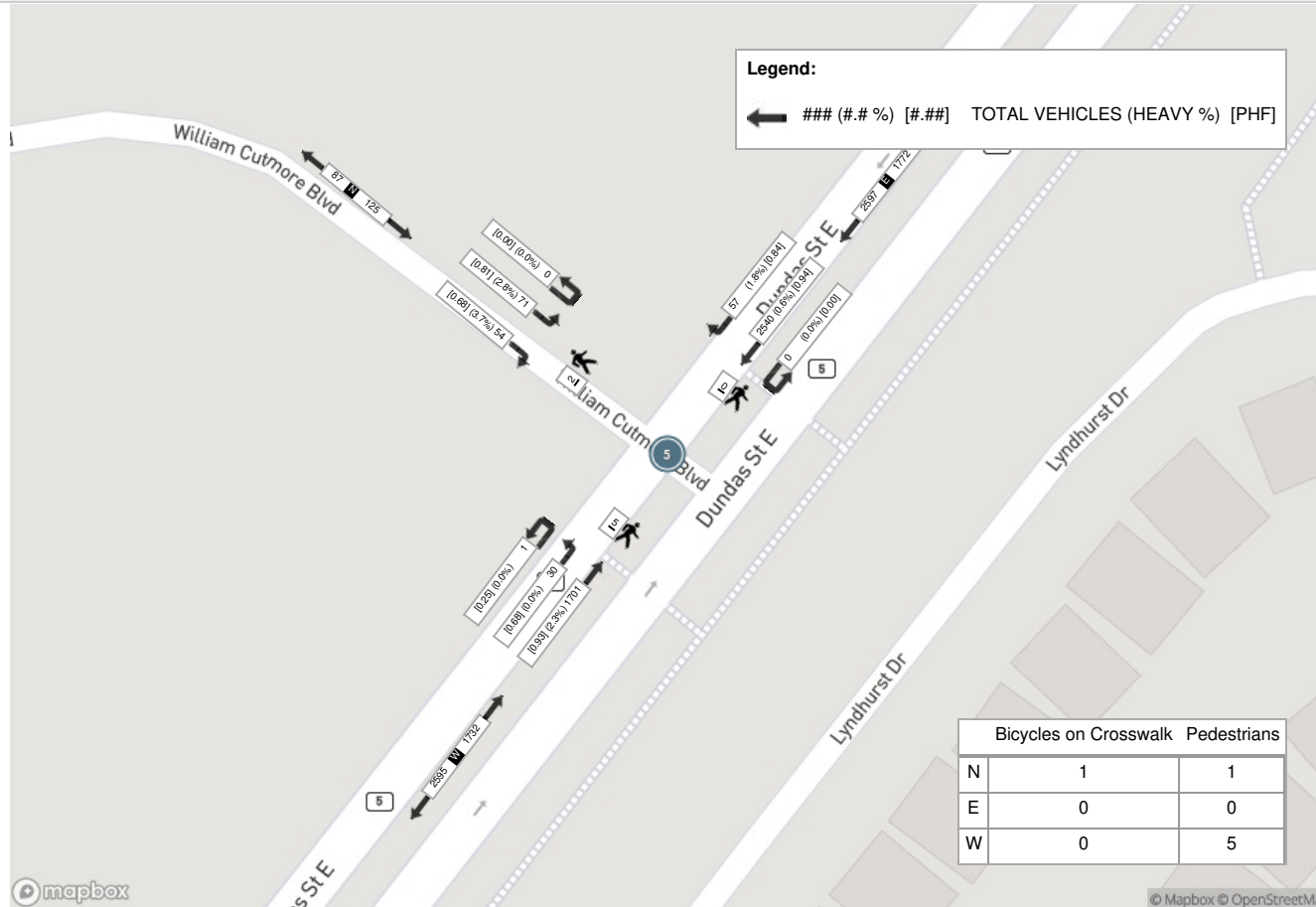
Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (7.89 °C)



mapbox

© Mapbox © OpenStreetMap

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (15.91 °C)





Turning Movement Count (1 . TRAFALGAR ROAD & BURNHAMTHORPE ROAD EAST)

Start Time	N Approach TRAFALGAR RD						E Approach BURNHAMTHORPE RD E						S Approach TRAFALGAR RD						W Approach BURNHAMTHORPE RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	17	127	0	0	0	144	1	13	6	0	1	20	5	104	6	0	1	115	11	8	8	0	0	27	306	
07:15:00	21	140	3	0	0	164	3	16	5	0	0	24	7	150	3	0	0	160	15	19	14	0	0	48	396	
07:30:00	12	197	1	0	0	210	2	19	9	0	0	30	12	177	7	0	0	196	16	26	18	0	0	60	496	
07:45:00	7	210	5	0	0	222	0	14	7	0	0	21	18	161	8	0	0	187	15	29	24	0	0	68	498	1696
08:00:00	16	207	4	0	0	227	4	21	10	0	0	35	21	197	10	0	0	228	20	50	23	0	0	93	583	1973
08:15:00	18	233	14	0	0	265	5	30	23	0	0	58	32	189	27	0	0	248	16	46	30	0	0	92	663	2240
08:30:00	15	253	15	0	0	283	12	35	15	0	0	62	28	231	15	0	0	274	17	47	26	0	2	90	709	2453
08:45:00	23	249	13	0	0	285	13	44	15	0	0	72	28	158	5	0	0	191	15	44	22	0	0	81	629	2584
09:00:00	23	221	6	0	0	250	4	13	11	0	0	28	17	141	10	0	0	168	11	25	18	0	0	54	500	2501
09:15:00	18	151	6	0	0	175	0	18	4	0	0	22	19	100	12	0	0	131	14	32	15	0	0	61	389	2227
09:30:00	6	176	6	0	0	188	2	9	11	0	0	22	15	127	12	0	0	154	16	22	15	0	0	53	417	1935
09:45:00	9	144	2	0	0	155	2	13	8	0	0	23	13	114	13	0	0	140	9	10	10	0	0	29	347	1653
BREAK																										
16:00:00	32	148	5	0	0	185	6	34	17	0	0	57	21	257	17	0	0	295	9	40	20	0	0	69	606	
16:15:00	21	156	4	0	0	181	10	39	11	0	0	60	40	276	21	0	0	337	9	42	18	0	0	69	647	
16:30:00	26	153	7	0	0	186	3	47	18	0	0	68	29	268	18	0	0	315	13	39	17	0	0	69	638	
16:45:00	22	181	4	0	0	207	5	48	9	0	0	62	22	287	22	0	0	331	11	32	14	0	0	57	657	2548
17:00:00	28	166	3	0	0	197	3	43	16	0	0	62	34	327	20	0	0	381	10	30	26	0	0	66	706	2648
17:15:00	26	186	4	0	0	216	2	46	14	0	0	62	35	304	19	0	0	358	10	46	18	0	0	74	710	2711
17:30:00	40	184	7	0	0	231	2	35	17	0	0	54	27	261	33	0	0	321	17	33	19	0	0	69	675	2748
17:45:00	23	174	5	0	0	202	2	39	7	0	0	48	18	213	21	0	0	252	18	50	15	0	0	83	585	2676
18:00:00	18	142	4	0	0	164	2	35	18	0	0	55	30	217	24	1	0	272	16	21	15	0	0	52	543	2513
18:15:00	11	141	4	0	0	156	1	26	12	0	0	39	29	206	18	0	0	253	20	35	16	0	0	71	519	2322
18:30:00	21	138	7	0	0	166	0	37	31	0	0	68	29	128	17	0	0	174	14	30	10	0	0	54	462	2109
18:45:00	10	132	5	0	0	147	1	28	21	0	0	50	14	129	15	0	0	158	5	33	12	0	0	50	405	1929
Grand Total	463	4209	134	0	0	4806	85	702	315	0	1	1102	543	4722	373	1	1	5639	327	789	423	0	2	1539	13086	-
Approach%	9.6%	87.6%	2.8%	0%	-	-	7.7%	63.7%	28.6%	0%	-	-	9.6%	83.7%	6.6%	0%	-	-	21.2%	51.3%	27.5%	0%	-	-	-	-
Totals %	3.5%	32.2%	1%	0%	-	36.7%	0.6%	5.4%	2.4%	0%	8.4%	4.1%	36.1%	2.9%	0%	-	43.1%	2.5%	6%	3.2%	0%	-	11.8%	-	-	-
Heavy	18	236	4	0	-	-	4	9	4	0	-	-	4	252	10	0	-	-	6	15	15	0	-	-	-	-
Heavy %	3.9%	5.6%	3%	0%	-	-	4.7%	1.3%	1.3%	0%	-	-	0.7%	5.3%	2.7%	0%	-	-	1.8%	1.9%	3.5%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (12.18 °C)

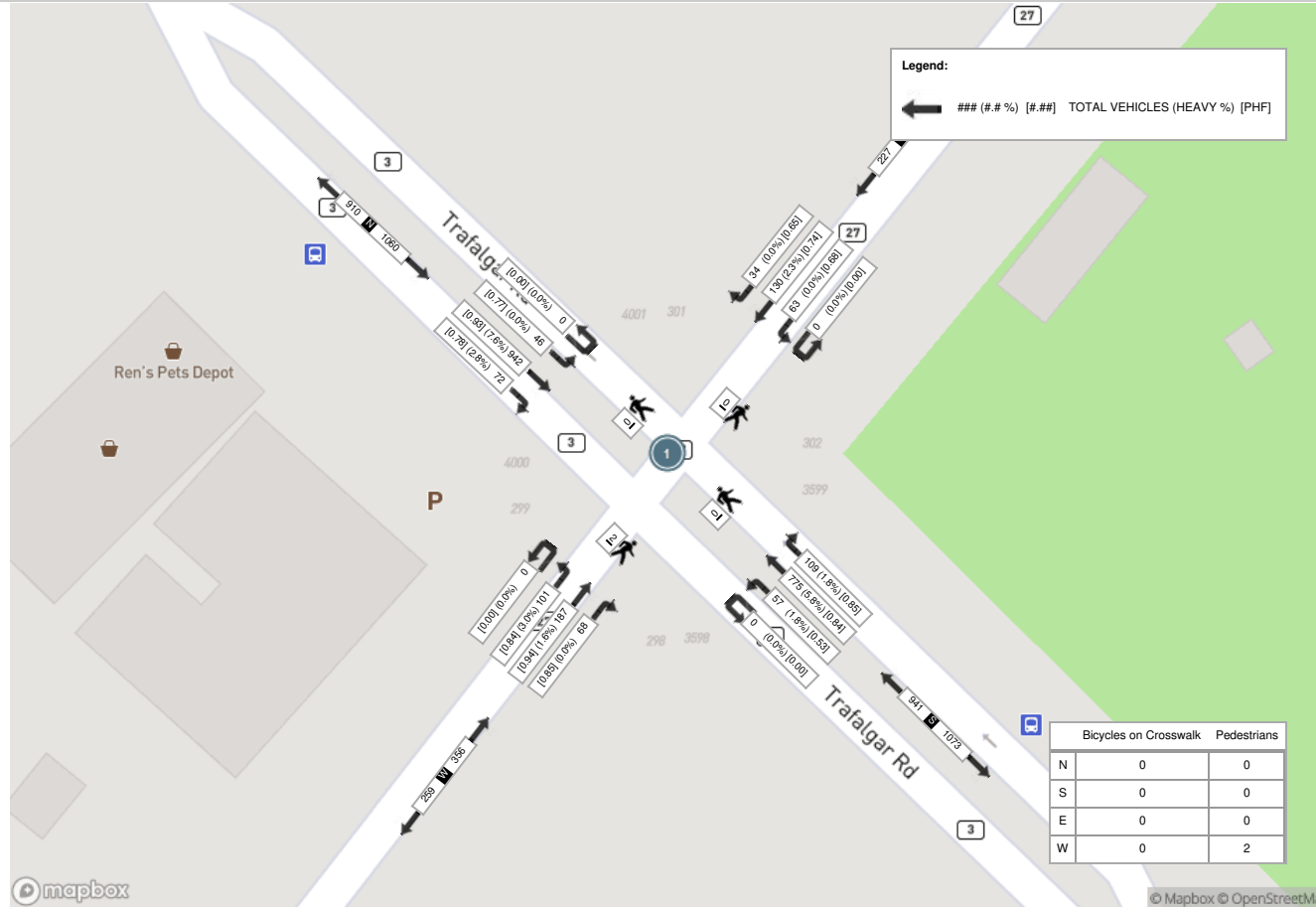
Start Time	N Approach TRAFALGAR RD						E Approach BURNHAMTHORPE RD E						S Approach TRAFALGAR RD						W Approach BURNHAMTHORPE RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	16	207	4	0	0	227	4	21	10	0	0	35	21	197	10	0	0	228	20	50	23	0	0	93	583
08:15:00	18	233	14	0	0	265	5	30	23	0	0	58	32	189	27	0	0	248	16	46	30	0	0	92	663
08:30:00	15	253	15	0	0	283	12	35	15	0	0	62	28	231	15	0	0	274	17	47	26	0	2	90	709
08:45:00	23	249	13	0	0	285	13	44	15	0	0	72	28	158	5	0	0	191	15	44	22	0	0	81	629
Grand Total	72	942	46	0	0	1060	34	130	63	0	0	227	109	775	57	0	0	941	68	187	101	0	2	356	2584
Approach%	6.8%	88.9%	4.3%	0%	-	-	15%	57.3%	27.8%	0%	-	-	11.6%	82.4%	6.1%	0%	-	-	19.1%	52.5%	28.4%	0%	-	-	-
Totals %	2.8%	36.5%	1.8%	0%	41%	1.3%	5%	2.4%	0%	8.8%	4.2%	30%	2.2%	0%	36.4%	2.6%	7.2%	3.9%	0%	13.8%	-	-	-	-	
PHF	0.78	0.93	0.77	0	0.93	0.65	0.74	0.68	0	0.79	0.85	0.84	0.53	0	0.86	0.85	0.94	0.84	0	0.96	-	-	-	-	
Heavy	2	72	0	0	74	0	3	0	0	3	2	45	1	0	48	0	3	3	0	6	-	-	-	-	
Heavy %	2.8%	7.6%	0%	0%	7%	0%	2.3%	0%	0%	1.3%	1.8%	5.8%	1.8%	0%	5.1%	0%	1.6%	3%	0%	1.7%	-	-	-	-	
Lights	70	870	46	0	986	34	127	63	0	224	107	730	56	0	893	68	184	98	0	350	-	-	-	-	
Lights %	97.2%	92.4%	100%	0%	93%	100%	97.7%	100%	0%	98.7%	98.2%	94.2%	98.2%	0%	94.9%	100%	98.4%	97%	0%	98.3%	-	-	-	-	
Single-Unit Trucks	2	42	0	0	44	0	1	0	0	1	1	28	0	0	29	0	1	3	0	4	-	-	-	-	
Single-Unit Trucks %	2.8%	4.5%	0%	0%	4.2%	0%	0.8%	0%	0%	0.4%	0.9%	3.6%	0%	0%	3.1%	0%	0.5%	3%	0%	1.1%	-	-	-	-	
Buses	0	8	0	0	8	0	2	0	0	2	1	7	1	0	9	0	1	0	0	1	-	-	-	-	
Buses %	0%	0.8%	0%	0%	0.8%	0%	1.5%	0%	0%	0.9%	0.9%	0.9%	1.8%	0%	1%	0%	0.5%	0%	0%	0.3%	-	-	-	-	
Articulated Trucks	0	22	0	0	22	0	0	0	0	0	0	10	0	0	10	0	1	0	0	1	-	-	-	-	
Articulated Trucks %	0%	2.3%	0%	0%	2.1%	0%	0%	0%	0%	0%	0%	1.3%	0%	0%	1.1%	0%	0.5%	0%	0%	0.3%	-	-	-	-	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-	-	-	
Pedestrians %	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	100%	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	
Bicycles on Crosswalk %	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	



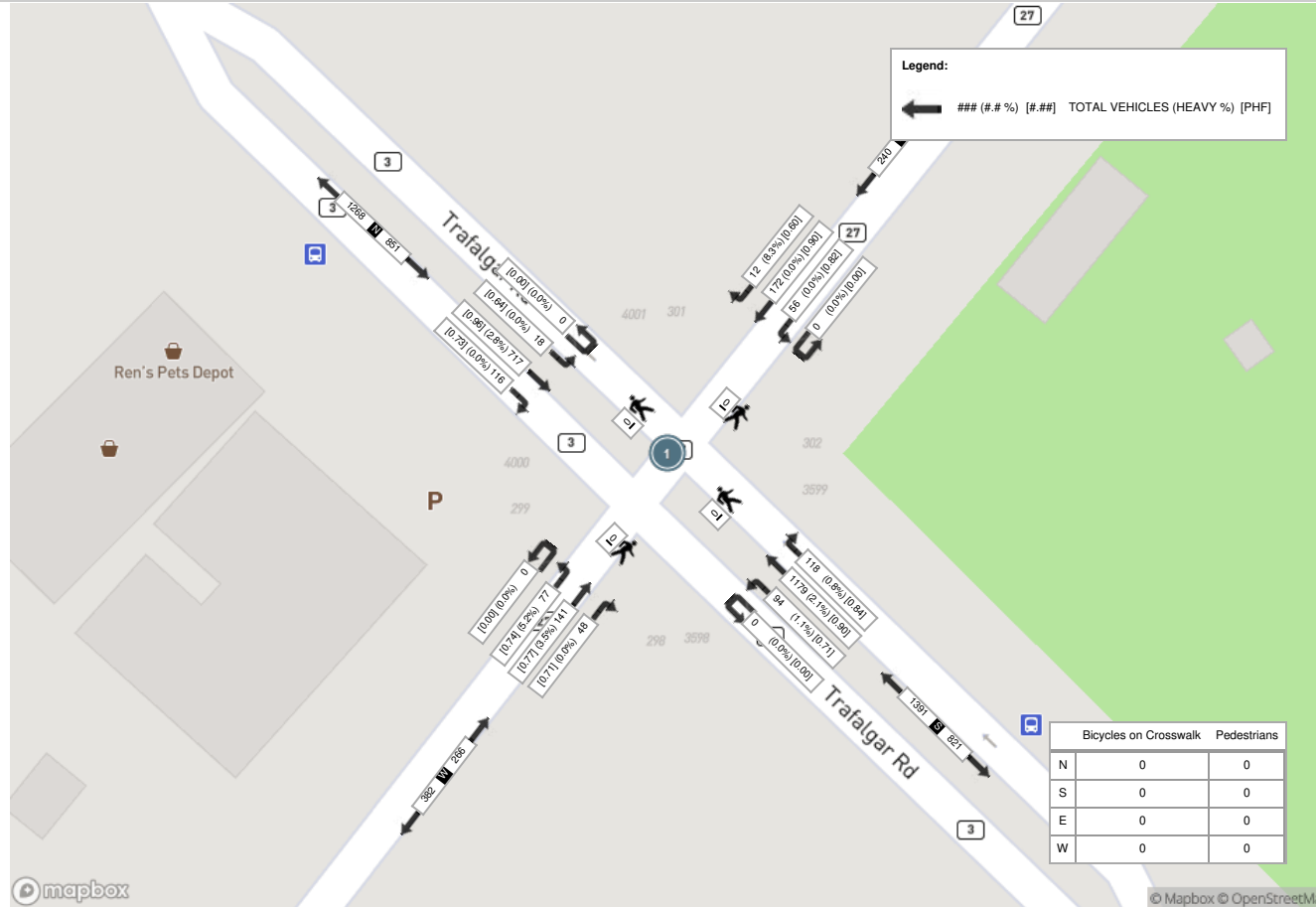
Peak Hour: 04:45 PM - 05:45 PM Weather: Clear Sky (21.12 °C)

Start Time	N Approach TRAFALGAR RD						E Approach BURNHAMTHORPE RD E						S Approach TRAFALGAR RD						W Approach BURNHAMTHORPE RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	22	181	4	0	0	207	5	48	9	0	0	62	22	287	22	0	0	331	11	32	14	0	0	57	657
17:00:00	28	166	3	0	0	197	3	43	16	0	0	62	34	327	20	0	0	381	10	30	26	0	0	66	706
17:15:00	26	186	4	0	0	216	2	46	14	0	0	62	35	304	19	0	0	358	10	46	18	0	0	74	710
17:30:00	40	184	7	0	0	231	2	35	17	0	0	54	27	261	33	0	0	321	17	33	19	0	0	69	675
Grand Total	116	717	18	0	0	851	12	172	56	0	0	240	118	1179	94	0	0	1391	48	141	77	0	0	266	2748
Approach%	13.6%	84.3%	2.1%	0%	-	-	5%	71.7%	23.3%	0%	-	-	8.5%	84.8%	6.8%	0%	-	-	18%	53%	28.9%	0%	-	-	-
Totals %	4.2%	26.1%	0.7%	0%	31%	-	0.4%	6.3%	2%	0%	8.7%	-	4.3%	42.9%	3.4%	0%	50.6%	-	1.7%	5.1%	2.8%	0%	9.7%	-	-
PHF	0.73	0.96	0.64	0	0.92	-	0.6	0.9	0.82	0	0.97	-	0.84	0.9	0.71	0	0.91	-	0.71	0.77	0.74	0	0.9	-	-
Heavy	0	20	0	0	20	-	1	0	0	0	1	-	1	25	1	0	27	-	0	5	4	0	9	-	-
Heavy %	0%	2.8%	0%	0%	2.4%	-	8.3%	0%	0%	0%	0.4%	-	0.8%	2.1%	1.1%	0%	1.9%	-	0%	3.5%	5.2%	0%	3.4%	-	-
Lights	116	696	18	0	830	-	11	172	56	0	239	-	117	1154	93	0	1364	-	48	136	73	0	257	-	-
Lights %	100%	97.1%	100%	0%	97.5%	-	91.7%	100%	100%	0%	99.6%	-	99.2%	97.9%	98.9%	0%	98.1%	-	100%	96.5%	94.8%	0%	96.6%	-	-
Single-Unit Trucks	0	6	0	0	6	-	0	0	0	0	0	-	0	14	1	0	15	-	0	1	3	0	4	-	-
Single-Unit Trucks %	0%	0.8%	0%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0%	1.2%	1.1%	0%	1.1%	-	0%	0.7%	3.9%	0%	1.5%	-	-
Buses	0	6	0	0	6	-	0	0	0	0	0	-	0	3	0	0	3	-	0	4	0	0	4	-	-
Buses %	0%	0.8%	0%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0%	2.8%	0%	0%	1.5%	-	-
Articulated Trucks	0	8	0	0	8	-	1	0	0	0	1	-	1	8	0	0	9	-	0	0	1	0	1	-	-
Articulated Trucks %	0%	1.1%	0%	0%	0.9%	-	8.3%	0%	0%	0%	0.4%	-	0.8%	0.7%	0%	0%	0.6%	-	0%	1.3%	0%	0%	0.4%	-	-
Bicycles on Road	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road %	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians %	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk %	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (12.18 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Clear Sky (21.12 °C)





Turning Movement Count (1 . WHEAT BOOM DR & THRESHING MILLS BLVD)

Start Time	N Approach THRESHING MILLS BLVD					S Approach THRESHING MILLS BLVD					W Approach WHEAT BOOM DR					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	U-Turn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	0	3	0	0	3	4	1	0	0	5	4	0	0	2	4	12	
07:15:00	0	4	0	0	4	2	0	0	0	2	2	0	0	3	2	8	
07:30:00	0	3	0	0	3	3	0	0	0	3	6	2	0	3	8	14	
07:45:00	0	11	0	0	11	7	4	0	0	11	4	1	0	1	5	27	61
08:00:00	1	12	0	0	13	6	2	0	0	8	6	0	0	4	6	27	76
08:15:00	2	15	0	0	17	8	7	0	0	15	4	1	0	2	5	37	105
08:30:00	0	17	0	0	17	9	3	0	0	12	7	0	0	3	7	36	127
08:45:00	1	14	0	0	15	14	4	0	0	18	8	1	0	4	9	42	142
09:00:00	0	8	0	0	8	6	6	0	0	12	4	1	0	1	5	25	140
09:15:00	0	9	0	0	9	6	5	0	0	11	4	0	0	2	4	24	127
09:30:00	0	7	0	0	7	10	2	0	0	12	6	0	0	4	6	25	116
09:45:00	0	10	0	0	10	6	3	0	0	9	7	0	0	0	7	26	100
BREAK																	
16:00:00	0	10	0	0	10	14	6	0	0	20	6	0	0	0	6	36	
16:15:00	0	10	0	2	10	16	5	0	0	21	8	1	0	0	9	40	
16:30:00	0	11	0	2	11	23	3	0	0	26	5	1	0	2	6	43	
16:45:00	1	5	0	0	6	16	8	1	0	25	8	0	0	4	8	39	158
17:00:00	2	12	0	0	14	19	11	0	0	30	3	0	0	2	3	47	169
17:15:00	1	10	0	0	11	16	10	0	0	26	5	1	0	0	6	43	172
17:30:00	0	9	0	0	9	27	6	0	0	33	5	1	0	0	6	48	177
17:45:00	1	3	0	0	4	16	9	0	0	25	10	0	0	0	10	39	177
18:00:00	0	14	0	0	14	13	7	0	0	20	6	0	0	0	6	40	170
18:15:00	1	6	0	0	7	17	11	0	0	28	4	0	0	1	4	39	166
18:30:00	0	11	0	0	11	16	8	0	0	24	6	0	0	4	6	41	159
18:45:00	2	8	0	0	10	11	5	0	0	16	7	0	0	3	7	33	153
Grand Total	12	222	0	4	234	285	126	1	0	412	135	10	0	45	145	791	-
Approach%	5.1%	94.9%	0%	-	-	69.2%	30.6%	0.2%	-	-	93.1%	6.9%	0%	-	-	-	-
Totals %	1.5%	28.1%	0%	-	29.6%	36%	15.9%	0.1%	-	52.1%	17.1%	1.3%	0%	-	18.3%	-	-
Heavy	0	4	0	-	-	9	3	0	-	-	8	1	0	-	-	-	-
Heavy %	0%	1.8%	0%	-	-	3.2%	2.4%	0%	-	-	5.9%	10%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (11.59 °C)

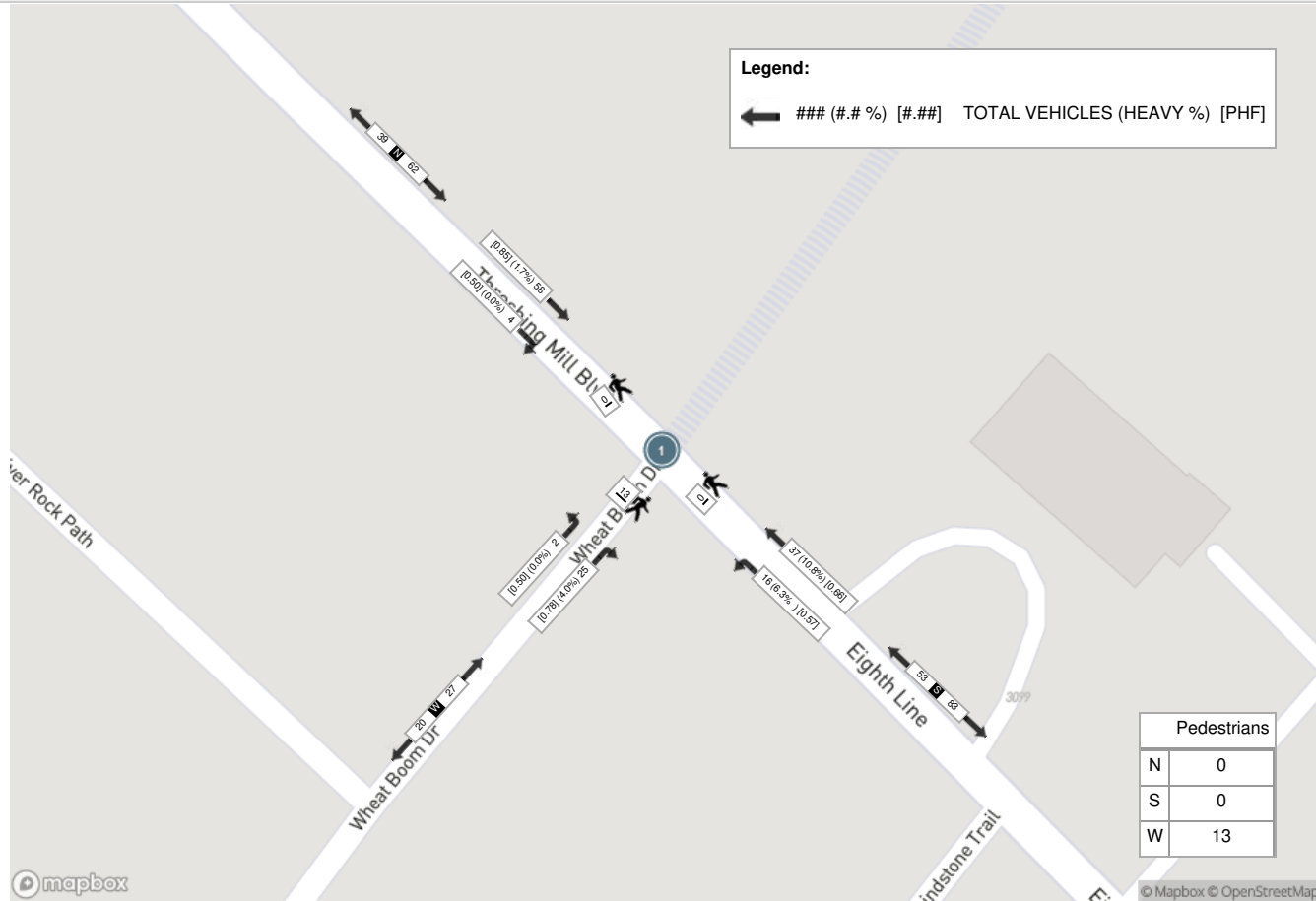
Start Time	N Approach THRESHING MILLS BLVD					S Approach THRESHING MILLS BLVD					W Approach WHEAT BOOM DR					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
08:00:00	1	12	0	0	13	6	2	0	0	8	6	0	0	4	6	27
08:15:00	2	15	0	0	17	8	7	0	0	15	4	1	0	2	5	37
08:30:00	0	17	0	0	17	9	3	0	0	12	7	0	0	3	7	36
08:45:00	1	14	0	0	15	14	4	0	0	18	8	1	0	4	9	42
Grand Total	4	58	0	0	62	37	16	0	0	53	25	2	0	13	27	142
Approach%	6.5%	93.5%	0%		-	69.8%	30.2%	0%		-	92.6%	7.4%	0%		-	-
Totals %	2.8%	40.8%	0%		43.7%	26.1%	11.3%	0%		37.3%	17.6%	1.4%	0%		19%	-
PHF	0.5	0.85	0		0.91	0.66	0.57	0		0.74	0.78	0.5	0		0.75	-
Heavy	0	1	0		1	4	1	0		5	1	0	0		1	-
Heavy %	0%	1.7%	0%		1.6%	10.8%	6.3%	0%		9.4%	4%	0%	0%		3.7%	-
Lights	4	57	0		61	33	15	0		48	24	2	0		26	-
Lights %	100%	98.3%	0%		98.4%	89.2%	93.8%	0%		90.6%	96%	100%	0%		96.3%	-
Single-Unit Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Buses	0	1	0		1	4	1	0		5	1	0	0		1	-
Buses %	0%	1.7%	0%		1.6%	10.8%	6.3%	0%		9.4%	4%	0%	0%		3.7%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	13	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	100%	-	-



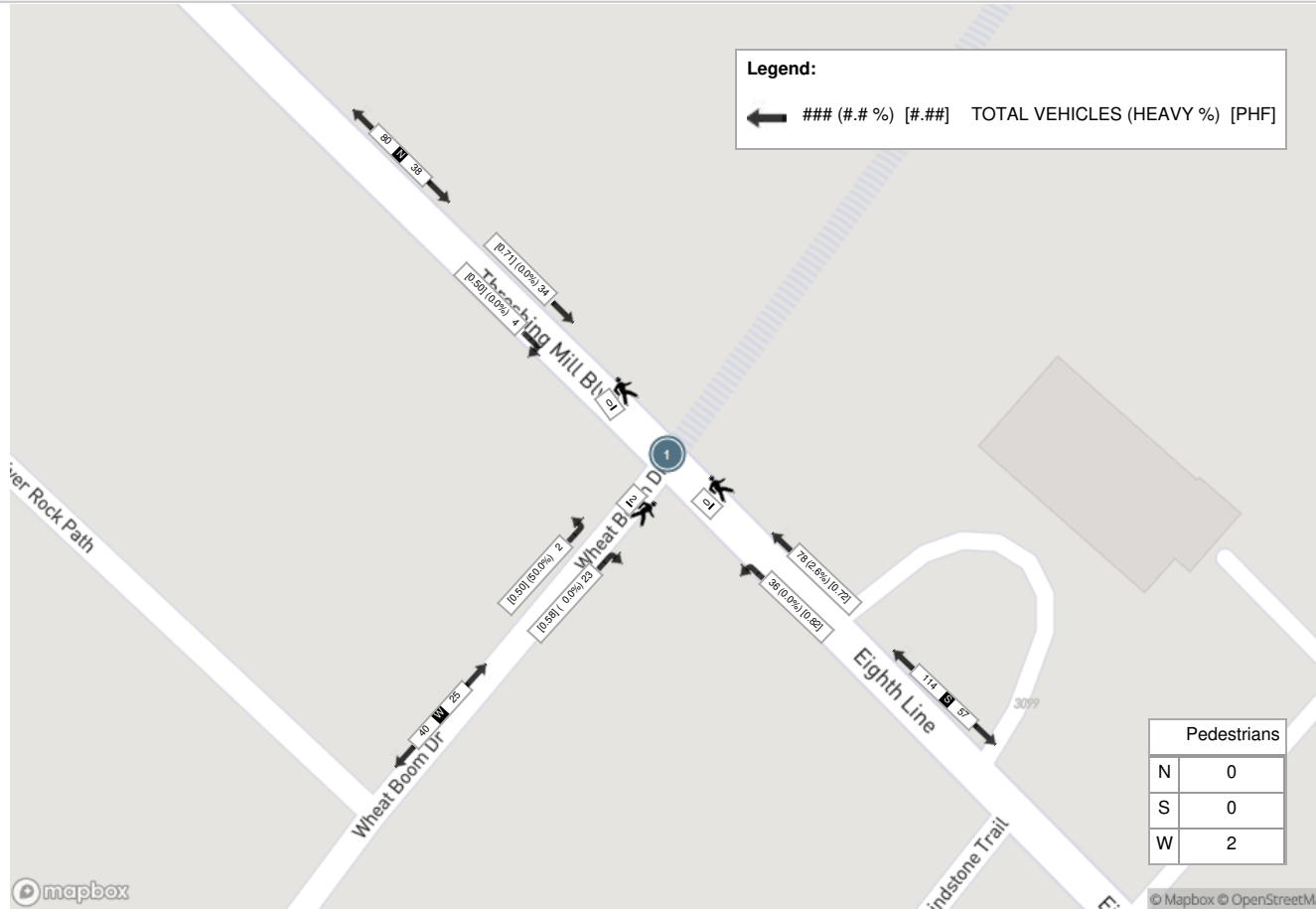
Peak Hour: 05:00 PM - 06:00 PM Weather: Clear Sky (23.83 °C)

Start Time	N Approach THRESHING MILLS BLVD					S Approach THRESHING MILLS BLVD					W Approach WHEAT BOOM DR					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
17:00:00	2	12	0	0	14	19	11	0	0	30	3	0	0	2	3	47
17:15:00	1	10	0	0	11	16	10	0	0	26	5	1	0	0	6	43
17:30:00	0	9	0	0	9	27	6	0	0	33	5	1	0	0	6	48
17:45:00	1	3	0	0	4	16	9	0	0	25	10	0	0	0	10	39
Grand Total	4	34	0	0	38	78	36	0	0	114	23	2	0	2	25	177
Approach%	10.5%	89.5%	0%		-	68.4%	31.6%	0%		-	92%	8%	0%		-	-
Totals %	2.3%	19.2%	0%		21.5%	44.1%	20.3%	0%		64.4%	13%	1.1%	0%		14.1%	-
PHF	0.5	0.71	0		0.68	0.72	0.82	0		0.86	0.58	0.5	0		0.63	-
Heavy	0	0	0		0	2	0	0		2	0	1	0		1	-
Heavy %	0%	0%	0%		0%	2.6%	0%	0%		1.8%	0%	50%	0%		4%	-
Lights	4	34	0		38	74	36	0		110	23	1	0		24	-
Lights %	100%	100%	0%		100%	94.9%	100%	0%		96.5%	100%	50%	0%		96%	-
Single-Unit Trucks	0	0	0		0	1	0	0		1	0	1	0		1	-
Single-Unit Trucks %	0%	0%	0%		0%	1.3%	0%	0%		0.9%	0%	50%	0%		4%	-
Buses	0	0	0		0	1	0	0		1	0	0	0		0	-
Buses %	0%	0%	0%		0%	1.3%	0%	0%		0.9%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0		0	2	0	0		2	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	2.6%	0%	0%		1.8%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	100%	-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (11.59 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Clear Sky (23.83 °C)



Ontario Traffic Inc.

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: Oakville
Site #: 1902900001
Intersection: Dundas St E & Ninth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 1452
 North Entering: 800
 North Peds: 0
 Peds Cross: \bowtie

Heavys	0	0	0	0
Trucks	0	2	0	2
Cars	98	518	182	798
Totals	98	520	182	



Heavys	0
Trucks	5
Cars	647
Totals	652

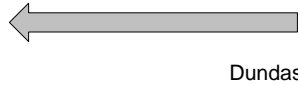
East Leg Total: 3571
 East Entering: 1102
 East Peds: 0
 Peds Cross: \bowtie

Heavys	Trucks	Cars	Totals
0	95	1036	1131

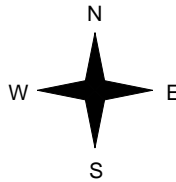


Ninth Line

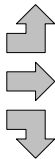
Cars	Trucks	Heavys	Totals
122	0	0	122
786	74	0	860
118	2	0	120
1026	76	0	



Dundas St E



Heavys	Trucks	Cars	Totals
0	0	217	217
0	25	2109	2134
0	1	312	313
0	26	2638	



Dundas St E



Peds Cross: \bowtie
 West Peds: 0
 West Entering: 2664
 West Leg Total: 3795

Cars	948	Cars	152	308	148	608
Trucks	5	Trucks	21	5	5	31
Heavys	0	Heavys	0	0	0	0
Totals	953	Totals	173	313	153	



Ninth Line



Peds Cross: \bowtie
 South Peds: 0
 South Entering: 639
 South Leg Total: 1592

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 18:00:00

One Hour Peak

From: 16:45:00

To: 17:45:00

Municipality: Oakville
Site #: 1902900001
Intersection: Dundas St E & Ninth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 1558
 North Entering: 598
 North Peds: 0
 Peds Cross: \times

Heavys	0	0	0	0
Trucks	0	2	2	4
Cars	195	297	102	594
Totals	195	299	104	



Heavys	0
Trucks	6
Cars	954
Totals	960

East Leg Total: 4476
 East Entering: 2687
 East Peds: 0
 Peds Cross: \times

Heavys	Trucks	Cars	Totals
0	25	2896	2921

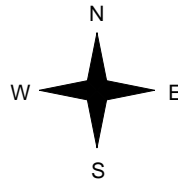


Ninth Line

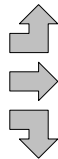
Cars	Trucks	Heavys	Totals
133	0	0	133
2393	20	0	2413
138	3	0	141
2664	23	0	



Dundas St E



Heavys	Trucks	Cars	Totals
0	0	129	129
0	35	1120	1155
0	4	159	163
0	39	1408	



Dundas St E



Cars	Trucks	Heavys	Totals
1726	63	0	1789

Peds Cross: \times
 West Peds: 0
 West Entering: 1447
 West Leg Total: 4368

Cars	594	Cars	308	692	504	1504
Trucks	9	Trucks	5	6	26	37
Heavys	0	Heavys	0	0	0	0
Totals	603	Totals	313	698	530	



Peds Cross: \times
 South Peds: 0
 South Entering: 1541
 South Leg Total: 2144

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Oakville
Site #: 1902900001
Intersection: Dundas St E & Ninth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 5571
 North Entering: 2631
 North Peds: 1
 Peds Cross: ⚡

Heavys	0	0	0	0
Trucks	1	9	5	15
Cars	548	1505	563	2616
Totals	549	1514	568	



Heavys	0
Trucks	24
Cars	2916
Totals	2940

East Leg Total: 15364
 East Entering: 7140
 East Peds: 0
 Peds Cross: ⚡

Heavys	Trucks	Cars	Totals
0	262	7476	7738

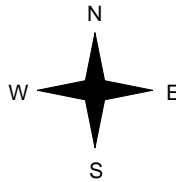


Ninth Line

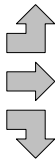
Cars	Trucks	Heavys	Totals
440	2	0	442
6020	205	0	6225
463	10	0	473
6923	217	0	



Dundas St E



Heavys	Trucks	Cars	Totals
0	1	610	611
0	145	6276	6421
0	20	830	850
0	166	7716	



Ninth Line



Dundas St E



Cars	Trucks	Heavys	Totals
8016	208	0	8224

Peds Cross: ⚡
 West Peds: 0
 West Entering: 7882
 West Leg Total: 15620

Cars	2798
Trucks	39
Heavys	0
Totals	2837



Cars	908	1866	1177	3951
Trucks	56	21	58	135
Heavys	0	0	0	0
Totals	964	1887	1235	

Peds Cross: ⚡
 South Peds: 1
 South Entering: 4086
 South Leg Total: 6923

Comments

Ontario Traffic Inc. Traffic Count Summary

Intersection: Dundas St E & Ninth Line

Count Date: 19-Feb-19

Municipality: Oakville

North Approach Totals						South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	194	414	43	651	1	1193	8:00:00	136	268	138	542	0
9:00:00	177	510	107	794	0	1413	9:00:00	188	289	142	619	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	82	283	207	572	0	1982	17:00:00	305	654	451	1410	1
18:00:00	115	307	192	614	0	2129	18:00:00	335	676	504	1515	0
Totals:	568	1514	549	2631	1	6717		964	1887	1235	4086	1
East Approach Totals						West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	94	718	86	898	0	3452	8:00:00	181	2131	242	2554	0
9:00:00	103	817	106	1026	0	3527	9:00:00	204	2007	290	2501	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	134	2350	111	2595	0	3998	17:00:00	99	1147	157	1403	0
18:00:00	142	2340	139	2621	0	4045	18:00:00	127	1136	161	1424	0
Totals:	473	6225	442	7140	0	15022		611	6421	850	7882	0
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	7:00	8:00	9:00	16:00		17:00	18:00	18:00	18:00			
Crossing Values:	0	744	875	0		1041	2609	1126	2609			

Ontario Traffic Inc.

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: Oakville
Site #: 1902900002
Intersection: Dundas St E & Meadowridge Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

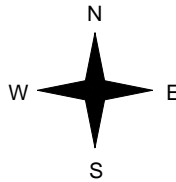
East Leg Total: 3762
 East Entering: 1118
 East Peds: 0
 Peds Cross: ∞

Heavys	Trucks	Cars	Totals
0	97	982	1079



Dundas St E

Heavys	Trucks	Cars	Totals
0	28	2351	2379
0	1	48	49
0	29	2399	



Meadowridge Dr

Cars	Trucks	Heavys	Totals
933	96	0	1029
88	1	0	89
1021	97	0	



Dundas St E

Cars	Trucks	Heavys	Totals
2616	28	0	2644

Peds Cross: ∞
 South Peds: 0
 South Entering: 315
 South Leg Total: 453

Peds Cross: ∞
 West Peds: 0
 West Entering: 2428
 West Leg Total: 3507

Cars	136
Trucks	2
Heavys	0
Totals	138



Cars	49	265	314
Trucks	1	0	1
Heavys	0	0	0
Totals	50	265	

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 18:00:00

One Hour Peak

From: 17:00:00

To: 18:00:00

Municipality: Oakville
Site #: 1902900002
Intersection: Dundas St E & Meadowridge Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

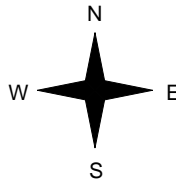
East Leg Total: 4325
 East Entering: 2891
 East Peds: 0
 Peds Cross: ∞

Heavys	Trucks	Cars	Totals
0	22	2689	2711



Dundas St E

Heavys	Trucks	Cars	Totals
0	37	1258	1295
0	0	71	71
0	37	1329	



Meadowridge Dr

Cars	Trucks	Heavys	Totals
2649	22	0	2671
220	0	0	220
2869	22	0	



Dundas St E



Cars	Trucks	Heavys	Totals
1397	37	0	1434

Peds Cross: ∞
 West Peds: 0
 West Entering: 1366
 West Leg Total: 4077

Cars	291
Trucks	0
Heavys	0
Totals	291



Cars	40	139	179
Trucks	0	0	0
Heavys	0	0	0
Totals	40	139	

Peds Cross: ∞
 South Peds: 0
 South Entering: 179
 South Leg Total: 470

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Oakville
Site #: 1902900002
Intersection: Dundas St E & Meadowridge Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

East Leg Total: 15666
 East Entering: 7748
 East Peds: 1
 Peds Cross: X

Heavys	Trucks	Cars	Totals
0	240	7114	7354

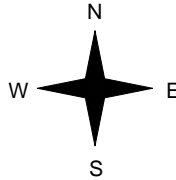


Dundas St E

Heavys	Trucks	Cars	Totals
0	163	6967	7130
0	1	207	208
0	164	7174	



Meadowridge Dr



Cars	Trucks	Heavys	Totals
6962	239	0	7201
536	11	0	547
7498	250	0	



Dundas St E

Cars	Trucks	Heavys	Totals
7746	172	0	7918



Peds Cross: X
 West Peds: 1
 West Entering: 7338
 West Leg Total: 14692

Cars	743
Trucks	12
Heavys	0
Totals	755



Cars	152	779	931
Trucks	1	9	10
Heavys	0	0	0
Totals	153	788	

Peds Cross: X
 South Peds: 2
 South Entering: 941
 South Leg Total: 1696

Comments

Ontario Traffic Inc. Traffic Count Summary

Intersection: Dundas St E & Meadowridge Dr													Count Date: 19-Feb-19		Municipality: Oakville	
North Approach Totals						South Approach Totals										
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds				
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total					
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0				
8:00:00	0	0	0	0	0	245	8:00:00	18	0	227	245	0				
9:00:00	0	0	0	0	0	345	9:00:00	58	0	287	345	0				
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0				
17:00:00	0	0	0	0	0	172	17:00:00	37	0	135	172	2				
18:00:00	0	0	0	0	0	179	18:00:00	40	0	139	179	0				
Totals:	0	0	0	0	0	941		153	0	788	941	2				
East Approach Totals						West Approach Totals										
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds				
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total					
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0				
8:00:00	43	841	0	884	1	3207	8:00:00	0	2304	19	2323	1				
9:00:00	91	1059	0	1150	0	3463	9:00:00	0	2261	52	2313	0				
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0				
17:00:00	193	2630	0	2823	0	4159	17:00:00	0	1270	66	1336	0				
18:00:00	220	2671	0	2891	0	4257	18:00:00	0	1295	71	1366	0				
Totals:	547	7201	0	7748	1	15086		0	7130	208	7338	1				
Calculated Values for Traffic Crossing Major Street																
Hours Ending:	7:00	8:00	9:00	16:00		17:00	17:00	18:00	18:00							
Crossing Values:	0	20	58	0		37	37	40	40							

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 7:30:00

To: 8:30:00

Municipality: Oakville
Site #: 1902900003
Intersection: Dundas St E & Prince Michael Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

East Leg Total: 3435
 East Entering: 1020
 East Peds: 2
 Peds Cross: ∞

Heavys	Trucks	Cars	Totals
0	108	960	1068

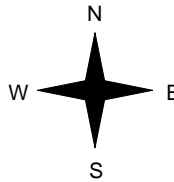


Dundas St E

Heavys	Trucks	Cars	Totals
0	28	2216	2244
0	4	103	107
0	32	2319	



Prince Michael Dr



Cars	Trucks	Heavys	Totals
854	107	0	961
59	0	0	59
913	107	0	



Dundas St E

Cars	Trucks	Heavys	Totals
2386	29	0	2415

Peds Cross: ∞
 South Peds: 1
 South Entering: 278
 South Leg Total: 444

Peds Cross: ∞
 West Peds: 2
 West Entering: 2351
 West Leg Total: 3419

Cars	162	Cars	106	170	276
Trucks	4	Trucks	1	1	2
Heavys	0	Heavys	0	0	0
Totals	166	Totals	107	171	

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 18:00:00

One Hour Peak

From: 16:45:00

To: 17:45:00

Municipality: Oakville
Site #: 1902900003
Intersection: Dundas St E & Prince Michael Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

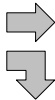
East Leg Total: 4051
 East Entering: 2719
 East Peds: 0
 Peds Cross: ∞

Heavys	Trucks	Cars	Totals
0	21	2623	2644

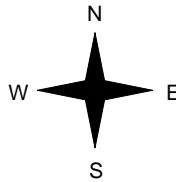


Dundas St E

Heavys	Trucks	Cars	Totals
0	40	1207	1247
0	3	147	150
0	43	1354	



Prince Michael Dr



Cars	Trucks	Heavys	Totals
2471	21	0	2492
226	1	0	227
2697	22	0	



Dundas St E

Cars	Trucks	Heavys	Totals
1292	40	0	1332

Peds Cross: ∞
 South Peds: 5
 South Entering: 237
 South Leg Total: 614

Peds Cross: ∞
 West Peds: 0
 West Entering: 1397
 West Leg Total: 4041

Cars	373	Cars	152	85	237
Trucks	4	Trucks	0	0	0
Heavys	0	Heavys	0	0	0
Totals	377	Totals	152	85	

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Oakville
Site #: 1902900003
Intersection: Dundas St E & Prince Michael Dr
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

East Leg Total: 14447
 East Entering: 7337
 East Peds: 3
 Peds Cross: 8

Heavys	Trucks	Cars	Totals
0	239	7018	7257

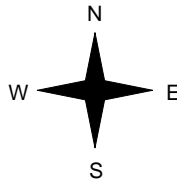


Dundas St E

Heavys	Trucks	Cars	Totals
0	157	6516	6673
0	12	489	501
0	169	7005	



Prince Michael Dr



Cars	Trucks	Heavys	Totals
6542	234	0	6776
559	2	0	561
7101	236	0	



Dundas St E

Cars	Trucks	Heavys	Totals
6952	158	0	7110



Peds Cross: 8
 West Peds: 8
 West Entering: 7174
 West Leg Total: 14431

Cars	1048	Cars	476	436	912
Trucks	14	Trucks	5	1	6
Heavys	0	Heavys	0	0	0
Totals	1062	Totals	481	437	



Peds Cross: 3
 South Peds: 14
 South Entering: 918
 South Leg Total: 1980

Comments

Ontario Traffic Inc. Traffic Count Summary

Intersection: Dundas St E & Prince Michael Dr Count Date: 19-Feb-19 Municipality: Oakville

North Approach Totals						South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0	215	8:00:00	69	0	146	215	3
9:00:00	0	0	0	0	0	249	9:00:00	108	0	141	249	1
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0	229	17:00:00	156	0	73	229	8
18:00:00	0	0	0	0	0	225	18:00:00	148	0	77	225	2
Totals:	0	0	0	0	0	918		481	0	437	918	14
East Approach Totals						West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	46	820	0	866	0	3106	8:00:00	0	2168	72	2240	1
9:00:00	67	1041	0	1108	2	3328	9:00:00	0	2074	146	2220	2
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	211	2444	0	2655	1	3989	17:00:00	0	1200	134	1334	3
18:00:00	237	2471	0	2708	0	4088	18:00:00	0	1231	149	1380	2
Totals:	561	6776	0	7337	3	14511		0	6673	501	7174	8
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	0:00	0:00	7:00	8:00			9:00	16:00	17:00	18:00		
Crossing Values:	0	0	0	70			112	0	160	150		

Ontario Traffic Inc.

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: Oakville
Site #: 1902900004
Intersection: Dundas St E & Eighth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 225
 North Entering: 175
 North Peds: 0
 Peds Cross: \bowtie

Heavys	0	0	0	0
Trucks	0	1	0	1
Cars	25	57	92	174
Totals	25	58	92	



Heavys	0
Trucks	2
Cars	48
Totals	50

East Leg Total: 3429
 East Entering: 1097
 East Peds: 1
 Peds Cross: \bowtie

Heavys	Trucks	Cars	Totals
0	95	1099	1194

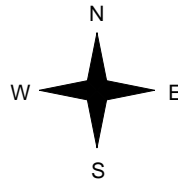


Eighth Line

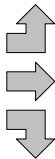
Cars	Trucks	Heavys	Totals
20	0	0	20
922	95	0	1017
60	0	0	60
1002	95	0	



Dundas St E



Heavys	Trucks	Cars	Totals
0	1	10	11
0	29	2060	2089
0	3	110	113
0	33	2180	



Dundas St E



Cars	Trucks	Heavys	Totals
2300	32	0	2332

Eighth Line



Peds Cross: \bowtie
 West Peds: 0
 West Entering: 2213
 West Leg Total: 3407

Cars	227
Trucks	4
Heavys	0
Totals	231



Cars	152	18	148	318
Trucks	0	1	3	4
Heavys	0	0	0	0
Totals	152	19	151	

Peds Cross: \bowtie
 South Peds: 1
 South Entering: 322
 South Leg Total: 553

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 18:00:00

One Hour Peak

From: 16:45:00

To: 17:45:00

Municipality: Oakville
Site #: 1902900004
Intersection: Dundas St E & Eighth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 163
 North Entering: 56
 North Peds: 0
 Peds Cross: \times

Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	10	13	33	56
Totals	10	13	33	



Heavys	0
Trucks	1
Cars	106
Totals	107

East Leg Total: 4027
 East Entering: 2642
 East Peds: 2
 Peds Cross: \times

Heavys	Trucks	Cars	Totals
0	20	2547	2567

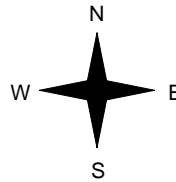


Eighth Line

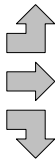
Cars	Trucks	Heavys	Totals
69	0	0	69
2374	19	0	2393
180	0	0	180
2623	19	0	



Dundas St E



Heavys	Trucks	Cars	Totals
0	0	9	9
0	42	1198	1240
0	3	178	181
0	45	1385	



Dundas St E



Cars	Trucks	Heavys	Totals
1343	42	0	1385



Eighth Line

Peds Cross: \times
 West Peds: 1
 West Entering: 1430
 West Leg Total: 3997

Cars	371
Trucks	3
Heavys	0
Totals	374



Cars	163	28	112	303
Trucks	1	1	0	2
Heavys	0	0	0	0
Totals	164	29	112	

Peds Cross: \times
 South Peds: 0
 South Entering: 305
 South Leg Total: 679

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Oakville
Site #: 1902900004
Intersection: Dundas St E & Eighth Line
TFR File #: 1
Count date: 19-Feb-19

Weather conditions:
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Dundas St E runs W/E

North Leg Total: 702
 North Entering: 397
 North Peds: 0
 Peds Cross: \bowtie

Heavys	0	0	0	0
Trucks	2	1	0	3
Cars	68	103	223	394
Totals	70	104	223	



Heavys	0
Trucks	8
Cars	297
Totals	305

East Leg Total: 14379
 East Entering: 7225
 East Peds: 6
 Peds Cross: \bowtie

Heavys	Trucks	Cars	Totals
0	241	7003	7244

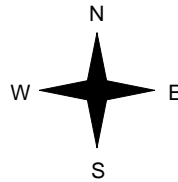


Eighth Line

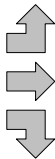
Cars	Trucks	Heavys	Totals
179	3	0	182
6372	234	0	6606
437	0	0	437
6988	237	0	



Dundas St E



Heavys	Trucks	Cars	Totals
0	3	38	41
0	161	6296	6457
0	11	530	541
0	175	6864	



Dundas St E



Cars	Trucks	Heavys	Totals
6987	167	0	7154

Peds Cross: \bowtie
 West Peds: 4
 West Entering: 7039
 West Leg Total: 14283

Cars	1070
Trucks	12
Heavys	0
Totals	1082



Cars	563	80	468	1111
Trucks	5	2	6	13
Heavys	0	0	0	0
Totals	568	82	474	

Peds Cross: \bowtie
 South Peds: 4
 South Entering: 1124
 South Leg Total: 2206

Comments

Ontario Traffic Inc. Traffic Count Summary

Intersection: Dundas St E & Eighth Line

Count Date: 19-Feb-19

Municipality: Oakville

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	71	27	28	126	0	345	8:00:00	83	6	130	219	1
9:00:00	86	47	17	150	0	472	9:00:00	164	20	138	322	1
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	24	19	11	54	0	326	17:00:00	153	24	95	272	2
18:00:00	42	11	14	67	0	378	18:00:00	168	32	111	311	0
Totals:	223	104	70	397	0	1521		568	82	474	1124	4
East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	30	840	16	886	1	2991	8:00:00	4	2013	88	2105	1
9:00:00	66	1029	26	1121	1	3251	9:00:00	15	2003	112	2130	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	172	2388	70	2630	1	4022	17:00:00	12	1220	160	1392	1
18:00:00	169	2349	70	2588	3	4000	18:00:00	10	1221	181	1412	2
Totals:	437	6606	182	7225	6	14264		41	6457	541	7039	4
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	7:00	8:00	9:00	16:00		17:00	17:00	18:00	18:00			
Crossing Values:	0	183	298	0		203	203	247	247			

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Configuration Controller Sequence

Phase Ring Sequence and Assignment (MM) 1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Sequence 1																
Ring 1	| 1	2 | 3	4 | 9	10 | 13	14 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 5	6 | 7	8 | 11	12 | 15	16 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 2																
Ring 1	| 2	1 | 3	4 | 10	9 | 13	14 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 5	6 | 7	8 | 11	12 | 15	16 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 3																
Ring 1	| 1	2 | 4	3 | 9	10 | 14	13 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 5	6 | 7	8 | 11	12 | 15	16 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 4																
Ring 1	| 2	1 | 4	3 | 10	9 | 14	13 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 5	6 | 7	8 | 11	12 | 15	16 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 5																
Ring 1	| 1	2 | 3	4 | 9	10 | 13	14 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 6	5 | 7	8 | 12	11 | 15	16 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 6																
Ring 1	| 2	1 | 3	4 | 10	9 | 13	14 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 6	5 | 7	8 | 12	11 | 15	16 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 7																
Ring 1	| 1	2 | 4	3 | 9	10 | 14	13 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 6	5 | 7	8 | 12	11 | 15	16 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 8																
Ring 1	| 2	1 | 4	3 | 10	9 | 14	13 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 6	5 | 7	8 | 12	11 | 15	16 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 9																
Ring 1	| 1	2 | 3	4 | 9	10 | 13	14 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 5	6 | 8	7 | 11	12 | 16	15 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 10																
Ring 1	| 2	1 | 3	4 | 10	9 | 13	14 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 5	6 | 8	7 | 11	12 | 16	15 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 11																
Ring 1	| 1	2 | 4	3 | 9	10 | 14	13 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 5	6 | 8	7 | 11	12 | 16	15 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 12																
Ring 1	| 2	1 | 4	3 | 10	9 | 14	13 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 5	6 | 8	7 | 11	12 | 16	15 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 13																
Ring 1	| 1	2 | 3	4 | 9	10 | 13	14 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Ring 2	| 6	5 | 8	7 | 12	11 | 16	15 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .
Sequence 14																
Ring 1	| 2	1 | 3	4 | 10	9 | 13	14 | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .	. | .

Ring 2	| 6	5	| 8	7	| 12	11	| 16	15	| .	.	.	.	.	.	.	.	.
Sequence 15																	
Ring 1	| 1	2	| 4	3	| 9	10	| 14	13	| .	.	.	.	.	.	.	.	.
Ring 2	| 6	5	| 8	7	| 12	11	| 16	15	| .	.	.	.	.	.	.	.	.
Sequence 16																	
Ring 1	| 2	1	| 4	3	| 10	9	| 14	13	| .	.	.	.	.	.	.	.	.
Ring 2	| 6	5	| 8	7	| 12	11	| 16	15	| .	.	.	.	.	.	.	.	.

Phases In Use/Exclusive Ped (MM) 1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X	X	X		X		X								
Exclusive Ped																

Phase Compatibility (MM)

1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB		SB		WB								
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Description																

Administration (MM) 1-7-1

Enable Controller/Cabinet Interlock CRC	No
CRC (16 bit)	F0D6
Enable Automatic Backup to Datakey	No

Backup Prevent (MM) 1-1-3

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phases	2	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Simultaneous Gap (MM) 1-1-4

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase Must Gap With Phase	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	V				-	Auto	X		
2	2	V				-	Auto	X		X
3	3	V				-	Auto	X		
4	4	V				-	Auto	X		X
5	5	.				+	Auto	X		
6	6	V				+	Auto	X		X
7	7	.				+	Auto	X		
8	8	V				+	Auto	X		X
9	2	.				-	Auto			
10	4	.				-	Auto			
11	6	.				+	Auto			
12	8	.				+	Auto			
13	1	O				-	Auto	X		

14	2	O				+	Auto	X		X
15	3	O				-	Auto	X		
16	4	O				+	Auto	X		X

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Configuration Port 1 (SDLC)**Port 1 SDLC (MM) 1-4-1**

BIU	1	2	3	4	5	6	7	8
Term & Facility	X	X						
Detector Rack	X							

Enable TS2/MMU Type Cabinet: No
 Enable MMU Extended Status: Yes
 Enable SDLC Stop Time: No
 Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM) 1-4-2

Channel Can Serve With Channel	
Channel 1	Channel 2
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM) 1-4-3

Enable Color Check: No

MMU/LS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green			X		X		X		X	X	X	X	X	X	X	X
Yellow			X		X		X		X	X	X	X	X	X	X	X
Red			X		X		X		X	X	X	X	X	X	X	X

Secondary Stations/Tests (MM) 1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term & Facility									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack									

Enable SDLC Diagnostic Test: No



Town of Oakville

MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Configuration Logging / Display

Event Logging (MM) 1-6-1

Critical RFE's (MMU/TF)	Yes	3 Critical Errors Within 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Fault	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	No	Controller Download	Yes
Preemption Events	Yes	TSP Events	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online / Offline	Yes		

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM) 1-7-2

Key Click Enable:	No
Backlight Enable:	Yes
LED Mode:	Auto
Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-Up Disable:	No

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World

Sign On Message Line 2:

Software Modules (MM) 8-7

Application Version: 02.49.00

OS (Boot) Version: 01.12.05



Town of Oakville

MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Logic Processor Page 1

Logic Statement Control (MM) 1-8-1

Logic #	Statement Control
---------	-------------------

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	SBLT	NB	WBLT	EB		SB		WB								
Min Green	7	20	7	10	0	20	0	10	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	7	0	7	0	7	0	7	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	5.0	3.0	3.0	0.0	5.0	0.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	15	45	0	30	0	60	0	30	35	35	35	35	35	35	35	35
Max2	15	45	15	35	0	60	0	50	40	40	40	40	40	40	40	40
Max3	15	45	0	55	0	60	0	55	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.6	3.0	3.7	3.0	4.6	3.0	3.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.4	1.0	2.3	1.0	1.4	1.0	2.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Controller Overlaps**Vehicle Overlaps (MM) 2-2**

Overlap	Type	Lag Green	Yellow	Red	Adv. Green
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Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green
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PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable
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Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Controller Start / Flash Data (MM) 2-5**Start Up**

Phase	Phase Setting
1	.
2	.
3	.
4	Y
5	.
6	.
7	.
8	Y
9	.
10	.
11	.
12	.
13	.
14	.
15	.
16	.

Overlap

Flash Thru Mon: Yes
Flash Time: 0
All Red: 0
Power Start Seq: 1
MUTCD Enabled: No
Y->G: n/a

Automatic Flash

Entry
2
6

Exit
2
6

Overlap Exit
A
B
C
D

Flash Thru Mon: Yes
Exit Flash: W
Minimum Flash: 8

Mimimum Recall: No
Cycle Through Phase: No

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MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Controller Options

Controller Options (MM) 2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Grn Ph	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guar Passage																
Non-Act I	X					X										
Non-Act II				X				X								
Dual Entry	X	X	X	X	X											
Cond Service																
Cond Reservice																
Ped Re-Service																
Rest In Walk																
Flashing Walk																
Ped Clr-Yel																
Ped Clr-Red																
IGRN + Veh Ext																

Ped Clear Protect: Off Unit Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Pre-Timed Mode (MM) 2-7

Enable Pre-Timed Mode: No Free Input Disables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed																

Phase Recall Options (MM) 2-8

Plan # 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall			X					X								
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

**Coordination Options
Options (MM) 3-1**

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Percent	Offsets In	Percent
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Percent
Cycle	120	Std (COS)	9	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB		SB		WB								
Splits (Split Pat 1)	17	41	0	42	0	58	0	42	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data			
Veh Perm 1	0	Veh Perm 2	0
Veh Perm 2 Disp	0	Split Demand Pat 1	0
Split Demand Pat 2	0	Split Demand Pat 2	0
Crossing Arterial Pat	0		

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Percent
Cycle	110	Std (COS)	17	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB		SB		WB								
Splits (Split Pat 2)	10	60	0	30	0	70	0	30	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data			
Veh Perm 1	0	Veh Perm 2	0
		Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0
		Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Percent
Cycle	120	Std (COS)	25	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB		SB		WB								
Splits (Split Pat 3)	13	55	0	32	0	68	0	32	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data			
Veh Perm 1	0	Veh Perm 2	0
		Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0
		Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 4

Split Pattern	4	TS2 (Pat-Off)	1-1	Splits In	Percent
Cycle	110	Std (COS)	33	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB		SB		WB								
Splits (Split Pat 4)	13	42	13	32	0	55	0	45	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data
 Veh Perm 1 0 Veh Perm 2 0 Veh Perm 2 Disp 0
 Split Demand Pat 1 0 Split Demand Pat 2 0 Crossing Arterial Pat 0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Coordination Split Pattern
Split Pattern Data (MM) 3-3
Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB		SB		WB								
Split (percent)	17	41	0	42	0	58	0	42	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB		SB		WB								
Split (percent)	10	60	0	30	0	70	0	30	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB		SB		WB								
Split (percent)	13	55	0	32	0	68	0	32	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB		SB		WB								

Split (percent)	13	42	13	32	0	55	0	45	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall		X				X										
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Preempt Plan

Preempt Plan (MM) 4-1

Preempt Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Veh	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases		X				X										
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	10	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	Yes	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	0	3	4.0	1.0
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	4.0	1.0
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	0	0.0	0	4.0	1.0

Preemption Active Out On		Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

**Time Base Clock/Calendar
Clock/Calendar Data (MM) 5-1**

Manual Action Plan: 0
SYNC Reference Time: 03:15
SYNC Reference: Reference Time
Day Light Savings: USDLS
Time Reset Input Set Time: 3:30:00
Standard Time From GMT: -5

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

**Time Base Action Plan
Action Plan (MM) 5-2**

Action Plan - 1

Pattern	1	Override Sys	Yes
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit			X													
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15	
LP 16-30	
LP 31-45	
LP 46-60	
LP 61-75	
LP 76-90	
LP 91-100	

Action Plan - 2

Pattern	2	Override Sys	Yes
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit			X													
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Action Plan - 3

Pattern	3	Override Sys	Yes
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit			X													
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Action Plan - 4

Pattern	4	Override Sys	Yes
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Action Plan - 5

Pattern	Free	Override Sys	Yes
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit			X													
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90
LP 91-100

Town of Oakville



 MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3
Day Plan #1

Event	Action Plan	Start Time
1	1	06:00
2	2	10:00
3	3	15:00
5	5	22:00

Day Plan #2

Event	Action Plan	Start Time
1	1	06:00
2	2	10:00
3	4	13:00
4	3	15:45
5	5	22:00

Day Plan #3

Event	Action Plan	Start Time
1	3	06:00
2	5	22:00

Schedule (MM) 5-4**Schedule Number - 1**

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X		

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
						X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22

	X	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31			
	X	X	X	X	X	X	X	X	X			

Town of Oakville



MOVING TRAFFIC FORWARD

REG5101 - Trafalgar Rd @ Burnhamthorpe Rd - Econolite Type - ASC/3

Detectors**Detectors - Pg 1****Veh Det Phase Assignment (MM) 6-1****Vehicle Detector Plan Number - 1**

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3	8	S
4	4	8	S
5	2		S
6	6		S
7	4	8	S
8	8	4	S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Plan Number - 2

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Setup (MM) 6-2

Veh Detector	Type	TS2 Detector	Description
1	S-STANDARD	Yes	
2	S-STANDARD	Yes	
3	S-STANDARD	Yes	

4	S-STANDARD	Yes	
5	S-STANDARD	Yes	
6	S-STANDARD	Yes	
7	S-STANDARD	Yes	
8	S-STANDARD	Yes	
9	S-STANDARD	Yes	
10	S-STANDARD	Yes	
11	S-STANDARD	Yes	
12	S-STANDARD	Yes	
13	S-STANDARD	Yes	
14	S-STANDARD	Yes	
15	S-STANDARD	Yes	
16	S-STANDARD	Yes	
17	S-STANDARD	Yes	
18	S-STANDARD	Yes	
19	S-STANDARD	Yes	
20	S-STANDARD	Yes	
21	C-CALLING	Yes	
22	S-STANDARD	Yes	
23	S-STANDARD	Yes	
24	S-STANDARD	Yes	
25	S-STANDARD	Yes	
26	S-STANDARD	Yes	
27	S-STANDARD	Yes	
28	S-STANDARD	Yes	
29	S-STANDARD	Yes	
30	S-STANDARD	Yes	
31	S-STANDARD	Yes	
32	S-STANDARD	Yes	
33	S-STANDARD	Yes	
34	S-STANDARD	Yes	
35	S-STANDARD	Yes	
36	S-STANDARD	Yes	
37	S-STANDARD	Yes	
38	S-STANDARD	Yes	
39	S-STANDARD	Yes	
40	S-STANDARD	Yes	
41	S-STANDARD	Yes	
42	S-STANDARD	Yes	
43	S-STANDARD	Yes	
44	S-STANDARD	Yes	
45	S-STANDARD	Yes	
46	S-STANDARD	Yes	
47	S-STANDARD	Yes	
48	S-STANDARD	Yes	
49	S-STANDARD	Yes	
50	S-STANDARD	Yes	
51	S-STANDARD	Yes	
52	S-STANDARD	Yes	
53	S-STANDARD	Yes	
54	S-STANDARD	Yes	
55	S-STANDARD	Yes	
56	S-STANDARD	Yes	
57	S-STANDARD	Yes	
58	S-STANDARD	Yes	
59	S-STANDARD	Yes	

60	S-STANDARD	Yes	
61	S-STANDARD	Yes	
62	S-STANDARD	Yes	
63	S-STANDARD	Yes	
64	S-STANDARD	Yes	

Vehicle Detector Plan Number - 1

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	6	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	None	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 2

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	None	0.0	0	No	0	None	No	No	No

Ped Detector Phase Assignment (MM) 6-3

Mode: NTCIP

Called Phase	Detector
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

18. APPENDIX D: PROGRAM REFERENCE CARD

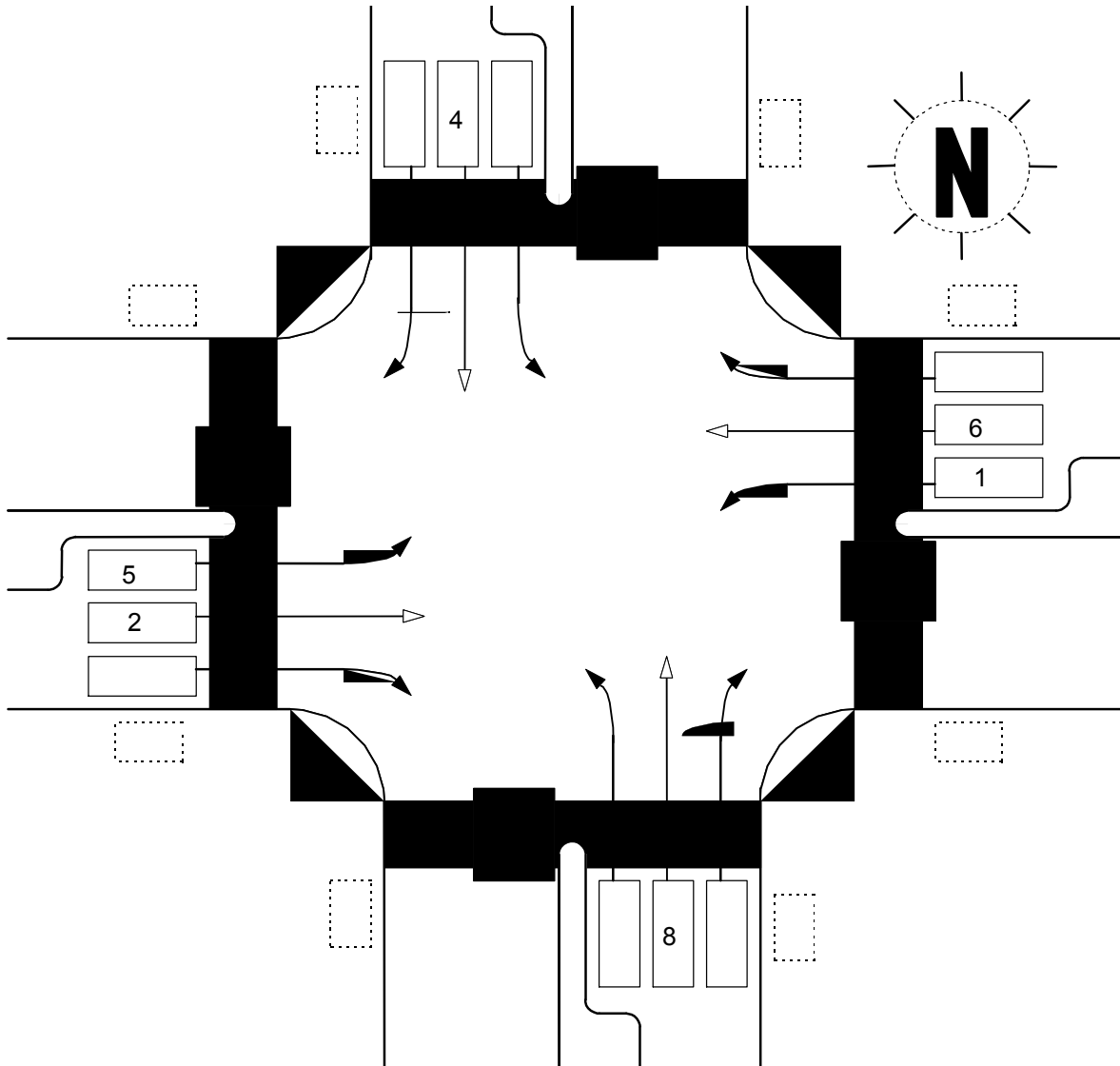
ASC/3

PROGRAM REFERENCE CARD

INTERSECTION Dundas Street & Eighth Line

CONTROLLER NUMBER _____ ENTERED BY: _____ DATE 03 / 27 / 17

BOOT: _____ MAIN: _____ HELP: _____ DATA BASE _____



CONFIGURATION SUBMENU

1-1-1. PHASE RING ASSIGNMENT

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
RING																

1-1-2. PHASE COMPATIBILITY

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-2. PHASES IN USE / EXCLUSIVE PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASES IN USE																
EXCLUSIVE PED																

1-1-4. BACKUP PREVENT PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-5 SIMULTANEOUS GAP

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-3. PHASE RING SEQUENCE

CONTROLLER 1			SEQUENCE 1																
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1			SEQUENCE 2																
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1			SEQUENCE 3																
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1			SEQUENCE 4																
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1			SEQUENCE 5																
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1			SEQUENCE 6																
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1			SEQUENCE 7																
RING 1																			
RING 2																			
RING 3																			
RING 4																			
CONTROLLER 1			SEQUENCE 8																
RING 1																			
RING 2																			
RING 3																			
RING 4																			

1-1-3. PHASE RING SEQUENCE (CONT)

CONTROLLER 1		SEQUENCE 9																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 10																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 11																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 12																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 13																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 14																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 15																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 16																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH	PHASE / OVERLAP	TYPE	DIMMING				AUTO FLASH	
			RED	YELLOW	GREEN	PHASE	COLOR	TOGETHER
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

1-4-2. MMU PROGRAM

PHASE	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

1-4-1. SDLC OPTIONS

TERM & FACIL	BIU NUMBER							
	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
DETECTOR RACK	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
MMU ENABLE								
MMU STOP TIME								
DIAGNOSTIC ENABLE (TEST FIXTURE)								
CONTROLLER PEER TO PEER ENABLE								
DISABLE 3 CRITICAL RFEs LOCKUP								

1-4-3. COLOR CHECK DISABLE

DISABLE ALL COLOR CHECKS																
MMU CHANNEL	1	2	3	4	5	6	7	8								
GREEN / WALK																
YELLOW / PC																
RED / DW																
MMU CHANNEL	9	10	11	12	13	14	15	16								
GREEN / WALK																
YELLOW / PC																
RED / DW																

1-5-1 GLOBAL PORT PARAMETERS

NTCIP BACKUP TIME (SECONDS)	
PORT 2 PRIORITY	
PORT 3A PRIORITY	
PORT 3B PRIORITY	
ETHERNET PRIORITY	

1-5-1 PORT 2 (TERMINAL)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-3 PORT 3A (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
ELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-7-1 ADMINISTRATION

SUPERVISOR ACCESS CODE	
ENABLE CRC CHECK OF DATA BASE	
CRC OF PROGRAM DATA BASE	
REQUEST DOWNLOAD OF PROGRAMMED DATA	

1-7-2 DISPLAY OPTIONS

KEY CLICK ENABLE	
BACKLIGHT ENABLE	

1-5-4. PORT 3B (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-5 ETHERNET PORT CONFIGURATION

IP ADDRESS					
ADDRESS MASK					
FTP SERVER ADDRESS					
DEFAULT GATEWAY ADDRESS					

1-6-1 ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TE)	
3 CRITICAL RFE ERRORS IN 24 HOURS	
NON-CRITICAL RFE'S (DET/TEST)	
DETECTOR ERRORS	
COORDINATION ERRORS	
MMU FLASH FAULTS	
LOCAL FLASH FAULTS	
PREEMPT	
POWER ON/OFF	
LOW BATTERY	
ACCESS	
DATA CHANGE	
CONTROLLER DOWNLOAD	
ALARM 1	
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

1-8-1 LOGIC STATEMENT CONTROL

	1	2	3	4	5	6	7	8	9	10
LP 1-										
10										
LP 11-20										
LP 21-30										
LP 31-40										
LP 41-50										
LP 51-60										
LP 61-70										
LP 71-80										
LP 81-90										
LP 91-10										

THEN				
ELSE				

1-8-1 LOGIC STATEMENT CONTROL

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR STATEMENTS

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				

LOGIC GATE NUMBER				
IF				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER					
IF					
THEN					
ELSE					

LOGIC GATE NUMBER					
IF					
THEN					
ELSE					

LOGIC GATE NUMBER					
IF					
THEN					
ELSE					

LOGIC GATE NUMBER					
IF					
THEN					
ELSE					

LOGIC GATE NUMBER					
IF					
THEN					
ELSE					

LOGIC GATE NUMBER					
IF					
THEN					
ELSE					

LOGIC GATE NUMBER					
IF					
THEN					
ELSE					

LOGIC GATE NUMBER					
IF					
THEN					
ELSE					

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER					
-------------------	--	--	--	--	--

IF				
THEN				
ELSE				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				

LOGIC GATE NUMBER				
IF				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

CONTROLLER SUBMENU

2-1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN	7	20	7	10	7	20	7	10								
BICYCLE MINIMUM GREEN																
CONDITIONAL SERVICE MINIMUM GREEN																
DELAYED GREEN																
WALK		7		7		7		7								
WALK 2																
WALK MAX																
PEDESTRIAN CLEARANCE		24		32		24		32								
PEDESTRIAN CLEARANCE 2																
PEDESTRIAN CLEARANCE MAX																
PEDESTRIAN CARRY OVER																
VEHICLE EXTENSION	3.5	5.5	3.5	3.5	3.5	5.5	3.5	3.5								
VEHICLE EXTENSION 2																
MAX1	15	46		25	15	46		25								
MAX2	20	60		30	20	60		30								
MAX3																
DYNAMIC MAX																
DYNAMIC MAX STEP																
YELLOW CHANGE	3.0	4.2		3.3	3.0	4.2		3.3								
RED CLRANCE	1.0	2.5		3.7	1.0	2.5		3.7								
RED MAX																
RED REVERT																
ACTUATIONS BEFORE GAP REDUCTION																
SECONDS PER ACTIONS ADDED TO INITIAL																
MAXIMUM ADDED INITIAL GREEN																
TIME BEFORE GAP REDUCTION																
CARS WAITING BEFORE GAP REDUCTION																
STEP TO REDUCE																
TIME TO REDUCE TO MINIMUM																
MINIMUM GAP																

2-2 VEHICLE OVERLAP

OVERLAP A PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP C PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP B PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP D PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP E PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP G PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP F PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP H PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP I																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
INCLUDED																			
PROTECTED																			
MODIFIER																			
PEDESTRIAN PROTECT NOT OVERLAP																			
TRAILING GREEN																			
TRAILING YELLOW																			
TRAILING RED																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
TRAILING LEADING																			
ADVANCE GREEN																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
FLASH GREEN																			

OVERLAP K																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
INCLUDED																			
PROTECTED																			
MODIFIER																			
PEDESTRIAN PROTECT NOT OVERLAP																			
TRAILING GREEN																			
TRAILING YELLOW																			
TRAILING RED																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
TRAILING LEADING																			
ADVANCE GREEN																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
FLASH GREEN																			

OVERLAP J																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
INCLUDED																			
PROTECTED																			
MODIFIER																			
PEDESTRIAN PROTECT NOT OVERLAP																			
TRAILING GREEN																			
TRAILING YELLOW																			
TRAILING RED																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
TRAILING LEADING																			
ADVANCE GREEN																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
FLASH GREEN																			

OVERLAP L																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
INCLUDED																			
PROTECTED																			
MODIFIER																			
PEDESTRIAN PROTECT NOT OVERLAP																			
TRAILING GREEN																			
TRAILING YELLOW																			
TRAILING RED																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
TRAILING LEADING																			
ADVANCE GREEN																			
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
FLASH GREEN																			

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP M PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP O PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP N PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP P PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-3 PEDESTRIAN OVERLAP

PEDESTRIAN OVERLAP CONSISTS OF PHASES																
PEDESTRIAN OVERLAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

2-4 GUARANTEED MINIMUM TIMES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN																
WALK																
PEDESTRIAN CLEARANCE																
YELLOW CHANGE																
RED CLEARANCE																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
MINIMUM GREEN																

2-5 START / FLASH DATA

POWER START																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
OVERLAP																
POWER START RED									FLASH TIME							
REMOTE (AUTOMATIC) FLASH																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENTRY																
EXIT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EXIT																
EXIT REMOTE FLASH									MINIMUM AUTOMATIC FLASH							
MINIMUM RECALL									CYCLE THROUGH PHASES							

2-6-1 CONTROLLER OPTIONS

PEDESTRIAN CLEARANCE PROTECT																
UNIT RED REVERT																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
GUARANTEE D PASSAGE																
NON-ACT I																
NON ACT II																
DUAL ENTRY																
PED RESERVICE																
REST IN WALK																
FLASHING WALK																
PED CLEAR > YELLOW																
PED CLEAR > ALL RED																
INIT GREEN + VEHICLE EXIT																

2-7 ACTUATED / PRE-TIMED MODE PHASES

ENABLE PRE-TIMED OPERATION																
FREE INPUT DISABLED PRE-TIMED																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
PRE-TIMED																

COORDINATOR SUBMENU

3-1 COORDINATOR OPTIONS

MANUAL PATTERN	Auto		
INTERCONNECT SOURCE	TBC	INTERCONNECT FORMAT	
TRANSITION	Smooth	ECPI COORDINATION	Yes
OFFSET REFERENCE	Lead	DWELL / ADD TIME	
DELAY COORD WALK TO LOCAL ZERO	No	FORCE OFF	Float
FORCE OFF ADDED INITIAL GREEN	No	USE PED TIME FOR SMOOTH TRANSITION	No
PEDESTRIAN RECALL	No	PEDESTRIAN RESERVICE	Yes
ENABLE MANUAL SYNC INPUT		LOCAL ZERO OVERRIDE	No
RE-SYNC COUNT	No	MAX SELECT	MaxInh
MULTISYNC	No		

3-2 COORDINATOR PATTERN

COORDINATOR PATTERN	1																	
CYCLE LENGTH (SECONDS)	130	SPLIT PATTERN																
OFFSET VALUE	23	SEQUENCE																
SPLITS IN	Per	OFFSETS IN . . .			Per													
CROSSING ARTERY PATTERN																		
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN			1													
ACTUATED COORDINATION	Yes	TIMING PLAN																
ACTUATED REST IN WALK		PHASE RESERVICE																
			1	2	3	4												
RING SPLIT EXTENSION (SECONDS)																		
SPLIT DEMAND PATTERN																		
RING DISPLACEMENT																		
	1	2	3	4	5	8	9	1	1	1	1	1	1	1	1	1	1	
PREFERENCE 1 PHASES								0	1									
PREFERENCE 2 PHASES																		
	1	2	3	4	5						8							
SPECIAL FUNCTION																		

COORDINATOR PATTERN	2																	
CYCLE LENGTH (SECONDS)	120	SPLIT PATTERN																
OFFSET VALUE	37	SEQUENCE																
SPLITS IN	Per	OFFSETS IN			Per													
CROSSING ARTERY PATTERN																		
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN			2													
ACTUATED COORDINATION	Yes	TIMING PLAN																
ACTUATED REST IN WALK		PHASE RESERVICE																
			1	2	3	4												
RING SPLIT EXTENSION (SECONDS)																		
SPLIT DEMAND PATTERN																		
RING DISPLACEMENT																		
	1	2	3	4	5	8	9	1	1	1	1	1	1	1	1	1	1	
PREFERENCE 1 PHASES								0	1									
PREFERENCE 2 PHASES																		

COORDINATOR PATTERN	3																	
CYCLE LENGTH (SECONDS)	130	SPLIT PATTERN																
OFFSET VALUE	1	SEQUENCE																
SPLITS IN	Per	OFFSETS IN			Per													
CROSSING ARTERY PATTERN																		
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN			3													
ACTUATED COORDINATION	Yes	TIMING PLAN																
ACTUATED REST IN WALK		PHASE RESERVICE																
			1	2	3	4												
RING SPLIT EXTENSION (SECONDS)																		
SPLIT DEMAND PATTERN																		
RING DISPLACEMENT																		
	1	2	3	4	5	8	9	1	1	1	1	1	1	1	1	1	1	
PREFERENCE 1 PHASES								0	1									
PREFERENCE 2 PHASES																		

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN	4			
CYCLE LENGTH (SECONDS)	100	SPLIT PATTERN		
OFFSET VALUE	44			
SPLITS IN	Per	OFFSETS IN	Per	
CROSSING ARTERY PATTERN				
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH		
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	4	
ACTUATED COORDINATION	Yes	TIMING PLAN		
ACTUATED REST IN WALK		PHASE RESERVICE		
RING SPLIT EXTENSION (SECONDS)				
SPLIT DEMAND PATTERN				
RING DISPLACEMENT				
	1	2	3	4
PREFER ENCE 1 PHASES				
PREFER ENCE 2 PHASES				

COORDINATOR PATTERN	5			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN		
OFFSET VALUE		SEQUENCE		
SPLITS IN		OFFSETS IN		
CROSSING ARTERY PATTERN				
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH		
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	5	
ACTUATED COORDINATION		TIMING PLAN		
ACTUATED REST IN WALK		PHASE RESERVICE		
RING SPLIT EXTENSION (SECONDS)				
SPLIT DEMAND PATTERN				
RING DISPLACEMENT				
	1	2	3	4
PREFER ENCE 1 PHASES				
PREFER ENCE 2 PHASES				

COORDINATOR PATTERN				
CYCLE LENGTH (SECONDS)		SPLIT PATTERN		
OFFSET VALUE		SEQUENCE		
SPLITS IN		OFFSETS IN		
CROSSING ARTERY PATTERN				
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH		
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN		
ACTUATED COORDINATION		TIMING PLAN		
ACTUATED REST IN WALK		PHASE RESERVICE		
RING SPLIT EXTENSION (SECONDS)				
SPLIT DEMAND PATTERN				
RING DISPLACEMENT				
	1	2	3	4
PREFER ENCE 1 PHASES				
PREFER ENCE 2 PHASES				

COORDINATOR PATTERN				
CYCLE LENGTH (SECONDS)		SPLIT PATTERN		
OFFSET VALUE		SEQUENCE		
SPLITS IN		OFFSETS IN		
CROSSING ARTERY PATTERN				
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH		
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN		
ACTUATED COORDINATION		TIMING PLAN		
ACTUATED REST IN WALK		PHASE RESERVICE		
RING SPLIT EXTENSION (SECONDS)				
SPLIT DEMAND PATTERN				
RING DISPLACEMENT				
	1	2	3	4
PREFER ENCE 1 PHASES				
PREFER ENCE 2 PHASES				

Per
Per

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																		
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																
OFFSET VALUE		SEQUENCE																
SPLITS IN		OFFSETS IN																
CROSSING ARTERY PATTERN																		
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																
ACTUATED COORDINATION		TIMING PLAN																
ACTUATED REST IN WALK		PHASE RESERVICE																
RING SPLIT EXTENSION (SECONDS)		1	2	3	4													
SPLIT DEMAND PATTERN																		
RING DISPLACEMENT																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
PREFERENCE 1 PHASES																		
PREFERENCE 2 PHASES																		

COORDINATOR PATTERN																		
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																
OFFSET VALUE		SEQUENCE																
SPLITS IN		OFFSETS IN																
CROSSING ARTERY PATTERN																		
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																
ACTUATED COORDINATION		TIMING PLAN																
ACTUATED REST IN WALK		PHASE RESERVICE																
RING SPLIT EXTENSION (SECONDS)		1	2	3	4													
SPLIT DEMAND PATTERN																		
RING DISPLACEMENT																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
PREFERENCE 1 PHASES																		
PREFERENCE 2 PHASES																		

3-3 SPLIT PATTERN

SPLIT PATTERN NUMBER		1																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		9	54	0	37	9	54	0	37											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		2																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		10	50	0	40	10	50	0	40											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		3																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		12	51	0	37	9	54	0	37											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		4																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		11	42	0	47	11	42	0	47											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-4 AUTO PERMISSIVE MINIMUM GREEN TIME

PHASE	1	2	3	4	5	6	7	8								
MINIMUM GREEN																
PHASE	9	10	11	12	13	14	15	16								
MINIMUM GREEN																

3-5 SPLIT DEMAND

PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
DEMAND 1																	
DEMAND 2																	
DEMAND		1	2														
DETECTOR																	
CALL TIME (SECONDS)																	
CYCLE COUNT																	

PREEMPTOR SUBMENU

4-1 PREEMPTOR

PREEMPTOR NUMBER	1																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/ EXIT YELLOW /RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

PREEMPTOR NUMBER	2																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/EXIT YELLOW/RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

4-2 LOW PRIORITY PREEMPTOR SELECTION

FILTERED INPUT	SOLID	PULSING
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		3																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		4																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		5															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		6															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		7															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		8															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		9																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		10																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

TIME BASE SUBMENU

5-1 CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL ACTION PLAN	
SYNC REFERENCE TIME	
SYNC REFERENCE	
DAYLIGHT SAVINGS	
TIME RESET INPUT TIME SET	
STANDARD TIME FROM GMT	

5-2 SCHEDULE

SCHEDULE NUMBER	1
DAY PLAN NUMBER	1

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
		X	X	X	X	X				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	1
DAY PLAN NUMBER	2

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
	X						X			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

PATTERN		1		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		3		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		2		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		4		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN																				
PATTERN	5	SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

5-5 EXCEPTION DAY PROGRAM

EXCEPTION DAY	FLOAT / FIXED	MON / MON	DOW / DOM	WOM / YEAR	DAY PLAN
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

DETECTORS

6-1. DETECTOR TYPE AND TS SELECT

DET	TYPE	TS1 DETECTOR
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

DET	TYPE	TS1 DETECTOR
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
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62		
63		
64		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

6-2 VEHICLE DETECTOR SETUP

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER																		
DETECTOR NUMBER																		
ASSIGNED PHASE		ADDED INITIAL OPTION																
SWITCH PHASE		CALL DETECTOR OPTION																
EXTEND TIME		PASSAGE DETECTOR OPTION																
DELAY TIME		QUEUE DETECTOR OPTION																
QUEUE LIMIT		NTCIP OCCUPANCY LOG																
FAIL TIME		NTCIP VOLUME LOG																
FAIL CALL DELAY		ECPI LOG																
YELLOW LOCK		RED LOCK																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																		

VEHICLE PLAN NUMBER																		
DETECTOR NUMBER																		
ASSIGNED PHASE		ADDED INITIAL OPTION																
SWITCH PHASE		CALL DETECTOR OPTION																
EXTEND TIME		PASSAGE DETECTOR OPTION																
DELAY TIME		QUEUE DETECTOR OPTION																
QUEUE LIMIT		NTCIP OCCUPANCY LOG																
FAIL TIME		NTCIP VOLUME LOG																
FAIL CALL DELAY		ECPI LOG																
YELLOW LOCK		RED LOCK																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																		

VEHICLE PLAN NUMBER																		
DETECTOR NUMBER																		
ASSIGNED PHASE		ADDED INITIAL OPTION																
SWITCH PHASE		CALL DETECTOR OPTION																
EXTEND TIME		PASSAGE DETECTOR OPTION																
DELAY TIME		QUEUE DETECTOR OPTION																
QUEUE LIMIT		NTCIP OCCUPANCY LOG																
FAIL TIME		NTCIP VOLUME LOG																
FAIL CALL DELAY		ECPI LOG																
YELLOW LOCK		RED LOCK																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																		

VEHICLE PLAN NUMBER																		
DETECTOR NUMBER																		
ASSIGNED PHASE		ADDED INITIAL OPTION																
SWITCH PHASE		CALL DETECTOR OPTION																
EXTEND TIME		PASSAGE DETECTOR OPTION																
DELAY TIME		QUEUE DETECTOR OPTION																
QUEUE LIMIT		NTCIP OCCUPANCY LOG																
FAIL TIME		NTCIP VOLUME LOG																
FAIL CALL DELAY		ECPI LOG																
YELLOW LOCK		RED LOCK																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																		

VEHICLE PLAN NUMBER																		
DETECTOR NUMBER																		
ASSIGNED PHASE		ADDED INITIAL OPTION																
SWITCH PHASE		CALL DETECTOR OPTION																
EXTEND TIME		PASSAGE DETECTOR OPTION																
DELAY TIME		QUEUE DETECTOR OPTION																
QUEUE LIMIT		NTCIP OCCUPANCY LOG																
FAIL TIME		NTCIP VOLUME LOG																
FAIL CALL DELAY		ECPI LOG																
YELLOW LOCK		RED LOCK																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																		

VEHICLE PLAN NUMBER																		
DETECTOR NUMBER																		
ASSIGNED PHASE		ADDED INITIAL OPTION																
SWITCH PHASE		CALL DETECTOR OPTION																
EXTEND TIME		PASSAGE DETECTOR OPTION																
DELAY TIME		QUEUE DETECTOR OPTION																
QUEUE LIMIT		NTCIP OCCUPANCY LOG																
FAIL TIME		NTCIP VOLUME LOG																
FAIL CALL DELAY		ECPI LOG																
YELLOW LOCK		RED LOCK																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																		

VEHICLE PLAN NUMBER																		
DETECTOR NUMBER																		
ASSIGNED PHASE		ADDED INITIAL OPTION																
SWITCH PHASE		CALL DETECTOR OPTION																
EXTEND TIME		PASSAGE DETECTOR OPTION																
DELAY TIME		QUEUE DETECTOR OPTION																
QUEUE LIMIT		NTCIP OCCUPANCY LOG																
FAIL TIME		NTCIP VOLUME LOG																
FAIL CALL DELAY		ECPI LOG																
YELLOW LOCK		RED LOCK																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																		

VEHICLE PLAN NUMBER																		
DETECTOR NUMBER																		
ASSIGNED PHASE		ADDED INITIAL OPTION																
SWITCH PHASE		CALL DETECTOR OPTION																
EXTEND TIME		PASSAGE DETECTOR OPTION																
DELAY TIME		QUEUE DETECTOR OPTION																
QUEUE LIMIT		NTCIP OCCUPANCY LOG																
FAIL TIME		NTCIP VOLUME LOG																
FAIL CALL DELAY		ECPI LOG																
YELLOW LOCK		RED LOCK																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																		

6-3 PHASE DETECTOR OPTIONS

PHASE DETECTOR OPTION PLAN NUMBER										1						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										2						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										3						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										4						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

6-4 PEDESTRIAN AND SYSTEM DETECTOR OPTIONS

PHASE PEDESTRIAN DETECTOR								
	1	2	3	4	5	6	7	8
PED DET INPUT								
	9	10	11	12	13	14	15	16
PED DET INPUT								
LOCAL SYSTEM DETECTOR								
	1	2	3	4	5	6	7	8
VEH DET INPUT								
	9	10	11	12	13	14	15	16
VEH DET INPUT								

6-5 LOG – SPEED DETECTOR SET UP

NTCIP LOG PERIOD								
ECPI LOG PERIOD								
LENGTH UNIT								
SPEED DETECTOR	1	2	3	4	5	6	7	8
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								
SPEED DETECTOR	9	10	11	12	13	14	15	16
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								

6-6 VEHICLE DETECTOR DIAGNOSTICS

VEHICLE DIAGNOSTIC PLAN NUMBER					1				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					33				
2					34				
3					35				
4					36				
5					37				
6					38				
7					39				
8					40				
9					41				
10					42				
11					43				
12					44				
13					45				
14					46				
15					47				
16					48				
17					49				
18					50				
19					51				
20					52				
21					53				
22					54				
23					55				
24					56				
25					57				
26					58				
27					59				
28					60				
29					61				
30					62				
31					63				
32					64				

VEHICLE DIAGNOSTIC PLAN NUMBER					2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					33				
2					34				
3					35				
4					36				
5					37				
6					38				
7					39				
8					40				
9					41				
10					42				
11					43				
12					44				
13					45				
14					46				
15					47				
16					48				
17					49				
18					50				
19					51				
20					52				
21					53				
22					54				
23					55				
24					56				
25					57				
26					58				
27					59				
28					60				
29					61				
30					62				
31					63				
32					64				

**6-6 VEHICLE DETECTOR DIAGNOSTICS
(CONTINUED)**

VEHICLE DIAGNOSTIC PLAN NUMBER					3
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					4
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

6-7 PEDESTRIAN DETECTOR DIAGNOSTICS

PED DIAGNOSTIC PLAN NUMBER 1					PED DIAGNOSTIC PLAN NUMBER 2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

PED DIAGNOSTIC PLAN NUMBER 3					PED DIAGNOSTIC PLAN NUMBER 4				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

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18. APPENDIX D: PROGRAM REFERENCE CARD

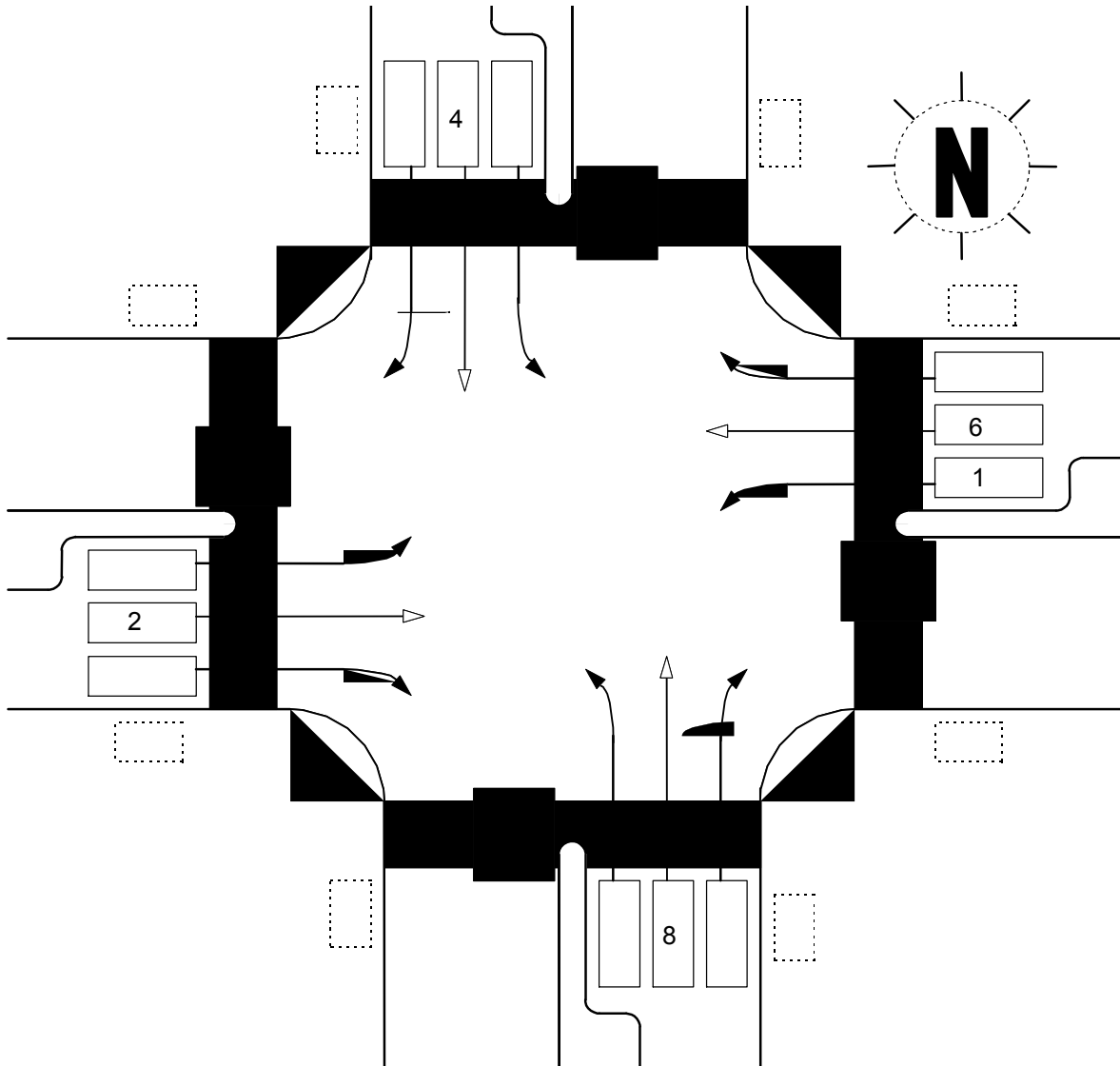
ASC/3

PROGRAM REFERENCE CARD

INTERSECTION Dundas Street & Meadowridge Drive

CONTROLLER NUMBER _____ ENTERED BY: _____ DATE 03/27/17

BOOT: _____ MAIN: _____ HELP: _____ DATA BASE _____



CONFIGURATION SUBMENU

1-1-1. PHASE RING ASSIGNMENT

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
RING																

1-1-2. PHASE COMPATIBILITY

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-2. PHASES IN USE / EXCLUSIVE PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASES IN USE																
EXCLUSIVE PED																

1-1-4. BACKUP PREVENT PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-5 SIMULTANEOUS GAP

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-3. PHASE RING SEQUENCE

CONTROLLER 1			SEQUENCE 1																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 2																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 3																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 4																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 5																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 6																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 7																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 8																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-1-3. PHASE RING SEQUENCE (CONT)

CONTROLLER 1		SEQUENCE 9																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 10																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 11																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 12																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 13																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 14																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 15																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 16																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH	PHASE / OVERLAP	TYPE	DIMMING				AUTO FLASH	
			RED	YELLOW	GREEN	PHASE	COLOR	TOGETHER
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

1-4-2. MMU PROGRAM

PHASE	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

1-4-1. SDLC OPTIONS

TERM & FACIL	BIU NUMBER							
	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
DETECTOR RACK	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
MMU ENABLE								
MMU STOP TIME								
DIAGNOSTIC ENABLE (TEST FIXTURE)								
CONTROLLER PEER TO PEER ENABLE								
DISABLE 3 CRITICAL RFEs LOCKUP								

1-4-3. COLOR CHECK DISABLE

DISABLE ALL COLOR CHECKS																
MMU CHANNEL	1	2	3	4	5	6	7	8								
GREEN / WALK																
YELLOW / PC																
RED / DW																
MMU CHANNEL	9	10	11	12	13	14	15	16								
GREEN / WALK																
YELLOW / PC																
RED / DW																

1-5-1 GLOBAL PORT PARAMETERS

NTCIP BACKUP TIME (SECONDS)	
PORT 2 PRIORITY	
PORT 3A PRIORITY	
PORT 3B PRIORITY	
ETHERNET PRIORITY	

1-5-1 PORT 2 (TERMINAL)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-3 PORT 3A (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
ELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-7-1 ADMINISTRATION

SUPERVISOR ACCESS CODE	
ENABLE CRC CHECK OF DATA BASE	
CRC OF PROGRAM DATA BASE	
REQUEST DOWNLOAD OF PROGRAMMED DATA	

1-7-2 DISPLAY OPTIONS

KEY CLICK ENABLE	
BACKLIGHT ENABLE	

1-5-4. PORT 3B (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-5 ETHERNET PORT CONFIGURATION

IP ADDRESS					
ADDRESS MASK					
FTP SERVER ADDRESS					
DEFAULT GATEWAY ADDRESS					

1-6-1 ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TE)	
3 CRITICAL RFE ERRORS IN 24 HOURS	
NON-CRITICAL RFE'S (DET/TEST)	
DETECTOR ERRORS	
COORDINATION ERRORS	
MMU FLASH FAULTS	
LOCAL FLASH FAULTS	
PREEMPT	
POWER ON/OFF	
LOW BATTERY	
ACCESS	
DATA CHANGE	
CONTROLLER DOWNLOAD	
ALARM 1	
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

1-8-1 LOGIC STATEMENT CONTROL

	1	2	3	4	5	6	7	8	9	10
LP 1-										
10										
LP 11-20										
LP 21-30										
LP 31-40										
LP 41-50										
LP 51-60										
LP 61-70										
LP 71-80										
LP 81-90										
LP 91-10										

	1	2	3	4	5	6	7	8	9	10
THEN										
ELSE										

1-8-1 LOGIC STATEMENT CONTROL

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR STATEMENTS

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				

LOGIC GATE NUMBER				
IF				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				

1-8-2 LOGIC PROCESSOR (CONTINUED)

IF				
THEN				
ELSE				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				

LOGIC GATE NUMBER				
IF				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

CONTROLLER SUBMENU

2-1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN	7	20	7	10	7	20	7	10								
BICYCLE MINIMUM GREEN																
CONDITIONAL SERVICE MINIMUM GREEN																
DELAYED GREEN																
WALK		7		7		7		7								
WALK 2																
WALK MAX																
PEDESTRIAN CLEARANCE		23		30		23		30								
PEDESTRIAN CLEARANCE 2																
PEDESTRIAN CLEARANCE MAX																
PEDESTRIAN CARRY OVER																
VEHICLE EXTENSION	3.5	5.5	3.5	3.5	3.5	5.5	3.5	3.5								
VEHICLE EXTENSION 2																
MAX1	20	55		30		55		30								
MAX2	20	60		30		60		30								
MAX3																
DYNAMIC MAX																
DYNAMIC MAX STEP																
YELLOW CHANGE	3.0	4.2		3.3		4.2		3.3								
RED CLRANCE	1.0	2.5		3.6		2.5		3.6								
RED MAX																
RED REVERT																
ACTUATIONS BEFORE GAP REDUCTION																
SECONDS PER ACTIONS ADDED TO INITIAL																
MAXIMUM ADDED INITIAL GREEN																
TIME BEFORE GAP REDUCTION																
CARS WAITING BEFORE GAP REDUCTION																
STEP TO REDUCE																
TIME TO REDUCE TO MINIMUM																
MINIMUM GAP																

2-2 VEHICLE OVERLAP

OVERLAP A PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP C PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP B PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP D PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP E PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP G PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP F PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP H PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP I PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP K PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP J PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP L PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP M PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP O PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP N PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP P PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-3 PEDESTRIAN OVERLAP

PEDESTRIAN OVERLAP CONSISTS OF PHASES																
PEDESTRIAN OVERLAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

2-4 GUARANTEED MINIMUM TIMES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN																
WALK																
PEDESTRIAN CLEARANCE																
YELLOW CHANGE																
RED CLEARANCE																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
MINIMUM GREEN																

2-5 START / FLASH DATA

POWER START																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
OVERLAP																
POWER START RED									FLASH TIME							
REMOTE (AUTOMATIC) FLASH																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENTRY																
EXIT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EXIT																
EXIT REMOTE FLASH									MINIMUM AUTOMATIC FLASH							
MINIMUM RECALL									CYCLE THROUGH PHASES							

2-6-1 CONTROLLER OPTIONS

PEDESTRIAN CLEARANCE PROTECT																
UNIT RED REVERT																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
GUARANTEE D PASSAGE																
NON-ACT I																
NON ACT II																
DUAL ENTRY																
PED RESERVICE																
REST IN WALK																
FLASHING WALK																
PED CLEAR > YELLOW																
PED CLEAR > ALL RED																
INIT GREEN + VEHICLE EXIT																

2-7 ACTUATED / PRE-TIMED MODE PHASES

ENABLE PRE-TIMED OPERATION																
FREE INPUT DISABLED PRE-TIMED																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
PRE-TIMED																

COORDINATOR SUBMENU

3-1 COORDINATOR OPTIONS

MANUAL PATTERN	Auto		
INTERCONNECT SOURCE	TBC	INTERCONNECT FORMAT	
TRANSITION	Smooth	ECPI COORDINATION	Yes
OFFSET REFERENCE	Lead	DWELL / ADD TIME	
DELAY COORD WALK TO LOCAL ZERO	No	FORCE OFF	Float
FORCE OFF ADDED INITIAL GREEN	No	USE PED TIME FOR SMOOTH TRANSITION	No
PEDESTRIAN RECALL	No	PEDESTRIAN RESERVICE	Yes
ENABLE MANUAL SYNC INPUT		LOCAL ZERO OVERRIDE	No
RE-SYNC COUNT	No	MAX SELECT	MaxInh
MULTISYNC	No		

3-2 COORDINATOR PATTERN

COORDINATOR PATTERN	1	SPLIT PATTERN																																																																					
CYCLE LENGTH (SECONDS)	130	SEQUENCE																																																																					
OFFSET VALUE	70	OFFSETS IN . . .	Per																																																																				
SPLITS IN	Per																																																																						
CROSSING ARTERY PATTERN																																																																							
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																																																																					
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	1																																																																				
ACTUATED COORDINATION	Yes	TIMING PLAN																																																																					
ACTUATED REST IN WALK		PHASE RESERVICE																																																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>RING SPLIT EXTENSION (SECONDS)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SPLIT DEMAND PATTERN</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="5">RING DISPLACEMENT</td> </tr> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>8</td> <td>9</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>PREFERENCE 1 PHASES</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>1</td> <td>3</td> <td>5</td> </tr> <tr> <td>PREFERENCE 2 PHASES</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SPECIAL FUNCTION</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					1	2	3	4	RING SPLIT EXTENSION (SECONDS)					SPLIT DEMAND PATTERN					RING DISPLACEMENT						1	2	3	4	5	8	9	1	1	1	1	PREFERENCE 1 PHASES								0	1	3	5	PREFERENCE 2 PHASES												SPECIAL FUNCTION	1	2	3	4	5	8					
	1	2	3	4																																																																			
RING SPLIT EXTENSION (SECONDS)																																																																							
SPLIT DEMAND PATTERN																																																																							
RING DISPLACEMENT																																																																							
	1	2	3	4	5	8	9	1	1	1	1																																																												
PREFERENCE 1 PHASES								0	1	3	5																																																												
PREFERENCE 2 PHASES																																																																							
SPECIAL FUNCTION	1	2	3	4	5	8																																																																	

COORDINATOR PATTERN	2	SPLIT PATTERN																																																									
CYCLE LENGTH (SECONDS)	120	SEQUENCE																																																									
OFFSET VALUE	7	OFFSETS IN	Per																																																								
SPLITS IN	Per																																																										
CROSSING ARTERY PATTERN																																																											
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																																																									
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	2																																																								
ACTUATED COORDINATION	Yes	TIMING PLAN																																																									
ACTUATED REST IN WALK		PHASE RESERVICE																																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>RING SPLIT EXTENSION (SECONDS)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SPLIT DEMAND PATTERN</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="5">RING DISPLACEMENT</td> </tr> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>8</td> <td>9</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>PREFERENCE 1 PHASES</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>1</td> <td>3</td> <td>5</td> </tr> <tr> <td>PREFERENCE 2 PHASES</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					1	2	3	4	RING SPLIT EXTENSION (SECONDS)					SPLIT DEMAND PATTERN					RING DISPLACEMENT						1	2	3	4	5	8	9	1	1	1	1	PREFERENCE 1 PHASES								0	1	3	5	PREFERENCE 2 PHASES											
	1	2	3	4																																																							
RING SPLIT EXTENSION (SECONDS)																																																											
SPLIT DEMAND PATTERN																																																											
RING DISPLACEMENT																																																											
	1	2	3	4	5	8	9	1	1	1	1																																																
PREFERENCE 1 PHASES								0	1	3	5																																																
PREFERENCE 2 PHASES																																																											

COORDINATOR PATTERN	3	SPLIT PATTERN																																																									
CYCLE LENGTH (SECONDS)	130	SEQUENCE																																																									
OFFSET VALUE	75	OFFSETS IN	Per																																																								
SPLITS IN	Per																																																										
CROSSING ARTERY PATTERN																																																											
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																																																									
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	3																																																								
ACTUATED COORDINATION	Yes	TIMING PLAN																																																									
ACTUATED REST IN WALK		PHASE RESERVICE																																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>RING SPLIT EXTENSION (SECONDS)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SPLIT DEMAND PATTERN</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="5">RING DISPLACEMENT</td> </tr> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>8</td> <td>9</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>PREFERENCE 1 PHASES</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>1</td> <td>3</td> <td>5</td> </tr> <tr> <td>PREFERENCE 2 PHASES</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					1	2	3	4	RING SPLIT EXTENSION (SECONDS)					SPLIT DEMAND PATTERN					RING DISPLACEMENT						1	2	3	4	5	8	9	1	1	1	1	PREFERENCE 1 PHASES								0	1	3	5	PREFERENCE 2 PHASES											
	1	2	3	4																																																							
RING SPLIT EXTENSION (SECONDS)																																																											
SPLIT DEMAND PATTERN																																																											
RING DISPLACEMENT																																																											
	1	2	3	4	5	8	9	1	1	1	1																																																
PREFERENCE 1 PHASES								0	1	3	5																																																
PREFERENCE 2 PHASES																																																											

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN	4		
CYCLE LENGTH (SECONDS)	100	SPLIT PATTERN	
OFFSET VALUE	8		
SPLITS IN	Per	OFFSETS IN	Per
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	4
ACTUATED COORDINATION	Yes	TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			

COORDINATOR PATTERN	5		
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	5
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			

Per
Per

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																	
CYCLE LENGTH (SECONDS)		SPLIT PATTERN															
OFFSET VALUE		SEQUENCE															
SPLITS IN		OFFSETS IN															
CROSSING ARTERY PATTERN																	
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH															
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN															
ACTUATED COORDINATION		TIMING PLAN															
ACTUATED REST IN WALK		PHASE RESERVICE															
RING SPLIT EXTENSION (SECONDS)		1	2	3	4												
SPLIT DEMAND PATTERN																	
RING DISPLACEMENT																	
		1	2	3	4	5			8	9	1	1	1	1	1	1	1
											0	1		3		5	
PREFERENCE 1 PHASES																	
PREFERENCE 2 PHASES																	

COORDINATOR PATTERN																	
CYCLE LENGTH (SECONDS)		SPLIT PATTERN															
OFFSET VALUE		SEQUENCE															
SPLITS IN		OFFSETS IN															
CROSSING ARTERY PATTERN																	
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH															
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN															
ACTUATED COORDINATION		TIMING PLAN															
ACTUATED REST IN WALK		PHASE RESERVICE															
RING SPLIT EXTENSION (SECONDS)		1	2	3	4												
SPLIT DEMAND PATTERN																	
RING DISPLACEMENT																	
		1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
											0	1	2	3	4	5	6
PREFERENCE 1 PHASES																	
PREFERENCE 2 PHASES																	

3-3 SPLIT PATTERN

SPLIT PATTERN NUMBER		1															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)		X				X											
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE	11	54	0	35	0	65	0	35									
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER		2															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)		X				X											
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE	10	52	0	38	0	62	0	38									
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER		3															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)		X				X											
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE	16	49	0	35	0	65	0	35									
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER		4															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)		X				X											
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE	11	44	0	45	0	55	0	45									
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-4 AUTO PERMISSIVE MINIMUM GREEN TIME

PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN								
PHASE	9	10	11	12	13	14	15	16
MINIMUM GREEN								

3-5 SPLIT DEMAND

PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
DEMAND 1																	
DEMAND 2																	
DEMAND	1		2														
DETECTOR																	
CALL TIME (SECONDS)																	
CYCLE COUNT																	

PREEMPTOR SUBMENU

4-1 PREEMPTOR

PREEMPTOR NUMBER	1																
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL – CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH	FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION									EXIT TIMING PLAN								
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL								
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT								
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER	2																
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL – CYCLE GREEN/EXIT YELLOW/RED																	
DWELL FLASH	FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION									EXIT TIMING PLAN								
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL								
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT								
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-2 LOW PRIORITY PREEMPTOR SELECTION

FILTERED INPUT	SOLID	PULSING
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		3															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		4															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		5															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		6															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		7																
ACTIVE		NON-LOCK INPUT																
PREEMPTION OVERRIDE		INTERLOCK ENABLE																
DELAY TIME (SECONDS)		INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)		MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)		TRACK CLEARANCE RESERVICE																
PED DARK		RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY		RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP		PC THROUGH YELLOW																
RING		1	2	3	4													
FREE DURING PREEMPTION																		
		WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		8																
ACTIVE		NON-LOCK INPUT																
PREEMPTION OVERRIDE		INTERLOCK ENABLE																
DELAY TIME (SECONDS)		INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)		MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)		TRACK CLEARANCE RESERVICE																
PED DARK		RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY		RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP		PC THROUGH YELLOW																
RING		1	2	3	4													
FREE DURING PREEMPTION																		
		WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		9																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		10																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

TIME BASE SUBMENU

5-1 CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL ACTION PLAN	
SYNC REFERENCE TIME	
SYNC REFERENCE	
DAYLIGHT SAVINGS	
TIME RESET INPUT TIME SET	
STANDARD TIME FROM GMT	

5-2 SCHEDULE

SCHEDULE NUMBER	1
DAY PLAN NUMBER	1

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
		x	x	x	x	x				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	1
DAY PLAN NUMBER	2

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
	x						x			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

PATTERN		1		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		3		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		2		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		4		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN																				
PATTERN	5	SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

5-5 EXCEPTION DAY PROGRAM

EXCEPTION DAY	FLOAT / FIXED	MON / MON	DOW / DOM	WOM / YEAR	DAY PLAN
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

DETECTORS

6-1. DETECTOR TYPE AND TS SELECT

DET	TYPE	TS1 DETECTOR
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

DET	TYPE	TS1 DETECTOR
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

6-2 VEHICLE DETECTOR SETUP

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

6-3 PHASE DETECTOR OPTIONS

PHASE DETECTOR OPTION PLAN NUMBER										1						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										2						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										3						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										4						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

6-4 PEDESTRIAN AND SYSTEM DETECTOR OPTIONS

PHASE PEDESTRIAN DETECTOR								
	1	2	3	4	5	6	7	8
PED DET INPUT								
	9	10	11	12	13	14	15	16
PED DET INPUT								
LOCAL SYSTEM DETECTOR								
	1	2	3	4	5	6	7	8
VEH DET INPUT								
	9	10	11	12	13	14	15	16
VEH DET INPUT								

6-5 LOG – SPEED DETECTOR SET UP

NTCIP LOG PERIOD								
ECPI LOG PERIOD								
LENGTH UNIT								
SPEED DETECTOR	1	2	3	4	5	6	7	8
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								
SPEED DETECTOR	9	10	11	12	13	14	15	16
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								

6-6 VEHICLE DETECTOR DIAGNOSTICS

VEHICLE DIAGNOSTIC PLAN NUMBER					1
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					2
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

**6-6 VEHICLE DETECTOR DIAGNOSTICS
(CONTINUED)**

VEHICLE DIAGNOSTIC PLAN NUMBER					3
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					4
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

6-7 PEDESTRIAN DETECTOR DIAGNOSTICS

PED DIAGNOSTIC PLAN NUMBER 1					PED DIAGNOSTIC PLAN NUMBER 2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

PED DIAGNOSTIC PLAN NUMBER 3					PED DIAGNOSTIC PLAN NUMBER 4				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

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18. APPENDIX D: PROGRAM REFERENCE CARD

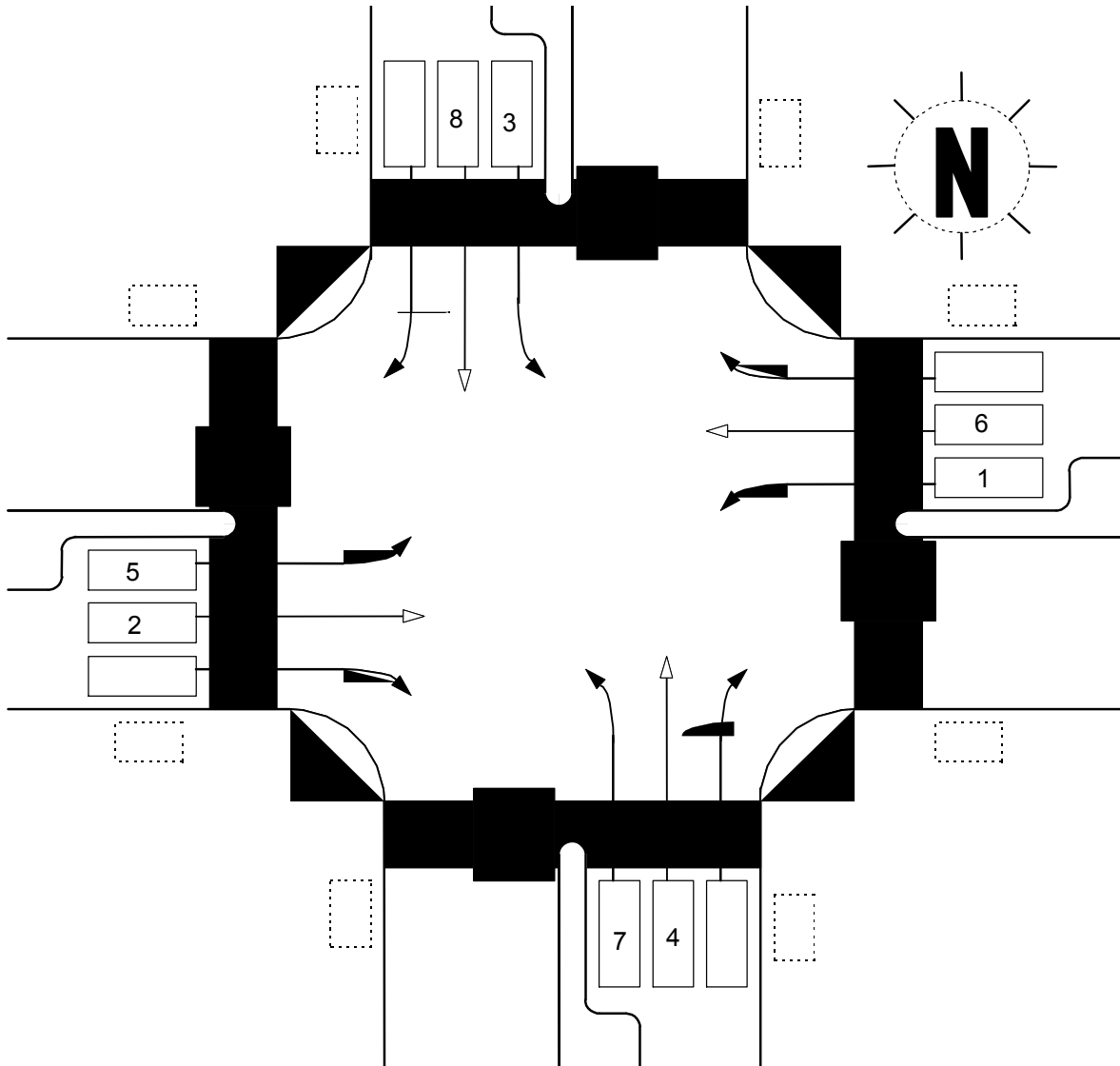
ASC/3

PROGRAM REFERENCE CARD

INTERSECTION Dundas Street & Ninth Line

CONTROLLER NUMBER _____ ENTERED BY: _____ DATE 03 / 13 / 17

BOOT: _____ MAIN: _____ HELP: _____ DATA BASE _____



CONFIGURATION SUBMENU

1-1-1. PHASE RING ASSIGNMENT

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
RING																

1-1-2. PHASE COMPATIBILITY

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-2. PHASES IN USE / EXCLUSIVE PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASES IN USE																
EXCLUSIVE PED																

1-1-4. BACKUP PREVENT PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-5 SIMULTANEOUS GAP

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-3. PHASE RING SEQUENCE

CONTROLLER 1			SEQUENCE 1																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 2																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 3																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 4																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 5																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 6																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 7																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 8																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-1-3. PHASE RING SEQUENCE (CONT)

CONTROLLER 1		SEQUENCE 9																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 10																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 11																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 12																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 13																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 14																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 15																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 16																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH	PHASE / OVERLAP	TYPE	DIMMING				AUTO FLASH	
			RED	YELLOW	GREEN	PHASE	COLOR	TOGGLE - THER
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

1-4-2. MMU PROGRAM

PHASE	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

1-4-1. SDLC OPTIONS

TERM & FACIL	BIU NUMBER							
	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
DETECTOR RACK	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
MMU ENABLE								
MMU STOP TIME								
DIAGNOSTIC ENABLE (TEST FIXTURE)								
CONTROLLER PEER TO PEER ENABLE								
DISABLE 3 CRITICAL RFEs LOCKUP								

1-4-3. COLOR CHECK DISABLE

DISABLE ALL COLOR CHECKS																
MMU CHANNEL	1	2	3	4	5	6	7	8								
GREEN / WALK																
YELLOW / PC																
RED / DW																
MMU CHANNEL	9	10	11	12	13	14	15	16								
GREEN / WALK																
YELLOW / PC																
RED / DW																

1-5-1 GLOBAL PORT PARAMETERS

NTCIP BACKUP TIME (SECONDS)	
PORT 2 PRIORITY	
PORT 3A PRIORITY	
PORT 3B PRIORITY	
ETHERNET PRIORITY	

1-5-1 PORT 2 (TERMINAL)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-3 PORT 3A (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
ELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-7-1 ADMINISTRATION

SUPERVISOR ACCESS CODE	
ENABLE CRC CHECK OF DATA BASE	
CRC OF PROGRAM DATA BASE	
REQUEST DOWNLOAD OF PROGRAMMED DATA	

1-7-2 DISPLAY OPTIONS

KEY CLICK ENABLE	
BACKLIGHT ENABLE	

1-5-4. PORT 3B (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-5 ETHERNET PORT CONFIGURATION

IP ADDRESS					
ADDRESS MASK					
FTP SERVER ADDRESS					
DEFAULT GATEWAY ADDRESS					

1-6-1 ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TE)	
3 CRITICAL RFE ERRORS IN 24 HOURS	
NON-CRITICAL RFE'S (DET/TEST)	
DETECTOR ERRORS	
COORDINATION ERRORS	
MMU FLASH FAULTS	
LOCAL FLASH FAULTS	
PREEMPT	
POWER ON/OFF	
LOW BATTERY	
ACCESS	
DATA CHANGE	
CONTROLLER DOWNLOAD	
ALARM 1	
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER			
IF			
THEN			
ELSE			

LOGIC GATE NUMBER			
IF			
THEN			
ELSE			

LOGIC GATE NUMBER			
IF			
THEN			
ELSE			

LOGIC GATE NUMBER			
IF			
THEN			
ELSE			

LOGIC GATE NUMBER			
IF			
THEN			
ELSE			

LOGIC GATE NUMBER			
IF			
THEN			
ELSE			

LOGIC GATE NUMBER			
IF			
THEN			
ELSE			

LOGIC GATE NUMBER			
IF			
THEN			
ELSE			

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER			
-------------------	--	--	--

IF				
THEN				
ELSE				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				

LOGIC GATE NUMBER				
IF				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

CONTROLLER SUBMENU

2-1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN	7	20	7	10	7	20	7	10								
BICYCLE MINIMUM GREEN																
CONDITIONAL SERVICE MINIMUM GREEN																
DELAYED GREEN																
WALK		7		7		7		7								
WALK 2																
WALK MAX																
PEDESTRIAN CLEARANCE		32		34		32		34								
PEDESTRIAN CLEARANCE 2																
PEDESTRIAN CLEARANCE MAX																
PEDESTRIAN CARRY OVER																
VEHICLE EXTENSION	3.5	5.5	3.5	3.5	3.5	5.5	3.5	3.5								
VEHICLE EXTENSION 2																
MAX1	20	55	20	35	20	55	20	35								
MAX2	20	60	20	40	20	60	20	40								
MAX3																
DYNAMIC MAX																
DYNAMIC MAX STEP																
YELLOW CHANGE	3.0	3.7	3.0	3.7	3.0	3.7	3.0	3.7								
RED CLRANCE	1.0	2.6	1.0	2.8	2.0	2.6	1.0	2.8								
RED MAX																
RED REVERT																
ACTUATIONS BEFORE GAP REDUCTION																
SECONDS PER ACTIONS ADDED TO INITIAL																
MAXIMUM ADDED INITIAL GREEN																
TIME BEFORE GAP REDUCTION																
CARS WAITING BEFORE GAP REDUCTION																
STEP TO REDUCE																
TIME TO REDUCE TO MINIMUM																
MINIMUM GAP																

2-2 VEHICLE OVERLAP

OVERLAP A PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP C PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP B PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP D PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN				TRAILING YELLOW						TRAILING RED							
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP E PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP G PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP F PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP H PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP I PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP K PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP J PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP L PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP M PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP O PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP N PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP P PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-3 PEDESTRIAN OVERLAP

PEDESTRIAN OVERLAP CONSISTS OF PHASES																
PEDESTRIAN OVERLAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

2-4 GUARANTEED MINIMUM TIMES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN																
WALK																
PEDESTRIAN CLEARANCE																
YELLOW CHANGE																
RED CLEARANCE																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
MINIMUM GREEN																

2-5 START / FLASH DATA

POWER START																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
OVERLAP																
POWER START RED									FLASH TIME							
REMOTE (AUTOMATIC) FLASH																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENTRY																
EXIT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EXIT																
EXIT REMOTE FLASH									MINIMUM AUTOMATIC FLASH							
MINIMUM RECALL									CYCLE THROUGH PHASES							

2-6-1 CONTROLLER OPTIONS

PEDESTRIAN CLEARANCE PROTECT																
UNIT RED REVERT																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
GUARANTEE D PASSAGE																
NON-ACT I																
NON ACT II																
DUAL ENTRY																
PED RESERVICE																
REST IN WALK																
FLASHING WALK																
PED CLEAR > YELLOW																
PED CLEAR > ALL RED																
INIT GREEN + VEHICLE EXIT																

2-7 ACTUATED / PRE-TIMED MODE PHASES

ENABLE PRE-TIMED OPERATION																
FREE INPUT DISABLED PRE-TIMED																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
PRE-TIMED																

COORDINATOR SUBMENU

3-1 COORDINATOR OPTIONS

MANUAL PATTERN	Auto		
INTERCONNECT SOURCE	TBC	INTERCONNECT FORMAT	
TRANSITION	Smooth	ECPI COORDINATION	Yes
OFFSET REFERENCE	Lead	DWELL / ADD TIME	
DELAY COORD WALK TO LOCAL ZERO	No	FORCE OFF	Float
FORCE OFF ADDED INITIAL GREEN	No	USE PED TIME FOR SMOOTH TRANSITION	No
PEDESTRIAN RECALL	No	PEDESTRIAN RESERVICE	Yes
ENABLE MANUAL SYNC INPUT		LOCAL ZERO OVERRIDE	Yes
RE-SYNC COUNT	No	MAX SELECT	MaxInh
MULTISYNC	No		

3-2 COORDINATOR PATTERN

COORDINATOR PATTERN	1		
CYCLE LENGTH (SECONDS)	130	SPLIT PATTERN	
OFFSET VALUE	12	SEQUENCE	
SPLITS IN	Per	OFFSETS IN . . .	Per
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	1
ACTUATED COORDINATION	Yes	TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			
	1	2	3
SPECIAL FUNCTION			

COORDINATOR PATTERN	2		
CYCLE LENGTH (SECONDS)	120	SPLIT PATTERN	
OFFSET VALUE	49	SEQUENCE	
SPLITS IN	Per	OFFSETS IN	Per
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	2
ACTUATED COORDINATION	Yes	TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			

COORDINATOR PATTERN	3		
CYCLE LENGTH (SECONDS)	130	SPLIT PATTERN	
OFFSET VALUE	12	SEQUENCE	
SPLITS IN	Per	OFFSETS IN	Per
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	3
ACTUATED COORDINATION	Yes	TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFER ENCE 1 PHASES			
PREFER ENCE 2 PHASES			

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN	4												
CYCLE LENGTH (SECONDS)	100	SPLIT PATTERN											
OFFSET VALUE	59												
SPLITS IN	Per	OFFSETS IN										Per	
CROSSING ARTERY PATTERN													
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH											
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN										4	
ACTUATED COORDINATION	Yes	TIMING PLAN											
ACTUATED REST IN WALK		PHASE RESERVICE											
RING SPLIT EXTENSION (SECONDS)													
SPLIT DEMAND PATTERN													
RING DISPLACEMENT													
	1	2	3	4	5			8	9	1	1	1	1
										0	1	3	5
PREFERENCE 1 PHASES													
PREFERENCE 2 PHASES													

COORDINATOR PATTERN	5												
CYCLE LENGTH (SECONDS)		SPLIT PATTERN											
OFFSET VALUE		SEQUENCE											
SPLITS IN		OFFSETS IN											
CROSSING ARTERY PATTERN													
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH											
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN										5	
ACTUATED COORDINATION		TIMING PLAN											
ACTUATED REST IN WALK		PHASE RESERVICE											
RING SPLIT EXTENSION (SECONDS)													
SPLIT DEMAND PATTERN													
RING DISPLACEMENT													
	1	2	3	4	5			8	9	1	1	1	1
										0	1	3	5
PREFERENCE 1 PHASES													
PREFERENCE 2 PHASES													

COORDINATOR PATTERN													
CYCLE LENGTH (SECONDS)		SPLIT PATTERN											
OFFSET VALUE		SEQUENCE											
SPLITS IN		OFFSETS IN											
CROSSING ARTERY PATTERN													
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH											
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN											
ACTUATED COORDINATION		TIMING PLAN											
ACTUATED REST IN WALK		PHASE RESERVICE											
RING SPLIT EXTENSION (SECONDS)													
SPLIT DEMAND PATTERN													
RING DISPLACEMENT													
	1	2	3	4	5			8	9	1	1	1	1
										0	1	3	5
PREFERENCE 1 PHASES													
PREFERENCE 2 PHASES													

COORDINATOR PATTERN													
CYCLE LENGTH (SECONDS)		SPLIT PATTERN											
OFFSET VALUE		SEQUENCE											
SPLITS IN		OFFSETS IN											
CROSSING ARTERY PATTERN													
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH											
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN											
ACTUATED COORDINATION		TIMING PLAN											
ACTUATED REST IN WALK		PHASE RESERVICE											
RING SPLIT EXTENSION (SECONDS)													
SPLIT DEMAND PATTERN													
RING DISPLACEMENT													
	1	2	3	4	5			8	9	1	1	1	1
										0	1	3	5
PREFERENCE 1 PHASES													
PREFERENCE 2 PHASES													

Per
Per

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1	2	3
	4	5	
		8	9
		1	1
		0	1
		1	3
		1	5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1	2	3
	4	5	
		8	9
		1	1
		0	1
		1	3
		1	5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1	2	3
	4	5	
		8	9
		1	1
		0	1
		1	3
		1	5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1	2	3
	4	5	
		8	9
		1	1
		0	1
		1	3
		1	5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN		SPLIT PATTERN	
CYCLE LENGTH (SECONDS)			
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
		1	2
RING SPLIT EXTENSION (SECONDS)			
SPLIT DEMAND PATTERN			
		3	4
RING DISPLACEMENT			
	1 2 3 4 5	8 9	1 1 1 1
		0 1	3 5
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN															
CYCLE LENGTH (SECONDS)		SPLIT PATTERN													
OFFSET VALUE		SEQUENCE													
SPLITS IN		OFFSETS IN													
CROSSING ARTERY PATTERN															
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH													
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN													
ACTUATED COORDINATION		TIMING PLAN													
ACTUATED REST IN WALK		PHASE RESERVICE													
RING SPLIT EXTENSION (SECONDS)		1	2	3	4										
SPLIT DEMAND PATTERN															
RING DISPLACEMENT															
		1	2	3	4	5		8	9	1	1	1	1	1	1
										0	1		3		5
PREFERENCE 1 PHASES															
PREFERENCE 2 PHASES															

COORDINATOR PATTERN																	
CYCLE LENGTH (SECONDS)		SPLIT PATTERN															
OFFSET VALUE		SEQUENCE															
SPLITS IN		OFFSETS IN															
CROSSING ARTERY PATTERN																	
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH															
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN															
ACTUATED COORDINATION		TIMING PLAN															
ACTUATED REST IN WALK		PHASE RESERVICE															
RING SPLIT EXTENSION (SECONDS)		1	2	3	4												
SPLIT DEMAND PATTERN																	
RING DISPLACEMENT																	
		1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	
											0	1	2	3	4	5	6
PREFERENCE 1 PHASES																	
PREFERENCE 2 PHASES																	

3-3 SPLIT PATTERN

SPLIT PATTERN NUMBER		1																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		9	53	11	27	15	47	11	27											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		2																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		12	51	12	25	12	51	12	25											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		3																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		10	53	17	20	10	53	10	27											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		4																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		12	48	12	28	12	48	12	28											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
	COORDINATED PHASE(S)																
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
	COORDINATED PHASE(S)																
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
	COORDINATED PHASE(S)																
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
	COORDINATED PHASE(S)																
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
	COORDINATED PHASE(S)																
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
	COORDINATED PHASE(S)																
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
	COORDINATED PHASE(S)																
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
	COORDINATED PHASE(S)																
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-4 AUTO PERMISSIVE MINIMUM GREEN TIME

PHASE	1	2	3	4	5	6	7	8								
MINIMUM GREEN																
PHASE	9	10	11	12	13	14	15	16								
MINIMUM GREEN																

3-5 SPLIT DEMAND

PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
DEMAND 1																	
DEMAND 2																	
DEMAND	1		2														
DETECTOR																	
CALL TIME (SECONDS)																	
CYCLE COUNT																	

PREEMPTOR SUBMENU

4-1 PREEMPTOR

PREEMPTOR NUMBER	1																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/ EXIT YELLOW /RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

PREEMPTOR NUMBER	2																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/EXIT YELLOW/RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

4-2 LOW PRIORITY PREEMPTOR SELECTION

FILTERED INPUT	SOLID	PULSING
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		3															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		4															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		5															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		6															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		7															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		8															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		9																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

PREEMPTOR NUMBER		10																
ACTIVE	NON-LOCK INPUT																	
PREEMPTION OVERRIDE	INTERLOCK ENABLE																	
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																	
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																	
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																	
PED DARK	RESERVICE TIME																	
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																	
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																	
RING	1	2	3	4														
FREE DURING PREEMPTION																		
	WALK	PED CLEAR	GREEN	YELLOW	RED													
ENTERING MINIMUM TIME																		
TRACK CLEARANCE TIME																		
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																		
DWELL FLASH		FLASH EXIT COLOR																
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																		
DWELL PHASE																		
DWELL PEDESTRIAN																		
CYCLING PHASE																		
CYCLING PEDESTRIAN																		
EXIT PHASE																		
EXIT CALLS																		
SPECIAL FUNCTION																		
PREEMPTION TO COORDINATION		EXIT TIMING PLAN																
LINKED PREEMPTOR																		
PREEMPTOR ACTIVE OUTPUTS																		
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL																
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
TRACK CLEAR OVERLAP																		
DWELL OVERLAP																		
CYCLING OVERLAP																		

TIME BASE SUBMENU

5-1 CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL ACTION PLAN	
SYNC REFERENCE TIME	
SYNC REFERENCE	
DAYLIGHT SAVINGS	
TIME RESET INPUT TIME SET	
STANDARD TIME FROM GMT	

5-2 SCHEDULE

SCHEDULE NUMBER	1
DAY PLAN NUMBER	1

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
		x	x	x	x	x				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	1
DAY PLAN NUMBER	2

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
	x						x			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER													
DAY PLAN NUMBER													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE							
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER							
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT						
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10			
	11	12	13	14	15	16	17	18	19	20			
	21	22	23	24	25	26	27	28	29	30			
	31												

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

PATTERN		1		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		3		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		2		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		4		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN																				
PATTERN	5	SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

5-5 EXCEPTION DAY PROGRAM

EXCEPTION DAY	FLOAT / FIXED	MON / MON	DOW / DOM	WOM / YEAR	DAY PLAN
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

DETECTORS

6-1. DETECTOR TYPE AND TS SELECT

DET	TYPE	TS1 DETECTOR
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

DET	TYPE	TS1 DETECTOR
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
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56		
57		
58		
59		
60		
61		
62		
63		
64		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

6-2 VEHICLE DETECTOR SETUP

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

VEHICLE PLAN NUMBER																			
DETECTOR NUMBER																			
ASSIGNED PHASE		ADDED INITIAL OPTION																	
SWITCH PHASE		CALL DETECTOR OPTION																	
EXTEND TIME		PASSAGE DETECTOR OPTION																	
DELAY TIME		QUEUE DETECTOR OPTION																	
QUEUE LIMIT		NTCIP OCCUPANCY LOG																	
FAIL TIME		NTCIP VOLUME LOG																	
FAIL CALL DELAY		ECPI LOG																	
YELLOW LOCK		RED LOCK																	
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1
CALLED																			

6-3 PHASE DETECTOR OPTIONS

PHASE DETECTOR OPTION PLAN NUMBER										1						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										2						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										3						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										4						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

6-4 PEDESTRIAN AND SYSTEM DETECTOR OPTIONS

PHASE PEDESTRIAN DETECTOR								
	1	2	3	4	5	6	7	8
PED DET INPUT								
	9	10	11	12	13	14	15	16
PED DET INPUT								
LOCAL SYSTEM DETECTOR								
	1	2	3	4	5	6	7	8
VEH DET INPUT								
	9	10	11	12	13	14	15	16
VEH DET INPUT								

6-5 LOG – SPEED DETECTOR SET UP

NTCIP LOG PERIOD								
ECPI LOG PERIOD								
LENGTH UNIT								
SPEED DETECTOR	1	2	3	4	5	6	7	8
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								
SPEED DETECTOR	9	10	11	12	13	14	15	16
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								

6-6 VEHICLE DETECTOR DIAGNOSTICS

VEHICLE DIAGNOSTIC PLAN NUMBER					1
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					2
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

**6-6 VEHICLE DETECTOR DIAGNOSTICS
(CONTINUED)**

VEHICLE DIAGNOSTIC PLAN NUMBER					3
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					4
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

6-7 PEDESTRIAN DETECTOR DIAGNOSTICS

PED DIAGNOSTIC PLAN NUMBER 1					PED DIAGNOSTIC PLAN NUMBER 2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

PED DIAGNOSTIC PLAN NUMBER 3					PED DIAGNOSTIC PLAN NUMBER 4				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

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18. APPENDIX D: PROGRAM REFERENCE CARD

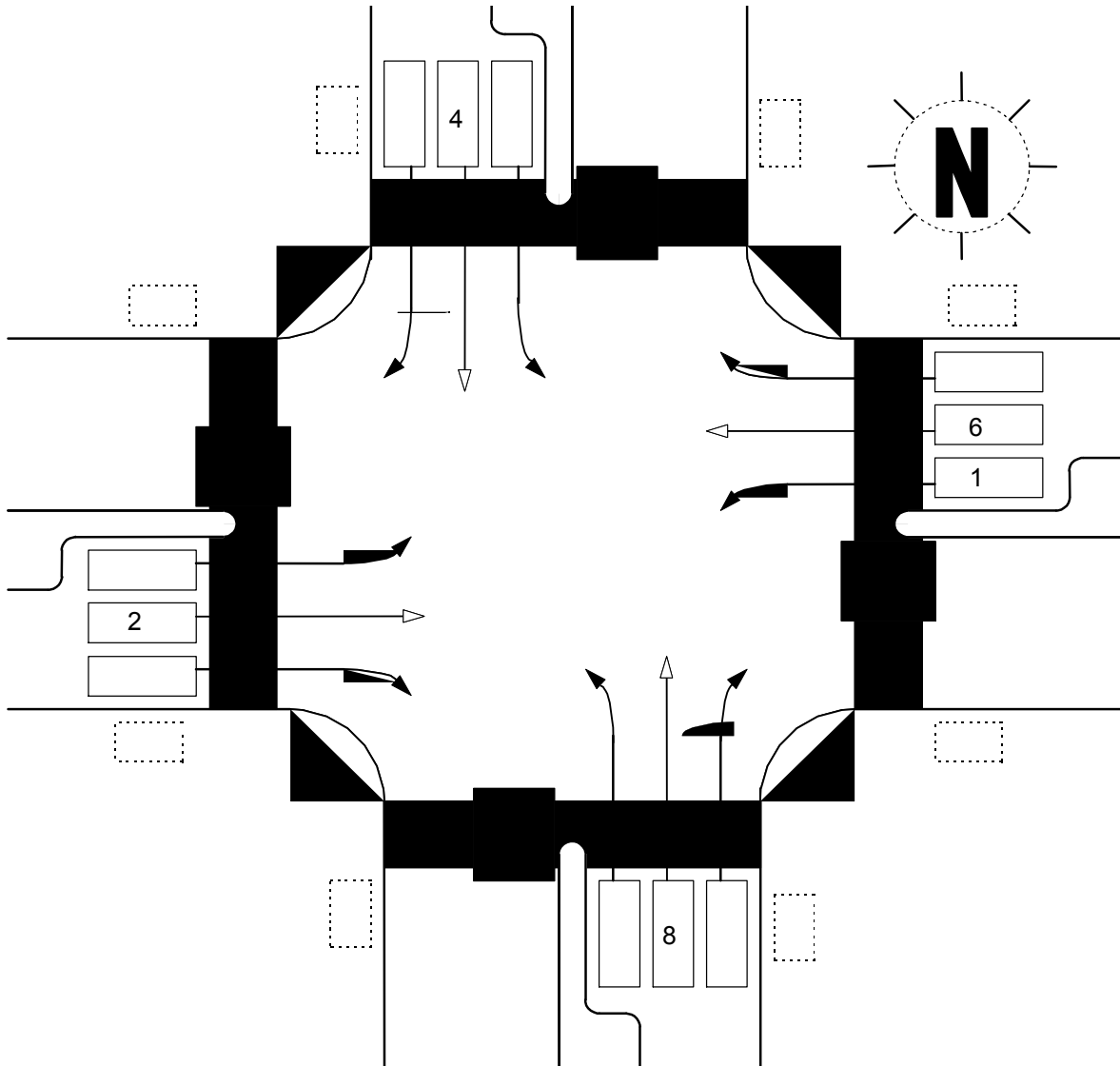
ASC/3

PROGRAM REFERENCE CARD

INTERSECTION Dundas Street & Prince Michael Drive

CONTROLLER NUMBER _____ ENTERED BY: _____ DATE 03 / 13 / 17

BOOT: _____ MAIN: _____ HELP: _____ DATA BASE _____



CONFIGURATION SUBMENU

1-1-1. PHASE RING ASSIGNMENT

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
RING																

1-1-2. PHASE COMPATIBILITY

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-2. PHASES IN USE / EXCLUSIVE PED

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASES IN USE																
EXCLUSIVE PED																

1-1-4. BACKUP PREVENT PHASES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-5 SIMULTANEOUS GAP

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

1-1-3. PHASE RING SEQUENCE

CONTROLLER 1			SEQUENCE 1																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 2																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 3																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 4																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 5																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 6																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 7																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1			SEQUENCE 8																	
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-1-3. PHASE RING SEQUENCE (CONT)

CONTROLLER 1		SEQUENCE 9																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 10																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 11																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 12																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 13																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 14																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 15																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				
CONTROLLER 1		SEQUENCE 16																		
RING 1																				
RING 2																				
RING 3																				
RING 4																				

1-3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH	PHASE / OVERLAP	TYPE	DIMMING				AUTO FLASH	
			RED	YELLOW	GREEN	PHASE	COLOR	TOGGLE - THER
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

1-4-2. MMU PROGRAM

PHASE	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

1-4-1. SDLC OPTIONS

TERM & FACIL	BIU NUMBER							
	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
DETECTOR RACK	1	2	3	4	5	6	7	8
ENABLE								
PEER-PEER EN								
MMU ENABLE								
MMU STOP TIME								
DIAGNOSTIC ENABLE (TEST FIXTURE)								
CONTROLLER PEER TO PEER ENABLE								
DISABLE 3 CRITICAL RFEs LOCKUP								

1-4-3. COLOR CHECK DISABLE

DISABLE ALL COLOR CHECKS																
MMU CHANNEL	1	2	3	4	5	6	7	8								
GREEN / WALK																
YELLOW / PC																
RED / DW																
MMU CHANNEL	9	10	11	12	13	14	15	16								
GREEN / WALK																
YELLOW / PC																
RED / DW																

1-5-1 GLOBAL PORT PARAMETERS

NTCIP BACKUP TIME (SECONDS)	
PORT 2 PRIORITY	
PORT 3A PRIORITY	
PORT 3B PRIORITY	
ETHERNET PRIORITY	

1-5-1 PORT 2 (TERMINAL)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-3 PORT 3A (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
ELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-7-1 ADMINISTRATION

SUPERVISOR ACCESS CODE	
ENABLE CRC CHECK OF DATA BASE	
CRC OF PROGRAM DATA BASE	
REQUEST DOWNLOAD OF PROGRAMMED DATA	

1-7-2 DISPLAY OPTIONS

KEY CLICK ENABLE	
BACKLIGHT ENABLE	

1-5-4. PORT 3B (TELEMETRY)

PROTOCOL	
ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
MODEM SETUP STRING	
USER STRING	
COMM. PORT ADDRESS	
SYSTEM DETECTOR 9 - 16 ADDRESS	
TELEMETRY RESPONSE DELAY	
DUPLEX HALF - FULL	
AB3418 / NTCIP GROUP ADDRESS	
AB3418 / NTCIP SINGLE FLAG ENABLE	
NTCIP PROTOCOL	
RTS TO CTS DELAY	
RTS TURN OFF DELAY	
DROP OUT TIME (in seconds)	
EARLY RTS	

1-5-5 ETHERNET PORT CONFIGURATION

IP ADDRESS					
ADDRESS MASK					
FTP SERVER ADDRESS					
DEFAULT GATEWAY ADDRESS					

1-6-1 ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TE)	
3 CRITICAL RFE ERRORS IN 24 HOURS	
NON-CRITICAL RFE'S (DET/TEST)	
DETECTOR ERRORS	
COORDINATION ERRORS	
MMU FLASH FAULTS	
LOCAL FLASH FAULTS	
PREEMPT	
POWER ON/OFF	
LOW BATTERY	
ACCESS	
DATA CHANGE	
CONTROLLER DOWNLOAD	
ALARM 1	
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				

IF				
THEN				
ELSE				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

1-8-2 LOGIC PROCESSOR (CONTINUED)

LOGIC GATE NUMBER				
IF				

LOGIC GATE NUMBER				
IF				

THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

CONTROLLER SUBMENU

2-1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN	7	20	7	10	7	20	7	10								
BICYCLE MINIMUM GREEN																
CONDITIONAL SERVICE MINIMUM GREEN																
DELAYED GREEN																
WALK		7		7		7		7								
WALK 2																
WALK MAX																
PEDESTRIAN CLEARANCE		25		30		25		30								
PEDESTRIAN CLEARANCE 2																
PEDESTRIAN CLEARANCE MAX																
PEDESTRIAN CARRY OVER																
VEHICLE EXTENSION	3.5	5.5	3.5	3.5	3.5	5.5	3.5	3.5								
VEHICLE EXTENSION 2																
MAX1	20	55		35		55		35								
MAX2	20	60		40		60		40								
MAX3																
DYNAMIC MAX																
DYNAMIC MAX STEP																
YELLOW CHANGE	3.0	4.2		3.3		4.2		3.3								
RED CLRANCE	1.0	2.6		3.4		2.6		3.4								
RED MAX																
RED REVERT																
ACTUATIONS BEFORE GAP REDUCTION																
SECONDS PER ACTIONS ADDED TO INITIAL																
MAXIMUM ADDED INITIAL GREEN																
TIME BEFORE GAP REDUCTION																
CARS WAITING BEFORE GAP REDUCTION																
STEP TO REDUCE																
TIME TO REDUCE TO MINIMUM																
MINIMUM GAP																

2-2 VEHICLE OVERLAP

OVERLAP A PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP C PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP B PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP D PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT																	
NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP E PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP G PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP F PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP H PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-2 VEHICLE OVERLAP (CONTINUED)

OVERLAP M PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP O PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP N PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

OVERLAP P PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
INCLUDED																	
PROTECTED																	
MODIFIER																	
PEDESTRIAN PROTECT NOT OVERLAP																	
TRAILING GREEN																	
TRAILING YELLOW																	
TRAILING RED																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRAILING LEADING																	
ADVANCE GREEN																	
PHASES	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
FLASH GREEN																	

2-3 PEDESTRIAN OVERLAP

PEDESTRIAN OVERLAP CONSISTS OF PHASES																
PEDESTRIAN OVERLAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

2-4 GUARANTEED MINIMUM TIMES

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN																
WALK																
PEDESTRIAN CLEARANCE																
YELLOW CHANGE																
RED CLEARANCE																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
MINIMUM GREEN																

2-5 START / FLASH DATA

POWER START																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
OVERLAP																
POWER START RED									FLASH TIME							
REMOTE (AUTOMATIC) FLASH																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENTRY																
EXIT																
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EXIT																
EXIT REMOTE FLASH									MINIMUM AUTOMATIC FLASH							
MINIMUM RECALL									CYCLE THROUGH PHASES							

2-6-1 CONTROLLER OPTIONS

PEDESTRIAN CLEARANCE PROTECT																
UNIT RED REVERT																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
GUARANTEE D PASSAGE																
NON-ACT I																
NON ACT II																
DUAL ENTRY																
PED RESERVICE																
REST IN WALK																
FLASHING WALK																
PED CLEAR > YELLOW																
PED CLEAR > ALL RED																
INIT GREEN + VEHICLE EXIT																

2-7 ACTUATED / PRE-TIMED MODE PHASES

ENABLE PRE-TIMED OPERATION																
FREE INPUT DISABLED PRE-TIMED																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE																
PRE-TIMED																

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN	4		
CYCLE LENGTH (SECONDS)	100	SPLIT PATTERN	
OFFSET VALUE	79		
SPLITS IN	Per	OFFSETS IN	Per
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	4
ACTUATED COORDINATION	Yes	TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN	5		
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	5
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

COORDINATOR PATTERN			
CYCLE LENGTH (SECONDS)		SPLIT PATTERN	
OFFSET VALUE		SEQUENCE	
SPLITS IN		OFFSETS IN	
CROSSING ARTERY PATTERN			
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH	
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN	
ACTUATED COORDINATION		TIMING PLAN	
ACTUATED REST IN WALK		PHASE RESERVICE	
RING SPLIT EXTENSION (SECONDS)		1	2
SPLIT DEMAND PATTERN			
RING DISPLACEMENT			
	1	2	3
PREFERENCE 1 PHASES			
PREFERENCE 2 PHASES			

Per
Per

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3	5								
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3	5								
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3	5								
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3	5								
PREFERENCE 2 PHASES																								

3-2 COORDINATOR PATTERN (CONTINUED)

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																								
CYCLE LENGTH (SECONDS)		SPLIT PATTERN																						
OFFSET VALUE		SEQUENCE																						
SPLITS IN		OFFSETS IN																						
CROSSING ARTERY PATTERN																								
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH																						
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN																						
ACTUATED COORDINATION		TIMING PLAN																						
ACTUATED REST IN WALK		PHASE RESERVICE																						
RING SPLIT EXTENSION (SECONDS)		1				2				3				4										
SPLIT DEMAND PATTERN																								
RING DISPLACEMENT																								
		1	2	3	4	5			8	9	1	1			1	1			1	1			1	1
PREFERENCE 1 PHASES										0	1				3								5	
PREFERENCE 2 PHASES																								

COORDINATOR PATTERN																	
CYCLE LENGTH (SECONDS)		SPLIT PATTERN															
OFFSET VALUE		SEQUENCE															
SPLITS IN		OFFSETS IN															
CROSSING ARTERY PATTERN																	
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH															
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN															
ACTUATED COORDINATION		TIMING PLAN															
ACTUATED REST IN WALK		PHASE RESERVICE															
RING SPLIT EXTENSION (SECONDS)		1	2	3	4												
SPLIT DEMAND PATTERN																	
RING DISPLACEMENT																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
PREFERENCE 1 PHASES																	
PREFERENCE 2 PHASES																	

COORDINATOR PATTERN																	
CYCLE LENGTH (SECONDS)		SPLIT PATTERN															
OFFSET VALUE		SEQUENCE															
SPLITS IN		OFFSETS IN															
CROSSING ARTERY PATTERN																	
VEHICLE PERMISSIVE 1 LENGTH		VEHICLE PERMISSIVE 2 LENGTH															
VEHICLE PERMISSIVE 2 DISPLACEMENT		ACTION PLAN															
ACTUATED COORDINATION		TIMING PLAN															
ACTUATED REST IN WALK		PHASE RESERVICE															
RING SPLIT EXTENSION (SECONDS)		1	2	3	4												
SPLIT DEMAND PATTERN																	
RING DISPLACEMENT																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PREFERENCE 1 PHASES																	
PREFERENCE 2 PHASES																	

3-3 SPLIT PATTERN

SPLIT PATTERN NUMBER		1																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		9	56	0	35	0	65	0	35											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		2																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		10	52	0	38	0	62	0	38											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		3																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		12	53	0	35	0	65	0	35											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER		4																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)			X				X													
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE		11	44	0	45	0	44	0	45											
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

SPLIT PATTERN NUMBER																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
COORDINATED PHASE(S)																				
PHASE		1	2	3	4	5	6	7	8											
SPLIT VALUE																				
MODE																				
PHASE		9	10	11	12	13	14	15	16											
SPLIT VALUE																				
MODE																				

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-3 SPLIT PATTERN (CONTINUED)

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

SPLIT PATTERN NUMBER																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
COORDINATED PHASE(S)																	
PHASE	1	2	3	4	5	6	7	8									
SPLIT VALUE																	
MODE																	
PHASE	9	10	11	12	13	14	15	16									
SPLIT VALUE																	
MODE																	

3-4 AUTO PERMISSIVE MINIMUM GREEN TIME

PHASE	1	2	3	4	5	6	7	8								
MINIMUM GREEN																
PHASE	9	10	11	12	13	14	15	16								
MINIMUM GREEN																

3-5 SPLIT DEMAND

PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
DEMAND 1																	
DEMAND 2																	
DEMAND	1		2														
DETECTOR																	
CALL TIME (SECONDS)																	
CYCLE COUNT																	

PREEMPTOR SUBMENU

4-1 PREEMPTOR

PREEMPTOR NUMBER	1																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/ EXIT YELLOW /RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

PREEMPTOR NUMBER	2																			
ACTIVE	NON-LOCK INPUT																			
PREEMPTION OVERRIDE	INTERLOCK ENABLE																			
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																			
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																			
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																			
PED DARK	RESERVICE TIME																			
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																			
TERMINATE OVERLAPS ASAP	PED CLEAR THROUGH YELLOW																			
RING	1				2				3				4							
FREE DURING PREEMPTION																				
	WALK				PED CLEAR				GREEN				YELLOW				RED			
ENTERING MINIMUM TIME																				
TRACK CLEARANCE TIME																				
MIN DWELL – CYCLE GREEN/EXIT YELLOW/RED																				
DWELL FLASH	FLASH EXIT COLOR																			
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	
TRACK CLEAR PHASE																				
DWELL PHASE																				
DWELL PEDESTRIAN																				
CYCLING PHASE																				
CYCLING PEDESTRIAN																				
EXIT PHASE																				
EXIT CALLS																				
SPECIAL FUNCTION																				
PREEMPTION TO COORDINATION									EXIT TIMING PLAN											
LINKED PREEMPTOR																				
PREEMPTOR ACTIVE OUTPUTS																				
PREEMPTOR ACTIVE OUT									PREEMPTOR ACTIVE OUT IN DWELL											
OTHER PRIORITY PREEMPTOR OUT									NON-PRIORITY PREEMPTOR OUT											
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
TRACK CLEAR OVERLAP																				
DWELL OVERLAP																				
CYCLING OVERLAP																				

4-2 LOW PRIORITY PREEMPTOR SELECTION

FILTERED INPUT	SOLID	PULSING
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		3															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		4															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		5															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		6															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH																	
FLASH EXIT COLOR																	
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION					EXIT TIMING PLAN												
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT					PREEMPTOR ACTIVE OUT IN DWELL												
OTHER PRIORITY PREEMPTOR OUT					NON-PRIORITY PREEMPTOR OUT												
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		7															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		8															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

4-1 PREEMPTOR (CONTINUED)

PREEMPTOR NUMBER		9															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

PREEMPTOR NUMBER		10															
ACTIVE	NON-LOCK INPUT																
PREEMPTION OVERRIDE	INTERLOCK ENABLE																
DELAY TIME (SECONDS)	INHIBIT TIME (SECONDS)																
EXTEND INPUT (SECONDS)	MAX PRESENCE TIME (SECONDS)																
DURATION TIME (SECONDS)	TRACK CLEARANCE RESERVICE																
PED DARK	RESERVICE TIME																
AUTOMATIC FLASH HAS PRIORITY	RED CLEAR GOES GREEN																
TERMINATE OVERLAPS ASAP	PC THROUGH YELLOW																
RING	1	2	3	4													
FREE DURING PREEMPTION																	
	WALK	PED CLEAR	GREEN	YELLOW	RED												
ENTERING MINIMUM TIME																	
TRACK CLEARANCE TIME																	
MIN DWELL - CYCLE GREEN/ EXIT YELLOW /RED																	
DWELL FLASH		FLASH EXIT COLOR															
PHASE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
TRACK CLEAR PHASE																	
DWELL PHASE																	
DWELL PEDESTRIAN																	
CYCLING PHASE																	
CYCLING PEDESTRIAN																	
EXIT PHASE																	
EXIT CALLS																	
SPECIAL FUNCTION																	
PREEMPTION TO COORDINATION		EXIT TIMING PLAN															
LINKED PREEMPTOR																	
PREEMPTOR ACTIVE OUTPUTS																	
PREEMPTOR ACTIVE OUT		PREEMPTOR ACTIVE OUT IN DWELL															
OTHER PRIORITY PREEMPTOR OUT		NON-PRIORITY PREEMPTOR OUT															
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
TRACK CLEAR OVERLAP																	
DWELL OVERLAP																	
CYCLING OVERLAP																	

TIME BASE SUBMENU

5-1 CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL ACTION PLAN	
SYNC REFERENCE TIME	
SYNC REFERENCE	
DAYLIGHT SAVINGS	
TIME RESET INPUT TIME SET	
STANDARD TIME FROM GMT	

5-2 SCHEDULE

SCHEDULE NUMBER	1
DAY PLAN NUMBER	1

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	1
DAY PLAN NUMBER	2

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER	
DAY PLAN NUMBER	

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT			
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
	31									

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER											
DAY PLAN NUMBER											
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE					
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER					
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT				
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	
	31										

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE						
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17	18	19	20		
	21	22	23	24	25	26	27	28	29	30		
	31											

PATTERN		1		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		3		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		2		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN		4		SYSTEM OVERRIDE														
VEHICLE DETECTOR PLAN				DETECTOR LOG														
FLASH				VEHICLE DET DIAGNOSTIC PLAN														
RED REST				PED DET DIAGNOSTIC PLAN														
CONTROLLER SEQUENCE				DIMMING ENABLE														
TIMING PLAN																		
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1
PED RECALL																		
WALK 2																		
VEH EXT 2																		
VEH RECALL																		
MAX RECALL																		
MAX 2																		
MAX 3																		
CS INHIBIT																		
PHASE OMIT																		
SPEC FUNCTION																		(1-8)
AUX FUNCTION																		(1-3)
		1	2	3	4	5	6	7	8	9	10							
LP 1-10																		
LP 11-20																		
LP 21-30																		
LP 31-40																		
LP 41-50																		
LP 51-60																		
LP 61-70																		
LP 71-80																		
LP 81-90																		
LP 91-100																		

ACTION PLAN																				
PATTERN	5	SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

ACTION PLAN																				
PATTERN		SYSTEM OVERRIDE																		
VEHICLE DETECTOR PLAN		DETECTOR LOG																		
FLASH		VEHICLE DET DIAGNOSTIC PLAN																		
RED REST		PED DET DIAGNOSTIC PLAN																		
CONTROLLER SEQUENCE		DIMMING ENABLE																		
TIMING PLAN																				
PHASE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
PED RECALL																				
WALK 2																				
VEH EXT 2																				
VEH RECALL																				
MAX RECALL																				
MAX 2																				
MAX 3																				
CS INHIBIT																				
PHASE OMIT																				
SPEC FUNCTION																				(1-8)
AUX FUNCTION					(1-3)															
		1	2	3	4	5	6	7	8	9	10									
LP 1-10																				
LP 11-20																				
LP 21-30																				
LP 31-40																				
LP 41-50																				
LP 51-60																				
LP 61-70																				
LP 71-80																				
LP 81-90																				
LP 91-100																				

5-5 EXCEPTION DAY PROGRAM

EXCEPTION DAY	FLOAT / FIXED	MON / MON	DOW / DOM	WOM / YEAR	DAY PLAN
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

DETECTORS

6-1. DETECTOR TYPE AND TS SELECT

DET	TYPE	TS1 DETECTOR
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

DET	TYPE	TS1 DETECTOR
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
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60		
61		
62		
63		
64		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

6-2 VEHICLE DETECTOR SETUP

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

VEHICLE PLAN NUMBER		
DETECTOR NUMBER		
ASSIGNED PHASE		ADDED INITIAL OPTION
SWITCH PHASE		CALL DETECTOR OPTION
EXTEND TIME		PASSAGE DETECTOR OPTION
DELAY TIME		QUEUE DETECTOR OPTION
QUEUE LIMIT		NTCIP OCCUPANCY LOG
FAIL TIME		NTCIP VOLUME LOG
FAIL CALL DELAY		ECPI LOG
YELLOW LOCK		RED LOCK
PHASE	1 2 3 4 5 6 7 8 9 0 1 1 1 1 1 1 1 1	
CALLED		

6-3 PHASE DETECTOR OPTIONS

PHASE DETECTOR OPTION PLAN NUMBER										1						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										2						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										3						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

PHASE DETECTOR OPTION PLAN NUMBER										4						
PHASE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1
DETECTOR LOCK																
VEH RECALL																
PED RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CALC																

6-4 PEDESTRIAN AND SYSTEM DETECTOR OPTIONS

PHASE PEDESTRIAN DETECTOR								
	1	2	3	4	5	6	7	8
PED DET INPUT								
	9	10	11	12	13	14	15	16
PED DET INPUT								
LOCAL SYSTEM DETECTOR								
	1	2	3	4	5	6	7	8
VEH DET INPUT								
	9	10	11	12	13	14	15	16
VEH DET INPUT								

6-5 LOG – SPEED DETECTOR SET UP

NTCIP LOG PERIOD								
ECPI LOG PERIOD								
LENGTH UNIT								
SPEED DETECTOR	1	2	3	4	5	6	7	8
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								
SPEED DETECTOR	9	10	11	12	13	14	15	16
LOCAL DETECTOR								
ONE / TWO DET								
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								

6-6 VEHICLE DETECTOR DIAGNOSTICS

VEHICLE DIAGNOSTIC PLAN NUMBER					1
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					2
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

**6-6 VEHICLE DETECTOR DIAGNOSTICS
(CONTINUED)**

VEHICLE DIAGNOSTIC PLAN NUMBER					3
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

VEHICLE DIAGNOSTIC PLAN NUMBER					4
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	
1					33
2					34
3					35
4					36
5					37
6					38
7					39
8					40
9					41
10					42
11					43
12					44
13					45
14					46
15					47
16					48
17					49
18					50
19					51
20					52
21					53
22					54
23					55
24					56
25					57
26					58
27					59
28					60
29					61
30					62
31					63
32					64

6-7 PEDESTRIAN DETECTOR DIAGNOSTICS

PED DIAGNOSTIC PLAN NUMBER 1					PED DIAGNOSTIC PLAN NUMBER 2				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

























PED DIAGNOSTIC PLAN NUMBER 3					PED DIAGNOSTIC PLAN NUMBER 4				
DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER	DET	COUNTS	ACTUATIONS	PRESENCE	MULTIPLIER
1					1				
2					2				
3					3				
4					4				
5					5				
6					6				
7					7				
8					8				
9					9				
10					10				
11					11				
12					12				
13					13				
14					14				
15					15				
16					16				

Appendix B

Existing Traffic Level of Service Calculations

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

07-11-2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	1990	130	82	1047	54	102	38	133	116	62	48
Future Volume (vph)	43	1990	130	82	1047	54	102	38	133	116	62	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	115.0		75.0	155.0		85.0	45.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1082	4980	1526	1785	4706	1469	1700	1740	1566	1767	1824	956
Flt Permitted	0.246			0.066			0.716			0.732		
Satd. Flow (perm)	280	4980	1473	124	4706	1436	1278	1740	1539	1355	1824	942
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103			67			122			67
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		310.7			586.1			253.5			312.8	
Travel Time (s)		16.0			30.1			18.3			22.5	
Confl. Peds. (#/hr)	1		7	7		1	3		5	5		3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	65%	3%	3%	0%	9%	7%	5%	8%	2%	1%	3%	67%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	2031	133	84	1068	55	104	39	136	118	63	49
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	38.0	38.0	11.5	38.0	38.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	11.7	70.2	70.2	11.7	70.2	70.2	48.1	48.1	48.1	48.1	48.1	48.1
Total Split (%)	9.0%	54.0%	54.0%	9.0%	54.0%	54.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Maximum Green (s)	7.7	63.2	63.2	7.7	63.2	63.2	41.1	41.1	41.1	41.1	41.1	41.1
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-2.0	-2.0	-3.0	-2.0	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

07-11-2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	103.2	89.0	89.0	104.8	92.1	92.1	19.8	19.8	19.8	19.8	19.8	19.8
Actuated g/C Ratio	0.79	0.68	0.68	0.81	0.71	0.71	0.15	0.15	0.15	0.15	0.15	0.15
v/c Ratio	0.15	0.60	0.13	0.35	0.32	0.05	0.54	0.15	0.40	0.57	0.23	0.24
Control Delay	4.5	12.7	3.0	8.2	8.9	3.0	60.0	46.7	13.6	61.3	48.5	8.1
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	4.5	12.7	3.0	8.2	8.9	3.0	60.0	46.7	13.6	61.3	48.5	8.1
LOS	A	B	A	A	A	A	E	D	B	E	D	A
Approach Delay		12.0			8.5			35.5			46.4	
Approach LOS		B			A			D			D	
Queue Length 50th (m)	1.9	94.4	2.3	0.6	63.5	2.1	26.2	9.3	3.3	30.0	15.1	0.0
Queue Length 95th (m)	5.7	142.7	11.6	11.8	79.0	9.7	43.2	19.1	21.0	48.0	27.5	7.2
Internal Link Dist (m)		286.7			562.1			229.5			288.8	
Turn Bay Length (m)	115.0		75.0	155.0		85.0	45.0			45.0		
Base Capacity (vph)	290	3407	1040	249	3335	1037	433	590	602	459	618	363
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	0.15	0.60	0.13	0.34	0.32	0.05	0.24	0.07	0.23	0.26	0.10	0.13

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	23 (18%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	14.6
Intersection LOS:	B
Intersection Capacity Utilization:	70.5%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Eighth Line & Dundas Street E



Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

07-11-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	2080	123	97	1055	22	118	3	146	11	0	8
Future Volume (vph)	21	2080	123	97	1055	22	118	3	146	11	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	120.0		75.0	125.0		85.0	65.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1623	5029	1497	1750	4724	1465	1716	1565	0	1785	1879	1413
Flt Permitted	0.253			0.055			0.757			0.337		
Satd. Flow (perm)	432	5029	1456	101	4724	1431	1359	1565	0	632	1879	1387
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96			44			149			101
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		586.1			572.2			226.5			194.2	
Travel Time (s)		30.1			29.4			16.3			14.0	
Confl. Peds. (#/hr)	1		2	2		1	3		1	1		3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	2%	5%	2%	8%	9%	4%	0%	1%	0%	0%	13%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	2122	126	99	1077	22	120	152	0	11	0	8
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt		Perm
Protected Phases		2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	1	6	6	4	4		3	8	8
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		7.0	10.0	10.0
Minimum Split (s)	25.2	25.2	25.2	11.0	25.2	25.2	22.5	22.5		11.0	24.3	24.3
Total Split (s)	72.0	72.0	72.0	11.0	83.0	83.0	23.0	23.0		24.0	47.0	47.0
Total Split (%)	55.4%	55.4%	55.4%	8.5%	63.8%	63.8%	17.7%	17.7%		18.5%	36.2%	36.2%
Maximum Green (s)	66.8	66.8	66.8	7.0	77.8	77.8	18.7	18.7		20.0	42.7	42.7
Yellow Time (s)	4.2	4.2	4.2	3.0	4.2	4.2	3.3	3.3		3.0	3.3	3.3
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-0.2	-0.2	-3.0	-0.2	0.0	-3.3	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.2	5.0	5.0	1.0	5.0	5.2	1.0	4.3		4.0	4.3	4.3

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

07-11-2023

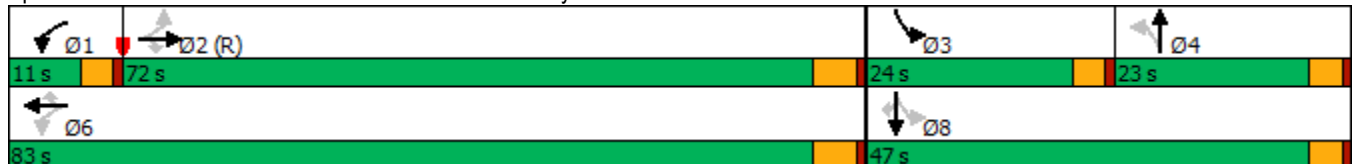


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max	None	None		None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0			0	0
Act Effct Green (s)	88.7	88.9	88.9	105.7	101.7	101.5	20.0	16.7		19.3		19.0
Actuated g/C Ratio	0.68	0.68	0.68	0.81	0.78	0.78	0.15	0.13		0.15		0.15
v/c Ratio	0.07	0.62	0.12	0.43	0.29	0.02	0.57	0.46		0.07		0.03
Control Delay	4.9	9.4	1.2	34.4	2.9	0.0	61.1	12.3		42.6		0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	4.9	9.4	1.2	34.4	2.9	0.0	61.1	12.3		42.6		0.1
LOS	A	A	A	C	A	A	E	B		D		A
Approach Delay		8.9			5.5			33.8				24.7
Approach LOS		A			A			C				C
Queue Length 50th (m)	0.4	121.6	0.4	13.3	14.5	0.0	30.4	0.7		2.6		0.0
Queue Length 95th (m)	m3.2	207.4	10.1	30.1	17.1	0.1	48.9	19.8		7.3		0.0
Internal Link Dist (m)		562.1			548.2			202.5				170.2
Turn Bay Length (m)	120.0		75.0	125.0		85.0	65.0			15.0		15.0
Base Capacity (vph)	294	3437	1025	232	3697	1127	241	364		289		523
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0		0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0		0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0		0
Reduced v/c Ratio	0.07	0.62	0.12	0.43	0.29	0.02	0.50	0.42		0.04		0.02

Intersection Summary





























Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 60 (46%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 9.7 Intersection LOS: A
 Intersection Capacity Utilization 70.4% ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Prince Michael Drive/John McKay Boulevard & Dundas Street E



Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

07-11-2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	5	2228	53	103	1132	7	57	0	268	3	0	0
Future Volume (vph)	5	2228	53	103	1132	7	57	0	268	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1069	5029	1572	1684	4724	1117	1750	1879	1597	1069	1879	1879
Flt Permitted	0.233			0.047			0.757			0.757		
Satd. Flow (perm)	260	5029	1535	83	4724	1051	1394	1879	1597	852	1879	1879
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66			33			125			
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		572.2			334.1			216.4			176.9	
Travel Time (s)		29.4			17.2			15.6			12.7	
Confl. Peds. (#/hr)	11		1	1		11						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	67%	2%	0%	6%	8%	43%	2%	0%	0%	67%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	2273	54	105	1155	7	58	0	273	3	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	1	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.7	26.7	26.7	11.5	28.4	28.4	24.9	24.9	24.9	24.9	24.9	24.9
Total Split (s)	90.0	90.0	90.0	14.0	104.0	104.0	26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	69.2%	69.2%	69.2%	10.8%	80.0%	80.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	83.3	83.3	83.3	10.0	97.3	97.3	19.1	19.1	19.1	19.1	19.1	19.1
Yellow Time (s)	4.2	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	3.6	3.6	3.6	3.6	3.6	3.6
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	6.9	6.9	6.9

Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

07-11-2023

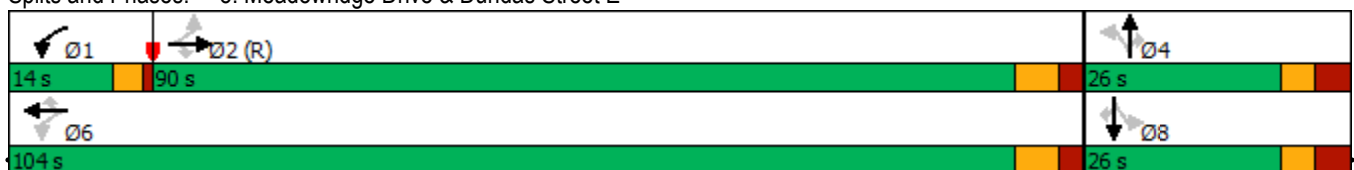


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (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
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	87.5	89.2	89.2	105.8	101.8	100.1	18.2		18.2	16.3		
Actuated g/C Ratio	0.67	0.69	0.69	0.81	0.78	0.77	0.14		0.14	0.13		
v/c Ratio	0.03	0.66	0.05	0.50	0.31	0.01	0.30		0.82	0.03		
Control Delay	2.4	4.1	0.1	24.3	3.1	0.0	53.0		49.2	48.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay	2.4	4.1	0.1	24.3	3.1	0.0	53.0		49.2	48.3		
LOS	A	A	A	C	A	A	D		D	D		
Approach Delay		4.0			4.8			49.9			48.3	
Approach LOS		A			A			D			D	
Queue Length 50th (m)	0.0	149.4	0.0	1.5	48.8	0.0	13.9		39.0	0.7		
Queue Length 95th (m)	m0.1	13.4	m0.0	17.6	6.5	m0.1	27.9		#77.7	3.8		
Internal Link Dist (m)		548.2			310.1			192.4			152.9	
Turn Bay Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		
Base Capacity (vph)	175	3452	1074	227	3697	816	225		362	125		
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		
Reduced v/c Ratio	0.03	0.66	0.05	0.46	0.31	0.01	0.26		0.75	0.02		

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 70 (54%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 8.2 Intersection LOS: A
 Intersection Capacity Utilization 82.1% 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: 8: Meadowridge Drive & Dundas Street E



Existing AM Peak 9:43 pm 07-11-2023 Baseline

Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd































07-11-2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↩	↑↑↑	↑↑↑	↪	↩	↪
Traffic Volume (vph)	47	2474	1176	54	65	68
Future Volume (vph)	47	2474	1176	54	65	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	100.0			85.0	45.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1638	5002	4794	1469	1733	1342
Flt Permitted	0.218				0.950	
Satd. Flow (perm)	376	5002	4794	1469	1733	1342
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				55		69
Link Speed (k/h)		70	70		50	
Link Distance (m)		334.1	505.1		180.3	
Travel Time (s)		17.2	26.0		13.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	9%	2%	7%	7%	3%	19%
Bus Blockages (#/hr)	0	4	0	4	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	2524	1200	55	66	69
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
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	1.01	1.02	1.01	1.04	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	10.0
Minimum Split (s)	24.5	24.5	24.5	24.5	22.5	22.5
Total Split (s)	106.0	106.0	106.0	106.0	24.0	24.0
Total Split (%)	81.5%	81.5%	81.5%	81.5%	18.5%	18.5%
Maximum Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

07-11-2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	165	2066	271	123	878	131	136	314	162	250	688	178
Future Volume (vph)	165	2066	271	123	878	131	136	314	162	250	688	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1750	5029	1526	1733	4706	1497	1668	3368	1551	1750	3466	1581
Flt Permitted	0.253			0.064			0.171			0.481		
Satd. Flow (perm)	466	5029	1526	117	4706	1497	300	3368	1551	886	3466	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200			134			145			161
Link Speed (k/h)		70			70			60				60
Link Distance (m)		505.1			255.3			487.3				810.8
Travel Time (s)		26.0			13.1			29.2				48.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	9%	5%	7%	6%	3%	2%	3%	1%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	168	2108	277	126	896	134	139	320	165	255	702	182
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	11.0	45.3	45.3	11.0	45.3	45.3	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (s)	11.0	60.0	60.0	11.0	60.0	60.0	11.0	48.0	48.0	11.0	48.0	48.0
Total Split (%)	8.5%	46.2%	46.2%	8.5%	46.2%	46.2%	8.5%	36.9%	36.9%	8.5%	36.9%	36.9%
Maximum Green (s)	7.0	53.7	53.7	7.0	53.7	53.7	7.0	41.5	41.5	7.0	41.5	41.5
Yellow Time (s)	3.0	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)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

07-11-2023

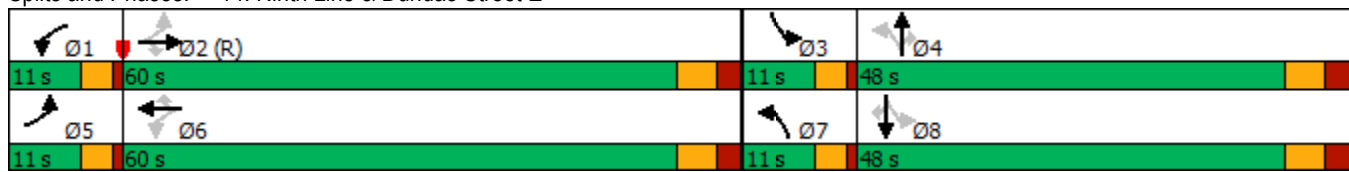


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	78.3	61.4	61.4	77.5	61.0	61.0	48.1	34.1	34.1	48.1	34.1	34.1
Actuated g/C Ratio	0.60	0.47	0.47	0.60	0.47	0.47	0.37	0.26	0.26	0.37	0.26	0.26
v/c Ratio	0.41	0.89	0.34	0.56	0.41	0.17	0.64	0.36	0.32	0.65	0.77	0.34
Control Delay	9.8	24.6	5.8	31.7	24.2	4.2	40.6	39.5	9.1	38.1	50.2	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	24.6	5.8	31.7	24.2	4.2	40.6	39.5	9.1	38.1	50.2	8.8
LOS	A	C	A	C	C	A	D	D	A	D	D	A
Approach Delay		21.6			22.7			31.7			40.9	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	8.6	122.4	9.7	15.4	57.6	0.0	25.3	37.2	4.0	49.7	92.5	4.3
Queue Length 95th (m)	23.2	#239.8	22.0	39.2	74.9	12.5	37.7	47.5	20.4	67.1	107.2	21.5
Internal Link Dist (m)		481.1			231.3			463.3			786.8	
Turn Bay Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Base Capacity (vph)	408	2374	826	225	2207	773	216	1114	610	394	1146	630
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	0.41	0.89	0.34	0.56	0.41	0.17	0.64	0.29	0.27	0.65	0.61	0.29

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 27.0 Intersection LOS: C
 Intersection Capacity Utilization 92.2% ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 14: Ninth Line & Dundas Street E



HCM Unsignalized Intersection Capacity Analysis

12: Eighth Line/Threshing Mill Blvd & Wheat Boom Drive

07-11-2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	25	16	37	58	4
Future Volume (Veh/h)	2	25	16	37	58	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	2	26	16	38	59	4
Pedestrians	13					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)	313					
pX, platoon unblocked						
vC, conflicting volume	144	74	76			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	144	74	76			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	97	99			
cM capacity (veh/h)	835	983	1482			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	28	54	63			
Volume Left	2	16	0			
Volume Right	26	0	4			
cSH	971	1482	1700			
Volume to Capacity	0.03	0.01	0.04			
Queue Length 95th (m)	0.7	0.3	0.0			
Control Delay (s)	8.8	2.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.8	2.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			19.5%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

07-11-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	1432	170	176	2155	105	121	87	135	71	39	15
Future Volume (vph)	13	1432	170	176	2155	105	121	87	135	71	39	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	115.0		75.0	155.0		85.0	45.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1572	1785	5079	1572	1733	1879	1581	1767	1879	1493
Flt Permitted	0.062			0.141			0.731			0.641		
Satd. Flow (perm)	116	5029	1508	264	5079	1508	1326	1879	1548	1183	1879	1466
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			89			125			67
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		310.7			586.1			253.5			312.8	
Travel Time (s)		16.0			30.1			18.3			22.5	
Confl. Peds. (#/hr)	10		10	10		10	6		9	9		6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	3%	0%	1%	1%	0%	7%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1461	173	180	2199	107	123	89	138	72	40	15
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	38.0	38.0	11.0	38.0	38.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	11.0	73.0	73.0	11.0	73.0	73.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	8.5%	56.2%	56.2%	8.5%	56.2%	56.2%	35.4%	35.4%	35.4%	35.4%	35.4%	35.4%
Maximum Green (s)	7.0	66.0	66.0	7.0	66.0	66.0	39.0	39.0	39.0	39.0	39.0	39.0
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-1.7	-1.7	-3.0	-1.7	-1.7	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.3	5.3	1.0	5.3	5.3	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

07-11-2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	100.1	85.8	85.8	104.5	95.8	95.8	20.5	20.5	20.5	20.5	20.5	20.5
Actuated g/C Ratio	0.77	0.66	0.66	0.80	0.74	0.74	0.16	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.06	0.44	0.16	0.49	0.59	0.09	0.59	0.30	0.40	0.39	0.14	0.05
Control Delay	4.4	12.1	2.1	20.0	7.5	3.6	61.5	49.4	12.9	53.6	45.6	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	4.4	12.1	2.1	20.0	7.5	3.6	61.5	49.4	12.9	53.6	45.6	0.3
LOS	A	B	A	C	A	A	E	D	B	D	D	A
Approach Delay		11.0			8.3			39.2			44.8	
Approach LOS		B			A			D			D	
Queue Length 50th (m)	0.6	62.7	0.0	17.7	47.7	0.1	31.2	21.5	3.0	17.6	9.4	0.0
Queue Length 95th (m)	2.5	98.2	10.2	m42.6	86.3	m8.9	49.5	35.9	20.7	31.5	19.2	0.0
Internal Link Dist (m)		286.7			562.1			229.5			288.8	
Turn Bay Length (m)	115.0		75.0	155.0		85.0	45.0			45.0		
Base Capacity (vph)	217	3319	1054	369	3743	1134	428	607	584	382	607	518
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	0.06	0.44	0.16	0.49	0.59	0.09	0.29	0.15	0.24	0.19	0.07	0.03

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 3 (2%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 12.6
 Intersection LOS: B
 Intersection Capacity Utilization 76.9%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Eighth Line & Dundas Street E



Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

07-11-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1508	161	193	2255	5	154	2	83	31	2	29
Future Volume (vph)	2	1508	161	193	2255	5	154	2	83	31	2	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	120.0		75.0	125.0		85.0	65.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	4980	1572	1767	5051	1597	1785	1544	0	1785	1879	1597
Flt Permitted	0.053			0.119			0.757			0.661		
Satd. Flow (perm)	100	4980	1451	221	5051	1548	1422	1544	0	1235	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164			107			85			123
Link Speed (k/h)		70			70			50				50
Link Distance (m)		586.1			572.2			226.5				193.9
Travel Time (s)		30.1			29.4			16.3				14.0
Confl. Peds. (#/hr)	3		16	16		3			3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	1%	1%	0%	0%	0%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	1539	164	197	2301	5	157	87	0	32	2	30
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)		3.5			3.5			3.5				3.5
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	4	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		6.5	10.0	10.0
Minimum Split (s)	11.0	26.8	26.8	11.0	26.8	26.8	23.5	23.5		11.0	22.5	22.5
Total Split (s)	17.0	79.5	79.5	16.0	78.5	78.5	23.5	23.5		11.0	34.5	34.5
Total Split (%)	13.1%	61.2%	61.2%	12.3%	60.4%	60.4%	18.1%	18.1%		8.5%	26.5%	26.5%
Maximum Green (s)	13.0	72.7	72.7	12.0	71.7	71.7	19.0	19.0		7.0	30.0	30.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.5	3.5		3.0	3.5	3.5
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.8	-1.8	-3.0	-1.8	0.0	-1.9	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	6.8	2.6	4.5		4.0	4.5	4.5

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

07-11-2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0			0	0
Act Effct Green (s)	84.0	83.0	83.0	97.6	93.6	91.8	19.1	17.2		26.6	23.5	23.5
Actuated g/C Ratio	0.65	0.64	0.64	0.75	0.72	0.71	0.15	0.13		0.20	0.18	0.18
v/c Ratio	0.01	0.48	0.17	0.62	0.63	0.00	0.75	0.31		0.11	0.01	0.08
Control Delay	8.0	7.5	0.6	19.8	25.3	0.0	75.3	13.7		41.1	39.0	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	8.0	7.5	0.6	19.8	25.3	0.0	75.3	13.7		41.1	39.0	0.4
LOS	A	A	A	B	C	A	E	B		D	D	A
Approach Delay		6.9			24.8			53.3			22.0	
Approach LOS		A			C			D			C	
Queue Length 50th (m)	0.1	30.1	0.2	34.5	211.5	0.0	40.5	0.5		6.8	0.4	0.0
Queue Length 95th (m)	m0.2	36.1	1.3	39.0	225.3	m0.0	#69.9	16.1		15.9	2.8	0.0
Internal Link Dist (m)		562.1			548.2			202.5			169.9	
Turn Bay Length (m)	120.0		75.0	125.0		85.0	65.0			15.0		15.0
Base Capacity (vph)	233	3180	985	346	3637	1124	228	298		286	433	463
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.01	0.48	0.17	0.57	0.63	0.00	0.69	0.29		0.11	0.00	0.06

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 11.8 (9%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 19.6 Intersection LOS: B
 Intersection Capacity Utilization 75.9% ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

























Splits and Phases: 6: Prince Michael Drive/John McKay Boulevard & Dundas Street E



Existing PM Peak 10:21 pm 07-11-2023 Baseline

Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

07-11-2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1576	50	185	2365	3	43	0	139	4	0	0
Future Volume (vph)	1	1576	50	185	2365	3	43	0	139	4	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1572	1785	5051	1201	1785	1879	1597	1428	1879	1879
Flt Permitted	0.052			0.127			0.757			0.757		
Satd. Flow (perm)	98	5029	1512	238	5051	1173	1422	1879	1574	1135	1879	1879
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			51			46			125			
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		572.2			334.1			216.4			176.0	
Travel Time (s)		29.4			17.2			15.6			12.7	
Confl. Peds. (#/hr)	1		5	5		1			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	1%	33%	0%	0%	0%	25%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	1608	51	189	2413	3	44	0	142	4	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4				8
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	26.7	26.7	11.0	28.4	28.4	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	11.0	96.5	96.5	11.0	96.5	96.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	8.5%	74.2%	74.2%	8.5%	74.2%	74.2%	17.3%	17.3%	17.3%	17.3%	17.3%	17.3%
Maximum Green (s)	7.0	89.8	89.8	7.0	89.8	89.8	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	6.7	2.6	4.5	2.6	4.5	4.5	4.5

Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

07-11-2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	105.2	97.2	97.2	113.5	107.3	105.6	12.9		12.9	11.0		
Actuated g/C Ratio	0.81	0.75	0.75	0.87	0.83	0.81	0.10		0.10	0.08		
v/c Ratio	0.01	0.43	0.04	0.55	0.58	0.00	0.31		0.53	0.04		
Control Delay	4.0	19.0	6.7	16.6	5.0	0.0	60.1		19.8	54.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay	4.0	19.0	6.7	16.6	5.0	0.0	60.1		19.8	54.5		
LOS	A	B	A	B	A	A	E		B	D		
Approach Delay		18.6			5.8			29.3			54.5	
Approach LOS		B			A			C			D	
Queue Length 50th (m)	0.1	137.9	4.8	12.5	3.4	0.0	11.3		4.3	1.0		
Queue Length 95th (m)	m0.1	169.4	9.8	23.7	232.0	m0.0	23.4		24.9	4.7		
Internal Link Dist (m)		548.2			310.1			192.4			152.0	
Turn Bay Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		
Base Capacity (vph)	169	3760	1143	342	4169	961	217		346	157		
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		
Reduced v/c Ratio	0.01	0.43	0.04	0.55	0.58	0.00	0.20		0.41	0.03		

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 75 (58%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 11.6 Intersection LOS: B
 Intersection Capacity Utilization 72.0% ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Meadowridge Drive & Dundas Street E



Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

07-11-2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑↑	↑↑↑	↗	↘	↘
Traffic Volume (vph)	31	1701	2540	57	71	54
Future Volume (vph)	31	1701	2540	57	71	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	100.0			85.0	45.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1785	5002	5079	1541	1733	1536
Flt Permitted	0.037				0.950	
Satd. Flow (perm)	70	5002	5079	1499	1714	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				58		55
Link Speed (k/h)		70	70		50	
Link Distance (m)		334.1	505.1		180.3	
Travel Time (s)		17.2	26.0		13.0	
Confl. Peds. (#/hr)	2			2	5	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	1%	2%	3%	4%
Bus Blockages (#/hr)	0	4	0	4	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	1736	2592	58	72	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
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	1.01	1.02	1.01	1.04	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	10.0	10.0
Minimum Split (s)	11.0	24.5	24.5	24.5	22.5	22.5
Total Split (s)	11.0	107.0	96.0	96.0	23.0	23.0
Total Split (%)	8.5%	82.3%	73.8%	73.8%	17.7%	17.7%
Maximum Green (s)	7.0	102.5	91.5	91.5	18.5	18.5
Yellow Time (s)	3.0	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.5	4.5	4.5	4.5

Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

07-11-2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	Max	Max	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	112.8	113.2	106.6	106.6	11.6	11.6
Actuated g/C Ratio	0.87	0.87	0.82	0.82	0.09	0.09
v/c Ratio	0.21	0.40	0.62	0.05	0.47	0.30
Control Delay	11.8	10.0	3.7	0.0	65.9	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	10.0	3.7	0.0	65.9	17.5
LOS	B	A	A	A	E	B
Approach Delay		10.0	3.6		44.9	
Approach LOS		B	A		D	
Queue Length 50th (m)	3.9	95.7	20.2	0.0	18.9	0.0
Queue Length 95th (m)	10.9	146.1	m27.6	m0.0	34.4	13.1
Internal Link Dist (m)		310.1	481.1		156.3	
Turn Bay Length (m)	100.0			85.0	45.0	
Base Capacity (vph)	153	4355	4164	1239	246	265
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	0.21	0.40	0.62	0.05	0.29	0.21

Intersection Summary































Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 7.2
 Intersection LOS: A
 Intersection Capacity Utilization 64.9%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Dundas Street E & William Cutmore Blvd



Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

07-11-2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	146	1421	182	151	2183	180	250	794	513	146	334	158
Future Volume (vph)	146	1421	182	151	2183	180	250	794	513	146	334	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1497	1733	5079	1541	1750	3535	1521	1767	3500	1597
Flt Permitted	0.068			0.097			0.482			0.156		
Satd. Flow (perm)	128	5029	1477	177	5079	1521	887	3535	1521	290	3500	1576
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			186			126			148			145
Link Speed (k/h)		70			70			60				60
Link Distance (m)		505.1			255.3			487.3				810.8
Travel Time (s)		26.0			13.1			29.2				48.6
Confl. Peds. (#/hr)	1		1	1		1	1					1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	3%	1%	2%	2%	1%	5%	1%	2%	0%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	1450	186	154	2228	184	255	810	523	149	341	161
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	11.0	45.3	45.3	11.0	45.3	45.3	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (s)	11.0	60.0	60.0	11.0	60.0	60.0	11.0	48.0	48.0	11.0	48.0	48.0
Total Split (%)	8.5%	46.2%	46.2%	8.5%	46.2%	46.2%	8.5%	36.9%	36.9%	8.5%	36.9%	36.9%
Maximum Green (s)	7.0	53.7	53.7	7.0	53.7	53.7	7.0	41.5	41.5	7.0	41.5	41.5
Yellow Time (s)	3.0	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)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

07-11-2023

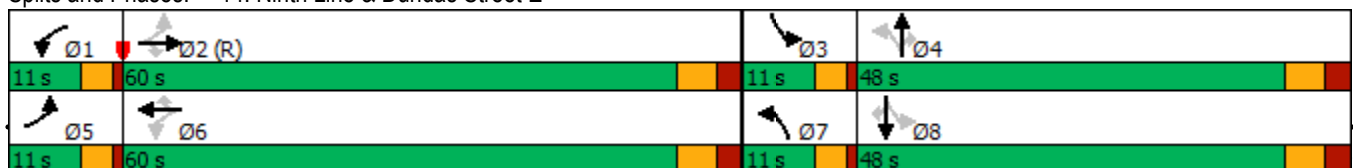


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	71.9	57.1	57.1	71.9	57.1	57.1	54.1	40.1	40.1	54.1	40.1	40.1
Actuated g/C Ratio	0.55	0.44	0.44	0.55	0.44	0.44	0.42	0.31	0.31	0.42	0.31	0.31
v/c Ratio	0.72	0.66	0.25	0.68	1.00	0.25	0.59	0.74	0.92	0.64	0.32	0.27
Control Delay	54.4	20.0	4.6	34.6	55.4	9.1	31.6	44.7	52.5	35.8	34.7	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	20.0	4.6	34.6	55.4	9.1	31.6	44.7	52.5	35.8	34.7	7.6
LOS	D	B	A	C	E	A	C	D	D	D	C	A
Approach Delay		21.2			50.8			45.2			28.3	
Approach LOS		C			D			D			C	
Queue Length 50th (m)	26.3	149.4	11.4	20.3	~236.7	9.3	43.8	99.5	99.9	23.9	35.7	2.9
Queue Length 95th (m)	#58.5	48.5	6.6	#48.8	#266.4	25.0	65.1	123.0	#166.7	38.8	49.0	19.0
Internal Link Dist (m)		481.1			231.3			463.3			786.8	
Turn Bay Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Base Capacity (vph)	208	2209	753	227	2232	739	435	1169	602	234	1157	618
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	0.72	0.66	0.25	0.68	1.00	0.25	0.59	0.69	0.87	0.64	0.29	0.26

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 39.2
 Intersection LOS: D
 Intersection Capacity Utilization 96.4%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 14: Ninth Line & Dundas Street E



HCM Unsignalized Intersection Capacity Analysis
 12: Eighth Line/Threshing Mill Blvd & Wheat Boom Drive

07-11-2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	23	36	78	34	4
Future Volume (Veh/h)	2	23	36	78	34	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	2	23	37	80	35	4
Pedestrians	2					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)	313					
pX, platoon unblocked						
vC, conflicting volume	193	39	41			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	193	39	41			
tC, single (s)	6.9	6.2	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.3	2.2			
p0 queue free %	100	98	98			
cM capacity (veh/h)	681	1037	1579			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	25	117	39			
Volume Left	2	37	0			
Volume Right	23	0	4			
cSH	995	1579	1700			
Volume to Capacity	0.03	0.02	0.02			
Queue Length 95th (m)	0.6	0.6	0.0			
Control Delay (s)	8.7	2.4	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.7	2.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization			22.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Appendix C

Background Developments



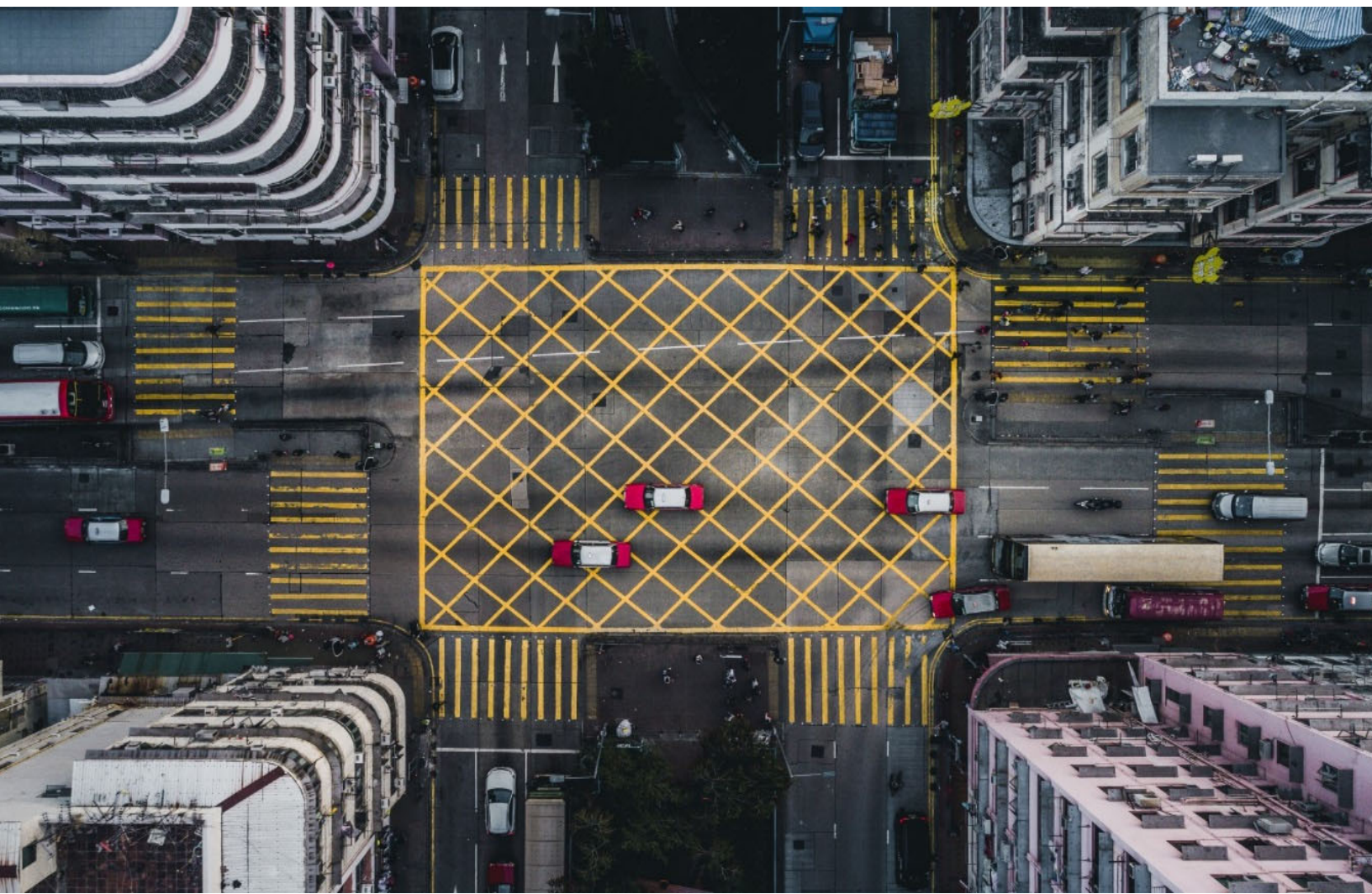
Traffic Impact Study

Joshua Creek Phase 3

Mattamy (Joshua Creek) Limited

18 April 2022

➔ **The Power of Commitment**



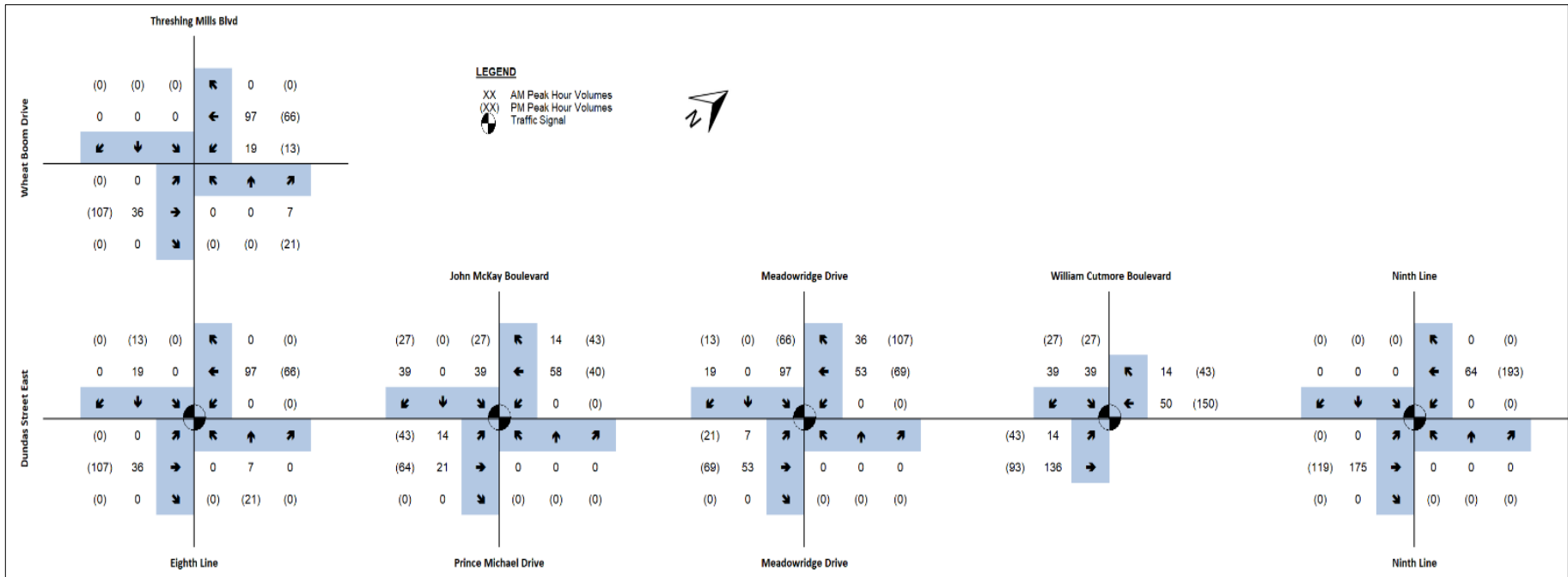
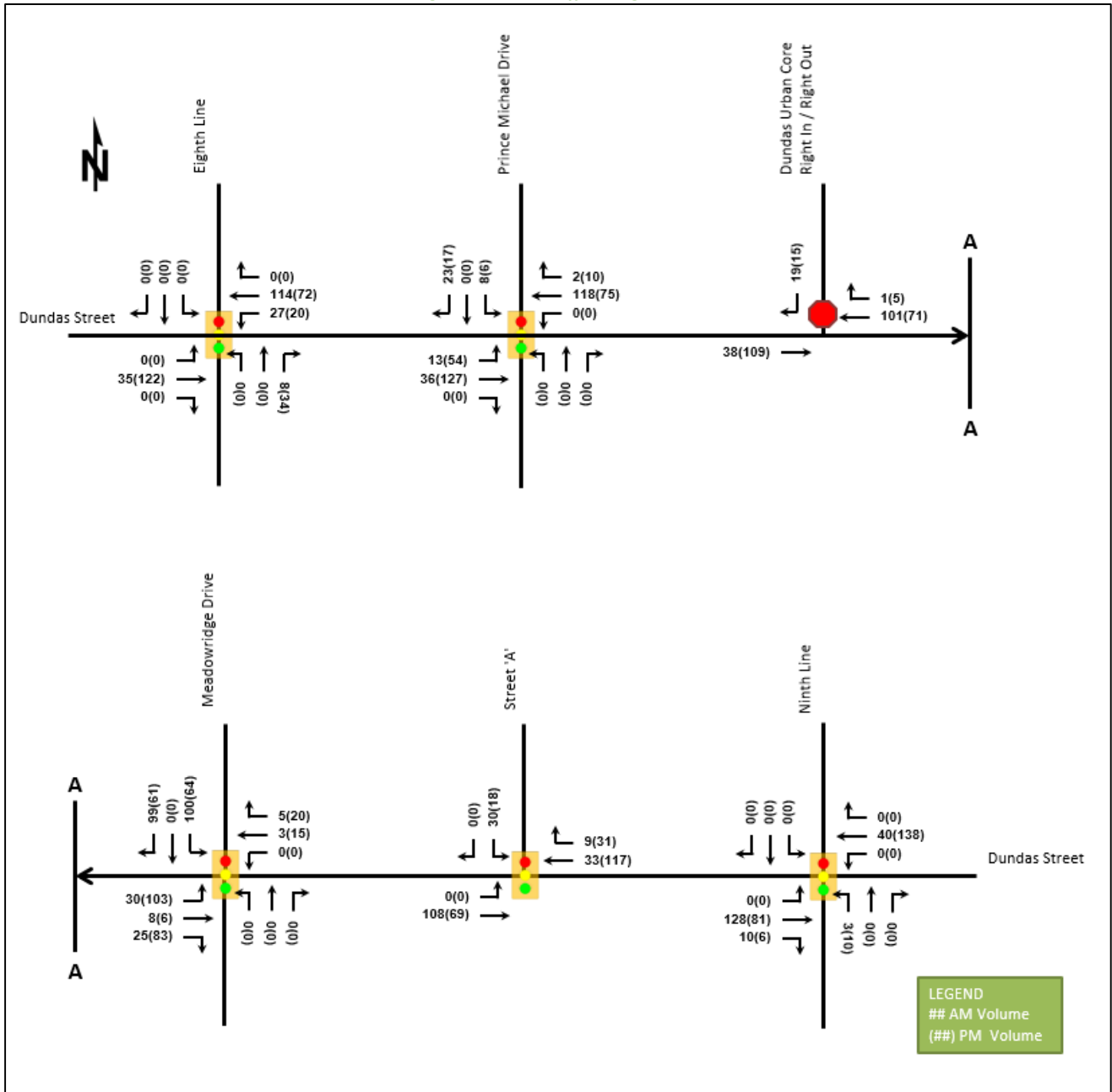


Figure 8 Site Trip Assignment

Figure 17: 2024 Traffic Assignment





Capoak Inc. and Redoak G & A Inc. Proposed Residential Development

Traffic Impact Study



Table 2 Site Trip Distribution

Trip Orientation	Trip Distribution
North	25%
South	10%
East	45%
West	20%
Total	100%

5.3 Site Trips Volumes

The estimated site trips generated by the proposed development for the 2% transit modal split scenario and the 10% transit modal split scenario, as assigned to the nearby road network for the weekday peak hours, is shown in **Figure 5** and **Figure 6**, respectively.

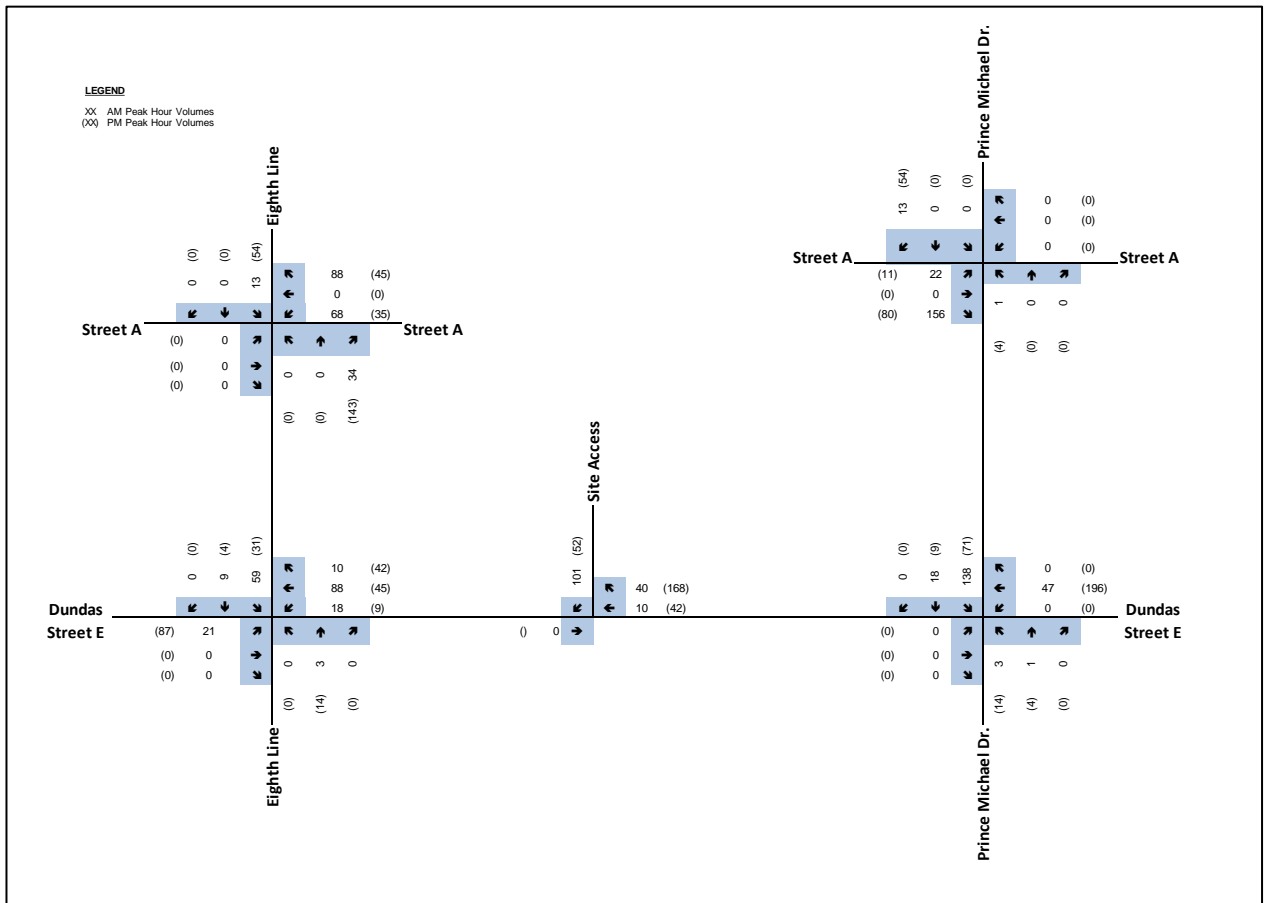


Figure 5 Site Trips with 2% Transit Modal Split



Dunoak and Bressa Draft Plans Proposed Residential Developments

Traffic Impact Study

GHD | 6705 Millcreek Drive Mississauga Ontario L5N 5M4 Canada
11194035 | 800 | Report No 2 | July 2020



Table 3 Site Trip Distribution

To/From	Road	Distribution	Inbound Route	Outbound Route
South	Ninth Line	20%	Northbound left-turn from Ninth Line onto Dundas Street E	Eastbound right-turn from Dundas Street E onto Ninth Line
East	Dundas Street East	37%	Westbound right-turn into given street from Dundas Street E	Southbound left-turn from given street onto Dundas Street E
West	Dundas Street East	43%	Eastbound left-turn into given street from Dundas Street E	Southbound right-turn from given street onto Dundas Street E
Total		100%		

The estimated site trips generated by the proposed development assigned to the adjacent road network for the weekday a.m. and p.m. peak hours are shown below in **Figure 8**.

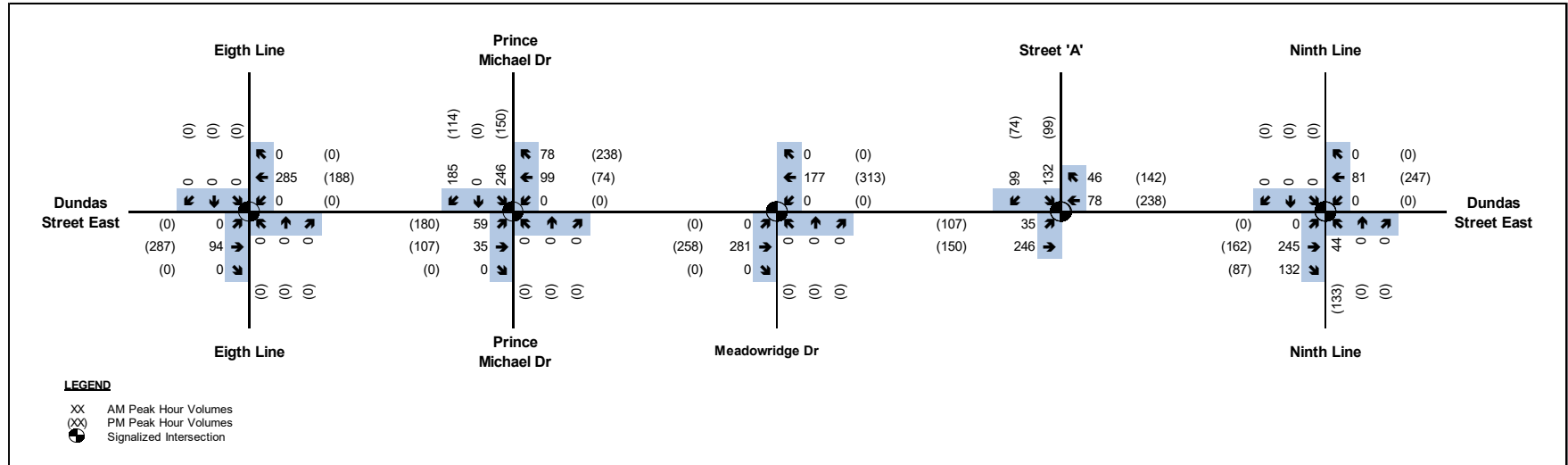
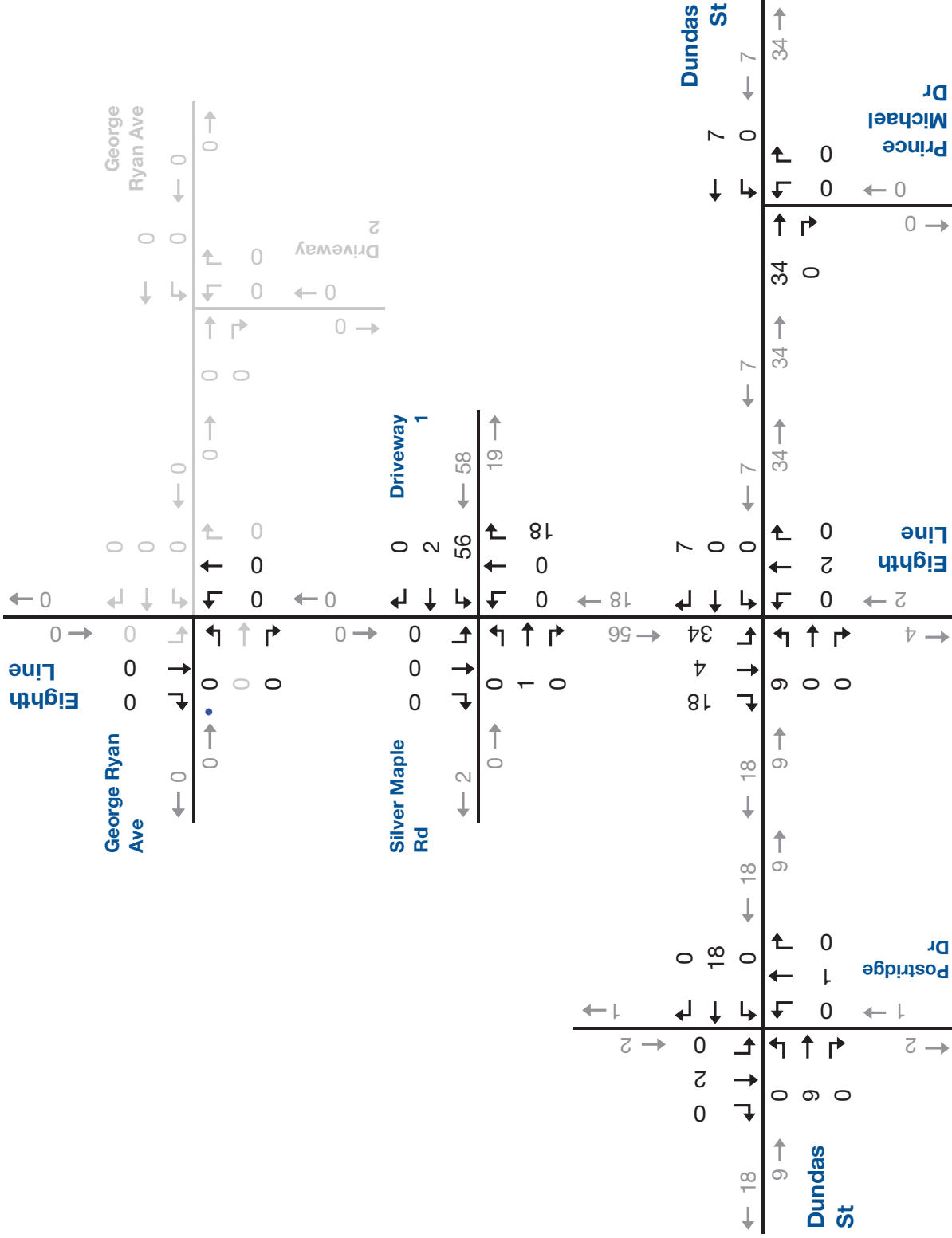
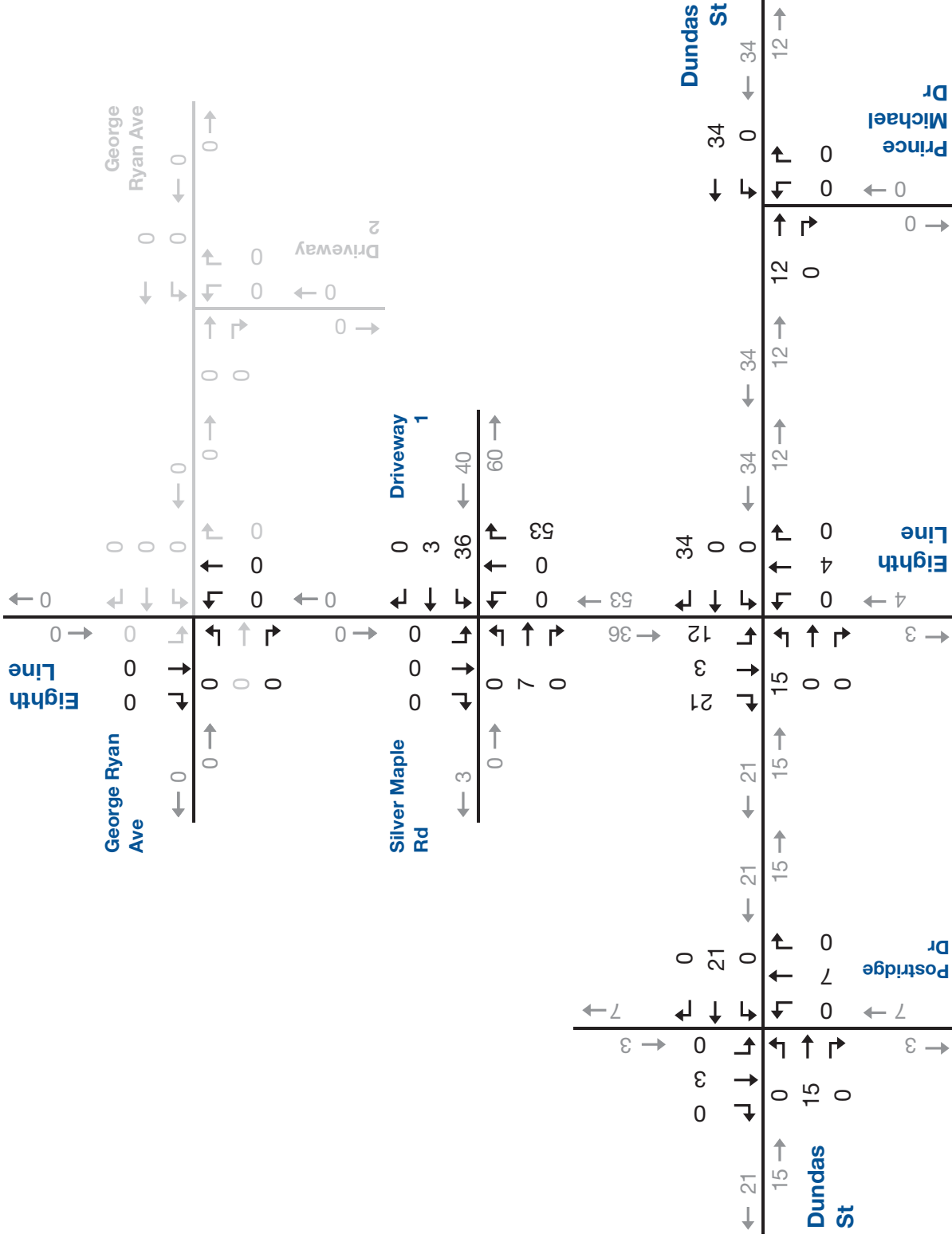


Figure 8 Site Traffic



Scenario 2 AM Peak Hour Site Generated Trip Assignment

Figure 3.3a



Scenario 2 PM Peak Hour Site Generated Trip Assignment

























Figure 3.3b

Appendix D

Future Background Level of Service Calculations

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	2521	130	123	1746	72	102	54	141	198	103	62
Future Volume (vph)	73	2521	130	123	1746	72	102	54	141	198	103	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	115.0		75.0	155.0		85.0	45.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1082	4980	1526	1785	4706	1469	1700	1740	1566	1767	1824	956
Flt Permitted	0.089			0.050			0.632			0.721		
Satd. Flow (perm)	101	4980	1473	94	4706	1436	1128	1740	1539	1335	1824	942
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81			72			119			67
Link Speed (k/h)		70			70			50				50
Link Distance (m)		310.7			586.1			253.5				312.8
Travel Time (s)		16.0			30.1			18.3				22.5
Confl. Peds. (#/hr)	1		7	7		1	3		5	5		3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	65%	3%	3%	0%	9%	7%	5%	8%	2%	1%	3%	67%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	2572	133	126	1782	73	104	55	144	202	105	63
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)		3.5			3.5			3.5				3.5
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	38.0	38.0	11.5	38.0	38.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	11.7	70.2	70.2	11.7	70.2	70.2	48.1	48.1	48.1	48.1	48.1	48.1
Total Split (%)	9.0%	54.0%	54.0%	9.0%	54.0%	54.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Maximum Green (s)	7.7	63.2	63.2	7.7	63.2	63.2	41.1	41.1	41.1	41.1	41.1	41.1
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-2.0	-2.0	-3.0	-2.0	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	95.0	78.6	78.6	96.6	81.7	81.7	28.1	28.1	28.1	28.1	28.1	28.1
Actuated g/C Ratio	0.73	0.60	0.60	0.74	0.63	0.63	0.22	0.22	0.22	0.22	0.22	0.22
v/c Ratio	0.44	0.85	0.14	0.52	0.60	0.08	0.43	0.15	0.34	0.70	0.27	0.25
Control Delay	18.4	26.3	6.6	19.5	20.3	6.6	47.8	39.4	11.9	59.3	42.2	10.0
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	18.4	26.3	6.6	19.5	20.3	6.6	47.8	39.4	11.9	59.3	42.2	10.0
LOS	B	C	A	B	C	A	D	D	B	E	D	A
Approach Delay		25.1			19.8			29.2				46.0
Approach LOS		C			B			C				D
Queue Length 50th (m)	4.8	195.8	5.4	12.2	120.9	3.3	24.4	12.1	5.4	50.7	23.7	0.0
Queue Length 95th (m)	18.3	#299.8	18.5	33.5	160.7	15.0	39.3	22.0	21.6	72.2	37.3	10.6
Internal Link Dist (m)		286.7			562.1			229.5				288.8
Turn Bay Length (m)	115.0		75.0	155.0		85.0	45.0			45.0		
Base Capacity (vph)	170	3010	922	244	2956	928	382	590	600	452	618	363
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	0.44	0.85	0.14	0.52	0.60	0.08	0.27	0.09	0.24	0.45	0.17	0.17

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 23 (18%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 24.8
 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: 3: Eighth Line & Dundas Street E



Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	2651	123	97	1570	116	118	3	146	415	14	203
Future Volume (vph)	89	2651	123	97	1570	116	118	3	146	415	14	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	120.0		75.0	125.0		85.0	65.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1623	5029	1497	1750	4724	1465	1716	1565	0	1785	1879	1413
Flt Permitted	0.130			0.054			0.748			0.315		
Satd. Flow (perm)	222	5029	1456	99	4724	1431	1343	1565	0	591	1879	1387
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			118			98			52
Link Speed (k/h)		70			70			50				50
Link Distance (m)		586.1			572.2			226.5				194.2
Travel Time (s)		30.1			29.4			16.3				14.0
Confl. Peds. (#/hr)	1		2	2		1	3		1	1		3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	2%	5%	2%	8%	9%	4%	0%	1%	0%	0%	13%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	2705	126	99	1602	118	120	152	0	423	14	207
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)		3.5			3.5			3.5				3.5
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases		2		1	6			4		3		8
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	1	6	6	4	4		3		8
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		7.0	10.0	10.0
Minimum Split (s)	25.2	25.2	25.2	11.0	25.2	25.2	22.5	22.5		11.0	24.3	24.3
Total Split (s)	72.0	72.0	72.0	11.0	83.0	83.0	23.0	23.0		24.0	47.0	47.0
Total Split (%)	55.4%	55.4%	55.4%	8.5%	63.8%	63.8%	17.7%	17.7%		18.5%	36.2%	36.2%
Maximum Green (s)	66.8	66.8	66.8	7.0	77.8	77.8	18.7	18.7		20.0	42.7	42.7
Yellow Time (s)	4.2	4.2	4.2	3.0	4.2	4.2	3.3	3.3		3.0	3.3	3.3
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-0.2	-0.2	-3.0	-0.2	0.0	-3.3	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.2	5.0	5.0	1.0	5.0	5.2	1.0	4.3		4.0	4.3	4.3

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

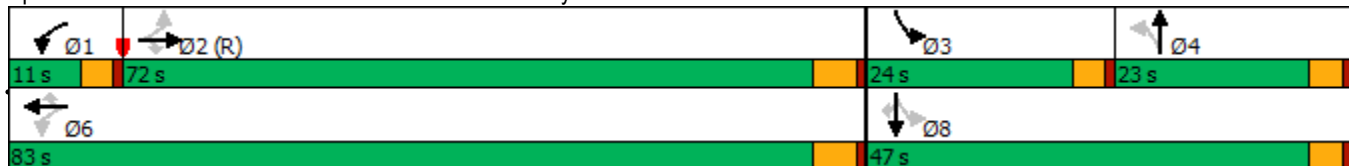


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max	None	None		None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0			0	0
Act Effct Green (s)	69.6	69.8	69.8	85.1	81.1	80.9	18.9	15.6		39.9	39.6	39.6
Actuated g/C Ratio	0.54	0.54	0.54	0.65	0.62	0.62	0.15	0.12		0.31	0.30	0.30
v/c Ratio	0.77	1.00	0.15	0.51	0.54	0.13	0.62	0.55		1.16	0.02	0.45
Control Delay	42.9	35.4	1.4	41.4	7.9	0.3	65.4	28.2		135.0	30.2	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	42.9	35.4	1.4	41.4	7.9	0.3	65.4	28.2		135.0	30.2	29.7
LOS	D	D	A	D	A	A	E	C		F	C	C
Approach Delay		34.2			9.3			44.6			98.9	
Approach LOS		C			A			D			F	
Queue Length 50th (m)	21.9	~289.6	4.9	13.7	50.4	0.2	30.4	13.3		~105.7	2.6	32.9
Queue Length 95th (m)	m32.0	#321.5	m0.5	32.7	56.2	0.4	51.4	35.6		#166.5	7.6	56.1
Internal Link Dist (m)		562.1			548.2			202.5			170.2	
Turn Bay Length (m)	120.0		75.0	125.0		85.0	65.0			15.0		15.0
Base Capacity (vph)	118	2698	817	195	2945	934	227	309		365	617	490
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.77	1.00	0.15	0.51	0.54	0.13	0.53	0.49		1.16	0.02	0.42

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 60 (46%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 34.0 Intersection LOS: C
 Intersection Capacity Utilization 104.0% 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: 6: Prince Michael Drive/John McKay Boulevard & Dundas Street E



Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	3084	78	103	1612	48	57	0	268	200	0	93
Future Volume (vph)	35	3084	78	103	1612	48	57	0	268	200	0	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1069	5029	1572	1684	4724	1117	1750	1879	1597	1069	1879	1597
Flt Permitted	0.139			0.045			0.757			0.757		
Satd. Flow (perm)	156	5029	1535	80	4724	1051	1394	1879	1597	852	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66			49			118			65
Link Speed (k/h)		70			70			50				50
Link Distance (m)		572.2			334.1			216.4				176.9
Travel Time (s)		29.4			17.2			15.6				12.7
Confl. Peds. (#/hr)	11		1	1		11						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	67%	2%	0%	6%	8%	43%	2%	0%	0%	67%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	3147	80	105	1645	49	58	0	273	204	0	95
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			4				8
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	1	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.7	26.7	26.7	11.5	28.4	28.4	24.9	24.9	24.9	24.9	24.9	24.9
Total Split (s)	90.0	90.0	90.0	14.0	104.0	104.0	26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	69.2%	69.2%	69.2%	10.8%	80.0%	80.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	83.3	83.3	83.3	10.0	97.3	97.3	19.1	19.1	19.1	19.1	19.1	19.1
Yellow Time (s)	4.2	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	3.6	3.6	3.6	3.6	3.6	3.6
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	6.9	6.9	6.9

Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

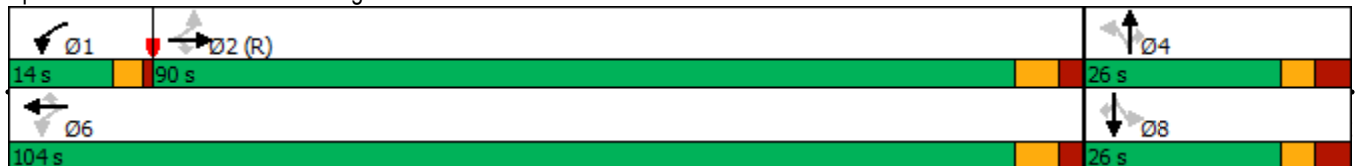


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (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
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	84.8	86.5	86.5	103.0	99.0	97.3	21.0		21.0	19.1		19.1
Actuated g/C Ratio	0.65	0.67	0.67	0.79	0.76	0.75	0.16		0.16	0.15		0.15
v/c Ratio	0.36	0.94	0.08	0.51	0.46	0.06	0.26		0.77	1.63		0.33
Control Delay	8.0	9.8	0.3	34.4	3.2	0.2	51.2		44.4	352.7		22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		7.3	3.8		0.0
Total Delay	8.0	9.8	0.3	34.4	3.2	0.2	51.2		51.6	356.5		22.4
LOS	A	A	A	C	A	A	D		D	F		C
Approach Delay		9.5			5.0			51.5				250.4
Approach LOS		A			A			D				F
Queue Length 50th (m)	1.9	60.9	0.2	7.0	7.9	0.1	13.9		40.9	~79.2		7.1
Queue Length 95th (m)	m2.1	m58.9	m0.2	m23.2	8.6	m0.0	27.9		#81.1	#130.2		23.9
Internal Link Dist (m)		548.2			310.1			192.4				152.9
Turn Bay Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Base Capacity (vph)	101	3344	1043	223	3597	798	225		356	125		290
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		51	20		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.36	0.94	0.08	0.47	0.46	0.06	0.26		0.90	1.94		0.33

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 70 (54%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.63
 Intersection Signal Delay: 23.2 Intersection LOS: C
 Intersection Capacity Utilization 101.3% 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: 8: Meadowridge Drive & Dundas Street E



Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

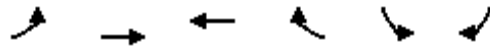
01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑↑	↑↑↑	↗	↖	↗
Traffic Volume (vph)	87	3535	1616	123	266	181
Future Volume (vph)	87	3535	1616	123	266	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	100.0			85.0	45.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1638	5002	4794	1469	1733	1342
Flt Permitted	0.125				0.950	
Satd. Flow (perm)	215	5002	4794	1469	1733	1342
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				126		65
Link Speed (k/h)		70	70		50	
Link Distance (m)		334.1	505.1		180.3	
Travel Time (s)		17.2	26.0		13.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	9%	2%	7%	7%	3%	19%
Bus Blockages (#/hr)	0	4	0	4	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	3607	1649	126	271	185
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
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	1.01	1.02	1.01	1.04	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	10.0
Minimum Split (s)	24.5	24.5	24.5	24.5	22.5	22.5
Total Split (s)	106.0	106.0	106.0	106.0	24.0	24.0
Total Split (%)	81.5%	81.5%	81.5%	81.5%	18.5%	18.5%
Maximum Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5

Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Max	C-Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.15	0.15
v/c Ratio	0.53	0.92	0.44	0.11	1.05	0.72
Control Delay	18.0	24.9	2.7	0.3	121.4	50.8
Queue Delay	0.0	1.6	0.0	0.0	0.0	0.0
Total Delay	18.0	26.4	2.7	0.3	121.4	50.8
LOS	B	C	A	A	F	D
Approach Delay		26.2	2.5		92.7	
Approach LOS		C	A		F	
Queue Length 50th (m)	12.4	317.5	20.0	0.1	~79.0	31.4
Queue Length 95th (m)	m16.1	m325.7	m24.8	m0.4	#136.2	#65.3
Internal Link Dist (m)		310.1	481.1		156.3	
Turn Bay Length (m)	100.0			85.0	45.0	
Base Capacity (vph)	167	3905	3743	1174	259	256
Starvation Cap Reductn	0	161	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	0.53	0.96	0.44	0.11	1.05	0.72

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 24.2
 Intersection LOS: C
 Intersection Capacity Utilization 90.5%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Dundas Street E & William Cutmore Blvd



Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	3094	420	123	1273	131	189	375	162	250	822	182
Future Volume (vph)	169	3094	420	123	1273	131	189	375	162	250	822	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1750	5029	1526	1733	4706	1497	1668	3368	1551	1750	3466	1581
Flt Permitted	0.128			0.067			0.129			0.440		
Satd. Flow (perm)	236	5029	1526	122	4706	1497	227	3368	1551	811	3466	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			194			134			142			137
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		505.1			255.3			487.3			810.8	
Travel Time (s)		26.0			13.1			29.2			48.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	9%	5%	7%	6%	3%	2%	3%	1%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	3157	429	126	1299	134	193	383	165	255	839	186
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	11.0	45.3	45.3	11.0	45.3	45.3	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (s)	11.0	60.0	60.0	11.0	60.0	60.0	11.0	48.0	48.0	11.0	48.0	48.0
Total Split (%)	8.5%	46.2%	46.2%	8.5%	46.2%	46.2%	8.5%	36.9%	36.9%	8.5%	36.9%	36.9%
Maximum Green (s)	7.0	53.7	53.7	7.0	53.7	53.7	7.0	41.5	41.5	7.0	41.5	41.5
Yellow Time (s)	3.0	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)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

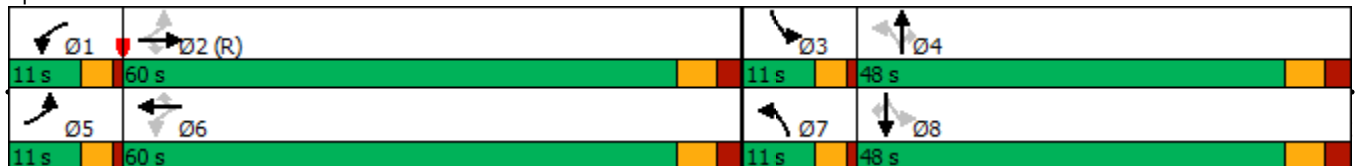


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	73.8	58.2	58.2	72.8	57.6	57.6	52.6	38.6	38.6	52.6	38.6	38.6
Actuated g/C Ratio	0.57	0.45	0.45	0.56	0.44	0.44	0.40	0.30	0.30	0.40	0.30	0.30
v/c Ratio	0.63	1.40	0.54	0.61	0.62	0.18	0.96	0.38	0.29	0.64	0.82	0.33
Control Delay	24.4	212.4	17.8	35.5	30.0	4.3	81.0	36.9	8.6	34.7	49.3	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	212.4	17.8	35.5	30.0	4.3	81.0	36.9	8.6	34.7	49.3	11.5
LOS	C	F	B	D	C	A	F	D	A	C	D	B
Approach Delay		181.5			28.2			42.1			40.9	
Approach LOS		F			C			D			D	
Queue Length 50th (m)	24.0	~430.1	39.6	16.1	100.8	0.0	33.7	42.6	4.4	46.0	109.2	9.5
Queue Length 95th (m)	m27.7	m#452.9	m49.8	#43.9	117.7	12.5	#76.0	55.2	20.5	65.1	129.7	27.7
Internal Link Dist (m)		481.1			231.3			463.3			786.8	
Turn Bay Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Base Capacity (vph)	271	2252	790	207	2086	738	202	1114	608	400	1146	614
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	0.63	1.40	0.54	0.61	0.62	0.18	0.96	0.34	0.27	0.64	0.73	0.30

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.40
 Intersection Signal Delay: 110.3 Intersection LOS: F
 Intersection Capacity Utilization 114.8% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Ninth Line & Dundas Street E



HCM Unsignalized Intersection Capacity Analysis
 12: Eighth Line/Threshing Mill Blvd & Wheat Boom Drive

























01-07-2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	74	27	85	203	71	16	46	15	14	58	4
Future Volume (Veh/h)	2	74	27	85	203	71	16	46	15	14	58	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	2	76	28	87	207	72	16	47	15	14	59	4
Pedestrians		13										
Lane Width (m)		3.5										
Walking Speed (m/s)		1.2										
Percent Blockage		1										
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)								313				
pX, platoon unblocked												
vC, conflicting volume	364	196	74	242	190	54	76			62		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	364	196	74	242	190	54	76			62		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	100	89	97	86	70	93	99			99		
cM capacity (veh/h)	410	675	983	622	683	1018	1482			1541		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	2	104	366	78	77							
Volume Left	2	0	87	16	14							
Volume Right	0	28	72	15	4							
cSH	410	737	713	1482	1541							
Volume to Capacity	0.00	0.14	0.51	0.01	0.01							
Queue Length 95th (m)	0.1	3.9	23.7	0.3	0.2							
Control Delay (s)	13.8	10.7	15.3	1.6	1.4							
Lane LOS	B	B	C	A	A							
Approach Delay (s)	10.7		15.3	1.6	1.4							
Approach LOS	B		C									
Intersection Summary												
Average Delay			11.1									
Intersection Capacity Utilization			41.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	2521	130	123	1746	72	102	54	141	198	103	62
Future Volume (vph)	73	2521	130	123	1746	72	102	54	141	198	103	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	115.0		75.0	155.0		85.0	45.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1082	4980	1526	1785	4706	1469	1700	1740	1566	1767	1824	956
Flt Permitted	0.088			0.050			0.632			0.721		
Satd. Flow (perm)	100	4980	1473	94	4706	1436	1128	1740	1539	1335	1824	942
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81			72			119			67
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		310.7			586.1			253.5			312.8	
Travel Time (s)		16.0			30.1			18.3			22.5	
Confl. Peds. (#/hr)	1		7	7		1	3		5	5		3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	65%	3%	3%	0%	9%	7%	5%	8%	2%	1%	3%	67%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	2572	133	126	1782	73	104	55	144	202	105	63
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	38.0	38.0	11.5	38.0	38.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	11.7	70.2	70.2	11.7	70.2	70.2	48.1	48.1	48.1	48.1	48.1	48.1
Total Split (%)	9.0%	54.0%	54.0%	9.0%	54.0%	54.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Maximum Green (s)	7.7	63.2	63.2	7.7	63.2	63.2	41.1	41.1	41.1	41.1	41.1	41.1
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-2.0	-2.0	-3.0	-2.0	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings

3: Eighth Line & Dundas Street E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	95.5	78.6	78.6	96.5	81.2	81.2	28.1	28.1	28.1	28.1	28.1	28.1
Actuated g/C Ratio	0.73	0.60	0.60	0.74	0.62	0.62	0.22	0.22	0.22	0.22	0.22	0.22
v/c Ratio	0.44	0.85	0.14	0.52	0.61	0.08	0.43	0.15	0.34	0.70	0.27	0.25
Control Delay	18.0	26.3	6.6	20.3	33.3	11.6	47.8	39.4	11.9	59.3	42.2	10.0
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	18.0	26.3	6.6	20.3	33.3	11.6	47.8	39.4	11.9	59.3	42.2	10.0
LOS	B	C	A	C	C	B	D	D	B	E	D	A
Approach Delay		25.1			31.7			29.2			46.0	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	4.8	195.8	5.4	10.5	170.5	3.1	24.4	12.1	5.4	50.7	23.7	0.0
Queue Length 95th (m)	18.4	#299.8	18.5	m31.6	196.1	m16.4	39.3	22.0	21.6	72.2	37.3	10.6
Internal Link Dist (m)		286.7			562.1			229.5			288.8	
Turn Bay Length (m)	115.0		75.0	155.0		85.0	45.0			45.0		
Base Capacity (vph)	172	3010	922	244	2940	924	382	590	600	452	618	363
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	0.43	0.85	0.14	0.52	0.61	0.08	0.27	0.09	0.24	0.45	0.17	0.17

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 23 (18%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 29.2 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Eighth Line & Dundas Street E
































2032 Future Background AM Peak 3:36 pm 01-07-2024 Baseline

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	89	2651	123	97	1570	116	118	3	146	415	14	203
Future Volume (vph)	89	2651	123	97	1570	116	118	3	146	415	14	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	120.0		75.0	125.0		85.0	65.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1623	5029	1497	1750	4724	1465	1716	1565	0	1785	1879	1413
Flt Permitted	0.087			0.058			0.748			0.315		
Satd. Flow (perm)	149	5029	1456	107	4724	1431	1343	1565	0	591	1879	1387
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			118			90			91
Link Speed (k/h)		70			70			50				50
Link Distance (m)		586.1			572.2			226.5				194.2
Travel Time (s)		30.1			29.4			16.3				14.0
Confl. Peds. (#/hr)	1		2	2		1	3		1	1		3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	2%	5%	2%	8%	9%	4%	0%	1%	0%	0%	13%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	2705	126	99	1602	118	120	152	0	423	14	207
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)		3.5			3.5			3.5				3.5
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	4	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.0	25.2	25.2	9.0	25.2	25.2	22.5	22.5		9.0	24.3	24.3
Total Split (s)	9.0	69.0	69.0	9.0	69.0	69.0	23.0	23.0		29.0	52.0	52.0
Total Split (%)	6.9%	53.1%	53.1%	6.9%	53.1%	53.1%	17.7%	17.7%		22.3%	40.0%	40.0%
Maximum Green (s)	5.0	63.8	63.8	5.0	63.8	63.8	18.7	18.7		25.0	47.7	47.7
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.3	3.3		3.0	3.3	3.3
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-0.2	-0.2	-3.0	-0.2	0.0	-3.3	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	5.2	1.0	4.3		4.0	4.3	4.3

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

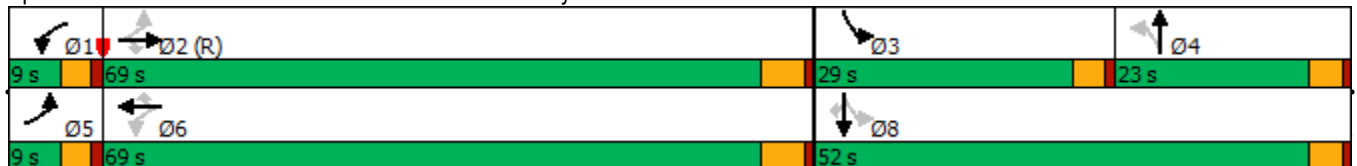


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0			0	0
Act Effct Green (s)	73.2	65.9	65.9	78.9	65.7	65.5	18.9	15.6		44.9	44.6	44.6
Actuated g/C Ratio	0.56	0.51	0.51	0.61	0.51	0.50	0.15	0.12		0.35	0.34	0.34
v/c Ratio	0.59	1.06	0.16	0.55	0.67	0.15	0.62	0.57		0.98	0.02	0.39
Control Delay	31.0	56.5	1.6	50.3	18.5	4.3	65.4	31.2		75.1	26.9	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	31.0	56.5	1.6	50.3	18.5	4.3	65.4	31.2		75.1	26.9	19.2
LOS	C	E	A	D	B	A	E	C		E	C	B
Approach Delay		53.4			19.3			46.3			56.1	
Approach LOS		D			B			D			E	
Queue Length 50th (m)	3.8	~309.0	5.1	18.1	53.6	0.0	30.4	15.4		96.0	2.5	22.3
Queue Length 95th (m)	m9.7	#338.1	m0.5	#37.9	78.6	10.1	51.4	37.9		#147.4	7.1	43.5
Internal Link Dist (m)		562.1			548.2			202.5			170.2	
Turn Bay Length (m)	120.0		75.0	125.0		85.0	65.0			15.0		15.0
Base Capacity (vph)	155	2549	776	180	2388	780	227	302		433	689	566
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.59	1.06	0.16	0.55	0.67	0.15	0.53	0.50		0.98	0.02	0.37

Intersection Summary





























Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 60 (46%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.06
 Intersection Signal Delay: 42.4 Intersection LOS: D
 Intersection Capacity Utilization 103.5% 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: 6: Prince Michael Drive/John McKay Boulevard & Dundas Street E



Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	35	3084	78	103	1612	48	57	0	268	200	0	93
Future Volume (vph)	35	3084	78	103	1612	48	57	0	268	200	0	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1069	5029	1572	1684	4724	1117	1750	1879	1597	1069	1879	1597
Flt Permitted	0.125			0.050			0.757			0.618		
Satd. Flow (perm)	140	5029	1535	89	4724	1051	1394	1879	1597	695	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100			66			98			65
Link Speed (k/h)		70			70			50				50
Link Distance (m)		572.2			334.1			216.4				176.9
Travel Time (s)		29.4			17.2			15.6				12.7
Confl. Peds. (#/hr)	11		1	1		11						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	67%	2%	0%	6%	8%	43%	2%	0%	0%	67%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	3147	80	105	1645	49	58	0	273	204	0	95
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm		Perm	pm+pt		Perm
Protected Phases		2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	1	6	6	4	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	4.0	20.0	20.0	10.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	26.7	26.7	26.7	8.0	28.4	28.4	24.9	24.9	24.9	9.0	24.9	24.9
Total Split (s)	82.0	82.0	82.0	8.0	90.0	90.0	27.0	27.0	27.0	13.0	40.0	40.0
Total Split (%)	63.1%	63.1%	63.1%	6.2%	69.2%	69.2%	20.8%	20.8%	20.8%	10.0%	30.8%	30.8%
Maximum Green (s)	75.3	75.3	75.3	4.0	83.3	83.3	20.1	20.1	20.1	9.0	33.1	33.1
Yellow Time (s)	4.2	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	3.6	3.6	3.6	1.0	3.6	3.6
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	4.0	6.9	6.9

Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

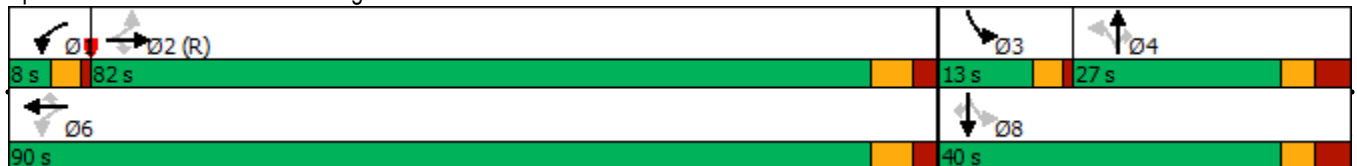


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0		0	0
Act Effct Green (s)	76.5	78.2	78.2	91.3	87.3	85.6	19.7		19.7	33.7		30.8
Actuated g/C Ratio	0.59	0.60	0.60	0.70	0.67	0.66	0.15		0.15	0.26		0.24
v/c Ratio	0.44	1.04	0.08	0.65	0.52	0.07	0.28		0.84	0.99		0.22
Control Delay	12.3	32.0	0.3	36.9	23.5	7.8	51.3		56.3	107.2		16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		64.0	48.1		0.0
Total Delay	12.3	32.0	0.3	36.9	23.5	7.8	51.3		120.3	155.2		16.0
LOS	B	C	A	D	C	A	D		F	F		B
Approach Delay		31.0			23.8			108.2				111.0
Approach LOS		C			C			F				F
Queue Length 50th (m)	2.8	~333.9	0.0	15.8	132.9	1.8	13.7		46.3	49.3		6.2
Queue Length 95th (m)	m2.8	m#83.4	m0.0	m#40.8	150.0	m8.9	27.6		#87.7	#104.1		20.6
Internal Link Dist (m)		548.2			310.1			192.4				152.9
Turn Bay Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Base Capacity (vph)	82	3023	962	162	3172	714	235		351	206		455
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		191	111		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.44	1.04	0.08	0.65	0.52	0.07	0.25		1.71	2.15		0.21

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 70 (54%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 37.4 Intersection LOS: D
 Intersection Capacity Utilization 98.9% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Meadowridge Drive & Dundas Street E



Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd































01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑↑	↑↑↑	↗	↘	↗
Traffic Volume (vph)	87	3535	1616	123	266	181
Future Volume (vph)	87	3535	1616	123	266	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	100.0			85.0	45.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1638	5002	4794	1469	1733	1342
Flt Permitted	0.121				0.950	
Satd. Flow (perm)	209	5002	4794	1469	1733	1342
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				126		54
Link Speed (k/h)		70	70		50	
Link Distance (m)		334.1	505.1		180.3	
Travel Time (s)		17.2	26.0		13.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	9%	2%	7%	7%	3%	19%
Bus Blockages (#/hr)	0	4	0	4	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	3607	1649	126	271	185
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
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	1.01	1.02	1.01	1.04	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	10.0
Minimum Split (s)	24.5	24.5	24.5	24.5	22.5	22.5
Total Split (s)	100.0	100.0	100.0	100.0	30.0	30.0
Total Split (%)	76.9%	76.9%	76.9%	76.9%	23.1%	23.1%
Maximum Green (s)	95.5	95.5	95.5	95.5	25.5	25.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	169	3094	420	123	1273	131	189	375	162	250	822	182
Future Volume (vph)	169	3094	420	123	1273	131	189	375	162	250	822	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1750	5029	1526	1733	4706	1497	1668	3368	1551	1750	3466	1581
Flt Permitted	0.153			0.047			0.090			0.495		
Satd. Flow (perm)	282	5029	1526	86	4706	1497	158	3368	1551	912	3466	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			168			131			77			104
Link Speed (k/h)		70			70			60				60
Link Distance (m)		505.1			255.3			487.3				810.8
Travel Time (s)		26.0			13.1			29.2				48.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour 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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	9%	5%	7%	6%	3%	2%	3%	1%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	169	3094	420	123	1273	131	189	375	162	250	822	182
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	45.3	45.3	9.0	45.3	45.3	9.0	47.5	47.5	9.0	47.5	47.5
Total Split (s)	9.0	88.0	88.0	9.0	88.0	88.0	15.0	54.0	54.0	9.0	48.0	48.0
Total Split (%)	5.6%	55.0%	55.0%	5.6%	55.0%	55.0%	9.4%	33.8%	33.8%	5.6%	30.0%	30.0%
Maximum Green (s)	5.0	81.7	81.7	5.0	81.7	81.7	11.0	47.5	47.5	5.0	41.5	41.5
Yellow Time (s)	3.0	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)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	95.9	83.0	83.0	96.3	83.2	83.2	60.9	47.9	47.9	53.9	41.9	41.9
Actuated g/C Ratio	0.60	0.52	0.52	0.60	0.52	0.52	0.38	0.30	0.30	0.34	0.26	0.26
v/c Ratio	0.68	1.19	0.48	0.85	0.52	0.16	0.98	0.37	0.31	0.72	0.91	0.37
Control Delay	29.4	123.3	16.0	76.9	26.2	3.3	102.7	45.2	23.6	53.8	71.2	22.3
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	29.4	123.3	16.0	76.9	26.2	3.3	102.7	45.2	23.6	53.8	71.2	22.3
LOS	C	F	B	E	C	A	F	D	C	D	E	C
Approach Delay		106.8			28.4			55.4			60.7	
Approach LOS		F			C			E			E	
Queue Length 50th (m)	24.1	~454.6	51.8	25.0	100.8	0.0	47.3	51.8	21.0	59.7	139.9	20.2
Queue Length 95th (m)	#37.2	#475.2	81.5	#68.7	114.7	11.1	#101.2	67.5	42.3	85.0	#170.1	43.8
Internal Link Dist (m)		481.1			231.3			463.3			786.8	
Turn Bay Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Base Capacity (vph)	250	2608	872	145	2447	841	192	1031	528	349	931	500
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	0.68	1.19	0.48	0.85	0.52	0.16	0.98	0.36	0.31	0.72	0.88	0.36

Intersection Summary






























Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 12 (8%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 76.9 Intersection LOS: E
 Intersection Capacity Utilization 114.8% 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: 14: Ninth Line & Dundas Street E



Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	97	2200	170	205	2926	174	121	142	169	113	67	31
Future Volume (vph)	97	2200	170	205	2926	174	121	142	169	113	67	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	115.0		75.0	155.0		85.0	45.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1572	1785	5079	1572	1733	1879	1581	1767	1879	1493
Flt Permitted	0.052			0.051			0.705			0.498		
Satd. Flow (perm)	98	5029	1508	96	5079	1508	1279	1879	1548	920	1879	1466
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126			109			107			67
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		310.7			586.1			253.5			312.8	
Travel Time (s)		16.0			30.1			18.3			22.5	
Confl. Peds. (#/hr)	10		10	10		10	6		9	9		6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	3%	0%	1%	1%	0%	7%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	2245	173	209	2986	178	123	145	172	115	68	32
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	38.0	38.0	11.0	38.0	38.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	11.0	73.0	73.0	11.0	73.0	73.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	8.5%	56.2%	56.2%	8.5%	56.2%	56.2%	35.4%	35.4%	35.4%	35.4%	35.4%	35.4%
Maximum Green (s)	7.0	66.0	66.0	7.0	66.0	66.0	39.0	39.0	39.0	39.0	39.0	39.0
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-1.7	-1.7	-3.0	-1.7	-1.7	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.3	5.3	1.0	5.3	5.3	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	91.5	75.4	75.4	103.2	86.1	86.1	21.8	21.8	21.8	21.8	21.8	21.8
Actuated g/C Ratio	0.70	0.58	0.58	0.79	0.66	0.66	0.17	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.45	0.77	0.19	0.57	0.89	0.17	0.57	0.46	0.49	0.75	0.22	0.11
Control Delay	25.8	24.0	5.2	36.1	18.8	7.3	59.3	52.2	23.1	78.3	46.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	24.0	5.2	36.1	18.8	7.3	59.3	52.2	23.1	78.3	46.1	1.4
LOS	C	C	A	D	B	A	E	D	C	E	D	A
Approach Delay		22.8			19.3			42.8			56.7	
Approach LOS		C			B			D			E	
Queue Length 50th (m)	8.1	160.9	5.3	46.0	134.5	10.6	30.9	35.7	15.4	29.9	16.0	0.0
Queue Length 95th (m)	27.0	208.8	18.1	m45.6	m132.5	m10.4	48.5	53.0	35.8	48.9	27.9	1.3
Internal Link Dist (m)		286.7			562.1			229.5			288.8	
Turn Bay Length (m)	115.0		75.0	155.0		85.0	45.0			45.0		
Base Capacity (vph)	222	2916	927	368	3363	1035	413	607	572	297	607	518
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	0.45	0.77	0.19	0.57	0.89	0.17	0.30	0.24	0.30	0.39	0.11	0.06

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 3 (2%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 23.5 Intersection LOS: C
 Intersection Capacity Utilization 99.7% ICU Level of Service F
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Eighth Line & Dundas Street E



Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	2115	161	193	2988	286	154	2	83	282	11	154
Future Volume (vph)	220	2115	161	193	2988	286	154	2	83	282	11	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	120.0		75.0	125.0		85.0	65.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	4980	1572	1767	5051	1597	1785	1544	0	1785	1879	1597
Flt Permitted	0.062			0.065			0.750			0.661		
Satd. Flow (perm)	116	4980	1451	121	5051	1548	1409	1544	0	1235	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			140			188		85				143
Link Speed (k/h)		70			70			50				50
Link Distance (m)		586.1			572.2			226.5				193.9
Travel Time (s)		30.1			29.4			16.3				14.0
Confl. Peds. (#/hr)	3		16	16		3			3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	1%	1%	0%	0%	0%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	2158	164	197	3049	292	157	87	0	288	11	157
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	4	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		6.5	10.0	10.0
Minimum Split (s)	11.0	26.8	26.8	11.0	26.8	26.8	23.5	23.5		11.0	22.5	22.5
Total Split (s)	17.0	79.5	79.5	16.0	78.5	78.5	23.5	23.5		11.0	34.5	34.5
Total Split (%)	13.1%	61.2%	61.2%	12.3%	60.4%	60.4%	18.1%	18.1%		8.5%	26.5%	26.5%
Maximum Green (s)	13.0	72.7	72.7	12.0	71.7	71.7	19.0	19.0		7.0	30.0	30.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.5	3.5		3.0	3.5	3.5
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.8	-1.8	-3.0	-1.8	0.0	-1.9	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	6.8	2.6	4.5		4.0	4.5	4.5

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

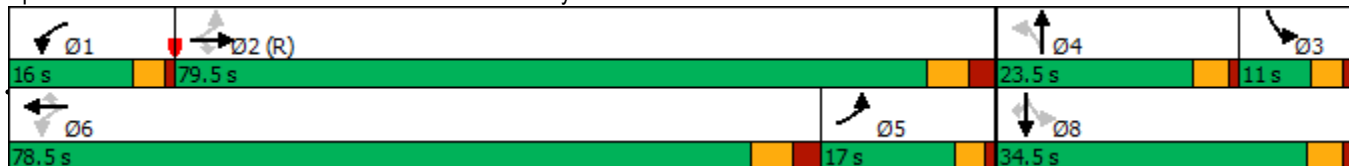


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0			0	0
Act Effct Green (s)	77.2	76.2	76.2	78.6	74.6	72.8	19.1	17.2		29.4	28.9	28.9
Actuated g/C Ratio	0.59	0.59	0.59	0.60	0.57	0.56	0.15	0.13		0.23	0.22	0.22
v/c Ratio	0.95	0.74	0.18	0.77	1.05	0.31	0.76	0.31		0.93	0.03	0.34
Control Delay	72.6	10.4	1.7	40.3	43.8	2.0	76.0	13.7		85.4	39.1	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	72.6	10.4	1.7	40.3	43.8	2.0	76.0	13.7		85.4	39.1	10.3
LOS	E	B	A	D	D	A	E	B		F	D	B
Approach Delay		15.3			40.2			53.8			58.4	
Approach LOS		B			D			D			E	
Queue Length 50th (m)	45.0	43.7	0.3	32.2	~341.2	9.1	40.5	0.5		71.4	2.3	3.0
Queue Length 95th (m)	m#82.2	67.3	m5.5	m35.0	m#357.8	m9.3	#70.4	16.1		#130.2	7.7	21.4
Internal Link Dist (m)		562.1			548.2			202.5			169.9	
Turn Bay Length (m)	120.0		75.0	125.0		85.0	65.0			15.0		15.0
Base Capacity (vph)	235	2919	908	263	2898	949	226	298		311	433	478
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.95	0.74	0.18	0.75	1.05	0.31	0.69	0.29		0.93	0.03	0.33

Intersection Summary

























Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 11.8 (9%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 32.6 Intersection LOS: C
 Intersection Capacity Utilization 103.5% 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: 6: Prince Michael Drive/John McKay Boulevard & Dundas Street E



Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	2229	133	185	3418	130	43	0	139	134	0	74
Future Volume (vph)	125	2229	133	185	3418	130	43	0	139	134	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1572	1785	5051	1201	1785	1879	1597	1428	1879	1597
Flt Permitted	0.045			0.049			0.757			0.757		
Satd. Flow (perm)	85	5029	1512	92	5051	1173	1422	1879	1574	1135	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136			91			91			80
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		572.2			334.1			216.4			176.0	
Travel Time (s)		29.4			17.2			15.6			12.7	
Confl. Peds. (#/hr)	1		5	5		1			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	1%	33%	0%	0%	0%	25%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	2274	136	189	3488	133	44	0	142	137	0	76
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4				8
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	26.7	26.7	11.0	28.4	28.4	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	11.0	96.5	96.5	11.0	96.5	96.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	8.5%	74.2%	74.2%	8.5%	74.2%	74.2%	17.3%	17.3%	17.3%	17.3%	17.3%	17.3%
Maximum Green (s)	7.0	89.8	89.8	7.0	89.8	89.8	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	6.7	2.6	4.5	2.6	4.5	4.5	4.5

Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

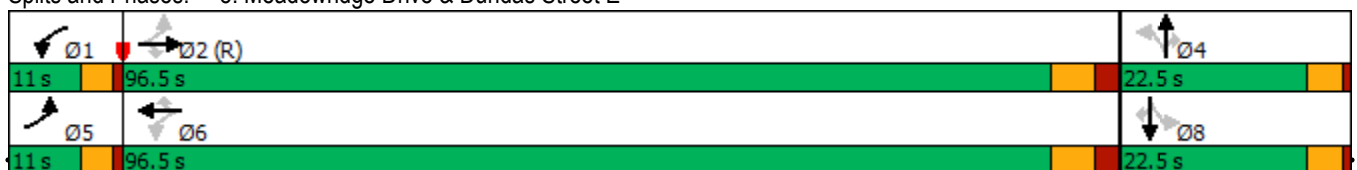


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	99.6	91.5	91.5	106.3	92.0	90.3	19.3		19.3	17.4		17.4
Actuated g/C Ratio	0.77	0.70	0.70	0.82	0.71	0.69	0.15		0.15	0.13		0.13
v/c Ratio	0.82	0.64	0.12	0.89	0.98	0.16	0.21		0.46	0.90		0.27
Control Delay	56.9	22.7	3.5	38.5	34.1	5.3	51.1		24.7	106.6		12.1
Queue Delay	0.0	0.0	0.0	0.0	5.3	0.0	0.0		0.0	0.0		0.0
Total Delay	56.9	22.7	3.5	38.5	39.4	5.3	51.1		24.7	106.6		12.1
LOS	E	C	A	D	D	A	D		C	F		B
Approach Delay		23.4			38.2			31.0				72.9
Approach LOS		C			D			C				E
Queue Length 50th (m)	14.7	210.1	5.6	30.3	336.0	7.8	10.5		12.2	36.7		0.0
Queue Length 95th (m)	m#33.3	227.2	m6.8	m27.3	m314.7	m6.2	22.5		33.6	#75.9		13.7
Internal Link Dist (m)		548.2			310.1			192.4				152.0
Turn Bay Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Base Capacity (vph)	157	3539	1104	213	3576	842	217		318	157		290
Starvation Cap Reductn	0	0	0	0	106	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.82	0.64	0.12	0.89	1.01	0.16	0.20		0.45	0.87		0.26

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 75 (58%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 33.5 Intersection LOS: C
 Intersection Capacity Utilization 98.3% ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Meadowridge Drive & Dundas Street E



2032 Future Background PM Peak 3:28 pm 01-07-2024 Baseline

Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	154	2385	3755	273	215	137
Future Volume (vph)	154	2385	3755	273	215	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	100.0			85.0	45.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1785	5002	5079	1541	1733	1536
Flt Permitted	0.042				0.950	
Satd. Flow (perm)	79	5002	5079	1499	1714	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				216		78
Link Speed (k/h)		70	70		50	
Link Distance (m)		334.1	505.1		180.3	
Travel Time (s)		17.2	26.0		13.0	
Confl. Peds. (#/hr)	2			2	5	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	1%	2%	3%	4%
Bus Blockages (#/hr)	0	4	0	4	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	157	2434	3832	279	219	140
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
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	1.01	1.02	1.01	1.04	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	10.0	10.0
Minimum Split (s)	11.0	24.5	24.5	24.5	22.5	22.5
Total Split (s)	11.0	107.0	96.0	96.0	23.0	23.0
Total Split (%)	8.5%	82.3%	73.8%	73.8%	17.7%	17.7%
Maximum Green (s)	7.0	102.5	91.5	91.5	18.5	18.5
Yellow Time (s)	3.0	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.5	4.5	4.5	4.5

Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	Max	Max	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	103.4	102.9	91.5	91.5	18.1	18.1
Actuated g/C Ratio	0.80	0.79	0.70	0.70	0.14	0.14
v/c Ratio	0.98	0.61	1.07	0.25	0.91	0.50
Control Delay	82.5	19.3	50.0	0.1	94.1	30.4
Queue Delay	0.0	0.0	11.7	0.0	0.0	78.3
Total Delay	82.5	19.3	61.8	0.1	94.1	108.7
LOS	F	B	E	A	F	F
Approach Delay		23.1	57.6		99.8	
Approach LOS		C	E		F	
Queue Length 50th (m)	~24.7	192.5	~164.2	0.0	58.8	15.2
Queue Length 95th (m)	m#70.9	207.7	m62.5	m0.0	#105.7	37.0
Internal Link Dist (m)		310.1	481.1		156.3	
Turn Bay Length (m)	100.0			85.0	45.0	
Base Capacity (vph)	160	3959	3574	1119	246	285
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	88	0	0	190
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.61	1.10	0.25	0.89	1.47

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 47.1 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: 10: Dundas Street E & William Cutmore Blvd



Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	2094	279	151	2802	180	413	949	513	146	399	170
Future Volume (vph)	148	2094	279	151	2802	180	413	949	513	146	399	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1497	1733	5079	1541	1750	3535	1521	1767	3500	1597
Flt Permitted	0.069			0.069			0.430			0.093		
Satd. Flow (perm)	130	5029	1477	126	5079	1521	792	3535	1521	173	3500	1576
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			203			98			133			124
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		505.1			255.3			487.3			810.8	
Travel Time (s)		26.0			13.1			29.2			48.6	
Confl. Peds. (#/hr)	1		1	1		1	1					1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	3%	1%	2%	2%	1%	5%	1%	2%	0%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	2137	285	154	2859	184	421	968	523	149	407	173
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	11.0	45.3	45.3	11.0	45.3	45.3	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (s)	11.0	60.0	60.0	11.0	60.0	60.0	11.0	48.0	48.0	11.0	48.0	48.0
Total Split (%)	8.5%	46.2%	46.2%	8.5%	46.2%	46.2%	8.5%	36.9%	36.9%	8.5%	36.9%	36.9%
Maximum Green (s)	7.0	53.7	53.7	7.0	53.7	53.7	7.0	41.5	41.5	7.0	41.5	41.5
Yellow Time (s)	3.0	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)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0

Lanes, Volumes, Timings
 14: Ninth Line & Dundas Street E

01-07-2024

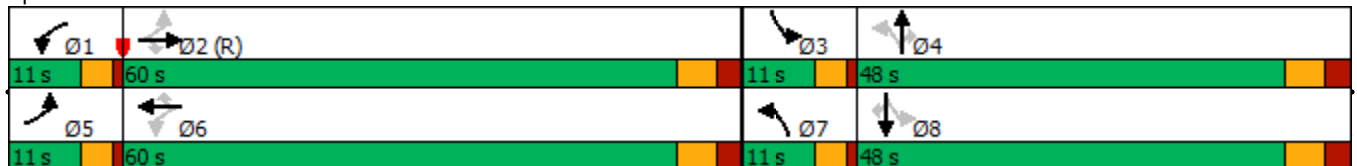


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	70.5	56.0	56.0	70.7	56.1	56.1	55.4	41.4	41.4	55.4	41.4	41.4
Actuated g/C Ratio	0.54	0.43	0.43	0.54	0.43	0.43	0.43	0.32	0.32	0.43	0.32	0.32
v/c Ratio	0.74	0.99	0.38	0.77	1.31	0.26	1.02	0.86	0.91	0.76	0.37	0.30
Control Delay	54.6	36.6	5.1	52.0	173.5	12.2	84.1	50.3	52.5	50.3	34.9	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	36.6	5.1	52.0	173.5	12.2	84.1	50.3	52.5	50.3	34.9	11.6
LOS	D	D	A	D	F	B	F	D	D	D	C	B
Approach Delay		34.2			158.3			58.3			32.5	
Approach LOS		C			F			E			C	
Queue Length 50th (m)	27.1	~138.6	3.9	24.7	~366.2	14.0	~81.4	126.4	104.3	23.9	43.6	9.1
Queue Length 95th (m)	m#55.7	#246.0	m12.7	#62.2	#393.1	30.7	#159.5	153.9	#172.5	#55.5	58.4	26.9
Internal Link Dist (m)		481.1			231.3			463.3			786.8	
Turn Bay Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Base Capacity (vph)	204	2164	751	199	2189	712	411	1169	592	196	1157	604
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	0.74	0.99	0.38	0.77	1.31	0.26	1.02	0.83	0.88	0.76	0.35	0.29

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.31
 Intersection Signal Delay: 86.7 Intersection LOS: F
 Intersection Capacity Utilization 117.5% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Ninth Line & Dundas Street E



HCM Unsignalized Intersection Capacity Analysis
 12: Eighth Line/Threshing Mill Blvd & Wheat Boom Drive





























01-07-2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	256	27	55	134	44	41	78	159	45	34	4
Future Volume (Veh/h)	2	256	27	55	134	44	41	78	159	45	34	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	2	261	28	56	137	45	42	80	162	46	35	4
Pedestrians		2										
Lane Width (m)		3.5										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)								313				
pX, platoon unblocked												
vC, conflicting volume	490	457	39	532	378	161	41			242		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	490	457	39	532	378	161	41			242		
tC, single (s)	7.6	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	4.0	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	44	97	77	74	95	97			97		
cM capacity (veh/h)	302	469	1037	240	520	889	1579			1336		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	2	289	238	284	85							
Volume Left	2	0	56	42	46							
Volume Right	0	28	45	162	4							
cSH	302	495	435	1579	1336							
Volume to Capacity	0.01	0.58	0.55	0.03	0.03							
Queue Length 95th (m)	0.2	29.4	25.7	0.7	0.9							
Control Delay (s)	17.0	21.9	22.8	1.3	4.3							
Lane LOS	C	C	C	A	A							
Approach Delay (s)	21.9		22.8	1.3	4.3							
Approach LOS	C		C									
Intersection Summary												
Average Delay			14.0									
Intersection Capacity Utilization			54.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	97	2200	170	205	2926	174	121	142	169	113	67	31
Future Volume (vph)	97	2200	170	205	2926	174	121	142	169	113	67	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	115.0		75.0	155.0		85.0	45.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1572	1785	5079	1572	1733	1879	1581	1767	1879	1493
Flt Permitted	0.052			0.051			0.705			0.498		
Satd. Flow (perm)	98	5029	1508	96	5079	1508	1279	1879	1548	920	1879	1466
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126			109			107			67
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		310.7			586.1			253.5			312.8	
Travel Time (s)		16.0			30.1			18.3			22.5	
Confl. Peds. (#/hr)	10		10	10		10	6		9	9		6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	3%	0%	1%	1%	0%	7%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	2245	173	209	2986	178	123	145	172	115	68	32
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	38.0	38.0	11.0	38.0	38.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	11.0	73.0	73.0	11.0	73.0	73.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	8.5%	56.2%	56.2%	8.5%	56.2%	56.2%	35.4%	35.4%	35.4%	35.4%	35.4%	35.4%
Maximum Green (s)	7.0	66.0	66.0	7.0	66.0	66.0	39.0	39.0	39.0	39.0	39.0	39.0
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-1.7	-1.7	-3.0	-1.7	-1.7	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.3	5.3	1.0	5.3	5.3	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	91.5	75.4	75.4	103.2	86.1	86.1	21.8	21.8	21.8	21.8	21.8	21.8
Actuated g/C Ratio	0.70	0.58	0.58	0.79	0.66	0.66	0.17	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.45	0.77	0.19	0.57	0.89	0.17	0.57	0.46	0.49	0.75	0.22	0.11
Control Delay	25.8	24.0	5.2	36.1	18.9	7.4	59.3	52.2	23.1	78.3	46.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	24.0	5.2	36.1	18.9	7.4	59.3	52.2	23.1	78.3	46.1	1.4
LOS	C	C	A	D	B	A	E	D	C	E	D	A
Approach Delay		22.8			19.3			42.8			56.7	
Approach LOS		C			B			D			E	
Queue Length 50th (m)	8.1	160.9	5.3	46.0	134.5	10.6	30.9	35.7	15.4	29.9	16.0	0.0
Queue Length 95th (m)	27.0	208.8	18.1	m45.5	m132.8	m10.4	48.5	53.0	35.8	48.9	27.9	1.3
Internal Link Dist (m)		286.7			562.1			229.5			288.8	
Turn Bay Length (m)	115.0		75.0	155.0		85.0	45.0			45.0		
Base Capacity (vph)	222	2916	927	368	3363	1035	413	607	572	297	607	518
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	0.45	0.77	0.19	0.57	0.89	0.17	0.30	0.24	0.30	0.39	0.11	0.06

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 3 (2%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 23.5 Intersection LOS: C
 Intersection Capacity Utilization 99.7% ICU Level of Service F
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Eighth Line & Dundas Street E



Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

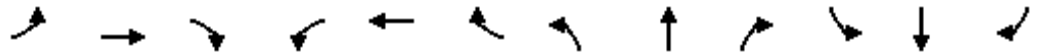
01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	2115	161	193	2988	286	154	2	83	282	11	154
Future Volume (vph)	220	2115	161	193	2988	286	154	2	83	282	11	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	120.0		75.0	125.0		85.0	65.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	4980	1572	1767	5051	1597	1785	1544	0	1785	1879	1597
Flt Permitted	0.062			0.065			0.750			0.661		
Satd. Flow (perm)	116	4980	1451	121	5051	1548	1409	1544	0	1235	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			140			188		85				143
Link Speed (k/h)		70			70			50				50
Link Distance (m)		586.1			572.2			226.5				193.9
Travel Time (s)		30.1			29.4			16.3				14.0
Confl. Peds. (#/hr)	3		16	16		3			3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	1%	1%	0%	0%	0%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	2158	164	197	3049	292	157	87	0	288	11	157
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	4	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		6.5	10.0	10.0
Minimum Split (s)	11.0	26.8	26.8	11.0	26.8	26.8	23.5	23.5		11.0	22.5	22.5
Total Split (s)	17.0	79.5	79.5	16.0	78.5	78.5	23.5	23.5		11.0	34.5	34.5
Total Split (%)	13.1%	61.2%	61.2%	12.3%	60.4%	60.4%	18.1%	18.1%		8.5%	26.5%	26.5%
Maximum Green (s)	13.0	72.7	72.7	12.0	71.7	71.7	19.0	19.0		7.0	30.0	30.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.5	3.5		3.0	3.5	3.5
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.8	-1.8	-3.0	-1.8	0.0	-1.9	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	6.8	2.6	4.5		4.0	4.5	4.5

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

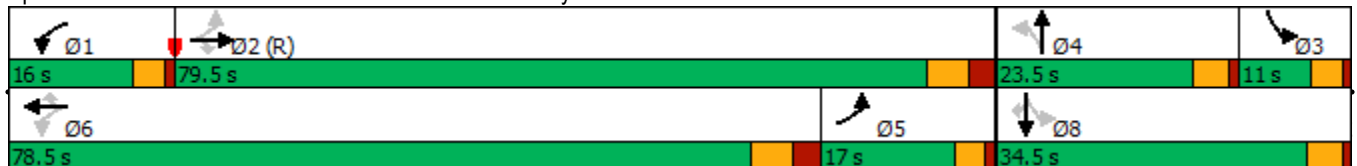


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0			0	0
Act Effct Green (s)	77.2	76.2	76.2	78.6	74.6	72.8	19.1	17.2		29.4	28.9	28.9
Actuated g/C Ratio	0.59	0.59	0.59	0.60	0.57	0.56	0.15	0.13		0.23	0.22	0.22
v/c Ratio	0.95	0.74	0.18	0.77	1.05	0.31	0.76	0.31		0.93	0.03	0.34
Control Delay	72.6	10.4	1.7	40.1	43.1	1.7	76.0	13.7		85.4	39.1	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	72.6	10.4	1.7	40.1	43.1	1.7	76.0	13.7		85.4	39.1	10.3
LOS	E	B	A	D	D	A	E	B		F	D	B
Approach Delay		15.3			39.5			53.8			58.4	
Approach LOS		B			D			D			E	
Queue Length 50th (m)	45.0	43.7	0.3	31.9	~343.0	8.2	40.5	0.5		71.4	2.3	3.0
Queue Length 95th (m)	m#82.2	67.3	m5.5	m32.4	m#339.7	m7.3	#70.4	16.1		#130.2	7.7	21.4
Internal Link Dist (m)		562.1			548.2			202.5			169.9	
Turn Bay Length (m)	120.0		75.0	125.0		85.0	65.0			15.0		15.0
Base Capacity (vph)	235	2919	908	263	2898	949	226	298		311	433	478
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.95	0.74	0.18	0.75	1.05	0.31	0.69	0.29		0.93	0.03	0.33

Intersection Summary






























Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 11.8 (9%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 32.2 Intersection LOS: C
 Intersection Capacity Utilization 103.5% 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: 6: Prince Michael Drive/John McKay Boulevard & Dundas Street E



Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	125	2229	133	185	3418	130	43	0	139	134	0	74
Future Volume (vph)	125	2229	133	185	3418	130	43	0	139	134	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1572	1785	5051	1201	1785	1879	1597	1428	1879	1597
Flt Permitted	0.045			0.049			0.757			0.757		
Satd. Flow (perm)	85	5029	1512	92	5051	1173	1422	1879	1574	1135	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136			80			105			95
Link Speed (k/h)		70			70			50				50
Link Distance (m)		572.2			334.1			216.4				176.0
Travel Time (s)		29.4			17.2			15.6				12.7
Confl. Peds. (#/hr)	1		5	5		1			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	1%	33%	0%	0%	0%	25%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	2274	136	189	3488	133	44	0	142	137	0	76
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4				8
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.7	26.7	9.0	28.4	28.4	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	16.0	95.0	95.0	12.0	91.0	91.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	12.3%	73.1%	73.1%	9.2%	70.0%	70.0%	17.7%	17.7%	17.7%	17.7%	17.7%	17.7%
Maximum Green (s)	12.0	88.3	88.3	8.0	84.3	84.3	18.5	18.5	18.5	18.5	18.5	18.5
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	6.7	2.6	4.5	2.6	4.5	4.5	4.5

Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

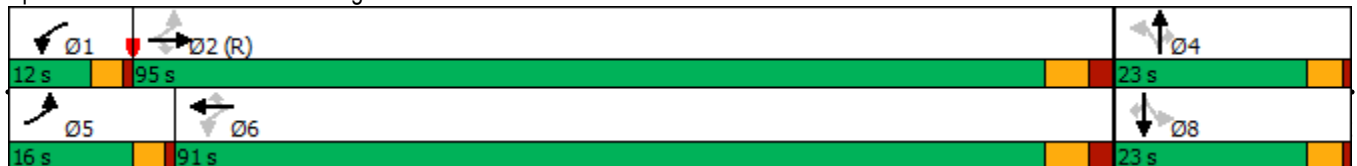


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	101.2	90.5	90.5	104.0	89.2	87.5	19.6		19.6	17.7		17.7
Actuated g/C Ratio	0.78	0.70	0.70	0.80	0.69	0.67	0.15		0.15	0.14		0.14
v/c Ratio	0.67	0.65	0.12	0.86	1.01	0.16	0.21		0.44	0.89		0.25
Control Delay	39.4	22.7	3.5	38.0	42.0	7.2	50.6		20.0	103.4		7.9
Queue Delay	0.0	0.0	0.0	0.0	1.6	0.0	0.0		0.0	0.0		0.0
Total Delay	39.4	22.7	3.5	38.0	43.6	7.2	50.6		20.0	103.4		7.9
LOS	D	C	A	D	D	A	D		B	F		A
Approach Delay		22.5			42.1			27.2				69.3
Approach LOS		C			D			C				E
Queue Length 50th (m)	13.2	210.2	5.6	30.6	~361.7	9.6	10.4		8.7	36.6		0.0
Queue Length 95th (m)	m25.3	227.2	m6.8	m29.5	m#329.4	m9.6	22.4		29.4	#74.6		9.9
Internal Link Dist (m)		548.2			310.1			192.4				152.0
Turn Bay Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Base Capacity (vph)	224	3502	1094	220	3464	815	223		335	161		308
Starvation Cap Reductn	0	0	0	0	19	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.57	0.65	0.12	0.86	1.01	0.16	0.20		0.42	0.85		0.25

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 75 (58%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 35.2 Intersection LOS: D
 Intersection Capacity Utilization 98.3% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Meadowridge Drive & Dundas Street E



Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

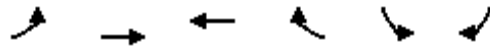
01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑↑	↑↑↑	↗	↘	↘
Traffic Volume (vph)	154	2385	3755	273	215	137
Future Volume (vph)	154	2385	3755	273	215	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	100.0			85.0	45.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1785	5002	5079	1541	1733	1536
Flt Permitted	0.042				0.950	
Satd. Flow (perm)	79	5002	5079	1499	1714	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				219		78
Link Speed (k/h)		70	70		50	
Link Distance (m)		334.1	505.1		180.3	
Travel Time (s)		17.2	26.0		13.0	
Confl. Peds. (#/hr)	2			2	5	
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	1%	2%	3%	4%
Bus Blockages (#/hr)	0	4	0	4	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	154	2385	3755	273	215	137
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
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	1.01	1.02	1.01	1.04	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	20.0	20.0	20.0	10.0	10.0
Minimum Split (s)	9.0	24.5	24.5	24.5	22.5	22.5
Total Split (s)	11.0	107.5	96.5	96.5	22.5	22.5
Total Split (%)	8.5%	82.7%	74.2%	74.2%	17.3%	17.3%
Maximum Green (s)	7.0	103.0	92.0	92.0	18.0	18.0
Yellow Time (s)	3.0	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.5	4.5	4.5	4.5

Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	Max	Max	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	103.8	103.3	92.0	92.0	17.7	17.7
Actuated g/C Ratio	0.80	0.79	0.71	0.71	0.14	0.14
v/c Ratio	0.97	0.60	1.04	0.24	0.91	0.50
Control Delay	79.8	18.6	48.3	2.0	95.6	30.1
Queue Delay	0.0	0.0	19.2	0.0	0.0	95.1
Total Delay	79.8	18.6	67.6	2.0	95.6	125.2
LOS	E	B	E	A	F	F
Approach Delay		22.3	63.1		107.2	
Approach LOS		C	E		F	
Queue Length 50th (m)	24.2	188.1	~401.7	4.0	57.8	14.5
Queue Length 95th (m)	m#69.0	203.5	#422.7	12.3	#105.3	36.0
Internal Link Dist (m)		310.1	481.1		156.3	
Turn Bay Length (m)	100.0			85.0	45.0	
Base Capacity (vph)	158	3974	3594	1124	239	279
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	150	0	0	226
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.60	1.09	0.24	0.90	2.58

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 50.4
 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: 10: Dundas Street E & William Cutmore Blvd



Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	2094	279	151	2802	180	413	949	513	146	399	170
Future Volume (vph)	148	2094	279	151	2802	180	413	949	513	146	399	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1497	1733	5079	1541	1750	3535	1521	1767	3500	1597
Flt Permitted	0.052			0.052			0.373			0.134		
Satd. Flow (perm)	98	5029	1477	95	5079	1520	687	3535	1521	249	3500	1576
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177			105			87			104
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		505.1			255.3			487.3			810.8	
Travel Time (s)		26.0			13.1			29.2			48.6	
Confl. Peds. (#/hr)	1		1	1		1	1					1
Confl. Bikes (#/hr)												
Peak Hour 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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	3%	1%	2%	2%	1%	5%	1%	2%	0%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	2094	279	151	2802	180	413	949	513	146	399	170
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	45.3	45.3	9.0	45.3	45.3	9.0	47.5	47.5	9.0	47.5	47.5
Total Split (s)	10.0	80.0	80.0	10.0	80.0	80.0	22.0	62.0	62.0	9.0	48.0	48.0
Total Split (%)	6.2%	49.7%	49.7%	6.2%	49.7%	49.7%	13.7%	38.5%	38.5%	5.6%	29.8%	29.8%
Maximum Green (s)	6.0	73.7	73.7	6.0	73.7	73.7	18.0	55.5	55.5	5.0	41.5	41.5
Yellow Time (s)	3.0	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)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

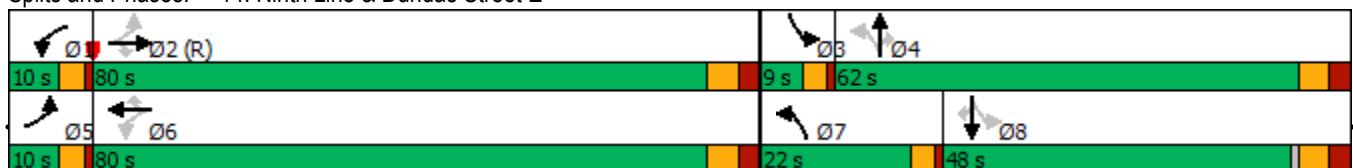


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	91.0	75.2	75.2	91.8	75.8	75.8	66.4	53.4	53.4	52.4	40.4	40.4
Actuated g/C Ratio	0.57	0.47	0.47	0.57	0.47	0.47	0.41	0.33	0.33	0.33	0.25	0.25
v/c Ratio	0.83	0.89	0.36	0.83	1.17	0.23	0.98	0.81	0.91	0.94	0.45	0.36
Control Delay	70.2	45.2	10.8	71.9	120.8	11.3	78.0	55.1	63.9	91.9	52.2	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.2	45.2	10.8	71.9	120.8	11.3	78.0	55.1	63.9	91.9	52.2	20.8
LOS	E	D	B	E	F	B	E	E	E	F	D	C
Approach Delay		42.9			112.1			62.5			52.8	
Approach LOS		D			F			E			D	
Queue Length 50th (m)	~33.7	233.5	19.5	~38.7	~413.9	14.0	102.2	148.6	138.3	30.1	58.4	17.0
Queue Length 95th (m)	#84.7	255.6	42.1	#88.9	#437.2	30.6	#173.9	175.8	#205.3	#67.2	75.5	39.2
Internal Link Dist (m)		481.1			231.3			463.3			786.8	
Turn Bay Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Base Capacity (vph)	179	2347	783	181	2390	771	421	1251	594	156	956	506
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	0.83	0.89	0.36	0.83	1.17	0.23	0.98	0.76	0.86	0.94	0.42	0.34

Intersection Summary

Area Type: Other
 Cycle Length: 161
 Actuated Cycle Length: 161
 Offset: 12 (7%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.17
 Intersection Signal Delay: 74.5 Intersection LOS: E
 Intersection Capacity Utilization 117.5% 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: 14: Ninth Line & Dundas Street E



Appendix E

2016 TTS Data Analysis

Mode of Transportation - AM Peak Period

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

Filters:

Primary travel mode of trip - mode_prime In B
and

2006 GTA zone of household - gta06_hhld In 4033
and

Start time of trip - start_time In 600-900

	C	D	G	J	M	P	T	U	W
		3034	4035						

Trip 2016

Table:

Mode of Transportation/Traffic Zones	4033	4035	Total	Percentage
Transit excluding GO rail	45	37	82	1%
Auto driver	3712	1277	4989	68%
GO rail only	314	67	381	5%
Joint GO rail and local transit	33	15	48	1%
Auto passenger	1025	190	1215	17%
Walk	448	129	577	8%
Total	5577	1715	7292	100%

Mode of Transportation - PM Peak Period

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

Filters:

Primary travel mode of trip - mode_prime In B
and

2006 GTA zone of household - gta06_hhld In 4033

and

Start time of trip - start_time In 1600-1900

Trip 2016

Table:





























Mode of Transportation/Traffic Zones	4033	4035	Total	Percentage
Transit excluding GO rail	54	17	71	1%
Cycle	0	17	17	0%
Auto driver	3374	1255	4629	74%
GO rail only	307	67	374	6%
Joint GO rail and local transit	21	25	46	1%
Auto passenger	912	129	1041	17%
Taxi passenger	19	0	19	0%
Walk	43	10	53	1%
Total	4730	1520	6250	100%

Appendix F

Future Total Level of Service Calculations

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	76	2524	130	123	1764	72	102	56	141	198	106	62
Future Volume (vph)	76	2524	130	123	1764	72	102	56	141	198	106	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	115.0		75.0	155.0		85.0	45.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1082	4980	1526	1785	4706	1469	1700	1740	1566	1767	1824	956
Flt Permitted	0.081			0.050			0.626			0.720		
Satd. Flow (perm)	92	4980	1473	94	4706	1436	1117	1740	1539	1333	1824	942
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81			72			119			67
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		310.7			586.1			253.5			312.8	
Travel Time (s)		16.0			30.1			18.3			22.5	
Confl. Peds. (#/hr)	1		7	7		1	3		5	5		3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	65%	3%	3%	0%	9%	7%	5%	8%	2%	1%	3%	67%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	2576	133	126	1800	73	104	57	144	202	108	63
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	38.0	38.0	11.5	38.0	38.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	11.7	70.2	70.2	11.7	70.2	70.2	48.1	48.1	48.1	48.1	48.1	48.1
Total Split (%)	9.0%	54.0%	54.0%	9.0%	54.0%	54.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Maximum Green (s)	7.7	63.2	63.2	7.7	63.2	63.2	41.1	41.1	41.1	41.1	41.1	41.1
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-2.0	-2.0	-3.0	-2.0	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	95.9	78.6	78.6	95.9	78.6	78.6	28.1	28.1	28.1	28.1	28.1	28.1
Actuated g/C Ratio	0.74	0.60	0.60	0.74	0.60	0.60	0.22	0.22	0.22	0.22	0.22	0.22
v/c Ratio	0.46	0.86	0.14	0.52	0.63	0.08	0.43	0.15	0.34	0.70	0.27	0.25
Control Delay	21.7	26.3	6.6	19.6	21.9	6.7	48.0	39.5	11.9	59.3	42.3	10.0
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	21.7	26.3	6.6	19.6	21.9	6.7	48.0	39.5	11.9	59.3	42.3	10.0
LOS	C	C	A	B	C	A	D	D	B	E	D	A
Approach Delay		25.3			21.2			29.4				46.1
Approach LOS		C			C			C				D
Queue Length 50th (m)	5.1	196.5	5.4	11.9	123.6	3.6	24.4	12.5	5.4	50.7	24.5	0.0
Queue Length 95th (m)	21.5	#300.6	18.5	33.3	162.9	14.7	39.4	22.6	21.6	72.2	38.0	10.6
Internal Link Dist (m)		286.7			562.1			229.5				288.8
Turn Bay Length (m)	115.0		75.0	155.0		85.0	45.0			45.0		
Base Capacity (vph)	170	3010	922	243	2844	896	378	590	600	452	618	363
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	0.46	0.86	0.14	0.52	0.63	0.08	0.28	0.10	0.24	0.45	0.17	0.17

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 23 (18%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 25.4 Intersection LOS: C
 Intersection Capacity Utilization 85.5% 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: 3: Eighth Line & Dundas Street E



Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	2651	123	97	1570	122	118	3	146	431	14	221
Future Volume (vph)	92	2651	123	97	1570	122	118	3	146	431	14	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	120.0		75.0	125.0		85.0	65.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1623	5029	1497	1750	4724	1465	1716	1565	0	1785	1879	1413
Flt Permitted	0.130			0.054			0.748			0.315		
Satd. Flow (perm)	222	5029	1456	99	4724	1431	1343	1565	0	591	1879	1387
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			124			97			52
Link Speed (k/h)		70			70			50				50
Link Distance (m)		586.1			572.2			226.5				194.2
Travel Time (s)		30.1			29.4			16.3				14.0
Confl. Peds. (#/hr)	1		2	2		1	3		1	1		3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	2%	5%	2%	8%	9%	4%	0%	1%	0%	0%	13%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	2705	126	99	1602	124	120	152	0	440	14	226
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)		3.5			3.5			3.5				3.5
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases		2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	1	6	6	4	4		3	8	8
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		7.0	10.0	10.0
Minimum Split (s)	25.2	25.2	25.2	11.0	25.2	25.2	22.5	22.5		11.0	24.3	24.3
Total Split (s)	72.0	72.0	72.0	11.0	83.0	83.0	23.0	23.0		24.0	47.0	47.0
Total Split (%)	55.4%	55.4%	55.4%	8.5%	63.8%	63.8%	17.7%	17.7%		18.5%	36.2%	36.2%
Maximum Green (s)	66.8	66.8	66.8	7.0	77.8	77.8	18.7	18.7		20.0	42.7	42.7
Yellow Time (s)	4.2	4.2	4.2	3.0	4.2	4.2	3.3	3.3		3.0	3.3	3.3
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-0.2	-0.2	-3.0	-0.2	0.0	-3.3	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.2	5.0	5.0	1.0	5.0	5.2	1.0	4.3		4.0	4.3	4.3

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

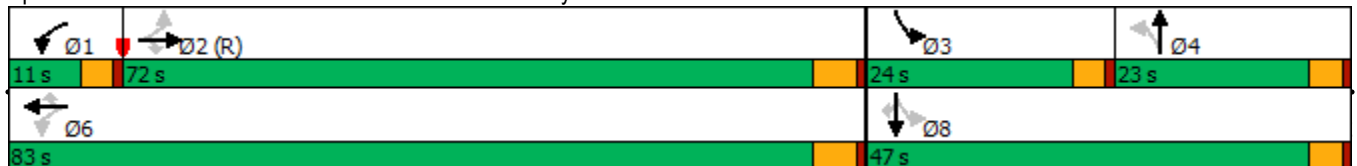


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max	None	None		None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0			0	0
Act Effct Green (s)	69.6	69.8	69.8	85.1	81.1	80.9	18.9	15.6		39.9	39.6	39.6
Actuated g/C Ratio	0.54	0.54	0.54	0.65	0.62	0.62	0.15	0.12		0.31	0.30	0.30
v/c Ratio	0.80	1.00	0.15	0.51	0.54	0.13	0.62	0.56		1.21	0.02	0.49
Control Delay	46.1	35.3	1.4	41.3	7.9	0.3	65.4	28.6		151.9	30.2	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	46.1	35.3	1.4	41.3	7.9	0.3	65.4	28.6		151.9	30.2	31.5
LOS	D	D	A	D	A	A	E	C		F	C	C
Approach Delay		34.2			9.2			44.8			109.4	
Approach LOS		C			A			D			F	
Queue Length 50th (m)	23.1	~289.7	4.9	13.7	50.2	0.2	30.4	13.6		~115.2	2.6	37.6
Queue Length 95th (m)	m#33.5	#321.4	m0.5	32.9	56.0	0.3	51.4	35.9		#177.0	7.6	62.1
Internal Link Dist (m)		562.1			548.2			202.5			170.2	
Turn Bay Length (m)	120.0		75.0	125.0		85.0	65.0			15.0		15.0
Base Capacity (vph)	118	2698	817	195	2945	937	227	308		365	617	490
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.80	1.00	0.15	0.51	0.54	0.13	0.53	0.49		1.21	0.02	0.46

Intersection Summary





























Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 60 (46%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.21
 Intersection Signal Delay: 35.7
 Intersection LOS: D
 Intersection Capacity Utilization 104.8%
 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: 6: Prince Michael Drive/John McKay Boulevard & Dundas Street E



Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	35	3100	78	103	1618	53	57	0	268	215	0	93
Future Volume (vph)	35	3100	78	103	1618	53	57	0	268	215	0	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1069	5029	1572	1684	4724	1117	1750	1879	1597	1069	1879	1597
Flt Permitted	0.138			0.045			0.757			0.757		
Satd. Flow (perm)	155	5029	1535	80	4724	1051	1394	1879	1597	852	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66			54			118			65
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		572.2			334.1			216.4			176.9	
Travel Time (s)		29.4			17.2			15.6			12.7	
Confl. Peds. (#/hr)	11		1	1		11						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	67%	2%	0%	6%	8%	43%	2%	0%	0%	67%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	3163	80	105	1651	54	58	0	273	219	0	95
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			4				8
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	1	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.7	26.7	26.7	11.5	28.4	28.4	24.9	24.9	24.9	24.9	24.9	24.9
Total Split (s)	90.0	90.0	90.0	14.0	104.0	104.0	26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	69.2%	69.2%	69.2%	10.8%	80.0%	80.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	83.3	83.3	83.3	10.0	97.3	97.3	19.1	19.1	19.1	19.1	19.1	19.1
Yellow Time (s)	4.2	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	3.6	3.6	3.6	3.6	3.6	3.6
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	6.9	6.9	6.9

Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

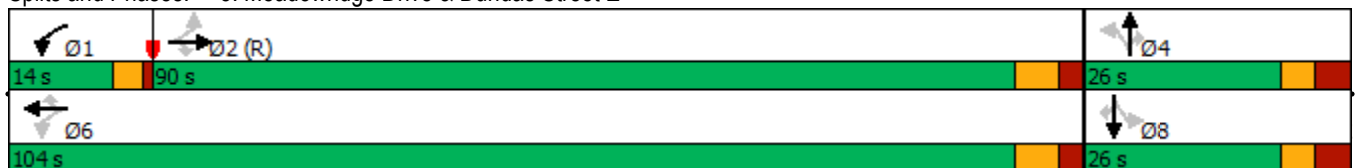


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (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
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	84.8	86.5	86.5	103.0	99.0	97.3	21.0		21.0	19.1		19.1
Actuated g/C Ratio	0.65	0.67	0.67	0.79	0.76	0.75	0.16		0.16	0.15		0.15
v/c Ratio	0.36	0.95	0.08	0.51	0.46	0.07	0.26		0.77	1.75		0.33
Control Delay	6.8	8.8	0.3	34.7	3.2	0.2	51.2		44.4	401.9		22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		8.5	4.5		0.0
Total Delay	6.8	8.8	0.3	34.7	3.2	0.2	51.2		52.9	406.4		22.4
LOS	A	A	A	C	A	A	D		D	F		C
Approach Delay		8.6			4.9			52.6				290.2
Approach LOS		A			A			D				F
Queue Length 50th (m)	2.0	62.6	0.2	7.1	7.8	0.1	13.9		40.9	~87.6		7.1
Queue Length 95th (m)	m2.1	m60.3	m0.2	m23.4	8.5	m0.0	27.9		#81.1	#139.7		23.9
Internal Link Dist (m)		548.2			310.1			192.4				152.9
Turn Bay Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Base Capacity (vph)	100	3344	1043	223	3597	800	225		356	125		290
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		55	23		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.36	0.95	0.08	0.47	0.46	0.07	0.26		0.91	2.15		0.33

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 70 (54%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.75
 Intersection Signal Delay: 25.4 Intersection LOS: C
 Intersection Capacity Utilization 102.5% 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: 8: Meadowridge Drive & Dundas Street E



Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑↑	↑↑↑	↗	↖	↗
Traffic Volume (vph)	87	3566	1627	129	281	181
Future Volume (vph)	87	3566	1627	129	281	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	100.0			85.0	45.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1638	5002	4794	1469	1733	1342
Flt Permitted	0.123				0.950	
Satd. Flow (perm)	212	5002	4794	1469	1733	1342
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				132		64
Link Speed (k/h)		70	70		50	
Link Distance (m)		334.1	505.1		180.3	
Travel Time (s)		17.2	26.0		13.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	9%	2%	7%	7%	3%	19%
Bus Blockages (#/hr)	0	4	0	4	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	3639	1660	132	287	185
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
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	1.01	1.02	1.01	1.04	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	10.0
Minimum Split (s)	24.5	24.5	24.5	24.5	22.5	22.5
Total Split (s)	106.0	106.0	106.0	106.0	24.0	24.0
Total Split (%)	81.5%	81.5%	81.5%	81.5%	18.5%	18.5%
Maximum Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5

Lanes, Volumes, Timings

10: Dundas Street E & William Cutmore Blvd

01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Max	C-Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	101.5	101.5	101.5	101.5	19.5	19.5
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.15	0.15
v/c Ratio	0.54	0.93	0.44	0.11	1.11	0.73
Control Delay	18.0	25.0	2.7	0.3	138.1	51.3
Queue Delay	0.0	2.0	0.0	0.0	0.0	0.0
Total Delay	18.0	27.0	2.7	0.3	138.1	51.3
LOS	B	C	A	A	F	D
Approach Delay		26.8	2.5		104.1	
Approach LOS		C	A		F	
Queue Length 50th (m)	12.5	319.7	20.0	0.1	~88.0	31.6
Queue Length 95th (m)	m15.8	m327.2	m24.7	m0.4	#146.2	#65.8
Internal Link Dist (m)		310.1	481.1		156.3	
Turn Bay Length (m)	100.0			85.0	45.0	
Base Capacity (vph)	165	3905	3743	1175	259	255
Starvation Cap Reductn	0	161	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	0.54	0.97	0.44	0.11	1.11	0.73

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 25.6 Intersection LOS: C
 Intersection Capacity Utilization 92.0% ICU Level of Service F
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

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































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

Splits and Phases: 10: Dundas Street E & William Cutmore Blvd



Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	169	3140	420	123	1290	131	189	375	162	250	822	182
Future Volume (vph)	169	3140	420	123	1290	131	189	375	162	250	822	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1750	5029	1526	1733	4706	1497	1668	3368	1551	1750	3466	1581
Flt Permitted	0.124			0.067			0.129			0.440		
Satd. Flow (perm)	228	5029	1526	122	4706	1497	227	3368	1551	811	3466	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			194			134			142			137
Link Speed (k/h)		70			70			60				60
Link Distance (m)		505.1			255.3			487.3				810.8
Travel Time (s)		26.0			13.1			29.2				48.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	9%	5%	7%	6%	3%	2%	3%	1%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	3204	429	126	1316	134	193	383	165	255	839	186
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)		3.5			3.5			3.5				3.5
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	11.0	45.3	45.3	11.0	45.3	45.3	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (s)	11.0	60.0	60.0	11.0	60.0	60.0	11.0	48.0	48.0	11.0	48.0	48.0
Total Split (%)	8.5%	46.2%	46.2%	8.5%	46.2%	46.2%	8.5%	36.9%	36.9%	8.5%	36.9%	36.9%
Maximum Green (s)	7.0	53.7	53.7	7.0	53.7	53.7	7.0	41.5	41.5	7.0	41.5	41.5
Yellow Time (s)	3.0	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)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

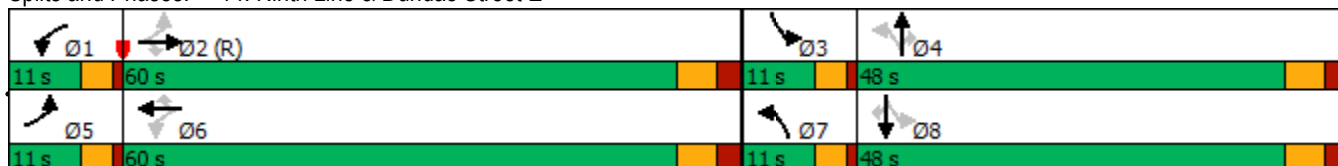


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	73.8	58.2	58.2	72.8	57.6	57.6	52.6	38.6	38.6	52.6	38.6	38.6
Actuated g/C Ratio	0.57	0.45	0.45	0.56	0.44	0.44	0.40	0.30	0.30	0.40	0.30	0.30
v/c Ratio	0.64	1.42	0.54	0.61	0.63	0.18	0.96	0.38	0.29	0.64	0.82	0.33
Control Delay	24.7	221.4	17.7	35.5	30.2	4.3	81.0	36.9	8.6	34.7	49.3	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	221.4	17.7	35.5	30.2	4.3	81.0	36.9	8.6	34.7	49.3	11.5
LOS	C	F	B	D	C	A	F	D	A	C	D	B
Approach Delay		189.6			28.4			42.1			40.9	
Approach LOS		F			C			D			D	
Queue Length 50th (m)	24.1	~440.1	40.2	16.1	102.6	0.0	33.7	42.6	4.4	46.0	109.2	9.5
Queue Length 95th (m)	m27.1	m#459.6	m48.4	#43.9	119.7	12.5	#76.0	55.2	20.5	65.1	129.7	27.7
Internal Link Dist (m)		481.1			231.3			463.3			786.8	
Turn Bay Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Base Capacity (vph)	267	2252	790	207	2086	738	202	1114	608	400	1146	614
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	0.64	1.42	0.54	0.61	0.63	0.18	0.96	0.34	0.27	0.64	0.73	0.30

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.42
 Intersection Signal Delay: 114.8 Intersection LOS: F
 Intersection Capacity Utilization 115.7% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Ninth Line & Dundas Street E



HCM Unsignalized Intersection Capacity Analysis
 12: Eighth Line/Threshing Mill Blvd & Wheat Boom Drive

01-16-2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	81	27	88	223	71	16	46	20	14	58	4
Future Volume (Veh/h)	2	81	27	88	223	71	16	46	20	14	58	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	2	83	28	90	228	72	16	47	20	14	59	4
Pedestrians		13										
Lane Width (m)		3.5										
Walking Speed (m/s)		1.2										
Percent Blockage		1										
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)								313				
pX, platoon unblocked												
vC, conflicting volume	377	201	74	248	193	57	76			67		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	377	201	74	248	193	57	76			67		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	99	88	97	85	67	93	99			99		
cM capacity (veh/h)	389	671	983	611	681	1015	1482			1535		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	2	111	390	83	77							
Volume Left	2	0	90	16	14							
Volume Right	0	28	72	20	4							
cSH	389	729	705	1482	1535							
Volume to Capacity	0.01	0.15	0.55	0.01	0.01							
Queue Length 95th (m)	0.1	4.3	27.3	0.3	0.2							
Control Delay (s)	14.3	10.8	16.2	1.5	1.4							
Lane LOS	B	B	C	A	A							
Approach Delay (s)	10.9		16.2	1.5	1.4							
Approach LOS	B		C									
Intersection Summary												
Average Delay			11.8									
Intersection Capacity Utilization			42.5%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	2524	130	123	1764	72	102	56	141	198	106	62
Future Volume (vph)	76	2524	130	123	1764	72	102	56	141	198	106	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	115.0		75.0	155.0		85.0	45.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1082	4980	1526	1785	4706	1469	1700	1740	1566	1767	1824	956
Flt Permitted	0.081			0.050			0.626			0.720		
Satd. Flow (perm)	92	4980	1473	94	4706	1436	1117	1740	1539	1333	1824	942
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81			72			119			67
Link Speed (k/h)		70			70			50				50
Link Distance (m)		310.7			586.1			253.5				312.8
Travel Time (s)		16.0			30.1			18.3				22.5
Confl. Peds. (#/hr)	1		7	7		1	3		5	5		3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	65%	3%	3%	0%	9%	7%	5%	8%	2%	1%	3%	67%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	2576	133	126	1800	73	104	57	144	202	108	63
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)		3.5			3.5			3.5				3.5
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	38.0	38.0	11.5	38.0	38.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	11.7	70.2	70.2	11.7	70.2	70.2	48.1	48.1	48.1	48.1	48.1	48.1
Total Split (%)	9.0%	54.0%	54.0%	9.0%	54.0%	54.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Maximum Green (s)	7.7	63.2	63.2	7.7	63.2	63.2	41.1	41.1	41.1	41.1	41.1	41.1
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-2.0	-2.0	-3.0	-2.0	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	95.9	78.6	78.6	95.9	78.6	78.6	28.1	28.1	28.1	28.1	28.1	28.1
Actuated g/C Ratio	0.74	0.60	0.60	0.74	0.60	0.60	0.22	0.22	0.22	0.22	0.22	0.22
v/c Ratio	0.46	0.86	0.14	0.52	0.63	0.08	0.43	0.15	0.34	0.70	0.27	0.25
Control Delay	21.7	26.3	6.6	29.3	19.3	3.8	48.0	39.5	11.9	59.3	42.3	10.0
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	21.7	26.3	6.6	29.3	19.3	3.8	48.0	39.5	11.9	59.3	42.3	10.0
LOS	C	C	A	C	B	A	D	D	B	E	D	A
Approach Delay		25.3			19.4			29.4			46.1	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	5.1	196.5	5.4	14.8	106.5	0.1	24.4	12.5	5.4	50.7	24.5	0.0
Queue Length 95th (m)	21.5	#300.6	18.5	37.3	159.4	8.2	39.4	22.6	21.6	72.2	38.0	10.6
Internal Link Dist (m)		286.7			562.1			229.5			288.8	
Turn Bay Length (m)	115.0		75.0	155.0		85.0	45.0			45.0		
Base Capacity (vph)	170	3010	922	243	2844	896	378	590	600	452	618	363
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	0.46	0.86	0.14	0.52	0.63	0.08	0.28	0.10	0.24	0.45	0.17	0.17

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 23 (18%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 24.8
 Intersection LOS: C
 Intersection Capacity Utilization 85.5%
 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: 3: Eighth Line & Dundas Street E



Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	92	2651	123	97	1570	122	118	3	146	431	14	221
Future Volume (vph)	92	2651	123	97	1570	122	118	3	146	431	14	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	120.0		75.0	125.0		85.0	65.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1623	5029	1497	1750	4724	1465	1716	1565	0	1785	1879	1413
Flt Permitted	0.118			0.053			0.748			0.295		
Satd. Flow (perm)	202	5029	1455	98	4724	1430	1342	1565	0	554	1879	1387
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			124			74			48
Link Speed (k/h)		70			70			50				50
Link Distance (m)		586.1			572.2			226.5				194.2
Travel Time (s)		30.1			29.4			16.3				14.0
Confl. Peds. (#/hr)	1		2	2		1	3		1	1		3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	2%	5%	2%	8%	9%	4%	0%	1%	0%	0%	13%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	2705	126	99	1602	124	120	152	0	440	14	226
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)		3.5			3.5			3.5				3.5
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases		2		1	6			4		3		8
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	1	6	6	4	4		3		8
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	4.0	20.0	20.0	10.0	10.0		4.0	10.0	10.0
Minimum Split (s)	25.2	25.2	25.2	8.0	25.2	25.2	22.5	22.5		8.0	24.3	24.3
Total Split (s)	76.0	76.0	76.0	8.0	84.0	84.0	23.0	23.0		33.0	56.0	56.0
Total Split (%)	54.3%	54.3%	54.3%	5.7%	60.0%	60.0%	16.4%	16.4%		23.6%	40.0%	40.0%
Maximum Green (s)	70.8	70.8	70.8	4.0	78.8	78.8	18.7	18.7		29.0	51.7	51.7
Yellow Time (s)	4.2	4.2	4.2	3.0	4.2	4.2	3.3	3.3		3.0	3.3	3.3
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-0.2	-0.2	-3.0	-0.2	0.0	-3.3	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.2	5.0	5.0	1.0	5.0	5.2	1.0	4.3		4.0	4.3	4.3

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max	None	None		None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0			0	0
Act Effct Green (s)	71.9	72.1	72.1	85.6	81.6	81.4	19.4	16.1		49.4	49.1	49.1
Actuated g/C Ratio	0.51	0.52	0.52	0.61	0.58	0.58	0.14	0.12		0.35	0.35	0.35
v/c Ratio	0.91	1.05	0.16	0.62	0.58	0.14	0.65	0.62		0.98	0.02	0.44
Control Delay	101.9	64.4	8.8	38.4	19.8	2.6	73.1	41.0		76.9	28.6	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	101.9	64.4	8.8	38.4	19.8	2.6	73.1	41.0		76.9	28.6	29.5
LOS	F	E	A	D	B	A	E	D		E	C	C
Approach Delay		63.3			19.7			55.2			60.2	
Approach LOS		E			B			E			E	
Queue Length 50th (m)	24.7	~316.7	7.9	11.9	106.5	0.0	33.1	21.3		107.8	2.6	38.6
Queue Length 95th (m)	#64.7	#343.2	19.4	#40.3	123.5	9.2	55.1	45.7		#167.2	7.7	62.7
Internal Link Dist (m)		562.1			548.2			202.5			170.2	
Turn Bay Length (m)	120.0		75.0	125.0		85.0	65.0			15.0		15.0
Base Capacity (vph)	103	2588	783	160	2754	883	210	273		450	693	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.91	1.05	0.16	0.62	0.58	0.14	0.57	0.56		0.98	0.02	0.42

Intersection Summary





























Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 60 (43%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 48.5 Intersection LOS: D
 Intersection Capacity Utilization 104.4% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Prince Michael Drive/John McKay Boulevard & Dundas Street E



Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	35	3100	78	103	1618	53	57	0	268	215	0	93
Future Volume (vph)	35	3100	78	103	1618	53	57	0	268	215	0	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1069	5029	1572	1684	4724	1117	1750	1879	1597	1069	1879	1597
Flt Permitted	0.123			0.043			0.757			0.616		
Satd. Flow (perm)	138	5029	1534	76	4724	1044	1394	1879	1597	693	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87			57			102			56
Link Speed (k/h)		70			70			50				50
Link Distance (m)		572.2			334.1			216.4				176.9
Travel Time (s)		29.4			17.2			15.6				12.7
Confl. Peds. (#/hr)	11		1	1		11						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	67%	2%	0%	6%	8%	43%	2%	0%	0%	67%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	3163	80	105	1651	54	58	0	273	219	0	95
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm		Perm	pm+pt		Perm
Protected Phases		2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	1	6	6	4	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0	4.0	20.0	20.0	10.0	10.0	10.0	4.0	10.0	10.0
Minimum Split (s)	26.7	26.7	26.7	8.0	28.4	28.4	24.9	24.9	24.9	8.0	24.9	24.9
Total Split (s)	95.0	95.0	95.0	10.0	105.0	105.0	25.0	25.0	25.0	20.0	45.0	45.0
Total Split (%)	63.3%	63.3%	63.3%	6.7%	70.0%	70.0%	16.7%	16.7%	16.7%	13.3%	30.0%	30.0%
Maximum Green (s)	88.3	88.3	88.3	6.0	98.3	98.3	18.1	18.1	18.1	16.0	38.1	38.1
Yellow Time (s)	4.2	4.2	4.2	3.0	4.2	4.2	3.3	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	3.6	3.6	3.6	1.0	3.6	3.6
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.0	5.0	1.0	5.0	6.7	5.0	6.9	5.0	4.0	6.9	6.9

Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

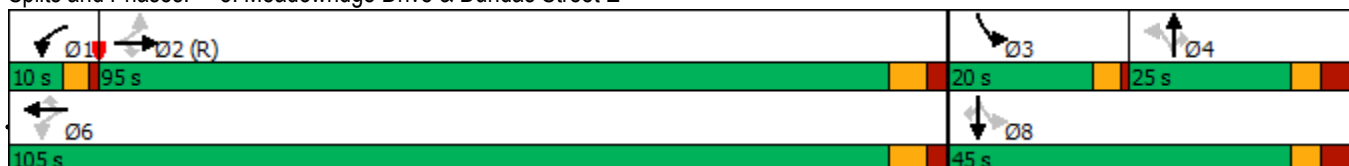


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0		0	0
Act Effct Green (s)	88.7	90.4	90.4	104.6	100.6	98.9	19.4		19.4	40.4		37.5
Actuated g/C Ratio	0.59	0.60	0.60	0.70	0.67	0.66	0.13		0.13	0.27		0.25
v/c Ratio	0.44	1.04	0.08	0.70	0.52	0.08	0.32		0.93	0.97		0.22
Control Delay	38.4	59.0	2.2	51.7	13.3	2.2	64.4		75.9	103.5		21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	38.4	59.0	2.2	51.7	13.3	2.2	64.4		75.9	103.5		21.1
LOS	D	E	A	D	B	A	E		E	F		C
Approach Delay		57.4			15.2			73.9				78.6
Approach LOS		E			B			E				E
Queue Length 50th (m)	6.0	~393.3	0.0	16.5	90.9	0.0	16.7		55.2	63.1		9.4
Queue Length 95th (m)	21.0	#414.9	6.2	#45.4	102.3	4.8	31.9		#110.2	#122.8		25.6
Internal Link Dist (m)		548.2			310.1			192.4				152.9
Turn Bay Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Base Capacity (vph)	81	3030	959	151	3167	707	185		301	226		447
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.44	1.04	0.08	0.70	0.52	0.08	0.31		0.91	0.97		0.21

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 70 (47%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 46.2 Intersection LOS: D
 Intersection Capacity Utilization 100.1% 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: 8: Meadowridge Drive & Dundas Street E



Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

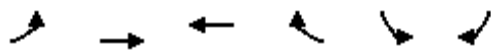
01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	87	3566	1627	129	281	181
Future Volume (vph)	87	3566	1627	129	281	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	100.0			85.0	45.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1638	5002	4794	1469	1733	1342
Flt Permitted	0.119				0.950	
Satd. Flow (perm)	205	5002	4794	1469	1733	1342
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				132		51
Link Speed (k/h)		70	70		50	
Link Distance (m)		334.1	505.1		180.3	
Travel Time (s)		17.2	26.0		13.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	9%	2%	7%	7%	3%	19%
Bus Blockages (#/hr)	0	4	0	4	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	3639	1660	132	287	185
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
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	1.01	1.02	1.01	1.04	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	10.0
Minimum Split (s)	24.5	24.5	24.5	24.5	22.5	22.5
Total Split (s)	106.0	106.0	106.0	106.0	34.0	34.0
Total Split (%)	75.7%	75.7%	75.7%	75.7%	24.3%	24.3%
Maximum Green (s)	101.5	101.5	101.5	101.5	29.5	29.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5

Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

01-07-2024

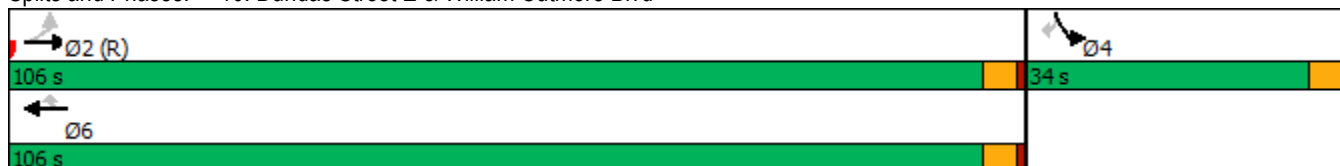


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Max	C-Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	104.3	104.3	104.3	104.3	26.7	26.7
Actuated g/C Ratio	0.74	0.74	0.74	0.74	0.19	0.19
v/c Ratio	0.59	0.98	0.46	0.12	0.87	0.62
Control Delay	28.0	27.7	7.7	1.1	80.1	46.5
Queue Delay	0.0	11.3	0.0	0.0	0.0	0.0
Total Delay	28.0	39.0	7.7	1.1	80.1	46.5
LOS	C	D	A	A	F	D
Approach Delay		38.7	7.2		66.9	
Approach LOS		D	A		E	
Queue Length 50th (m)	11.1	346.4	65.8	0.0	80.4	35.6
Queue Length 95th (m)	#44.1	#424.1	76.2	5.6	#122.4	62.1
Internal Link Dist (m)		310.1	481.1		156.3	
Turn Bay Length (m)	100.0			85.0	45.0	
Base Capacity (vph)	152	3727	3572	1128	365	323
Starvation Cap Reductn	0	175	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	0.59	1.02	0.46	0.12	0.79	0.57

Intersection Summary

























Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 31.5
 Intersection LOS: C
 Intersection Capacity Utilization 92.0%
 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: 10: Dundas Street E & William Cutmore Blvd



Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	3140	420	123	1290	131	189	375	162	250	822	182
Future Volume (vph)	169	3140	420	123	1290	131	189	375	162	250	822	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1750	5029	1526	1733	4706	1497	1668	3368	1551	1750	3466	1581
Flt Permitted	0.150			0.047			0.090			0.509		
Satd. Flow (perm)	276	5029	1526	86	4706	1497	158	3368	1551	938	3466	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			167			131			77			104
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		505.1			255.3			487.3			810.8	
Travel Time (s)		26.0			13.1			29.2			48.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour 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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	9%	5%	7%	6%	3%	2%	3%	1%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	169	3140	420	123	1290	131	189	375	162	250	822	182
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	20.0	20.0	4.0	20.0	20.0
Minimum Split (s)	8.0	45.3	45.3	8.0	45.3	45.3	8.0	47.5	47.5	8.0	47.5	47.5
Total Split (s)	8.0	89.0	89.0	8.0	89.0	89.0	15.0	55.0	55.0	8.0	48.0	48.0
Total Split (%)	5.0%	55.6%	55.6%	5.0%	55.6%	55.6%	9.4%	34.4%	34.4%	5.0%	30.0%	30.0%
Maximum Green (s)	4.0	82.7	82.7	4.0	82.7	82.7	11.0	48.5	48.5	4.0	41.5	41.5
Yellow Time (s)	3.0	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)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	96.1	84.0	84.0	96.1	84.0	84.0	60.9	48.9	48.9	52.9	41.9	41.9
Actuated g/C Ratio	0.60	0.52	0.52	0.60	0.52	0.52	0.38	0.31	0.31	0.33	0.26	0.26
v/c Ratio	0.70	1.19	0.48	0.91	0.52	0.15	0.98	0.36	0.31	0.72	0.91	0.37
Control Delay	32.7	124.2	15.6	90.8	25.8	3.2	102.7	44.4	23.1	55.4	71.2	22.3
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	32.7	124.2	15.6	90.8	25.8	3.2	102.7	44.4	23.1	55.4	71.2	22.3
LOS	C	F	B	F	C	A	F	D	C	E	E	C
Approach Delay		107.8			29.1			54.8			61.0	
Approach LOS		F			C			D			E	
Queue Length 50th (m)	24.1	~462.3	51.2	25.1	101.2	0.0	47.3	51.3	20.8	59.7	139.9	20.2
Queue Length 95th (m)	#41.8	#482.4	80.6	#72.2	115.2	10.9	#101.2	66.8	41.8	85.0	#170.1	43.8
Internal Link Dist (m)		481.1			231.3			463.3			786.8	
Turn Bay Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Base Capacity (vph)	240	2640	880	135	2470	848	192	1052	537	346	931	500
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	0.70	1.19	0.48	0.91	0.52	0.15	0.98	0.36	0.30	0.72	0.88	0.36

Intersection Summary





























Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 12 (8%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 77.7 Intersection LOS: E
 Intersection Capacity Utilization 115.7% 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: 14: Ninth Line & Dundas Street E



Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	106	2210	170	205	2938	174	121	146	169	113	69	31
Future Volume (vph)	106	2210	170	205	2938	174	121	146	169	113	69	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	115.0		75.0	155.0		85.0	45.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1572	1785	5079	1572	1733	1879	1581	1767	1879	1493
Flt Permitted	0.052			0.052			0.699			0.488		
Satd. Flow (perm)	98	5029	1508	98	5079	1508	1268	1879	1548	902	1879	1466
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126			109			107			67
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		310.7			586.1			253.5			312.8	
Travel Time (s)		16.0			30.1			18.3			22.5	
Confl. Peds. (#/hr)	10		10	10		10	6		9	9		6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	3%	0%	1%	1%	0%	7%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	2255	173	209	2998	178	123	149	172	115	70	32
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	38.0	38.0	11.0	38.0	38.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	11.0	73.0	73.0	11.0	73.0	73.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	8.5%	56.2%	56.2%	8.5%	56.2%	56.2%	35.4%	35.4%	35.4%	35.4%	35.4%	35.4%
Maximum Green (s)	7.0	66.0	66.0	7.0	66.0	66.0	39.0	39.0	39.0	39.0	39.0	39.0
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-1.7	-1.7	-3.0	-1.7	-1.7	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.3	5.3	1.0	5.3	5.3	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	91.9	75.3	75.3	103.1	85.5	85.5	21.9	21.9	21.9	21.9	21.9	21.9
Actuated g/C Ratio	0.71	0.58	0.58	0.79	0.66	0.66	0.17	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.47	0.77	0.19	0.57	0.90	0.17	0.58	0.47	0.49	0.76	0.22	0.11
Control Delay	27.8	24.2	5.2	34.9	18.9	7.4	59.3	52.4	23.0	80.1	46.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	24.2	5.2	34.9	18.9	7.4	59.3	52.4	23.0	80.1	46.1	1.4
LOS	C	C	A	C	B	A	E	D	C	F	D	A
Approach Delay		23.1			19.3			42.9				57.5
Approach LOS		C			B			D				E
Queue Length 50th (m)	10.4	162.5	5.3	45.5	136.2	10.6	30.9	36.7	15.4	29.9	16.5	0.0
Queue Length 95th (m)	29.8	210.4	18.1	m44.9 m#	136.0	m10.3	48.5	54.5	35.7	49.1	28.6	1.3
Internal Link Dist (m)		286.7			562.1			229.5				288.8
Turn Bay Length (m)	115.0		75.0	155.0		85.0	45.0			45.0		
Base Capacity (vph)	228	2912	926	369	3340	1029	409	607	572	291	607	518
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	0.47	0.77	0.19	0.57	0.90	0.17	0.30	0.25	0.30	0.40	0.12	0.06

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 3 (2%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 23.6 Intersection LOS: C
 Intersection Capacity Utilization 100.0% ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Eighth Line & Dundas Street E
































2032 Future Total PM Peak 6:05 pm 01-07-2024 Baseline

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

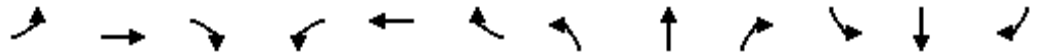
01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	230	2115	161	193	2988	304	154	2	83	293	11	166
Future Volume (vph)	230	2115	161	193	2988	304	154	2	83	293	11	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	120.0		75.0	125.0		85.0	65.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	4980	1572	1767	5051	1597	1785	1544	0	1785	1879	1597
Flt Permitted	0.063			0.066			0.750			0.661		
Satd. Flow (perm)	118	4980	1451	123	5051	1548	1409	1544	0	1235	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			140			199		85				143
Link Speed (k/h)		70			70			50				50
Link Distance (m)		586.1			572.2			226.5				193.9
Travel Time (s)		30.1			29.4			16.3				14.0
Confl. Peds. (#/hr)	3		16	16		3			3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	1%	1%	0%	0%	0%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	235	2158	164	197	3049	310	157	87	0	299	11	169
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	4	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		6.5	10.0	10.0
Minimum Split (s)	11.0	26.8	26.8	11.0	26.8	26.8	23.5	23.5		11.0	22.5	22.5
Total Split (s)	17.0	79.5	79.5	16.0	78.5	78.5	23.5	23.5		11.0	34.5	34.5
Total Split (%)	13.1%	61.2%	61.2%	12.3%	60.4%	60.4%	18.1%	18.1%		8.5%	26.5%	26.5%
Maximum Green (s)	13.0	72.7	72.7	12.0	71.7	71.7	19.0	19.0		7.0	30.0	30.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.5	3.5		3.0	3.5	3.5
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.8	-1.8	-3.0	-1.8	0.0	-1.9	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	6.8	2.6	4.5		4.0	4.5	4.5

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

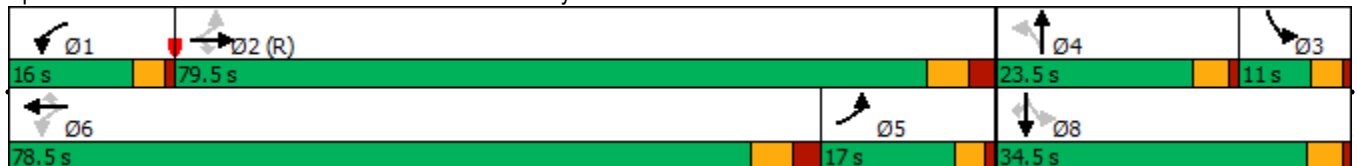


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0			0	0
Act Effct Green (s)	76.8	75.8	75.8	78.2	74.2	72.4	19.1	17.2		29.8	29.3	29.3
Actuated g/C Ratio	0.59	0.58	0.58	0.60	0.57	0.56	0.15	0.13		0.23	0.23	0.23
v/c Ratio	1.00	0.74	0.18	0.77	1.06	0.33	0.76	0.31		0.94	0.03	0.36
Control Delay	82.6	10.5	1.8	39.4	45.6	2.0	76.0	13.7		88.7	39.1	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	82.6	10.5	1.8	39.4	45.6	2.0	76.0	13.7		88.7	39.1	11.9
LOS	F	B	A	D	D	A	E	B		F	D	B
Approach Delay		16.5			41.4			53.8			60.5	
Approach LOS		B			D			D			E	
Queue Length 50th (m)	48.2	43.7	0.3	31.7	~341.1	9.7	40.5	0.5		74.7	2.3	5.5
Queue Length 95th (m)	m#88.7	68.0	m5.4	m33.8	m#350.6	m9.8	#70.4	16.1		#136.9	7.7	25.3
Internal Link Dist (m)		562.1			548.2			202.5			169.9	
Turn Bay Length (m)	120.0		75.0	125.0		85.0	65.0			15.0		15.0
Base Capacity (vph)	236	2904	904	264	2883	950	226	298		317	433	478
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.00	0.74	0.18	0.75	1.06	0.33	0.69	0.29		0.94	0.03	0.35

Intersection Summary






























Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 11.8 (9%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.06
 Intersection Signal Delay: 33.9 Intersection LOS: C
 Intersection Capacity Utilization 104.6% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Prince Michael Drive/John McKay Boulevard & Dundas Street E



Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	125	2240	133	185	3436	147	43	0	139	145	0	74
Future Volume (vph)	125	2240	133	185	3436	147	43	0	139	145	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1572	1785	5051	1201	1785	1879	1597	1428	1879	1597
Flt Permitted	0.045			0.048			0.757			0.757		
Satd. Flow (perm)	85	5029	1512	90	5051	1173	1422	1879	1574	1135	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136			102			90			80
Link Speed (k/h)		70			70			50				50
Link Distance (m)		572.2			334.1			216.4				176.0
Travel Time (s)		29.4			17.2			15.6				12.7
Confl. Peds. (#/hr)	1		5	5		1			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	1%	33%	0%	0%	0%	25%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	2286	136	189	3506	150	44	0	142	148	0	76
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)		3.5			3.5			3.5				3.5
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4				8
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	26.7	26.7	11.0	28.4	28.4	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	11.0	96.5	96.5	11.0	96.5	96.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	8.5%	74.2%	74.2%	8.5%	74.2%	74.2%	17.3%	17.3%	17.3%	17.3%	17.3%	17.3%
Maximum Green (s)	7.0	89.8	89.8	7.0	89.8	89.8	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	6.7	2.6	4.5	2.6	4.5	4.5	4.5

Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

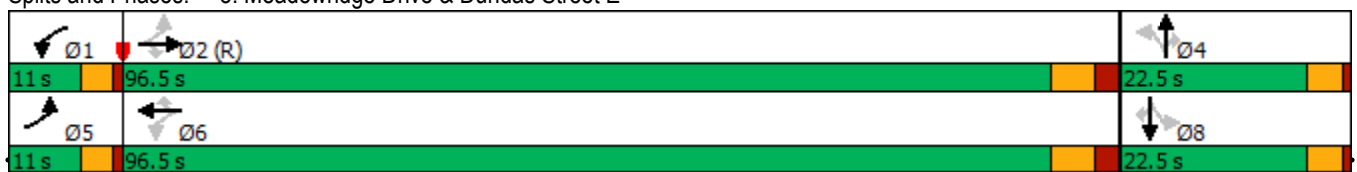


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	99.5	91.5	91.5	105.5	91.5	89.8	19.9		19.9	18.0		18.0
Actuated g/C Ratio	0.77	0.70	0.70	0.81	0.70	0.69	0.15		0.15	0.14		0.14
v/c Ratio	0.82	0.65	0.12	0.93	0.99	0.18	0.20		0.45	0.94		0.26
Control Delay	57.5	23.0	3.5	42.2	35.5	5.3	51.0		24.7	113.6		12.0
Queue Delay	0.0	0.0	0.0	0.0	7.5	0.0	0.0		0.0	0.0		0.0
Total Delay	57.5	23.0	3.5	42.2	43.0	5.3	51.0		24.7	113.6		12.0
LOS	E	C	A	D	D	A	D		C	F		B
Approach Delay		23.7			41.5			30.9				79.1
Approach LOS		C			D			C				E
Queue Length 50th (m)	14.8	210.4	5.4	30.7	337.7	8.2	10.5		12.4	40.1		0.0
Queue Length 95th (m)	m#33.5	m227.6	m6.8	m27.7	m313.5	m7.0	22.5		33.9	#83.7		13.7
Internal Link Dist (m)		548.2			310.1			192.4				152.0
Turn Bay Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Base Capacity (vph)	156	3539	1104	203	3555	841	217		317	157		290
Starvation Cap Reductn	0	0	0	0	108	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.82	0.65	0.12	0.93	1.02	0.18	0.20		0.45	0.94		0.26

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 75 (58%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 35.8 Intersection LOS: D
 Intersection Capacity Utilization 99.3% ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Meadowridge Drive & Dundas Street E



2032 Future Total PM Peak 6:05 pm 01-07-2024 Baseline

Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	154	2407	3790	290	226	137
Future Volume (vph)	154	2407	3790	290	226	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	100.0			85.0	45.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1785	5002	5079	1541	1733	1536
Flt Permitted	0.042				0.950	
Satd. Flow (perm)	79	5002	5079	1499	1714	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				227		78
Link Speed (k/h)		70	70		50	
Link Distance (m)		334.1	505.1		180.3	
Travel Time (s)		17.2	26.0		13.0	
Confl. Peds. (#/hr)	2			2	5	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	1%	2%	3%	4%
Bus Blockages (#/hr)	0	4	0	4	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	157	2456	3867	296	231	140
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
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	1.01	1.02	1.01	1.04	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	10.0	10.0
Minimum Split (s)	11.0	24.5	24.5	24.5	22.5	22.5
Total Split (s)	11.0	107.0	96.0	96.0	23.0	23.0
Total Split (%)	8.5%	82.3%	73.8%	73.8%	17.7%	17.7%
Maximum Green (s)	7.0	102.5	91.5	91.5	18.5	18.5
Yellow Time (s)	3.0	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.5	4.5	4.5	4.5

Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag		Lag	
Lead-Lag Optimize?	Yes		Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	Max	Max	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	103.0	102.5	91.5	91.5	18.5	18.5
Actuated g/C Ratio	0.79	0.79	0.70	0.70	0.14	0.14
v/c Ratio	1.02	0.62	1.08	0.26	0.94	0.49
Control Delay	92.4	19.6	54.8	0.1	98.8	30.1
Queue Delay	0.0	0.0	7.9	0.0	0.0	82.1
Total Delay	92.4	19.6	62.6	0.1	98.8	112.1
LOS	F	B	E	A	F	F
Approach Delay		24.0	58.2		103.8	
Approach LOS		C	E		F	
Queue Length 50th (m)	~24.3	193.8	~172.9	0.0	62.5	15.2
Queue Length 95th (m)	m#70.1	209.0	m61.2	m0.0	#114.1	37.0
Internal Link Dist (m)		310.1	481.1		156.3	
Turn Bay Length (m)	100.0			85.0	45.0	
Base Capacity (vph)	154	3943	3574	1122	246	285
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	93	0	0	203
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.62	1.11	0.26	0.94	1.71

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 48.0 Intersection LOS: D
 Intersection Capacity Utilization 105.1% 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: 10: Dundas Street E & William Cutmore Blvd



Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 		 	 	
Traffic Volume (vph)	148	2116	279	151	2854	180	413	949	513	146	399	170
Future Volume (vph)	148	2116	279	151	2854	180	413	949	513	146	399	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1497	1733	5079	1541	1750	3535	1521	1767	3500	1597
Flt Permitted	0.069			0.069			0.430			0.093		
Satd. Flow (perm)	130	5029	1477	126	5079	1521	792	3535	1521	173	3500	1576
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			201			97			133			124
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		505.1			255.3			487.3			810.8	
Travel Time (s)		26.0			13.1			29.2			48.6	
Confl. Peds. (#/hr)	1		1	1		1	1					1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	3%	1%	2%	2%	1%	5%	1%	2%	0%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	2159	285	154	2912	184	421	968	523	149	407	173
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	11.0	45.3	45.3	11.0	45.3	45.3	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (s)	11.0	60.0	60.0	11.0	60.0	60.0	11.0	48.0	48.0	11.0	48.0	48.0
Total Split (%)	8.5%	46.2%	46.2%	8.5%	46.2%	46.2%	8.5%	36.9%	36.9%	8.5%	36.9%	36.9%
Maximum Green (s)	7.0	53.7	53.7	7.0	53.7	53.7	7.0	41.5	41.5	7.0	41.5	41.5
Yellow Time (s)	3.0	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)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

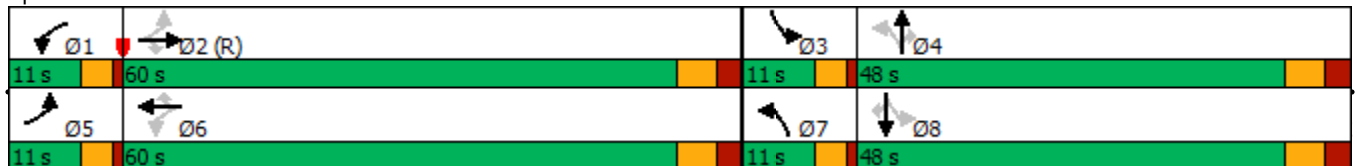


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	70.5	56.0	56.0	70.7	56.1	56.1	55.4	41.4	41.4	55.4	41.4	41.4
Actuated g/C Ratio	0.54	0.43	0.43	0.54	0.43	0.43	0.43	0.32	0.32	0.43	0.32	0.32
v/c Ratio	0.74	1.00	0.38	0.77	1.33	0.26	1.02	0.86	0.91	0.76	0.37	0.30
Control Delay	53.9	38.9	5.2	52.0	183.8	12.3	84.1	50.3	52.5	50.3	34.9	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	38.9	5.2	52.0	183.8	12.3	84.1	50.3	52.5	50.3	34.9	11.6
LOS	D	D	A	D	F	B	F	D	D	D	C	B
Approach Delay		36.0			167.9			58.3			32.5	
Approach LOS		D			F			E			C	
Queue Length 50th (m)	26.9	~162.0	3.8	24.7	~377.1	14.2	~81.4	126.4	104.3	23.9	43.6	9.1
Queue Length 95th (m)	m#55.1	#250.6	m13.2	#62.2	#403.5	30.9	#159.5	153.9	#172.5	#55.5	58.4	26.9
Internal Link Dist (m)		481.1			231.3			463.3			786.8	
Turn Bay Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Base Capacity (vph)	204	2164	749	199	2189	711	411	1169	592	196	1157	604
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	0.74	1.00	0.38	0.77	1.33	0.26	1.02	0.83	0.88	0.76	0.35	0.29

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 12 (9%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.33
 Intersection Signal Delay: 91.2 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Ninth Line & Dundas Street E



HCM Unsignalized Intersection Capacity Analysis
 12: Eighth Line/Threshing Mill Blvd & Wheat Boom Drive





























01-16-2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	279	27	57	148	44	41	78	172	45	34	4
Future Volume (Veh/h)	2	279	27	57	148	44	41	78	172	45	34	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	2	285	28	58	151	45	42	80	176	46	35	4
Pedestrians		2										
Lane Width (m)		3.5										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)								313				
pX, platoon unblocked												
vC, conflicting volume	504	471	39	552	385	168	41			256		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	504	471	39	552	385	168	41			256		
tC, single (s)	7.6	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	4.0	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	38	97	73	71	95	97			97		
cM capacity (veh/h)	287	460	1037	211	515	881	1579			1321		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	2	313	254	298	85							
Volume Left	2	0	58	42	46							
Volume Right	0	28	45	176	4							
cSH	287	485	410	1579	1321							
Volume to Capacity	0.01	0.65	0.62	0.03	0.03							
Queue Length 95th (m)	0.2	36.2	32.3	0.7	0.9							
Control Delay (s)	17.6	25.0	27.0	1.2	4.4							
Lane LOS	C	C	D	A	A							
Approach Delay (s)	24.9		27.0	1.2	4.4							
Approach LOS	C		D									
Intersection Summary												
Average Delay			16.2									
Intersection Capacity Utilization			57.0%		ICU Level of Service				B			
Analysis Period (min)			15									

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	106	2210	170	205	2938	174	121	146	169	113	69	31
Future Volume (vph)	106	2210	170	205	2938	174	121	146	169	113	69	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	115.0		75.0	155.0		85.0	45.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1572	1785	5079	1572	1733	1879	1581	1767	1879	1493
Flt Permitted	0.052			0.052			0.699			0.488		
Satd. Flow (perm)	98	5029	1508	98	5079	1508	1268	1879	1548	902	1879	1466
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126			109			107			67
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		310.7			586.1			253.5			312.8	
Travel Time (s)		16.0			30.1			18.3			22.5	
Confl. Peds. (#/hr)	10		10	10		10	6		9	9		6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	3%	0%	1%	1%	0%	7%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	2255	173	209	2998	178	123	149	172	115	70	32
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.01	1.04	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	38.0	38.0	11.0	38.0	38.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (s)	11.0	73.0	73.0	11.0	73.0	73.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	8.5%	56.2%	56.2%	8.5%	56.2%	56.2%	35.4%	35.4%	35.4%	35.4%	35.4%	35.4%
Maximum Green (s)	7.0	66.0	66.0	7.0	66.0	66.0	39.0	39.0	39.0	39.0	39.0	39.0
Yellow Time (s)	3.0	3.3	3.3	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	1.0	3.7	3.7	1.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lost Time Adjust (s)	-3.0	-1.7	-1.7	-3.0	-1.7	-1.7	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	1.0	5.3	5.3	1.0	5.3	5.3	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
3: Eighth Line & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0	32.0	32.0	32.0	32.0	32.0	32.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	91.9	75.3	75.3	103.1	85.5	85.5	21.9	21.9	21.9	21.9	21.9	21.9
Actuated g/C Ratio	0.71	0.58	0.58	0.79	0.66	0.66	0.17	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.47	0.77	0.19	0.57	0.90	0.17	0.58	0.47	0.49	0.76	0.22	0.11
Control Delay	27.8	24.2	5.2	34.5	24.6	4.9	59.3	52.4	23.0	80.1	46.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	24.2	5.2	34.5	24.6	4.9	59.3	52.4	23.0	80.1	46.1	1.4
LOS	C	C	A	C	C	A	E	D	C	F	D	A
Approach Delay		23.1			24.2			42.9				57.5
Approach LOS		C			C			D				E
Queue Length 50th (m)	10.4	162.5	5.3	33.5	223.1	6.0	30.9	36.7	15.4	29.9	16.5	0.0
Queue Length 95th (m)	29.8	210.4	18.1	63.3	#349.8	19.7	48.5	54.5	35.7	49.1	28.6	1.3
Internal Link Dist (m)		286.7			562.1			229.5				288.8
Turn Bay Length (m)	115.0		75.0	155.0		85.0	45.0			45.0		
Base Capacity (vph)	228	2912	926	369	3340	1029	409	607	572	291	607	518
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	0.47	0.77	0.19	0.57	0.90	0.17	0.30	0.25	0.30	0.40	0.12	0.06

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 3 (2%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 26.1 Intersection LOS: C
 Intersection Capacity Utilization 100.0% 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: 3: Eighth Line & Dundas Street E



Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	2115	161	193	2988	304	154	2	83	293	11	166
Future Volume (vph)	230	2115	161	193	2988	304	154	2	83	293	11	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	120.0		75.0	125.0		85.0	65.0		0.0	15.0		15.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	4980	1572	1767	5051	1597	1785	1543	0	1785	1879	1597
Flt Permitted	0.055			0.057			0.750			0.630		
Satd. Flow (perm)	103	4980	1444	106	5051	1547	1409	1543	0	1177	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146			191			85			153
Link Speed (k/h)		70			70			50				50
Link Distance (m)		586.1			572.2			226.5				193.9
Travel Time (s)		30.1			29.4			16.3				14.0
Confl. Peds. (#/hr)	3		16	16		3			3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	1%	1%	0%	0%	0%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	235	2158	164	197	3049	310	157	87	0	299	11	169
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)		3.5			3.5			3.5				3.5
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	4	4		3	8	8
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	5.0	5.0		4.0	10.0	10.0
Minimum Split (s)	8.0	26.8	26.8	8.0	26.8	26.8	22.5	22.5		9.0	22.5	22.5
Total Split (s)	19.0	92.0	92.0	13.0	86.0	86.0	23.0	23.0		12.0	35.0	35.0
Total Split (%)	13.6%	65.7%	65.7%	9.3%	61.4%	61.4%	16.4%	16.4%		8.6%	25.0%	25.0%
Maximum Green (s)	15.0	85.2	85.2	9.0	79.2	79.2	19.0	19.0		8.0	30.5	30.5
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.0		3.0	3.5	3.5
All-Red Time (s)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.8	-1.8	-3.0	-1.8	0.0	-1.9	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	6.8	2.1	4.0		4.0	4.5	4.5

Lanes, Volumes, Timings

6: Prince Michael Drive/John McKay Boulevard & Dundas Street E

01-07-2024

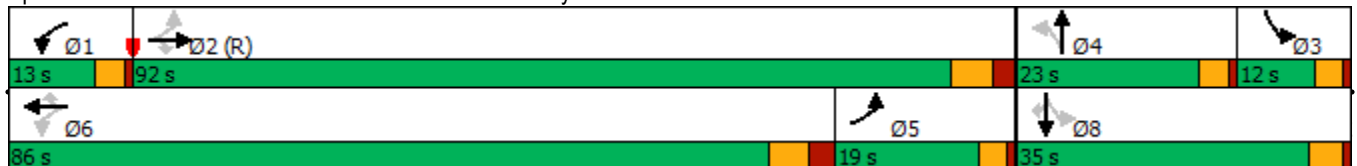


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0			0	0
Act Effct Green (s)	88.0	87.0	87.0	85.0	81.0	79.2	19.7	17.8		31.0	30.5	30.5
Actuated g/C Ratio	0.63	0.62	0.62	0.61	0.58	0.57	0.14	0.13		0.22	0.22	0.22
v/c Ratio	0.96	0.70	0.17	0.96	1.04	0.32	0.80	0.32		1.00	0.03	0.36
Control Delay	100.5	19.2	2.6	62.7	47.9	4.0	85.5	14.6		106.2	43.5	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	100.5	19.2	2.6	62.7	47.9	4.0	85.5	14.6		106.2	43.5	11.2
LOS	F	B	A	E	D	A	F	B		F	D	B
Approach Delay		25.6			44.9			60.2			71.2	
Approach LOS		C			D			E			E	
Queue Length 50th (m)	52.4	145.8	1.9	39.1	~361.8	16.1	44.4	0.5		~83.5	2.6	3.7
Queue Length 95th (m)	#107.7	162.3	11.0	m40.8m	#369.4	m16.6	#79.1	17.1		#152.0	8.2	23.7
Internal Link Dist (m)		562.1			548.2			202.5			169.9	
Turn Bay Length (m)	120.0		75.0	125.0		85.0	65.0			15.0		15.0
Base Capacity (vph)	244	3094	952	206	2922	958	210	282		300	409	467
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.96	0.70	0.17	0.96	1.04	0.32	0.75	0.31		1.00	0.03	0.36

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 11.8 (8%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 40.1 Intersection LOS: D
 Intersection Capacity Utilization 104.6% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Prince Michael Drive/John McKay Boulevard & Dundas Street E



Lanes, Volumes, Timings
8: Meadowridge Drive & Dundas Street E

01-07-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	2240	133	185	3436	147	43	0	139	145	0	74
Future Volume (vph)	125	2240	133	185	3436	147	43	0	139	145	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5029	1572	1785	5051	1201	1785	1879	1597	1428	1879	1597
Flt Permitted	0.040			0.051			0.757			0.757		
Satd. Flow (perm)	75	5029	1510	96	5051	1172	1422	1879	1574	1135	1879	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136			92			88			75
Link Speed (k/h)		70			70			50				50
Link Distance (m)		572.2			334.1			216.4				176.0
Travel Time (s)		29.4			17.2			15.6				12.7
Confl. Peds. (#/hr)	1		5	5		1			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	1%	33%	0%	0%	0%	25%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	4	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	2286	136	189	3506	150	44	0	142	148	0	76
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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.04	1.01	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4				8
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.7	26.7	9.0	28.4	28.4	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	15.0	106.0	106.0	11.0	102.0	102.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	10.7%	75.7%	75.7%	7.9%	72.9%	72.9%	16.4%	16.4%	16.4%	16.4%	16.4%	16.4%
Maximum Green (s)	11.0	99.3	99.3	7.0	95.3	95.3	18.5	18.5	18.5	18.5	18.5	18.5
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.7	-1.7	-3.0	-1.7	0.0	-1.9	0.0	-1.9	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	1.0	5.0	6.7	2.6	4.5	2.6	4.5	4.5	4.5

Lanes, Volumes, Timings

8: Meadowridge Drive & Dundas Street E

01-07-2024

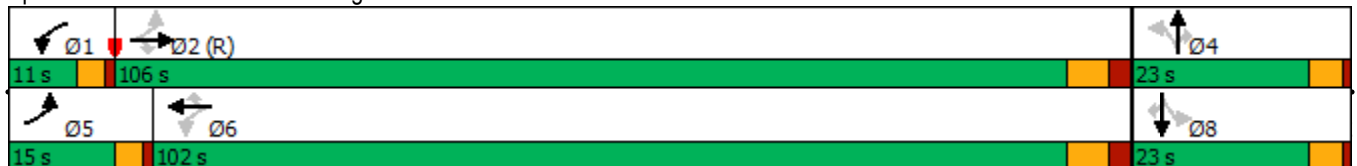


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	111.7	101.0	101.0	112.3	98.3	96.6	20.4		20.4	18.5		18.5
Actuated g/C Ratio	0.80	0.72	0.72	0.80	0.70	0.69	0.15		0.15	0.13		0.13
v/c Ratio	0.72	0.63	0.12	0.96	0.99	0.18	0.21		0.47	0.99		0.28
Control Delay	41.8	23.6	4.5	48.6	39.1	6.4	55.8		27.6	131.8		14.4
Queue Delay	0.0	0.0	0.0	0.0	37.5	0.0	0.0		0.0	0.0		0.0
Total Delay	41.8	23.6	4.5	48.6	76.6	6.4	55.8		27.6	131.8		14.4
LOS	D	C	A	D	E	A	E		C	F		B
Approach Delay		23.5			72.5			34.3				92.0
Approach LOS		C			E			C				F
Queue Length 50th (m)	15.2	216.4	9.1	32.8	~373.7	10.8	11.5		14.1	43.7		0.3
Queue Length 95th (m)	m32.5	m231.0	m13.7	m31.5	m359.7	m10.2	24.0		36.4	#90.1		15.7
Internal Link Dist (m)		548.2			310.1			192.4				152.0
Turn Bay Length (m)	80.0		80.0	140.0		70.0	25.0		25.0	15.0		15.0
Base Capacity (vph)	194	3628	1127	197	3547	837	207		304	149		276
Starvation Cap Reductn	0	0	0	0	338	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.66	0.63	0.12	0.96	1.09	0.18	0.21		0.47	0.99		0.28

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 75 (54%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 53.7 Intersection LOS: D
 Intersection Capacity Utilization 99.3% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Meadowridge Drive & Dundas Street E



Lanes, Volumes, Timings
10: Dundas Street E & William Cutmore Blvd

01-07-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	154	2407	3790	290	226	137
Future Volume (vph)	154	2407	3790	290	226	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	100.0			85.0	45.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1785	5002	5079	1541	1733	1536
Flt Permitted	0.038				0.950	
Satd. Flow (perm)	71	5002	5079	1498	1713	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				221		81
Link Speed (k/h)		70	70		50	
Link Distance (m)		334.1	505.1		180.3	
Travel Time (s)		17.2	26.0		13.0	
Confl. Peds. (#/hr)	2			2	5	
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	1%	2%	3%	4%
Bus Blockages (#/hr)	0	4	0	4	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	154	2407	3790	290	226	137
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
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	1.01	1.02	1.01	1.04	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	20.0	20.0	20.0	10.0	10.0
Minimum Split (s)	9.0	24.5	24.5	24.5	22.5	22.5
Total Split (s)	12.0	117.0	105.0	105.0	23.0	23.0
Total Split (%)	8.6%	83.6%	75.0%	75.0%	16.4%	16.4%
Maximum Green (s)	8.0	112.5	100.5	100.5	18.5	18.5
Yellow Time (s)	3.0	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5	4.5	4.5	4.5	4.5

Lanes, Volumes, Timings
 10: Dundas Street E & William Cutmore Blvd

01-07-2024

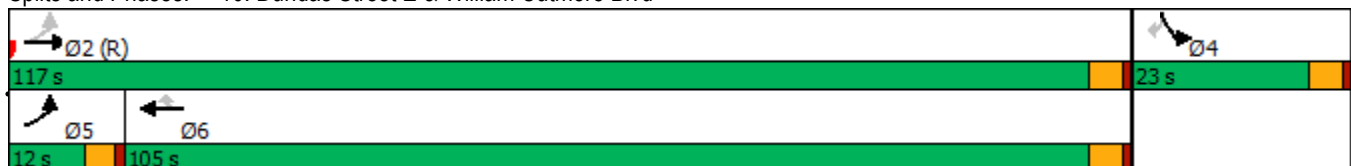


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	Max	Max	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	113.0	112.5	100.5	100.5	18.5	18.5
Actuated g/C Ratio	0.81	0.80	0.72	0.72	0.13	0.13
v/c Ratio	0.99	0.60	1.04	0.26	0.99	0.50
Control Delay	86.3	15.3	47.0	2.2	116.1	31.2
Queue Delay	0.0	0.0	25.6	0.0	0.0	92.0
Total Delay	86.3	15.3	72.6	2.2	116.1	123.2
LOS	F	B	E	A	F	F
Approach Delay		19.6	67.6		118.8	
Approach LOS		B	E		F	
Queue Length 50th (m)	30.4	158.3	~435.6	5.4	66.7	14.9
Queue Length 95th (m)	m#73.6	m183.5	#454.2	14.1	#121.8	37.8
Internal Link Dist (m)		310.1	481.1		156.3	
Turn Bay Length (m)	100.0			85.0	45.0	
Base Capacity (vph)	155	4019	3645	1137	229	273
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	386	0	0	215
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.60	1.16	0.26	0.99	2.36

Intersection Summary































Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 52.7
 Intersection LOS: D
 Intersection Capacity Utilization 105.1%
 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: 10: Dundas Street E & William Cutmore Blvd



Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	148	2116	279	151	2854	180	413	949	513	146	399	170
Future Volume (vph)	148	2116	279	151	2854	180	413	949	513	146	399	170
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1785	5293	1497	1733	5346	1541	1750	3721	1521	1767	3684	1597
Flt Permitted	0.051			0.051			0.376			0.128		
Satd. Flow (perm)	96	5293	1477	93	5346	1520	692	3721	1521	238	3684	1576
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182			106			77			104
Link Speed (k/h)		70			70			60				60
Link Distance (m)		505.1			255.3			487.3				810.8
Travel Time (s)		26.0			13.1			29.2				48.6
Confl. Peds. (#/hr)	1		1	1		1	1					1
Confl. Bikes (#/hr)												
Peak Hour 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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	3%	1%	2%	2%	1%	5%	1%	2%	0%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	2116	279	151	2854	180	413	949	513	146	399	170
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)		3.5			3.5			3.5			3.5	
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	1.01	0.95	1.04	1.01	0.95	1.04	1.01	0.95	1.01	1.01	0.95	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	9.0	45.3	45.3	9.0	45.3	45.3	9.0	47.5	47.5	9.0	47.5	47.5
Total Split (s)	9.0	82.0	82.0	9.0	82.0	82.0	21.0	60.0	60.0	9.0	48.0	48.0
Total Split (%)	5.6%	51.3%	51.3%	5.6%	51.3%	51.3%	13.1%	37.5%	37.5%	5.6%	30.0%	30.0%
Maximum Green (s)	5.0	75.7	75.7	5.0	75.7	75.7	17.0	53.5	53.5	5.0	41.5	41.5
Yellow Time (s)	3.0	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)	1.0	2.6	2.6	1.0	2.6	2.6	1.0	2.8	2.8	1.0	2.8	2.8
Lost Time Adjust (s)	-3.0	-1.3	-1.3	-3.0	-1.3	-1.3	-3.0	-1.5	-1.5	-3.0	-1.5	-1.5
Total Lost Time (s)	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0	1.0	5.0	5.0

Lanes, Volumes, Timings
14: Ninth Line & Dundas Street E

01-07-2024

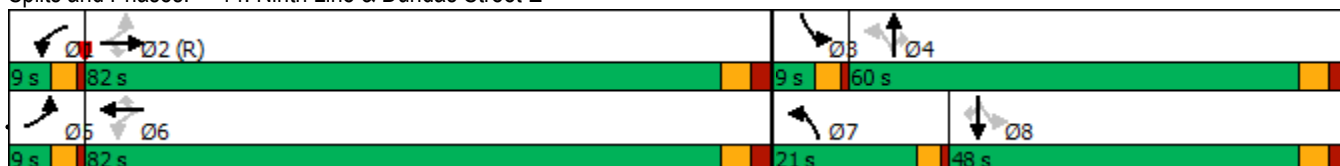


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (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
Time To Reduce (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
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	91.4	77.0	77.0	91.4	77.0	77.0	65.6	52.6	52.6	52.6	40.6	40.6
Actuated g/C Ratio	0.57	0.48	0.48	0.57	0.48	0.48	0.41	0.33	0.33	0.33	0.25	0.25
v/c Ratio	0.90	0.83	0.35	0.95	1.11	0.23	1.00	0.78	0.93	0.95	0.43	0.36
Control Delay	84.6	39.5	9.7	95.9	94.6	10.5	82.1	53.2	68.2	95.2	51.1	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.6	39.5	9.7	95.9	94.6	10.5	82.1	53.2	68.2	95.2	51.1	20.7
LOS	F	D	A	F	F	B	F	D	E	F	D	C
Approach Delay		38.9			89.9			63.7			52.9	
Approach LOS		D			F			E			D	
Queue Length 50th (m)	~37.7	220.9	17.8	~41.8	~398.2	13.3	103.4	147.5	143.3	30.5	58.1	17.0
Queue Length 95th (m)	#87.5	241.3	39.2	#91.6	#421.1	29.4	#181.3	173.8	#214.3	#69.6	75.1	39.5
Internal Link Dist (m)		481.1			231.3			463.3			786.8	
Turn Bay Length (m)	225.0		85.0	230.0		85.0	160.0		130.0	130.0		55.0
Base Capacity (vph)	164	2547	805	159	2572	786	415	1279	573	154	990	499
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	0.90	0.83	0.35	0.95	1.11	0.23	1.00	0.74	0.90	0.95	0.40	0.34

Intersection Summary

Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 12 (8%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 65.2 Intersection LOS: E
 Intersection Capacity Utilization 115.7% 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: 14: Ninth Line & Dundas Street E

























Appendix G

Sensitivity Analysis

Lanes, Volumes, Timings
3: Trafalgar Road & Burnhamthorpe Road E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	239	68	63	209	34	57	926	109	46	1126	72
Future Volume (vph)	101	239	68	63	209	34	57	926	109	46	1126	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	20.0		0.0	140.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1733	1789	0	1785	1808	0	1750	3327	0	1785	3280	0
Flt Permitted	0.602			0.255			0.176			0.161		
Satd. Flow (perm)	1098	1789	0	479	1808	0	324	3327	0	303	3280	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			9			13			9	
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		521.1			1922.6			766.3			1041.9	
Travel Time (s)		31.3			115.4			34.5			46.9	
Confl. Peds. (#/hr)							2					2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	0%	0%	2%	0%	2%	6%	2%	0%	8%	3%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	320	0	66	253	0	59	1079	0	48	1248	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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	29.0	29.0		11.0	29.0		29.0	29.0		11.0	29.0	
Total Split (s)	35.0	35.0		15.0	50.0		45.0	45.0		15.0	60.0	
Total Split (%)	31.8%	31.8%		13.6%	45.5%		40.9%	40.9%		13.6%	54.5%	
Maximum Green (s)	29.0	29.0		11.0	44.0		39.0	39.0		11.0	54.0	
Yellow Time (s)	3.3	3.3		3.0	3.3		4.6	4.6		3.0	4.6	
All-Red Time (s)	2.7	2.7		1.0	2.7		1.4	1.4		1.0	1.4	
Lost Time Adjust (s)	-3.0	-2.0		-3.0	-2.0		-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		1.0	4.0		3.0	3.0		1.0	3.0	

Lanes, Volumes, Timings
 3: Trafalgar Road & Burnhamthorpe Road E

01-07-2024

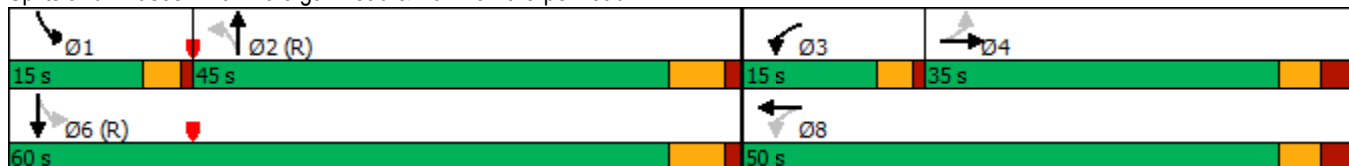


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
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	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	26.7	25.7		38.8	35.8		58.1	58.1		69.2	67.2	
Actuated g/C Ratio	0.24	0.23		0.35	0.33		0.53	0.53		0.63	0.61	
v/c Ratio	0.39	0.75		0.22	0.43		0.35	0.61		0.15	0.62	
Control Delay	38.1	48.3		22.3	28.5		28.7	22.8		11.5	16.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.1	48.3		22.3	28.5		28.7	22.8		11.5	16.9	
LOS	D	D		C	C		C	C		B	B	
Approach Delay		45.8			27.2			23.1			16.7	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	19.8	64.5		9.6	41.3		8.1	92.7		4.1	91.8	
Queue Length 95th (m)	34.3	90.3		16.9	56.9		24.5	137.2		10.8	137.0	
Internal Link Dist (m)		497.1			1898.6			742.3			1017.9	
Turn Bay Length (m)	30.0			20.0			140.0			120.0		
Base Capacity (vph)	321	516		335	761		171	1762		379	2007	
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	0.33	0.62		0.20	0.33		0.35	0.61		0.13	0.62	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	23.9
Intersection LOS:	C
Intersection Capacity Utilization:	77.6%
ICU Level of Service:	D
Analysis Period (min):	15

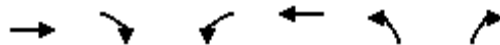
Splits and Phases: 3: Trafalgar Road & Burnhamthorpe Road E



HCM Unsignalized Intersection Capacity Analysis

6: Burnhamthorpe Road E & William Halton Pkwy

01-07-2024

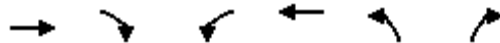


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (veh/h)	716	0	267	292	1	443
Future Volume (Veh/h)	716	0	267	292	1	443
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	823	0	307	336	1	509
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			823		1773	823
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			823		1773	823
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			62		98	0
cM capacity (veh/h)			807		57	373
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	823	643	510			
Volume Left	0	307	1			
Volume Right	0	0	509			
cSH	1700	807	369			
Volume to Capacity	0.48	0.38	1.38			
Queue Length 95th (m)	0.0	14.3	201.4			
Control Delay (s)	0.0	8.8	216.0			
Lane LOS		A	F			
Approach Delay (s)	0.0	8.8	216.0			
Approach LOS			F			
Intersection Summary						
Average Delay			58.6			
Intersection Capacity Utilization			105.3%	ICU Level of Service	G	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: John McKay Blvd & Burnhamthorpe Road E























01-07-2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	378	16	30	237	54	106
Future Volume (Veh/h)	378	16	30	237	54	106
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	411	17	33	258	59	115
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			428			420
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			428			420
tC, single (s)			4.1			6.2
tC, 2 stage (s)						
tF (s)			2.2			3.3
p0 queue free %			97			82
cM capacity (veh/h)			1142			634
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	428	291	174			
Volume Left	0	33	59			
Volume Right	17	0	115			
cSH	1700	1142	511			
Volume to Capacity	0.25	0.03	0.34			
Queue Length 95th (m)	0.0	0.7	12.0			
Control Delay (s)	0.0	1.2	15.6			
Lane LOS			A			C
Approach Delay (s)	0.0	1.2	15.6			
Approach LOS			C			
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			53.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Trafalgar Road & Burnhamthorpe Road E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	232	48	56	245	12	94	1409	118	18	857	116
Future Volume (vph)	77	232	48	56	245	12	94	1409	118	18	857	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	20.0		0.0	140.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1700	1771	0	1785	1859	0	1767	3461	0	1785	3415	0
Flt Permitted	0.596			0.291			0.250			0.064		
Satd. Flow (perm)	1066	1771	0	547	1859	0	465	3461	0	120	3415	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			3			9			20	
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		521.1			1922.6			766.3			1041.9	
Travel Time (s)		31.3			115.4			34.5			46.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	4%	0%	0%	0%	8%	1%	2%	1%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	288	0	58	265	0	97	1575	0	19	1004	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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	29.0	29.0		11.0	29.0		29.0	29.0		11.0	29.0	
Total Split (s)	35.0	35.0		15.0	50.0		45.0	45.0		15.0	60.0	
Total Split (%)	31.8%	31.8%		13.6%	45.5%		40.9%	40.9%		13.6%	54.5%	
Maximum Green (s)	29.0	29.0		11.0	44.0		39.0	39.0		11.0	54.0	
Yellow Time (s)	3.3	3.3		3.0	3.3		4.6	4.6		3.0	4.6	
All-Red Time (s)	2.7	2.7		1.0	2.7		1.4	1.4		1.0	1.4	
Lost Time Adjust (s)	-3.0	-2.0		-3.0	-2.0		-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		1.0	4.0		3.0	3.0		1.0	3.0	

Lanes, Volumes, Timings
 3: Trafalgar Road & Burnhamthorpe Road E

01-07-2024

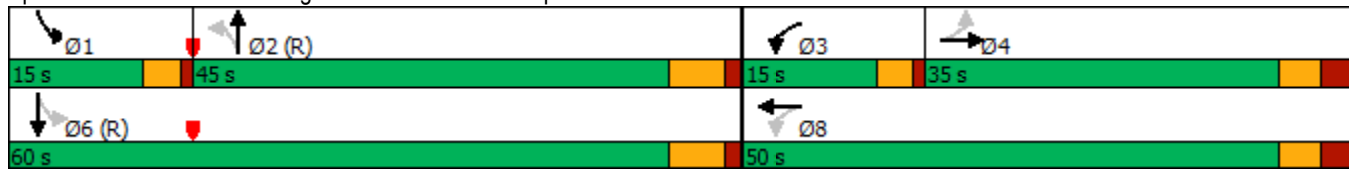


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
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	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	25.5	24.5		37.4	34.4		64.2	64.2		70.6	68.6	
Actuated g/C Ratio	0.23	0.22		0.34	0.31		0.58	0.58		0.64	0.62	
v/c Ratio	0.32	0.72		0.19	0.46		0.36	0.78		0.08	0.47	
Control Delay	36.9	48.0		22.5	30.8		22.7	24.5		10.9	13.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.9	48.0		22.5	30.8		22.7	24.5		10.9	13.3	
LOS	D	D		C	C		C	C		B	B	
Approach Delay		45.6			29.3			24.4			13.2	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	14.9	58.6		8.6	45.8		10.2	126.0		1.5	60.9	
Queue Length 95th (m)	27.0	81.6		15.5	60.8		34.6	#253.4		5.5	95.2	
Internal Link Dist (m)		497.1			1898.6			742.3			1017.9	
Turn Bay Length (m)	30.0			20.0			140.0			120.0		
Base Capacity (vph)	312	508		343	779		271	2024		288	2137	
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	0.25	0.57		0.17	0.34		0.36	0.78		0.07	0.47	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 23.8
 Intersection LOS: C
 Intersection Capacity Utilization 83.8%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

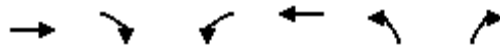
Splits and Phases: 3: Trafalgar Road & Burnhamthorpe Road E



HCM Unsignalized Intersection Capacity Analysis

6: Burnhamthorpe Road E & William Halton Pkwy

01-07-2024

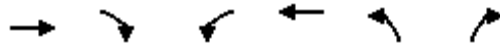


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (veh/h)	409	3	404	923	3	408
Future Volume (Veh/h)	409	3	404	923	3	408
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	435	3	430	982	3	434
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			438		2278	436
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			438		2278	436
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			62		89	30
cM capacity (veh/h)			1122		27	618
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	438	1412	437			
Volume Left	0	430	3			
Volume Right	3	0	434			
cSH	1700	1122	538			
Volume to Capacity	0.26	0.38	0.81			
Queue Length 95th (m)	0.0	14.6	63.6			
Control Delay (s)	0.0	9.5	34.4			
Lane LOS		A	D			
Approach Delay (s)	0.0	9.5	34.4			
Approach LOS			D			
Intersection Summary						
Average Delay			12.5			
Intersection Capacity Utilization			128.1%	ICU Level of Service	H	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: John McKay Blvd & Burnhamthorpe Road E























01-07-2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	337	63	91	316	39	71
Future Volume (Veh/h)	337	63	91	316	39	71
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	366	68	99	343	42	77
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			434			400
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			434			400
tC, single (s)			4.1			6.2
tC, 2 stage (s)						
tF (s)			2.2			3.3
p0 queue free %			91			88
cM capacity (veh/h)			1136			650
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	434	442	119			
Volume Left	0	99	42			
Volume Right	68	0	77			
cSH	1700	1136	431			
Volume to Capacity	0.26	0.09	0.28			
Queue Length 95th (m)	0.0	2.3	8.9			
Control Delay (s)	0.0	2.6	16.5			
Lane LOS			A	C		
Approach Delay (s)	0.0	2.6	16.5			
Approach LOS			C			
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization			59.8%	ICU Level of Service	B	
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Trafalgar Road & Burnhamthorpe Road E

01-07-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	241	68	63	213	34	57	926	109	46	1126	72
Future Volume (vph)	101	241	68	63	213	34	57	926	109	46	1126	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	20.0		0.0	140.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1733	1789	0	1785	1810	0	1750	3327	0	1785	3280	0
Flt Permitted	0.600			0.253			0.176			0.160		
Satd. Flow (perm)	1094	1789	0	475	1810	0	324	3327	0	301	3280	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			9			13			9	
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		521.1			1922.6			766.3			1041.9	
Travel Time (s)		31.3			115.4			34.5			46.9	
Confl. Peds. (#/hr)							2					2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	0%	0%	2%	0%	2%	6%	2%	0%	8%	3%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	322	0	66	257	0	59	1079	0	48	1248	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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	29.0	29.0		11.0	29.0		29.0	29.0		11.0	29.0	
Total Split (s)	35.0	35.0		15.0	50.0		45.0	45.0		15.0	60.0	
Total Split (%)	31.8%	31.8%		13.6%	45.5%		40.9%	40.9%		13.6%	54.5%	
Maximum Green (s)	29.0	29.0		11.0	44.0		39.0	39.0		11.0	54.0	
Yellow Time (s)	3.3	3.3		3.0	3.3		4.6	4.6		3.0	4.6	
All-Red Time (s)	2.7	2.7		1.0	2.7		1.4	1.4		1.0	1.4	
Lost Time Adjust (s)	-3.0	-2.0		-3.0	-2.0		-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		1.0	4.0		3.0	3.0		1.0	3.0	

Lanes, Volumes, Timings

3: Trafalgar Road & Burnhamthorpe Road E

01-07-2024

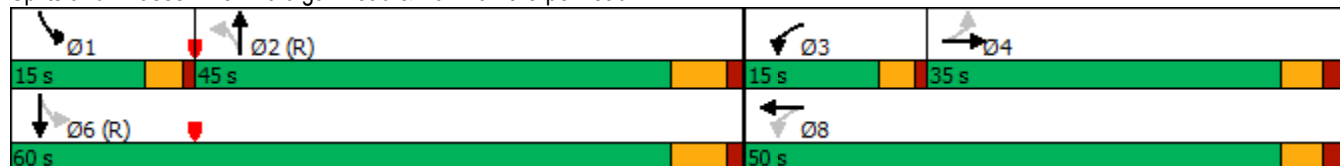


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
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				7.0
Flash Dont Walk (s)	16.0	16.0			16.0		16.0	16.0				16.0
Pedestrian Calls (#/hr)	0	0			0		0	0				0
Act Effct Green (s)	26.8	25.8		38.9	35.9		58.0	58.0		69.1	67.1	
Actuated g/C Ratio	0.24	0.23		0.35	0.33		0.53	0.53		0.63	0.61	
v/c Ratio	0.39	0.75		0.22	0.43		0.35	0.61		0.15	0.62	
Control Delay	38.1	48.3		22.3	28.6		28.7	22.9		11.5	17.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.1	48.3		22.3	28.6		28.7	22.9		11.5	17.0	
LOS	D	D		C	C		C	C		B	B	
Approach Delay		45.8			27.3			23.2			16.8	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	19.8	64.9		9.6	42.0		8.1	92.9		4.1	92.0	
Queue Length 95th (m)	34.3	91.0		16.9	57.7		24.5	137.2		10.8	137.0	
Internal Link Dist (m)		497.1			1898.6			742.3			1017.9	
Turn Bay Length (m)	30.0			20.0			140.0			120.0		
Base Capacity (vph)	320	516		334	762		170	1759		378	2005	
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	0.33	0.62		0.20	0.34		0.35	0.61		0.13	0.62	

Intersection Summary

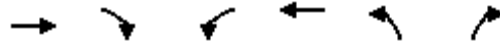
Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	24.0
Intersection LOS:	C
Intersection Capacity Utilization:	77.7%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 3: Trafalgar Road & Burnhamthorpe Road E



HCM Unsignalized Intersection Capacity Analysis
 6: Burnhamthorpe Road E & William Halton Pkwy

01-07-2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Volume (veh/h)	716	0	277	292	1	469
Future Volume (Veh/h)	716	0	277	292	1	469
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	823	0	318	336	1	539
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			823		1795	823
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			823		1795	823
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			61		98	0
cM capacity (veh/h)			807		54	373
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	823	654	540			
Volume Left	0	318	1			
Volume Right	0	0	539			
cSH	1700	807	369			
Volume to Capacity	0.48	0.39	1.46			
Queue Length 95th (m)	0.0	15.1	227.5			
Control Delay (s)	0.0	9.1	249.8			
Lane LOS		A	F			
Approach Delay (s)	0.0	9.1	249.8			
Approach LOS			F			
Intersection Summary						
Average Delay			69.8			
Intersection Capacity Utilization			107.5%	ICU Level of Service	G	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: John McKay Blvd & Burnhamthorpe Road E

















01-07-2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	378	18	40	237	60	132
Future Volume (Veh/h)	378	18	40	237	60	132
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	411	20	43	258	65	143
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			431			421
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			431			421
tC, single (s)			4.1			6.2
tC, 2 stage (s)						
tF (s)			2.2			3.3
p0 queue free %			96			77
cM capacity (veh/h)			1139			632
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	431	301	208			
Volume Left	0	43	65			
Volume Right	20	0	143			
cSH	1700	1139	510			
Volume to Capacity	0.25	0.04	0.41			
Queue Length 95th (m)	0.0	0.9	15.7			
Control Delay (s)	0.0	1.5	16.8			
Lane LOS			A	C		
Approach Delay (s)	0.0	1.5	16.8			
Approach LOS			C			
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			57.1%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: John McKay Blvd & Street D

01-07-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	32	17	35	3	7	80	12	80	15	15	15	12
Future Volume (vph)	32	17	35	3	7	80	12	80	15	15	15	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	18	38	3	8	87	13	87	16	16	16	13
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	91	98	116	45								
Volume Left (vph)	35	3	13	16								
Volume Right (vph)	38	87	16	13								
Hadj (s)	-0.17	-0.53	-0.06	-0.10								
Departure Headway (s)	4.2	3.8	4.3	4.3								
Degree Utilization, x	0.11	0.10	0.14	0.05								
Capacity (veh/h)	821	895	799	780								
Control Delay (s)	7.7	7.3	8.0	7.6								
Approach Delay (s)	7.7	7.3	8.0	7.6								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.7									
Level of Service			A									
Intersection Capacity Utilization			24.2%	ICU Level of Service	A							
Analysis Period (min)			15									

Lanes, Volumes, Timings

3: Trafalgar Road & Burnhamthorpe Road E

01-07-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	237	48	56	251	12	94	1409	118	18	857	116
Future Volume (vph)	77	237	48	56	251	12	94	1409	118	18	857	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	20.0		0.0	140.0		0.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1700	1773	0	1785	1859	0	1767	3461	0	1785	3415	0
Flt Permitted	0.593			0.287			0.249			0.065		
Satd. Flow (perm)	1061	1773	0	539	1859	0	463	3461	0	122	3415	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			3			9			20	
Link Speed (k/h)		60			60			80			80	
Link Distance (m)		521.1			1922.6			766.3			1041.9	
Travel Time (s)		31.3			115.4			34.5			46.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	4%	0%	0%	0%	8%	1%	2%	1%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	293	0	58	271	0	97	1575	0	19	1004	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)		3.5			3.5			3.5			3.5	
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	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	29.0	29.0		11.0	29.0		29.0	29.0		11.0	29.0	
Total Split (s)	35.0	35.0		15.0	50.0		45.0	45.0		15.0	60.0	
Total Split (%)	31.8%	31.8%		13.6%	45.5%		40.9%	40.9%		13.6%	54.5%	
Maximum Green (s)	29.0	29.0		11.0	44.0		39.0	39.0		11.0	54.0	
Yellow Time (s)	3.3	3.3		3.0	3.3		4.6	4.6		3.0	4.6	
All-Red Time (s)	2.7	2.7		1.0	2.7		1.4	1.4		1.0	1.4	
Lost Time Adjust (s)	-3.0	-2.0		-3.0	-2.0		-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	3.0	4.0		1.0	4.0		3.0	3.0		1.0	3.0	

Lanes, Volumes, Timings
3: Trafalgar Road & Burnhamthorpe Road E

01-07-2024

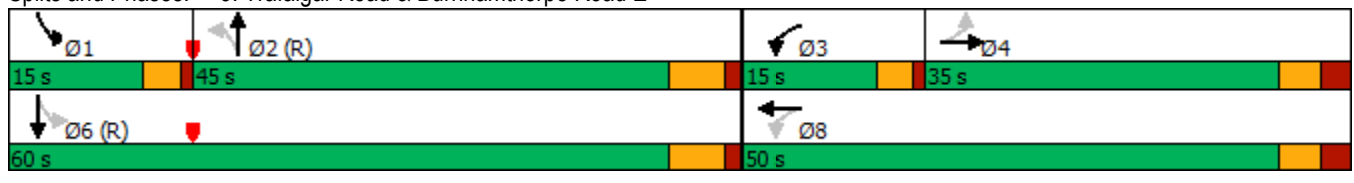


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
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	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	25.8	24.8		37.7	34.7		63.9	63.9		70.3	68.3	
Actuated g/C Ratio	0.23	0.23		0.34	0.32		0.58	0.58		0.64	0.62	
v/c Ratio	0.32	0.72		0.19	0.46		0.36	0.78		0.08	0.47	
Control Delay	36.6	47.9		22.2	30.7		23.1	24.8		11.1	13.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.6	47.9		22.2	30.7		23.1	24.8		11.1	13.5	
LOS	D	D		C	C		C	C		B	B	
Approach Delay		45.5			29.2			24.7			13.4	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	14.8	59.7		8.6	46.8		10.3	126.9		1.5	61.3	
Queue Length 95th (m)	26.8	82.7		15.3	61.8		34.9	#255.0		5.6	96.0	
Internal Link Dist (m)		497.1			1898.6			742.3			1017.9	
Turn Bay Length (m)	30.0			20.0			140.0			120.0		
Base Capacity (vph)	311	510		343	779		269	2014		289	2128	
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	0.25	0.57		0.17	0.35		0.36	0.78		0.07	0.47	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 24.0 Intersection LOS: C
 Intersection Capacity Utilization 84.1% 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.

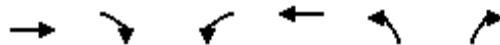
Splits and Phases: 3: Trafalgar Road & Burnhamthorpe Road E



HCM Unsignalized Intersection Capacity Analysis

6: Burnhamthorpe Road E & William Halton Pkwy

01-07-2024

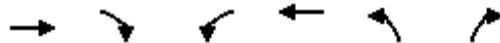


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	409	3	426	923	3	421
Future Volume (Veh/h)	409	3	426	923	3	421
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	435	3	453	982	3	448
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			438	2324		436
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			438	2324		436
tC, single (s)			4.1	6.4		6.2
tC, 2 stage (s)						
tF (s)			2.2	3.5		3.3
p0 queue free %			60	88		27
cM capacity (veh/h)			1122	25		618
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	438	1435	451			
Volume Left	0	453	3			
Volume Right	3	0	448			
cSH	1700	1122	533			
Volume to Capacity	0.26	0.40	0.85			
Queue Length 95th (m)	0.0	15.9	70.8			
Control Delay (s)	0.0	10.1	38.5			
Lane LOS			B	E		
Approach Delay (s)	0.0	10.1	38.5			
Approach LOS			E			
Intersection Summary						
Average Delay			13.7			
Intersection Capacity Utilization			130.1%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: John McKay Blvd & Burnhamthorpe Road E

















01-07-2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	337	68	113	316	43	84
Future Volume (Veh/h)	337	68	113	316	43	84
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	366	74	123	343	47	91
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			440		992	403
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			440		992	403
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			89		81	86
cM capacity (veh/h)			1131		243	647
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	440	466	138			
Volume Left	0	123	47			
Volume Right	74	0	91			
cSH	1700	1131	413			
Volume to Capacity	0.26	0.11	0.33			
Queue Length 95th (m)	0.0	2.9	11.6			
Control Delay (s)	0.0	3.1	18.0			
Lane LOS		A	C			
Approach Delay (s)	0.0	3.1	18.0			
Approach LOS			C			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			62.3%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: John McKay Blvd & Street D

01-07-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	17	6	24	2	9	55	38	55	15	40	41	27
Future Volume (vph)	17	6	24	2	9	55	38	55	15	40	41	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	7	26	2	10	60	41	60	16	43	45	29
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	51	72	117	117								
Volume Left (vph)	18	2	41	43								
Volume Right (vph)	26	60	16	29								
Hadj (s)	-0.23	-0.49	0.01	-0.06								
Departure Headway (s)	4.3	4.0	4.3	4.2								
Degree Utilization, x	0.06	0.08	0.14	0.14								
Capacity (veh/h)	793	838	804	812								
Control Delay (s)	7.5	7.3	8.0	7.9								
Approach Delay (s)	7.5	7.3	8.0	7.9								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.8									
Level of Service			A									
Intersection Capacity Utilization			24.1%	ICU Level of Service	A							
Analysis Period (min)			15									

Appendix H

Town of Oakville Comments

DRAFT Comments Report

Date:	October 25, 2023	REVISED: November 3, 2023
To:	Robert Russell , Planning Consultant Tom Baskerville , Owner	rob.russell@russellplanning.com tbaskerville@coscorp.ca
From:	Brandon Hassan , Senior Planner, Planning Services	
Contact Info:	T: 905-845-6601 ext. 3006 F: 905-338-4414 E: brandon.hassan@oakville.ca	
Re:	Circulation Comments (2nd submission)	
Application:	Rampen Holding Inc. (Coscorp)	
Description:	Zoning By-law Amendment and Plan of Subdivision for 188 residential units	
Address:	1086 Burnhamthorpe Road East	
File #s:	Z.1310.18 & 24T-22009.1310	

The above-noted Zoning By-law Amendment and Plan of Subdivision applications have been circulated to various municipal departments and external agencies for review. Comments which have been received with respect to the applications are included below. Please be aware that comments from some departments and/or agencies may still be pending.

Please contact the staff member responsible for each set of comments, as listed below, in order to resolve any outstanding comments/issues. Kindly request the responsible staff member to send me an email of all correspondence for our records.

Revised and coordinated plans and documents which fully address the attached comments must be submitted according to the process outlined in the [Step by Step Digital Submissions Guide](#) on the Town's website. Digital materials must be named in an organized and descriptive manner according to format outlined in Planning's [Digital Submission Naming Conventions](#) document.

You are also required to submit the following items (forming a complete resubmission package):

- **a cover letter describing how each comment within this report has been addressed.**
- a transmittal provided in .doc (Word) format listing the materials submitted, with their revision number and date and the titles and information presented in the format as provided at the end of this report

Furthermore, all reports, documents and drawings submitted must:

- be presented in metric measure that can be accurately scaled,
- be prepared, stamped and signed by a qualified professional architect (for site plan and architectural drawings), engineer (for site plan and engineering drawings/reports), or landscape architect (for landscape and tree protection drawings/reports)

Circulation Comments:

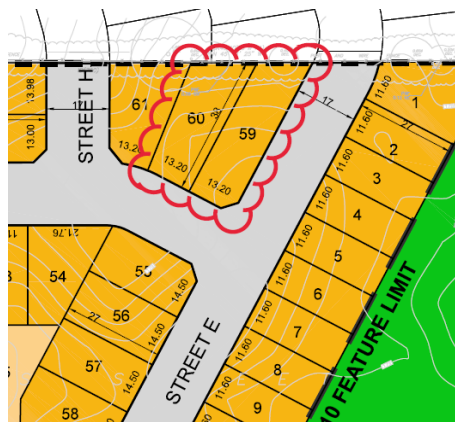
PLANNING SERVICES

1 Current Planning

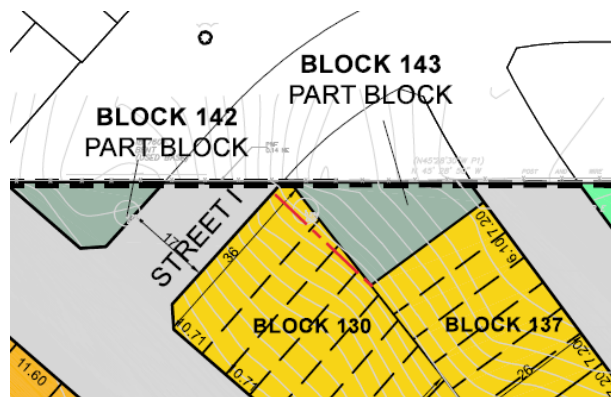
Brandon Hassan ext. 3006

Circulation 2

- A 3rd Submission is required to address the comments noted in this Report, prior to bringing a Recommendation Report to the Planning and Development Council:
 - **Comments** – outstanding matters to be addressed
 - **Comments** – not yet received
 - **Comments** – cleared
- **[Comment addressed]** Please provide a plan and advise the potential for Lots 60 and 59 to face Street E in order to have a contiguous streetscape of front yards, rather than a flankage yard which would result in an elongated privacy fence:

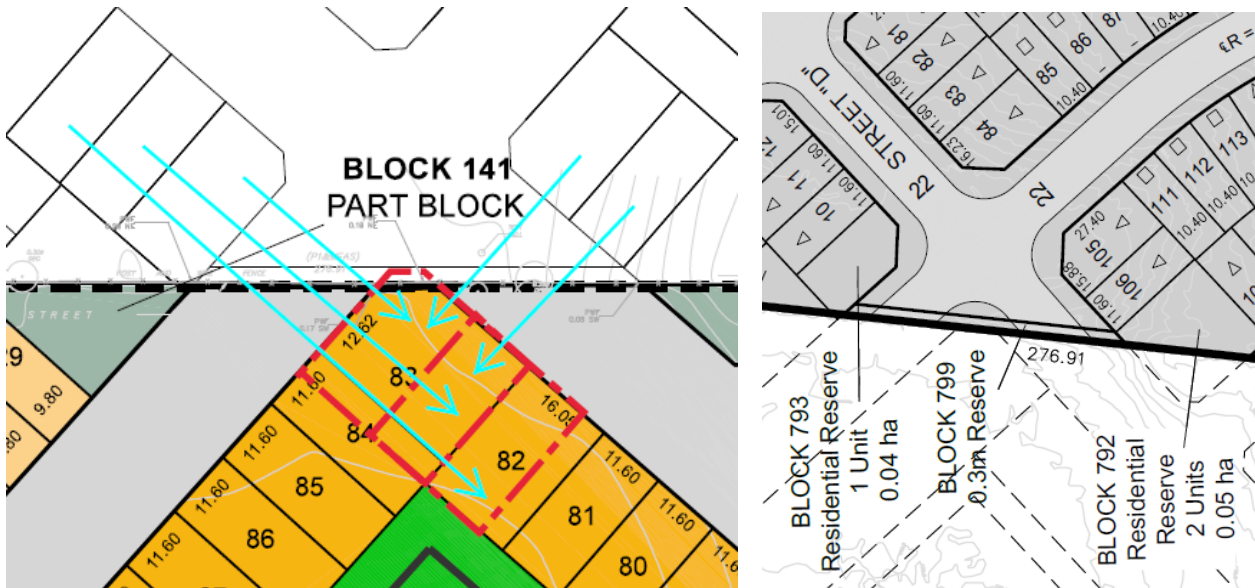


- Please provide a plan and advise how the proposed property line between Block 130 and Block 143 can be realigned the dissect the center of Street I:

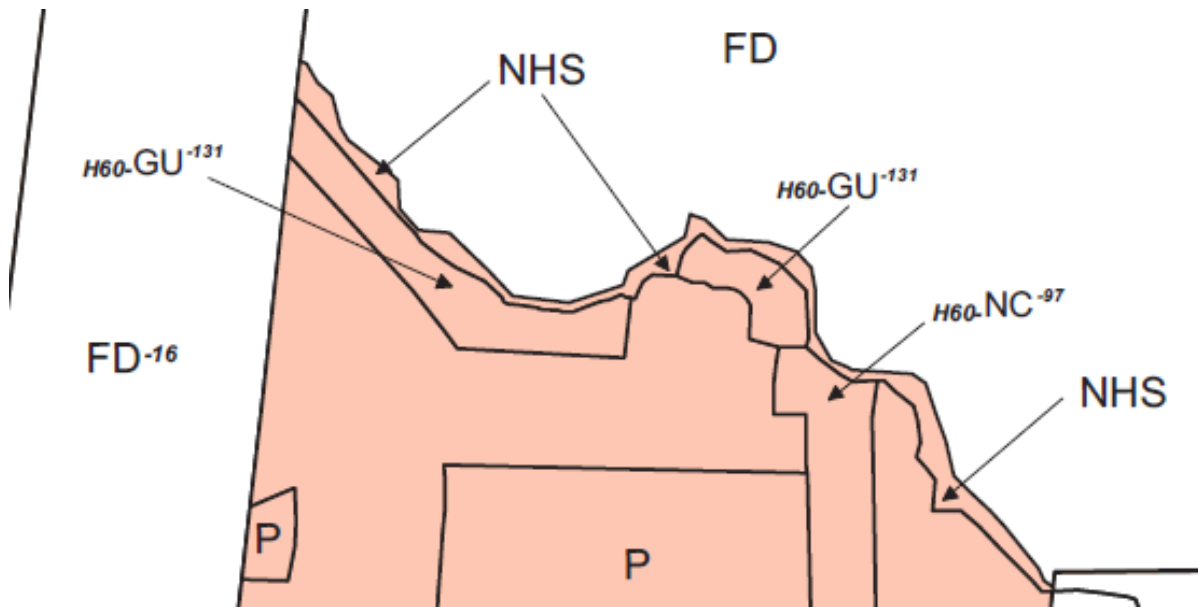


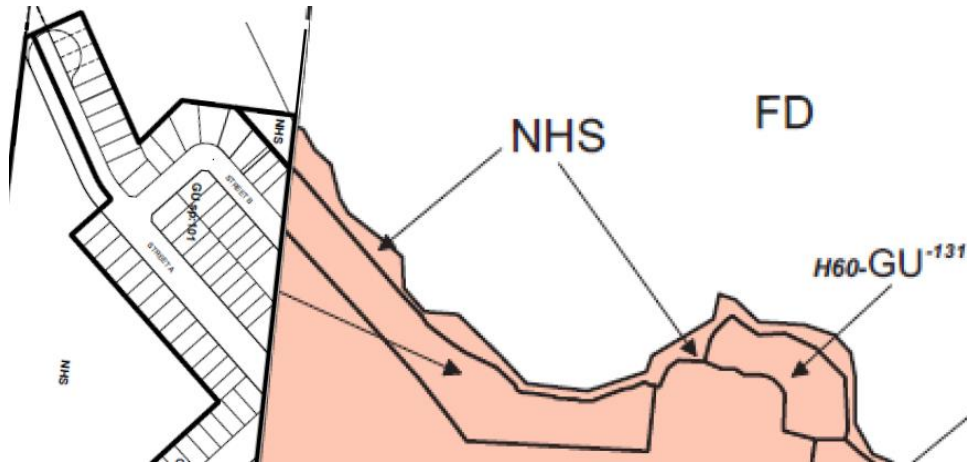
- **[Circ 2]** It still appears that the now Block 133 lots are deeper than the abutting now Block 146 lots – additional dimensions would help clarify to show the centerline.

- **[Comment addressed]** Please provide a plan and advise if it's possible to reconfigure Lots 82, 83 and 84 in order for them to interface with the intersection and face Street C and Street A as the lots on the other corners of the intersection do:



- **[Comment addressed]** Please confirm that the proposed lots will comply with the lot area, frontage and depth for the S and GU zones.
- Please be advised that the Mattamy Phase 3 Zoning will be used on the shared lots to avoid split zoning.
 - **[Circ 2]** Lots along the north side of Street B in Mattamy are Zoned GU sp: 131 – the zone should extend up to the Block 148 walkway on this Draft Plan for consistency (to be confirmed by our GIS Staff when the Draft Schedule is prepared):





- **[Circ 2]** Blocks 133-140 should be zoned GU, as sp: 101 would not be applicable for townhomes since it relates to architectural details for singles in Mattamy.
- **[Circ 2]** Part Block 146 should also be zoned GU as well, unless a townhouse cannot be accommodated with the abutting Mattamy Part Block 770 – please advise. It would be more appropriate for townhomes, rather than two single lots.
- Please provide a Phasing Plan. All lands that do not have sufficient allocation will be subject to a Holding Provision relating to allocation.
 - **[Circ 2]** H# to be provided for the ZBA Schedule.
- Please be advised that the entire subdivision will be subject to a Holding Provision until such time that road access is provided from the Mattamy lands to the east.
 - **[Circ 2]** H# to be provided for the ZBA Schedule.
 - **[Circ 2]** Block 141 should remain as (FD) to be rezoned at a later date with the Capobianco lands based on future floodplain studies, to not presuppose its zone/use.
- **[Comment addressed]** Please provide a Concept Plan illustrating how Block 138 is intended to be developed with the lands to the west to ensure the approval of the current subdivision would not preclude the ultimate development of the lands to the west. Staff note that Street D may need to be extended to provide access.
- Please provide dwelling siting plans for any irregular lots such as 19, 33, 35, 46, 54 and 61.
 - Further to the conceptual drawings in the submitted Urban Design brief.
 - **[Circ 2]** Although Lot 19 will be irregular in shape and oversized due to the curve in the road, the alignment with the rear of Lot 34 should be squared off and the frontage along Street G should be the same as Lot 59 along Street F – this should result in a dwelling on Lot 33 with the same width as Lots 27-32 (approximately 8.6 m according to the Prelim Lot Siting Plan if the lot line is shifted 1.2 m):



- **[Comment addressed]** Please ensure you follow the Master Plan with respect to the land use category for example:
 - The lots on the east side of Street F should be GU
 - The lots bounded by Street H, Street F and Street E should be GU
 - The lots bounded by Street D, Street G, Street E and Street F should be GU
- **[Comment addressed]** With the changes requested above, please update the Density Map and ensure you are within the density range for each land use category.
- **[Comment addressed]** Please ensure that there is sufficient area between the wetland buffer and rear lots line to accommodate a trail without infringing on privacy of the residential lots.
- Please review the North Oakville Parking Strategy for on-street parking stall dimensions and revise the on-street parking plan accordingly.
 - **[Circ 2]** Please submit the revised Preliminary On-Street Parking Plan (i.e. separate from Figure 26 in the TIS) showing the parking space locations, rather than a count along the street – the Plan states +/- 115 spaces, whereas Figure 26 states 26 spaces, which is a substantial difference:



Figure 26 – On-Street Parking for the Internal Streets



-
- **[Comment addressed]** Please ensure the Draft Plan of Subdivision is signed by the owner and the surveyor.
 - **[Circ 2]** Matters to be Addressed from the June 26, 2023 Planning and Development Council Meeting (to be included in future Recommendation Report):
 - a. *details on the Village Square including the facilities to be provided.*
 - b. *explanation of the optional Natural Heritage System linkage.*
 - c. *details about the overall traffic plan and timing, and use of a temporary turning circle and future connection to Burnhamthorpe Road.*
 - d. *details about access/servicing to the subject lands through abutting lands.*

Conditions of Draft Plan Approval

- *TBD* – **[Circ 2]** A draft of the Conditions will be provided for review, prior to the Planning and Development Council Meeting Agenda being set.

Re-Circulation Fee

- A re-circulation fee of 15% of the in-effect application fee will be required after the 3rd submission and every resubmission thereafter (per Schedule 'A' Section 10 of the applicable fee by-law).

File Naming

Future submission materials must be named according to the following format:

- File Number _ Condensed Name _ Version Number _ Date (with no spaces)

For example, your set of files should look like the following list:

- 00_CoverLetter_v1_2020-02-28
- 01_Aerial_v1_2020-02-14
- 02_Survey_v1_2020-02-23
- 03_SitePlan_v1_2020-02-23
- 04_FloorPlan_v1_2020-02-23
- etc.

Requirements:

- NO spaces in the file name.
- NO special characters within the file name (i.e. @ # \$ % & * / \ |).
- ONLY Letters, Numbers, Dashes, Underscores and Periods are permitted in the file name.

Final Note:

- All submission of plans and/or studies must be clearly labelled and in a larger font size in the title block as the next submission by number, corresponding to the version number and date in the file name.

2 Policy Planning, Heritage

Susan Schappert ext. 3870

Circulation 1

Heritage Planning has concerns with the four lots included at the end of the temporary turning circle located in Part 2 of the R-Plan (that used to designate the adjacent cultural heritage landscape). While no heritage attributes are directly impacted within this area, Part 2 was intended to be a buffer between the future development and the cultural heritage landscape of the Joshua Creek Heritage Art Centre. This area should remain clear of building lots, although roads and park or open space would be acceptable to Heritage Planning staff. The tip of lot 98 does overlap into Part 2; however Heritage Planning staff would accept this minor intrusion into the buffer area.

3 Urban Design

Philip Wiersma ext. 3795, Nada Almasri ext. 3132

Circulation 2

The following comments are based on materials circulated September 13, 2023 [Circ 2]. These comments reflect the Town's concerns identified in the high-level assessment as noted below and provide direction on necessary modifications. Additional and/or modified comments may be provided after review of subsequently submitted revised materials.

Policies and Guidelines

In framing our review and drafting our comments, we have utilized and relied upon the following:

- North Oakville East Secondary Plan
- North Oakville Master Plan
- North Oakville Urban Design and Open Space Guidelines
- North Oakville Urban Forest Strategic Management Plan
- Livable by Design Urban Design Manual (LbDM); specifically
 - [Urban Design Direction for Oakville \(LivDesignManual-v2-1.pdf \(oakville.ca\)\)](#);
 - [Site Design and Development Standards \(Livable by Design Manual \(Part C\) \(oakville.ca\)\)](#) [referenced to ensure site functionality]

Comments and Recommendations

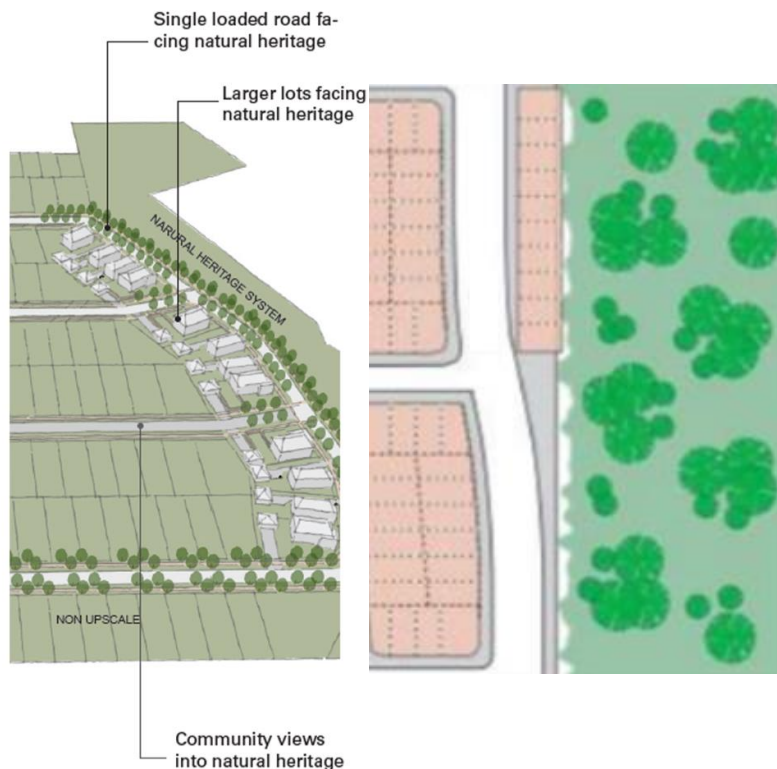
1. **[Circ 2] Comment addressed.**

[Circ 1] The NHS blocks (Blocks 147 and 150) to the northwest and southeast within the site contribute to the identity of this development as focal points. While views to Block 147 are provided, Block 150 is completely hidden from public views by the strip of rear-lotting dwellings along its edge. Explore the opportunity to extend the views to these natural features on this block from streets and public spaces where feasible.

The Urban Design Brief (Section 2.4 Views & Vistas from the Site and Section 6.1.3 Views and Vistas) considers “opportunities to provide strategic views and vistas towards the existing and proposed open space features (NHS /Joshua Creek Floodplain) within the Coscorp Joshua Inc. neighbourhood”. It further states that “These views and vista opportunities are primarily provided through the location of street frontage immediately adjacent to these open space features”, however, this is not reflected on the NHS Block 150 as per the below image. Please revise the plan and update the UDB as needed.



The below sketches show examples of neighborhood edge interfaces through single loaded road, fully or partially, facing the NHS areas which provide views and public access.



Circulation Comment Chronology

- November 21, 2022 [Circ 1]
- September 13, 2023 [Circ 2]

4 Development Engineering

Richard Renaud ext. 3631

Circulation 2

SECTION 1: General Comments

Show the location of the switch gears. This may require to include designated lands within the draft plan. All Hydro infrastructure is to be located within town lands.

Draft Plan

The draft plan # DP (B&W)-01 provided in the first submission was not provided in the second submission. Please submit this plan for review and approval. Provide the turning circle diameter and dimensions for all roads on the draft plan. All roads to be to town standards.

SECTION 2: Functional Servicing Report Comments

Development Engineering have reviewed the **fourth circulation** functional servicing material and offer the following comments:

Provide a response letter indication how each comment was addressed or an explanation why the comment was not addressed.

Conceptual Storm Servicing

The storm and sanitary sewers are reversed, and dimensions are slightly not in accordance with the town standards as shown on the sections 10.5R and 10.7R. Provide the justification for not following the town standards.

Drawing 8C - Sections**Section 5-5**

Section 5-5 will require armor stone along the entire area where the road is adjacent to the 3:1 slope.

Figure 7.4 Sump Pump Detail

All sump pumps are to be directly connected to the storm sewer unless justification can be provided to the ground. No flows are permitted to flow across the sidewalks.

5 Development Engineering, ForestryTony Molnar ext. 3869

Circulation 1

Pending.

6 Engineering and Construction, TransportationAquisha Khan ext. 3236

Circulation 2

Sustainable Transportation (M. Dimas)

1. Site Plan

- a. [Circ 2] Please ensure linkages from the road directly onto the proposed off road trail in the North Oakville Trails Plan. Please ensure a minimum of 4metres in width.
- a. [Circ. 1 Not Addressed] – Please indicate bicycling facilities, path as per Figure 6.1 of Design Brief. Please refer to OTM book 18 for details. Please indicate where the cycle parking will be located at the village square.

2. TDM

- a. [Circ 2] Please include in your TIS under TDM measures, a monitoring program/report to include surveys, and details information on the available modes of travel and within the first year of occupancy to promote sustainable choices in travel. This program will be reviewed with town staff and may be repeated to determine if any changes to the TDM measures are justified.
- a. [Circ. 1 Acknowledged] – Please indicate on-street parking details of proposed roads associated with future cycle lanes.

Oakville Transit (J. Phoenix)

1. [Circ. 2] – Staff has no comments at this time.
2. [Circ. 1] – Staff has no comments at this time.

Transportation Services (A. Khan)

1. Site Plan

- a. [Circ. 2] – Staff acknowledges that the proposed development will be collaborating with the adjacent development “Mattamy - Joshua Creek Phase 3” for the distribution of trips and road network, please note that access to 86 through 132 will not be accessible until the full completion of the road network for “Mattamy - Joshua Creek Phase 3B”.
 - a. [Circ. 1] – Staff has no site plan comments at this time.
-

2. Traffic Impact Assessment/Study

Comments based on TIS dated July 11, 2023 (NexTrans)

- a. [Circ. 2] – General – Please address any outstanding comments identified in Circ. 1.
- b. [Circ. 2] – General – Please ensure that all comments addressed in the comment matrix for Circ. 1 are applied in the body of the report addendum.
- c. [Circ. 2] – Figure 3 – Please provide a box to indicate the connection to Burnhamthorpe with respect to the actual road network, rather than to have it floating in the figure.
- d. [Circ. 2] – Section 7.2 – Please provide detail support for the recommendation of an “All-way Stop Control” at Street A/Street C. Also, please confirm that this recommendation is consistent with recommendations as outlined by “Mattamy - Joshua Creek Phase 3B” report.
- e. [Circ. 2] – Section 7.4 – Please ensure that the dimensions on the on-street parking is consistent with the details provided in the comment matrix.

Comments based on TIS dated July 4, 2022 (NexTrans)

- a. [Circ. 1 – Addressed] – As per the Pre-consultation requirements, an approved Scope of Work from the Region of Halton/Town of Oakville was required. Please provide a copy of the approved scope of work from either the Region/Town in the Appendix.
- b. [Circ. 1 - Addressed] – All reports submitted for review should be finalized, signed and stamped by a Professional Engineer.
- c. [Circ. 1] – Executive Summary
 - i. [Not Addressed] – Proposed Development: The proposed development should not rely strictly on connection to “Mattamy Joshua Creek Phase 3” development for access as the it is unclear when the road network will be completed. The development land boundaries onto Burnhamthorpe Road, please provide information for access onto Burnhamthorpe Road. – **Please clearly identify the road access anticipated to be utilized for connection to Mattamy Joshua Creek Phase 3 as Phase 3 has been split into two phases A & B.**

Nextrans acknowledged that some of the information from this Study, especially the traffic turning movement counts, have utilized and referenced from the GHD Traffic Impact Study dated April, 2022 that was prepared on behalf of Mattamy Joshua Creek Phase 3 proposed draft plan of subdivision with permission from GHD and Mattamy. This is to ensure consistency.

- ii. [Not Addressed] – Auto- Mode Assessment: Please include support to the statement made.

Auto Mode Assessment

Based on the intersection capacity analysis, under the existing conditions, all intersections considered in the analysis are expected to operate at acceptable levels of service, with the exception of the westbound through movement at Dundas Street E/Ninth Line during the afternoon peak hour. This is due to the heavy through movement, however, it is a typical condition at the major arterial in the Region and in the Town of Oakville. This critical movement will be addressed through the completion of William Halton Parkway and Burnhamthorpe Road E in the future.

-
- iii. [Addressed] – Please include in this section, the study horizons for the proposed development.
 - d. [Circ. 1 – Not Addressed] – Introduction: Please identify phases for anticipated access to proposed development. – **Phases for access was not identified.**
 - e. [Circ. 1] – Section 2.0 Existing Condition Assessment:
 - iv. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.
 - v. [Addressed] – Please provide reference to the location of the figures provided, either in the body of the report or in the appendix. (E.g. Figure 3 is mentioned in the report but not illustrated in the report.)
 - vi. [Addressed] – Walking & Cycling Section: There are no existing walking/cycling facilities within the study area. The 2017 ATMP illustrates the future active routes within the study area.
 - vii. [Addressed] – Figure 4 & Figure 5: Please illustrate the site location bordering Burnhamthorpe as illustrated in the site plan.
 - viii. [Addressed] – Transit Section: Please update statement to reflect the actual number of routes servicing this subdivision.

The area is current serviced by two existing Oakville Transit Bus Routes 1 Trafalgar, 24 South Common and 20 Northridge. Figure 6 illustrates the existing Oakville Transit System.

- ix. [Addressed] – Transit Section: Both Trafalgar Road and Dundas Road transit routes are more than 400m away from the proposed subdivision and do not currently service the study area as there are no existing developments. Please use the North Oakville Secondary Plan to identify future Transit Route in the “Future Conditions section”.
- x. [Addressed] – Section 2.3: This section seems to be referring to future operations, please update.

2.3. Existing Area Context

Nextrans has conducted a comprehensive review of the area. The proposed development is located within the approved North Oakville East Secondary Plan, Joshua’s Meadows residential community bounded by Dundas Street E to the south, Burnhamthorpe Road E to the north, Trafalgar Road to the west and Ninth Line to the east, in the Town of Oakville.

- xi. [Addressed] – Section 2.4: GHD undertook their counts in 2019 which is over three (3) years old, please undertake/obtain the most recent turning movement counts for the approved study area intersections.
 - xii. [Addressed] – Section 2.4: Similar to comment above, please remain consistent with the reference to figures provided in the report body/appendix.
 - xiii. [Addressed] – Section 2.6: Please clarify the highlighted statement with respect to re-distribution of trips from Highway 403 from Dundas Street E to Burnhamthorpe Road.
-

analysis are operating at acceptable levels of service, with the exception of the westbound through movement at the Ninth Line/Dundas Street E. This is due to the heavy through traffic volumes in this direction coming from Highway 403 and Mississauga. However, this type of movement is typical at any major arterial intersections in the Great Toronto Area and in the Region of Halton. It is expected that with the future improvements on Burnhamthorpe Road E, the North Oakville Secondary Plan subdivision east-west road south of Burnhamthorpe Road E, as well as the completion of William Halton Parkway, it will provide much needed east-west capacity for the area.

- f. [Circ. 1] – Section 4.0 Future Background Conditions
- xiv. [Not Addressed] – Section 4.1: The proposed development is anticipated to be built by 2024, however Joshua Creek Phase 3 is anticipating a 2027 build-out year. Please clarify how the horizon of the developments are anticipated to align.
 - xv. [Not Addressed] – Section 4.1: A five year horizon should be completed post build-out. – Although, the halton TIS guideline request for 5 year post study, this development is unique and staff requests a study horizon of 5 years post build-out.
 - xvi. [Addressed] – Section 4.5: Please clarify how all the subdivision intersections along Dundas Street E are “operating at acceptable level of service” when the intersections are operating over the critical capacity of 0.85. – please include in the body of the addendum report.
 - xvii. [Addressed] – Figure 11: Please confirm that these volumes were obtained from the respective TIA reports identifies and are the summation of all background development site traffic.
 - xviii. [Addressed] – Figure 12: Please confirm that these volumes were obtained from the GHD.
- g. [Circ. 1] – Section 5.0 Site Traffic
- xix. [Addressed] – Non-modal split: Please provide confirmation that Regional Staff supports 18% non-auto modal split for the area.
 - xx. [Addressed] – Figure 14: Please clarify the distribution of the site trips, provide details as to why there were no trip distributed via William Cutmore Boulevard.
- h. [Circ. 1] – Section 6.0 Future Total Traffic
- xxi. [Addressed] – Section 6.1: Please clarify most of the subdivision intersections along Dundas Street E are operating at acceptable level of service when the intersections are operating over the critical capacity of 0.85.
- i. [Circ. 1] – Section 7.0 Draft Plan of Subdivision Review
- xxii. [Addressed] – Section 7.4: Please verify the width for on-street parking stall. It is typically not the width of a bicycle route.
 - xxiii. [Addressed] – Section 7.4: Since there is an approximate number of on-street parking identified on the site concept plan, please provide a summary of the total amount of anticipated on-street parking for the subdivision. Please note that 17m ROW do not allow for parking on both sides.
- j. [Circ. 1 – Addressed] – Staff requires a sensitivity analysis report for the redistribution of trips to Burnhamthorpe Road based on the North Oakville Secondary Plan. Traffic counts will be required at the intersections of Burhamthorpe Road & Trafalgar Road and Burnhamthorpe Road & Ninth Line.

- k. [Circ. 1 – Addressed] – Appendix
 - xxiv. Please identify the intersection under review that is provided in the future capacity analysis.

HCM Unsignalized Intersection Capacity Analysis													HCM Unsignalized Intersection Capacity Analysis															
3:													3:															
06-28-2022													06-28-2022															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Sign Control	Stop			Stop			Stop			Stop			Sign Control	Stop			Stop			Stop			Stop			Stop		
Lane Configurations	T+L			T+L			T+L			T+L			Lane Configurations	T+L			T+L			T+L			T+L			T+L		
Traffic Volume (vph)	17	19	44	0	11	4	35	27	0	1	10	6	Traffic Volume (vph)	6	10	50	0	12	3	54	19	0	4	30	10			
Future Volume (vph)	17	19	44	0	11	4	35	27	0	1	10	6	Future Volume (vph)	6	10	50	0	12	3	54	19	0	4	30	10			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Hourly Flow rate (vph)	18	20	48	0	12	4	38	28	0	1	11	7	Hourly Flow rate (vph)	7	11	54	0	13	3	58	21	0	4	33	11			
Direction, Lane #	EB 1	WB 1	NB 1	SB 1									Direction, Lane #	EB 1	WB 1	NB 1	SB 1											
Volume Total (vph)	66	16	87	9									Volume Total (vph)	72	16	80	14											
Volume Left (vph)	18	0	38	1									Volume Left (vph)	7	0	59	4											
Volume Right (vph)	48	4	8	17									Volume Right (vph)	54	3	0	11											
Peak (s)	-0.29	-0.12	0.13	-0.19									Peak (s)	-0.43	-0.08	0.16	-0.05											
Departure Headway (s)	3.8	4.0	4.3	4.0									Departure Headway (s)	3.8	4.2	4.3	4.1											
Engine Utilization %	0.09	0.02	0.08	0.02									Engine Utilization %	0.08	0.02	0.10	0.05											
Capacity (veh/s)	917	863	817	873									Capacity (veh/s)	919	830	814	880											
Control Delay (s)	7.2	7.1	7.6	7.1									Control Delay (s)	7.1	7.2	7.7	7.3											
Approach Delay (s)	7.2	7.1	7.6	7.1									Approach Delay (s)	7.1	7.2	7.7	7.3											
Approach LOS	A	A	A	A									Approach LOS	A	A	A	A											
Intersection Summary													Intersection Summary															
Delay	7.3												Delay	7.4														
Level of Service	A												Level of Service	A														
Intersection Capacity Utilization	31.1%												Intersection Capacity Utilization	30.6%														
Analysis Period (min)	15												Analysis Period (min)	15														
Internal Intersection AM Peak: 12:35 pm 06-28-2022 Baseline													Internal Intersection PM Peak: 12:35 pm 06-28-2022 Baseline															
Synchro 11 Report Page 1													Synchro 11 Report Page 1															

INTERNAL DEPARTMENTS

7 Environmental Planning

Elisa Bernier ext. 3476

Circulation 2

Comments:

EIR/FSS

1. Conservation Halton’s Comment 2: Please expand on the response to include whether wildlife will be impacted by the change in the hydroperiod of the wetland, especially during the winter when a decrease of up to 27% is proposed in volume to the wetland. Confirm if these changes will impact wetland species that require a certain depth of water to overwinter. For further discussion on this matter, please contact Elisa Bernier, Environmental Planner.
2. Conservation Halton’s Comment 30: Section 10.0 Roads, page 56: Partially addressed. The openness ratio has been provided. The openness ratio of 9.75 x 1.22 m with a length of 9.7 is greater than 1. Revise Section 10 to ensure the dimensions of the culvert coincide with section 5.5.2 and Figure 7J. The first sentence states the box culvert is proposed to be 7.315 x 1.981 m whereas the rest of the section and drawings show 9.75 x 1.22 m.
3. It appears that hydrologic feature A abuts or may be partially on the subject property. As a condition of draft plan, works in the floodplain should minimize impacts to hydrologic feature A to the extent possible.

Draft Plan of Zoning By-Law

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1. Revise the Schedule A of the Draft Zoning By-law to exclude the road alignment from the “NHS”.

Conditions for Draft Plan

1. At detailed design, provide grading, erosion and sediment control plans and restoration plans to ensure no impact to the hydrologic feature A during the proposed floodplain alteration works.
2. Works in the floodplain are to be coordinated with adjacent landowner(s) to ensure no impacts to property and the natural heritage system.

Notes to file:

- 2nd watercourse crossing has an opening of at least 3 m (confirmed with CH staff on October 25, 2023). No concern for wildlife/fish passage currently.
- WRE (Town) are commenting on sheet flow proposed to PSW 31A. Alternative drainage is recommended to not impact trail.
- CH comment: although the vegetation type of the ELC was not given for PSW 31A, it most likely resembles SWT2-9 as gray dogwood was observed.
- Figures 2.1 and 4.2 do not show the correct wetland limits however, the limits of NHS are correct.
- Block 141 and 147 are identified as “future development on the draft plan of subdivision”

8 Parks and Open Space

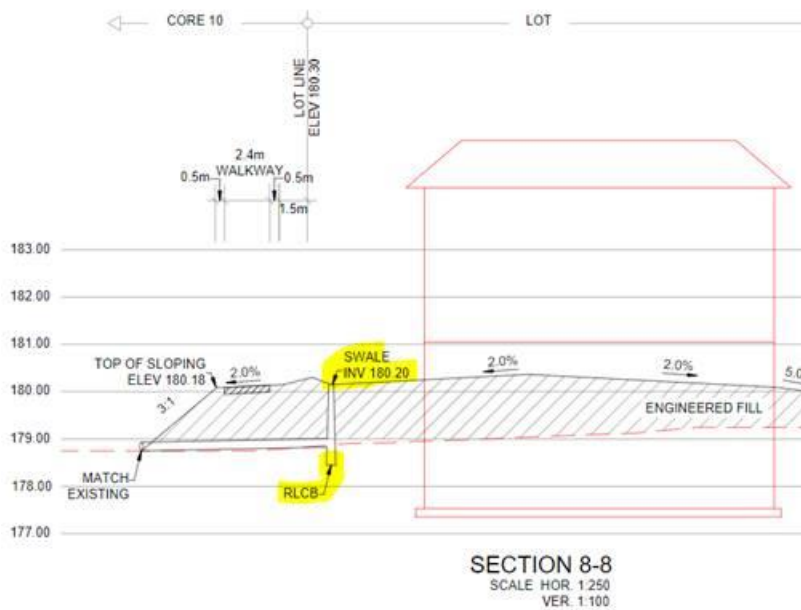
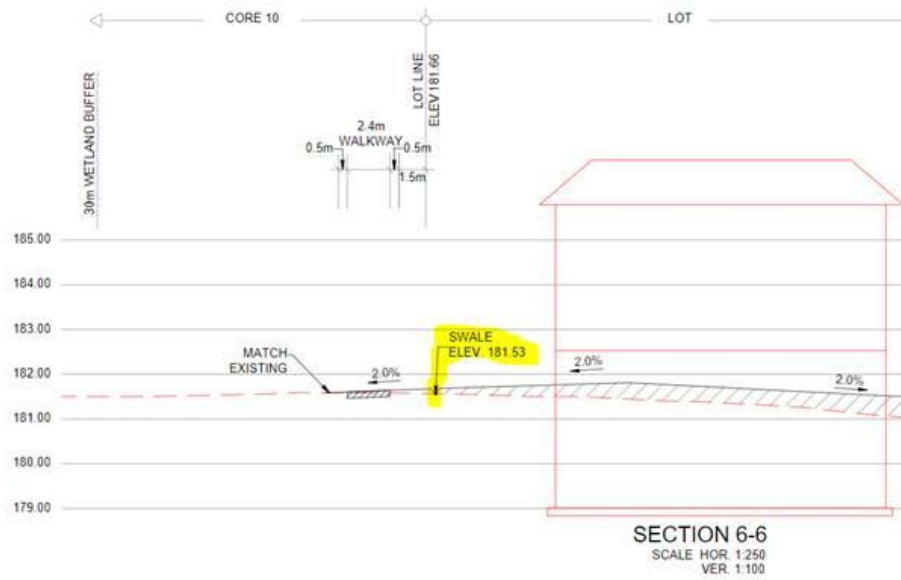
Janis Olbina ext. 3148

Circulation 1

My original comments from Sept 2021 are followed by updated comments highlighted, and in italics.

I would echo some of the comments made in Rita’s memo to you regarding final staking/trail layout walk on site being preferred when appropriate. There are a lot of generalized comments about trail being only 2.0m away from the property line, but some opportunities to meander away in select locations. From viewing many of the plans, I recognize there is a wetland feature impacting many of these detail design decisions. I also read that most areas are currently in agricultural state and void of significant (any) vegetation, so hopefully that creates more opportunities for realignment. I would also echo the request for a few cross-sections, especially where there is proposed cut-off swales.

DSEL (and team) have provided some updated cross-sections as part of their submission. In section 6-6 shown below, we would ask for clarification on exact location of proposed swale; is it entirely in rear lot area, or is it on property line? We ask, because section 8-8 (also below) is very similar, but clearly shows rear-yard catch basin collection, and a small berm at the property line, thus containing any potential surface runoff from the adjacent lot(s). We would see this as a ‘preferred’ scenario going forward.



My biggest concern/question is how this draft plan differs from our larger masterplan/secondary plans. I found it very difficult to try and compare our trails master plan with the proposed trail drawings attached to this EIR addendum. *This has been addressed through meetings with applicant and updated mapping.*

9 Finance
Matt Day ext. 6029

Circulation 1

Pending.

10 Building Services, Zoning

Matt Rubic ext. 3361

Circulation 2

We have reviewed the above noted development application circulation and have the following comments:

Zoning By-law Amendment

Based on the draft by-law provided by the applicant in the Planning Justification Report, zoning recommends the following:

1. When the applicant's draft by-law has been vetted by you (the planner), please prepare your draft by-law and circulate the draft for review. Further comments will be provided when the internal draft by-law is circulated.

Draft Plan of Subdivision

1. A surveyor's certificate providing lot areas, lot frontages and lot depths is required prior to draft approval.
2. For blocks which will be combined with adjacent lands to create future lots: Lot areas, frontages and lot depths will be confirmed for the combined blocks qualifying as lots prior to draft approval of adjacent lands. Please note that under section 4.11.4 of zoning by-law 2009-189, as amended, blocks not qualifying as lots until they are combined with additional land so as to qualify as lots, shall be used for the purpose of horticulture only and no building or structure may be erected thereon.

11 Legal, Realty Services

Jim Knighton ext. 3022

Circulation 1

Planner has confirmed Rampen Holdings Inc. is part of the NOEMPA and added party Agreement. No CILP implications.

EXTERNAL AGENCIES

12 Region of Halton, Planning & Public Works Dept

Michaela Campbell – michaela.campbell@halton.ca

Circulation 2

Regional staff are forwarding comments in response to the circulation of the 2nd submission for the above-noted application circulated on September 13, 2023. The 1st submission application proposed a development consisting of 181 residential units (81 - 11.6m single detached, 48 - 9.8m single

detached, and 52 street townhouses). Regional staff understand that the 2nd submission proposes a Draft Plan of Subdivision (DPS) application seeking to develop the subject lands with 188 residential units (82 - 11.6m single detached, 54 - 9.8m single detached, and 52 street townhouses). The DPS development is proposed to include a village square, natural heritage system, roads, residential reserve blocks a future roadblock and walkway blocks.

The purpose of the Zoning By-law Amendment (ZBA) is to rezone the subject lands from Future Development (FD) to Natural Heritage System, Park, and site-specific General Urban and sub-urban to facilitate the creation of 187 dwelling units.

Staff notes the 'Environmental Implementation Report' and 'Functional Servicing Report (EIR/FSS) Addendum #4' (prepared by David Schaeffer Engineering Ltd)) was circulated with this 2nd submission of the Draft Plan of Subdivision and Zoning By-law Amendment.

Please note that this letter supersedes the previous letter issued on July 4, 2023. The comments in this letter specifically provide updates to the Regional Natural Heritage System, site contamination, allocation, and municipal servicing matters (please refer to the respective comment sections, including the conditions section). Regional comments per other planning policies, archaeological potential, and finance generally remain the same.

Regional staff acknowledge that the existing Joshua Creek Heritage Art Centre is part of the same ownership as the Draft Plan of Subdivision, therefore effectively creating a severance of the parcel, as a result of the proposed Draft Plan of Subdivision application.

Regional planning staff offer the following comments.

Matters of Provincial and Regional Interest

Provincial Policy:

The 2020 Provincial Policy Statement (PPS) PPS promotes within urban areas and settlement areas, development densities and a mix of land uses that are appropriate for, and efficiently use, the infrastructure and public service facilities that are planned or available, and avoid the need for their unjustified and/or uneconomical expansion where this can be accommodated, taking into account existing building stock or areas, and the availability of suitable existing or planned infrastructure facilities required to accommodate projected needs. Section 1.4 of the PPS also provides that the allocation of units by the upper-tier municipality shall be based on and reflect provincial plans where these exist.

The 2020 Growth Plan (GP) encourage municipalities to leverage infrastructure investment, to direct growth and development per the policies and schedules of the Plan, including the achievement of the minimum intensification and density targets in the Plan. The subject lands are located within the 'Designated Greenfield Area' of the Plan. Section 2.2.7 provides that development taking place in the designated Greenfield area will be in a manner that supports complete communities, active transportation, and encourages the integration of sustained viable transit service.

Subject to addressing technical comments/concerns identified in this letter, confirmation from the Town of Oakville that any matters related to the Regional Natural Heritage System are addressed,

and the inclusion of any requested conditions of draft approval (when Halton Region is in a position to issue conditions), Halton Region would consider the applications to be consistent with the PPS 2020 and conform to the GP.

Region of Halton Official Plan 2009:

The Region's Official Plan provides goals, objectives and policies to direct physical development and change in Halton. The lands are designated as 'Urban Area' and 'Regional Natural Heritage System (RNHS)' as shown on Map 1: Regional Structure of the 2009 Regional Official Plan (ROP).

Part III: Land Stewardship Policies:

Land Use Designations:

Section 72.1(1)-(3) of the Urban Area policies support the development of vibrant and healthy mixed use communities that afford maximum choices for residence, work and leisure. Section 77(2.4) of the Urban Area policies also requires development in the Greenfield Area (outside the Urban Built Boundary) to contribute to achieving development density targets established by the Plan, within healthy communities that will comprise of a range of mixed-use neighbourhoods. ROP policy 76 states that the range of permitted uses and the creation of new lots in the Urban Area will be per Local Official Plans and Zoning By-laws. All development, however, shall be subject to the policies of this Plan.

Regional Natural Heritage System:

Within the Regional Natural Heritage System (RNHS) designation, the subject lands contain key features within the ROP, being significant woodlands, and wetlands. Section 114 of the ROP provides for biological diversity and ecological functions, including a continuous natural open space system to provide separation of communities from key features and ecological functions.

Within the 1st submission of the Draft Plan of Subdivision and Zoning By-law Amendment applications, Regional staff, in conjunction with Conservation Halton staff as part of the Interim Ecological Services Agreement, had noted Conservation Halton (CH) provided environmental advisory and technical review services to the Region concerning the protection of certain natural heritage features and areas and natural hazard management. As such, Halton Region was deferring to CH for comments as part of our Memorandum of Understanding (MOU) for North Oakville. Regional staff were not in receipt of supportive CH comments.

On January 1, 2023, a new Minister's regulation (Ontario Regulation 596/22: Prescribed Acts – Subsections 21.1.1 (1.1) and 21.1.2 (1.1) of the Conservation Authorities Act) came into effect which provides that conservation authorities (CAs) may not provide a municipal (Category 2) or other (Category 3) program or service related to reviewing and commenting on proposals, applications, or other matters under a prescribed Act, including the Planning Act. As a result, technical review services (e.g., technical reviews related to natural heritage and select aspects of stormwater management) that CH formerly provided under to the Memorandums of Understanding (MOU, 1999 and 2018) and Interim Ecological Services Agreement (IESA, 2021) with Halton Region will no longer be provided for applications received after January 1, 2023.

Within the 2nd submission of the Draft Plan of Subdivision and Zoning By-law Amendment applications, Regional staff acknowledge receipt of the EIR/FSS addendum #3, as circulated on September 13, 2023. Per ROP sections 116.2 and 116.3, the delineation and implementation of the Regional Natural Heritage System within the North Oakville East Secondary Plan Area and the North Oakville West Secondary Plan (NOESP) Area shall be implemented by the Town of Oakville. As the limits of the RNHS is located within Conservation Halton's regulated area and within North Oakville, the Owner shall implement all CH and Town of Oakville recommendations as it relates to any RNHS, natural hazards, buffers, or storm water management related requirements.

Regional staff are **not** in receipt of supportive Town of Oakville comments. Regional staff will require the Owner to provide correspondence from the Town of Oakville indicating that matters have been sufficiently addressed to their satisfaction.

Those lands that are confirmed to form part of the Natural Heritage System and/or Regional Natural Heritage System are to be conveyed to/retained in Town ownership and placed in an appropriate zone category.

Please note that CH provides comments for matters within their regulatory jurisdiction related to Conservation Authority legislation, regulations, and guidelines. As such, it is recommended that CH staff concerns relating to these matters be addressed to their satisfaction.

Once Regional staff are in receipt of supportive Town of Oakville comments, that they are in a position to provide conditions and that they are satisfied that those lands that are confirmed to form part of the Regional Natural Heritage System are to be conveyed to/retained in Town ownership and placed in an appropriate zone category, Halton Region would be in a position to provide our conditions of draft approval, subject to addressing other matters raised in this letter.

Managing Growth – Allocation Program:

The ROP requires that the development industry absorb their share of the cost of the provision for infrastructure and that any financial impact of new development or redevelopment on existing residents be based on a financing plan communicated to the taxpayers and subsequently approved by Council (Section 77 (15)). Policy 77 (17) requires that prior to the Local Municipality approving development within any Regional phase that Regional Council approves a financial and implementation plan, including financial commitment by the private development sector to absorb its share of the cost of the provision of the necessary infrastructure and human services as permitted by applicable legislation. To this end, Halton Region has implemented Allocation Programs that require proponents of residential development applications to secure servicing allocation from Halton Region through an Allocation Agreement. The subject lands are located outside the urban built boundary, and are subject to the Regional Allocation program.

Within the 1st submission, Regional staff offered the following comments:

- The application proposes 181 residential units, comprised of:
 - 129 single detached dwelling units; and
 - 52 street townhouse units.
- Based on the residential units noted above, the proposed development would require 169 Single Detached Equivalent (SDE) to fully service the development. The Region does allow

for draft approval with a minimum of 40% allocation, which would require a minimum of 68 SDE's. The Region's records indicate that 76 SDE's of servicing allocation have been reserved for the subject lands through the 2020 Allocation Program (Law file number 2020-205). Therefore, sufficient allocation had been reserved to support the proposed development within the 1st submission.

- As 76 SDEs have been reserved for these lands, the owner can currently service approximately 45% of the development based on the above-mentioned 181 residential dwelling units, with approximately 93 additional low-medium density SDEs remaining required to enable the full build-out of the proposed development within the 1st submission.
- As there is sufficient allocation for the subdivision as a whole, the Region is in a position to support draft approval of the plan from an allocation perspective.
- Phasing of Development/Allocation Assignment Plan
 - **As a next step, Regional staff required the applicant to confirm their phasing strategy** (i.e. is the applicant looking to only develop the 169 residential units available from the 76 SDE's? Alternatively, was the Owner looking to develop the full 181 residential units?).
 - As noted at the 2022 Pre-consultation meeting, staff required an allocation assignment plan, which includes all applicable allocation agreements (i.e. transfer, top-up or amending agreements) and how many SDE's are being allocated to the proposal from each agreement. Please include the dwelling type(s), number of units proposed, allocation units required to accommodate the proposed development, and allocation units available to the Owner. The Owner should demonstrate that there is enough SDE's for the proposed units and how those SDE's will be allocated for the proposed development. This was not included in the 1st submission package.

Within the 2nd submission, Regional staff reviewed documents entitled 'Draft Plan of Subdivision' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) and 'Allocation Assignment Plan' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023). Staff offer the following comments:

Regional staff emailed the agent for the subject lands on both September 22, 26, and 27, 2023 with several questions concerning allocation to ensure staff understood the final total residential unit count and so all supporting documents were reflected as such. After correspondence with the Town of Oakville, Regional staff believes the application now proposes 188 residential units, comprised of:

- 136 single detached dwelling units; and
- 52 street townhouse units.

Staff note that the Draft Plan of Subdivision' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) and 'Allocation Assignment Plan' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) should be revised to reflect the above.

Based on the residential units noted above, the proposed development would require 176 Single Detached Equivalents (SDE) to fully service the development. The Region does allow for draft approval with a minimum of 40% allocation, which would require a minimum of 70 SDE's. The Region's records indicate that 76 SDE's of servicing allocation have been reserved for the subject

lands through the 2020 Allocation Program (Law file number 2020-205). Therefore, sufficient allocation had been reserved to support the proposed development within the 2nd submission.

As 70 SDEs have been reserved for these lands, the owner can currently service approximately 43% of the development based on the above-mentioned 188 residential dwelling units, with approximately 100 additional low-medium density SDEs remaining required to enable the full build-out of the proposed development.

As there is sufficient allocation for the subdivision as a whole, the Region is in a position to support draft approval of the plan from an allocation perspective.

Phasing of Development/Allocation Assignment Plan

Regional staff note if the proposed phasing plan changes, then the Owner should provide an update to Regional staff, accompanied by revised documentation.

Regional staff note the Owner has enough allocation secured for Phase 1 (as outlined in the 'Allocation Assignment Plan' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023)). It is the Owner's responsibility to secure allocation from a future Regional allocation program to deal with subsequent phases (including Phase 2).

The Owner should provide an updated 'Allocation Assignment Plan' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) to reflect the correct number of units in both Phase 1 and 2.

Residential Reserve Blocks

There are six blocks of residential reserves within the draft plan of subdivision (to be combined with different landowners).

It is the developer's responsibility to determine how they wish to address the seven reserve blocks (e.g. top-up, landowner agreement) per the applicable agreement. It is the Region's standard that through the registration process, should these blocks be included, appropriate allocation will be required or alternatively an agreement between both the applicant and the neighbouring landowner will be required indicating that the adjacent landowner will be securing for these lots for servicing allocation.

Securing Additional SDE Shortfall Prior to Registration of Draft Plan of Subdivision

It is the Region's standard that through the registration process, all residential lots and blocks within the proposed development must have appropriate SDE allocation. It is the Owner /developer's responsibility to determine how they wish to address the 100 SDE shortfall (either through an allocation top-up request, or through an allocation transfer from another residential development site having surplus SDEs or through the use of a Holding provision) in accordance with the applicable allocation program agreement.

Please note that:

-
- There is a process involved in obtaining approval/sign-off by the Region for allocation top-ups or transfers. The developer should consider this in their project timelines in order to prevent delays in the condition clearance and registration stage of the process.
 - In accordance with Section 5.5 of the 2012 and 2020 Allocation program agreements, a Public Works Commissioner's Notice (PWCN) letter will be required prior to obtaining a building permit. A condition draft plan approval will require that all matters related to the Allocation Program be addressed to the Region's satisfaction.

Unallocated Lots/Blocks

The implementing zoning by-law will be required to include a Holding provision for the residential portions of the lands that have no allocation and/or where the Owner will not secure allocation through a top-up or transfer as part of this subdivision process. The wording for such a holding provision is as follows:

"That prior to the lifting of the H, the Owner shall have addressed the following requirements for all the units proposed for development to the satisfaction of the Region of Halton. The Region of Halton shall provide written confirmation that these matters have been addressed:

- a) The Owner shall secure the appropriate amount of water and wastewater Servicing Allocation under the Region of Halton Allocation Program;
- b) The Owner shall have signed the applicable Allocation Agreement or any required Amending Agreements;
- c) The Owner shall have made all required payments associated with the Allocation Program; and,
- d) The Owner shall be in receipt of the Region of Halton Public Works Commissioner's Notice (PWCN) letter."

PWCN/Zone 3/4/5 Boundary Adjustment

In order to obtain a Public Works Commissioner's Notice (PWCN), please provide a formal request in an email or letter along with the following information to the Regional Planner on file thus:

- The number of single detached equivalents (SDEs) that the PWCN is being requested for, the respective law file number and corresponding allocation program, including a copy of the draft plan drawing.
- A Functional Servicing Report (FSR) OR a Design Brief rationalizing the most current FSR that was approved for the proposed development.
- Confirmation that the Zone 3/4/5 Boundary Realignment Assessment in relation to your proposed development is deemed satisfactorily by the Region's Development Project Manager (Please contact the Ron MacKenzie, Development Project Manager for more details: ron.mackenzie@halton.ca).

Important Note: A PWCN cannot be issued until all projects listed in the respective group as set out in Schedule G (Engineering and Construction projects) of the applicable Allocation Agreement(s) have been completed.

Part IV: Healthy Community Policies

Cultural Heritage Policies - Archaeological Resources:

The ROP also contains policies concerning archaeological potential, and the preservation and mitigation and documentation of artifacts. It should be noted the site is identified as having archaeological potential. Within the 1st submission, Regional staff reviewed a Stage 1 and 2 Archaeological Assessment (Prepared by Archaeological & Cultural Heritage Services, dated February 23, 2017) that was completed for the subject lands, which noted no archaeological resources were encountered for the assessments. An Ontario Ministry of Tourism, Culture and Sport acknowledgement letter (MTCS File number 0004969) was issued on April 28, 2017, confirming the Ministry is satisfied with the fieldwork and reporting completed and accepting the report into the Ontario Public Register of Archaeological Reports. As such, Regional staff have no further concerns in this regard.

The proponent is cautioned that during development activities, should archaeological materials be found on the property, the Archaeology Program Unit of the Ministry of Citizenship and Multiculturalism must be notified immediately (archaeology@ontario.ca). If human remains are encountered during construction, the proponent should immediately contact the appropriate authorities (police or coroner) and all soil disturbances must stop to allow the authorities to investigate and the Registrar, Ontario Ministry of Public and Business Service Delivery, who administers provisions of that Act related to burial sites, to be consulted.

Environmental Quality-Land:

Section 147(17) of the Regional Official Plan requires the proponent of a development proposal to determine whether there is any potential contamination on the site they wish to develop, and if there is, to undertake the steps necessary to bring the site to a condition suitable for its intended use. The applicant is required to follow the processes outlined in O.Reg. 153/04 in the preparation of all Environmental Site Assessment (ESA) reports and supporting documentation. As such, ESA reports must be no older than 18 months old and completed per part VII and VIII and Schedule D and E of the regulation. Regional staff have reviewed this application within the context of the Halton Region's "Protocol for Reviewing Development Applications concerning Contaminated Sites".

Within the 1st submission, an ESSQ and 'Phase Two Environmental Site Assessment' (Prepared by WSP, dated April 24, 2017) was provided. Regional staff noted that the ESA report did not satisfy Regional requirements as the report is older than 18 months. Regional staff requested that an updated Phase Two ESA report (Ontario Regulations 153/04 compliant) be submitted for review to establish any potential further requirements. Staff noted any further work recommended by the Qualified Person (QP) in the Phase Two ESA will be required to be submitted to the Region for review. The author of the environmental reports must extend third party reliance to Halton Region.

Within the 2nd submission, a document entitled 'Phase Two Environmental Site Assessment Update, 1086 Burnhamthorpe Road East, Oakville, Ontario' (Prepared by WSP, dated July 20, 2023) was submitted. Regional staff offer the following comments which require submission of a previously prepared Phase One ESA report and letter of reliance:

- Staff are satisfied with the submitted update report, which confirms no exceedances of the applicable site condition standards indicating the site is suitable for its proposed use.

-
- Staff request that the applicant submit the March 2017 Phase One ESA report and also provide a letter of reliance that meet's Halton Region's Reliance Letter template, which extends reliance for the three ESA reports prepared for the site.

Conditions related to Environmental Site Contamination will be requested by Halton Region once we are in a position to provide conditions of draft approval.

Summary:

Subject to addressing the technical comments/concerns identified in this letter, confirmation from the Town of Oakville that any matters related to the Regional Natural Heritage System are addressed, the inclusion of any requested conditions of draft approval (when Halton Region is in a position to issue conditions), Regional staff would consider the applications to conform with the Region's Official Plan.

Other Regional Comments

Water and Wastewater Servicing:

Regional Staff note the proposed use is to connect to the Regional water and wastewater system per section 89(3) of the ROP. Section 58-1.1 (Part 3: Land Stewardship Policies – Development Criteria) states that uses are permitted as specified for each land use designation provided that an adequate supply of water and treatment of wastewater for the proposed use has been secured to the satisfaction of the Region.

Existing Services:

Water:

- No existing watermains are located adjacent to the property.

Sanitary Sewer:

- No existing sanitary sewers are located adjacent to the property.

Within the 1st submission, it was noted that a Functional Servicing Study (FSS) was submitted with the application as part of the Environmental Implementation Report (EIR) prepared by multiple consultants in support of the application. Addendum 5 to the EIR/FSS was submitted in support of this subdivision titled: Rampen Holdings Inc. (Coscorp) Environmental Implementation Report and Functional Servicing Study (Joshua Creek Tributaries EIR#FSS) and was dated August 2022.

Within the 2nd submission, a revised report entitled Environmental Implementation Report and Functional Servicing Report (EIR/FSS) Addendum – circulation 4 (revised Addendum 5) (Prepared by David Schaeffer Engineering Ltd, dated July 2023) was circulated concurrently.

The servicing of the North Oakville East Secondary Plan is addressed in the Area Servicing Plan (ASP) for this area. The ASP provides the overall servicing plan for the ultimate servicing and infrastructure requirements for the NOESP.

Wastewater Servicing:

The FSS notes that the wastewater servicing of this subdivision will be by an internal gravity sewer system that will convey flows eastward to the gravity sewer system in the Mattamy (Joshua Creek) Phase 3 Subdivision. These flows will eventually be conveyed southward to the Regional pump station (Dundas Street East PS) located north of Dundas Street East. Please note that the Dundas Street East Sewage Pump Station has just recently been constructed and is now operational.

The sanitary sewage flow in this subdivision is divided into two catchments and will connect to two locations to the future sanitary sewer system to be constructed as part of the Mattamy (Joshua Creek) Phase 3 Subdivision. The sanitary sewer system that is in the adjacent subdivision will have to be constructed and operational prior to occupancies being considered for the units draining to this sewer.

Water Servicing:

Please note that no water modeling or sizing of the proposed watermains was provided in the FSS, however, the FSS noted that sizing of the local watermain system within this subdivision would be addressed at the detailed design stage.

The FSS notes that the proposed development will be serviced for water by connecting to the proposed watermains that are to be constructed as part of the Mattamy (Joshua Creek) Phase 3 Subdivision. There will also be a future watermain connection to the west once the lands west of this subdivision are developed.

The FSS also does not address dead end watermains. The proposed road and lot fabric proposed for this subdivision will result in two streets being temporary dead ends until the adjacent lands located west of this subdivision are developed. The watermains on these streets that have temporary dead ends are a concern to the Region due to the water quality issues associated with dead end watermains and the Regional resources required to flush these mains regularly. Consideration should be given in the FSS that addresses a program for flushing of dead end watermains or providing temporary looping of these mains. Some temporary looping of watermains may require external temporary easements on the adjacent lands.

The revised Addendum 5 included water modelling of the water system for this development. The water modelling analysis indicated that the proposed water system would meet all Regional requirements for pressures and flows and would adequately service the development for water supply.

Water Pressure Zone Realignment:

The Region is currently undergoing a program to realign the water pressure zones in the Region. As part of this program, it is proposed to implement both an interim zone condition and an ultimate zone condition within the Region's water distribution system. The timing of implementing the new pressure zone boundaries may take several years to complete. The proposed development may be impacted by the changes to the pressure zones in both the interim and ultimate conditions depending on the timing of the implementation of these changes. Please note that minimum service levels for both

water pressure and flow will be maintained throughout the Region during this process. Residents may notice changes to their water pressure when the zones are changed over from the existing zone to the interim zone and also when the interim zone is changed to the ultimate zone.

The revised Addendum 5 included water modelling that determined the impact of the Region's zone realignment program on this development. The analysis included in the report indicated there were no adverse impacts of the zone realignments on this development.

Lands Outside of the Draft Plan:

Please note that the proposed draft plan of subdivision will divide the subject property into two parts that includes the lands included in the draft plan of subdivision and the northern portion of the property that is located adjacent to Burnhamthorpe Road. The northern parcel is located outside of the draft plan of subdivision but has an existing museum facility located on it. It is assumed that the existing facility is currently serviced by private well and septic system. The application is creating a parcel of land that is located within the urban area that will not be servicing by municipal infrastructure.

The revised Addendum 5 notes that this parcel of land will serviced sometime in the future once municipal services are available on Burnhamthorpe Road. This applicant would be responsible to service the northern parcel of land once servicing becomes available and/or municipal servicing is near be extended to the property.

Existing Private Water Well & Septic System Decommissioning:

All existing private wells and septic systems are to be decommissioned prior to construction commencing on the site. Both existing wells and septic systems, if present on the site are to be decommissioned and removed from the site according to the proper MOE guidelines.

Summary:

Please note that the Owner is required to submit a revised Functional Servicing Study outlining in detail the proposed servicing of this property that includes water modelling and that addresses secondary watermain connections, flows, pressures and dead-end watermains

Please note that the Owner is required to submit a revised Functional Servicing Study that includes water modelling for both the interim and ultimate water pressure conditions for the Region's zone realignment that demonstrates the impact these changes will have on the development.

Since the site is currently not serviced and will require the extensions of both a watermain and a sanitary sewer through the adjoining developments the servicing of the development is an issue.

Accordingly, Regional staff request that a holding provision be included on the zoning application to accommodate the Region's concerns in regards to the lack of servicing for this site. The holding provision could be lifted at such a time that the servicing extensions have been constructed or possibly should an alternate arrangement be made with the Region to secure these servicing extensions to the satisfaction of the Region.

The following wording is recommended:

“That the external local watermains and sanitary sewer extensions that are proposed on the lands and that are required to service this property have been constructed and are operational to the satisfaction of the Region of Halton or that alternative provisions have been made by the Owner for the design and construction of the external watermain and sanitary sewer extensions to the satisfaction of the Region of Halton.”

Once we are in a position to issue conditions of draft approval, they will include conditions to servicing.

Waste Management:

The Region has considered the subject application from a Regional waste collection perspective and notes the subject site is eligible for curbside residential waste collection once construction is completed and the units are occupied.

Once we are in a position to issue conditions of draft approval, they will include a condition to waste collection.

Finance:

This development requires Regional Allocation for the single detached equivalents units (SDEs) proposed. The payments and contributions are payable per the terms and conditions set out in the applicable allocation program agreement in which the SDEs are being reserved for the Owner.

The Owner is also required to pay all other applicable Regional Development Charges (DCs) and Front-ending Recovery Payments prior to the issuance of any building permits, unless a subdivision (or other form of development) agreement is required in which case a portion of the DC's and Front-ending Recovery Payment may be payable upon execution of the agreement. Please visit our website at <https://www.halton.ca/The-Region/Finance-and-Transparency/Financing-Growth/Development-Charges-Front-ending-Recovery-Payment> to obtain the most current Development Charge and Front-ending Recovery Payment information, which is subject to change.

Disclaimer: It is the Owner's responsibility to ensure that all applicable payments and development charges for the single detached equivalents units (SDEs) being requested are paid for as required by the terms and conditions of the applicable allocation program agreement.

It does not appear that the Owner currently owns sufficient Allocation SDE for this complete the full draft plan of Subdivision.

All residential Lots/Blocks on a Subdivision Agreement require sufficient Allocation SDE unless there is a Holding Provision in place by the Local Municipality.

Six residential reserves must be covered by the first developer in for Subdivision Agreement unless they have written agreement from the adjoining Owner(s).

Conclusion:

The Region is not in a position at this time to provide conditions of draft approval until:

- The Town of Oakville has:
 - Provided supportive comments;
 - Conditions of draft approval; and
 - Indicated that they are satisfied that those lands that are confirmed to form part of the Regional Natural Heritage System are to be conveyed to/retained in Town ownership and placed in an appropriate zone category.

- The Owner has addressed the servicing of the existing Joshua Creek Heritage Art Centre, to the satisfaction of Halton Region.

Halton Region also requests the following at this time:

- That the Draft Plan of Subdivision' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) and 'Allocation Assignment Plan (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) be revised to reflect the above noted allocation comments, including reflecting the correct number of units in both Phase 1 and 2.

- As outlined in this letter, Halton Region requests that the implementing zoning by-law include a Holding provision related to servicing on all the residential-zoned lands and a Holding provision related to allocation on those lands for which there is no allocation:

“That the external local watermains and sanitary sewer extensions that are proposed on the lands and that are required to service this property have been constructed and are operational to the satisfaction of the Region of Halton or that alternative provisions have been made by the Owner for the design and construction of the external watermain and sanitary sewer extensions to the satisfaction of the Region of Halton.”

“That prior to the lifting of the H, the Owner shall have addressed the following requirements for all the units proposed for development to the satisfaction of the Region of Halton. The Region of Halton shall provide written confirmation that these matters have been addressed:

1. The Owner shall secure the appropriate amount of water and wastewater Servicing Allocation under the Region of Halton Allocation Program;
 2. The Owner shall have signed the applicable Allocation Agreement or any required Amending Agreements;
 3. The Owner shall have made all required payments associated with the Allocation Program; and,
 4. The Owner shall be in receipt of the Region of Halton Public Works Commissioner's Notice (PWCN) letter.”
- That the Owner submit the March 2017 Phase 1 ESA report and letter of reliance, to the satisfaction of Halton Region. The author of the environmental reports must extend third party reliance to Halton Region, according to Halton Region's template. The Owner is required to comply with Ontario Regulation 153/04 and Halton's Protocol for Reviewing Development Applications with respect to Contaminated or Potentially Contaminated Sites.

Please note the applicant will be required to execute the allocation transfer and top-up requests as required.

We trust that these comments are of assistance. Should you have any questions or require additional information, please do not hesitate to contact the undersigned. Please send notice of the Town's decision on this application.

Sincerely,

Michaela Campbell
Michaela Campbell
Intermediate Planner
michaela.campbell@halton.ca

cc: Michael Di Febo, Acting Senior Planner (via email)
Andrew Suprun, Multi-Residential Waste Diversion Coordinator (via email)
Ron MacKenzie, Development Engineer (South) (via email)
Cathie Boyle, Finance, Halton Region (via email)
Greg Bowie, Allocations Program Manager (via email)
Elisa Bernier, Environmental Planner, Town of Oakville (via email)

Appendix "A"

Guidelines for Zone 3/4/5 Boundary Realignment Assessment

Zone 3/4/5 Boundary Assessment:

The Region of Halton's Infrastructure Planning team provides this general guidance to complete the assessment for the Zone 3/4/5 Boundary Realignment. Please note that the Region will not prescribe the exact method for the assessment, as the complexity, built form and size of the development may impact the approach. Regional staff would be happy to discuss and assist as needed to support your consultant in this assessment. General guidance and requirements are outlined below:

Modeling:

The Zone 3/4/5 Boundary Re-alignment assessment can include the use of the Region's Hydraulic Model, which the Region will make available, but it is not a requirement for approval and may be overly complex in some instances. Any modeling exercise or theoretical calculation which can demonstrate adequate servicing under all pressure scenarios is considered suitable. In general, it is expected that the pressure boundary assessment will build on the servicing assessment done as part of the Functional Servicing Study.

Required Information for Regional Approval:

The Zone 3/4/5 Boundary Re-alignment assessment must demonstrate the following at a minimum:

- That fire flow/pressure will be suitable for all residents/buildings within the development under existing, interim and future pressure scenarios.
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- That residential/employment water flow/pressure within the development (i.e., general servicing) will adhere to both Regional guidelines and Building Code guidelines under existing interim and pressure scenarios.
 - If any requirement will not be met under one or more pressure scenarios, the developer must outline what provisions or mitigating measures will be put in place to address the deficiency.
 - It is required that the assessment is carried out by a reputable consultant. The submission must include a covering letter with a summary of the assessment as well as results and mitigating measures (as required). The letter will be signed and stamped by a qualified professional.
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13 **Enbridge**

Barbara M.J. Baranow – ONTLands@enbridge.com

Circulation 1

It is Enbridge Gas Inc.'s request that as a condition of final approval that the owner/developer provide to Enbridge the necessary easements and/or agreements required by Enbridge for the provision of gas services for this project, in a form satisfactory to Enbridge.

14 **Oakville Hydro**

Chris Gaunt – cgaunt@oakvillehydro.com

Circulation 2

Supply for the development to come from Burnhamthorpe R E.

Once the development is draft approved, Oakville Hydro will submit to the Developer an "Offer to Connect" for the electrical distribution system. The Developer will have several options to choose from at that time. Under Ontario Energy Board regulations, an economic evaluation will be done to determine the funding split (between the developer and Oakville Hydro) for the distribution system expansion. The developer will have to up-front the cost of the electrical distribution system expansion. Contact Oakville Hydro Engineering for further information.

15 **Halton District School Board**

Laureen Choi – choil@hdsb.ca

Circulation 2

Thank you for the opportunity to review the proposed development application. It is understood that the application is a proposal to include the construction of 185 residential units (133 detached units, 52 townhouses).

According to the Board's projections many of the existing schools in the vicinity are projected to be over building and portable capacity. Long range projections for schools can be viewed in our [Long Term Accommodation Plan \(LTAP\)](#) which can be found on the Board's website. The Board has identified a need for new elementary school sites in North Oakville. The next identified elementary school sites are **Oakville NE #3 ps** located in file #24T-12003, [Joshua Creek Mattamy](#) and **Oakville**

NE #5 ps located in files #24T-19004, [Preserve North Phase 4](#) and #24T-21004, [Docasa Group](#). As a result, options for student accommodations will be reviewed in the future. Attendance at these schools is not guaranteed for existing and new students. Currently, any students generated from this development would attend **Falgarwood PS, Munn's PS** and **T.A. Blakelock HS**.

Please be advised that the Halton District School Board has no objection to the proposed application as submitted. Please notify us of the adoption of the proposed application and include us in the circulation of any future applications, including site plans, related to this development. The Halton District School Board will provide comments and conditions on each proposed development application received.

The Halton District School Board has no objection to the development application subject to the following:

1. The owner agrees to place the following notification in all offers of purchase and sale for all lots/units and in the Town's subdivision agreement, to be registered on title:
 - a. Prospective purchasers are advised that schools on sites designated for the Halton District School Board in the community are not guaranteed. Attendance at schools in the area yet to be constructed is also not guaranteed. Pupils may be accommodated in temporary facilities and/or be directed to schools outside of the area.
 - b. Prospective purchasers are advised that school busses will not enter cul- de- sacs and pick up points will be generally located on through streets convenient to the Halton Student Transportation Services. Additional pick up points will not be located within the subdivision until major construction activity has been completed.
2. That in cases where offers of purchase and sale have already been executed, the owner sends a letter to all purchasers which include the above statement.
3. That the developer agrees that, should the development be phased, a copy of the phasing plan must be submitted prior to final approval to the Halton District School Board. The phasing plan will indicate the sequence of development, the land area, the number of lots and blocks and units for each phase.
4. That the Owner shall supply, erect and maintain signs at all major entrances into the new development advising prospective purchasers that pupils may be directed to schools outside of the area. The Owner will make these signs to the specifications of the Halton District School Board and erect them prior to the issuance of building permits.
5. That a copy of the approved sidewalk plan, prepared to the satisfaction of the Town of Oakville be submitted to the Halton District School Board.
6. The Owner shall provide Halton District School Board a geo-referenced AutoCAD file of the Draft M-plan once all Lot and Block numbering has been finalized. Should any changes occur after the initial submission to Lot and Block configuration or numbering on the draft M-plan the Owner shall provide a new AutoCAD file and a memo outlining the changes.

In addition, the following note should be included in the conditions:

Educational Development Charges are payable in accordance with the applicable Education Development Charge By-law and are required at the issuance of a building permit. Any building permits which are additional to the maximum unit yield which is specified by the Subdivision

Agreement are subject to Education Development Charges prior to the issuance of a building permit, at the rate in effect at the date of issuance.

16 Halton Catholic District School Board

Kathie Panzer – panerk@hcdsb.org

Circulation 2

In response to the above noted revised application to permit the development of 132 single family dwellings and 52 townhouse units, the Halton Catholic District School Board (“HCDSB”) has no objection. Conditions and notes provided on December 12, 2022 still apply for this development.

1st Submission Comments:

In response to the above noted application to permit the development of 133 single family dwellings and 52 townhouse units, the Halton Catholic District School Board (“HCDSB”) has no objection.

In terms of school accommodation, if the development were to proceed today, elementary students generated from this proposal would be accommodated at St. Gregory the Great CES located 138 Sixteen Mile Drive.

Secondary school students would be directed to Holy Trinity CSS located at 2420 Sixth Line. Should you proceed with the approval of the draft plan of subdivision and zoning by-law amendment, we require that the following conditions be placed in the draft plan conditions and the subdivision agreement, as well as any future agreements (e.g. Site Plan, Condominium). The conditions are to be fulfilled prior to final approval:

1. The owner agrees to place the following notification in all offers of purchase and sale for all lots/units and in the Town’s agreements, to be registered on title:
 - a. Prospective purchasers are advised that Catholic school accommodation may not be available for students residing in this area, and that you are notified that students may be accommodated in temporary facilities and/or bused to existing facilities outside the area.
 - b. Prospective purchasers are advised that the HCDSB will designate pick up points for the children to meet the bus on roads presently in existence or other pick up areas convenient to the Board, and that you are notified that school busses will not enter cul-de-sacs and private roads.
 2. In cases where offers of purchase and sale have already been executed, the owner is to send a letter to all purchasers which include the above statements.
 3. That the owner agrees to the satisfaction of the HCDSB, to erect and maintain signs at all major entrances into the new development advising prospective purchasers that if a permanent school is not available alternative accommodation and/or busing will be provided. The owner will make these signs to the specifications of the HCDSB and erect them prior to final approval.
 4. That the developer agrees that should the development be phased, a copy of the phasing plan must be submitted prior to final approval to the HCDSB. The phasing plan will indicate
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the sequence of development, the land area, the number of lots and blocks and units for each phase.

5. That a copy of the approved sidewalk plan, prepared to the satisfaction of the Town of Oakville be submitted to the HCDSB.
6. The owner shall provide HCDSB a geo-referenced AutoCAD file of the Draft M-plan once all Lot and Block numbering has been finalized. Should any changes occur after the initial submission to Lot and Block configuration or numbering on the draft M-plan the Owner shall provide a new AutoCAD file and a memo outlining the changes.

It should be noted that Education Development Charges are payable in accordance with the applicable Education Development Charge By-law and are required at the issuance of a building permit. Any building permits that are additional to the maximum unit yield that is specified by the Subdivision Agreement are subject to Education Development Charges prior to the issuance of a building permit, at the rate in effect at the date of issuance.

17 **Conservation Halton**

Sean Stewart – sstewart@hrcs.on.ca

Circulation 2

Conservation Halton (CH) staff has reviewed the above-noted application as per our regulatory responsibilities under Ontario Regulation 162/06 and our provincially delegated responsibilities under Ontario Regulation 686/21 (e.g., represent provincial interests for Sections 3.1.1-3.1.7 of the Provincial Policy Statement (PPS)).

Documents reviewed as part of this submission, received on **September 22, 2023**, are listed in **Appendix A**. Detailed comments that are to be addressed as conditions of approval and/or through the CH permitting process are noted in **Appendix B**.

Proposal

To rezone the site from Future Development (FD) to Natural Heritage System, Park and site-specific General Urban, Sub-Urban to facilitate the creation of 187 dwelling units.

A Draft Plan of Subdivision and Zoning By-Law Amendment Application has been submitted to permit:

Residential Units (187 Units)

- Detached dwellings (11.6 m): 81 units
- Detached dwellings (9.8 m): 54 units
- Townhouses (street): 52 units
- Village Square: 0.185 ha
- Natural Heritage System: 6.8 ha
- Roads: 2.95 ha
- Walkways: 0.018 ha
- TOTAL Site Area: 15.468 ha

Background

This is the second circulation of the DPS, and ZBA, and the 3rd circulation of the EIR/FSS. As there were significant comments from CH on the 2nd EIR/FSS submission, CH advised in our letter dated December 22, 2022, regarding the DPS and ZBA, that we would provide more comprehensive comment upon review of the 3rd submission of an EIR/FSS (CH considers this to be the 3rd EIR/FSS submission). The applicant has submitted the EIR/FSS, DPS, and ZBA submissions in tandem for review.

Ontario Regulation 162/06

CH regulates all watercourses, valleylands, wetlands, Lake Ontario and Hamilton Harbour shoreline and hazardous lands, as well as lands adjacent to these features. The subject property is traversed to the north east of the proposed Plan of Subdivision by a tributary of Joshua's Creek (JC 7) and contains the flooding and erosion hazards associated with that watercourse. The property also contains Provincially Significant Wetlands (PSW). CH regulates 7.5m from the greater of the flooding or erosion hazards and 120 m from PSWs. Permission is required from CH prior to undertaking any development within CH's regulated area and must meet CH's *Policies and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document*, dated April 27, 2006 (last amended, November 26, 2020) (<https://conservationhalton.ca/policies-and-guidelines>).

Provincial Delegated Authority Under Ontario Regulation 686/21

CH reviews applications based on its provincially delegated responsibility to represent provincial interests for the natural hazard policies of the PPS (3.1.1-3.1.7 inclusive).

In general, there does not appear to be a conflict with the natural hazards policies of the PPS. Please see comments below regarding the status of Block 141. CH will confirm consistency with the natural hazard policies of the PPS upon review of a future DPS and ZBA circulation.

Recommendation

CH staff are generally satisfied with the EIR/FSS, and remaining comments can be provided as a condition of draft plan approval.

As outlined in **Appendix B**, CH staff have some questions about subdivision Block 141 and the draft ZBA Schedule A. We recommend deferral of a decision on the DPS and ZBA applications, and that the applicant provide a response to our questions regarding Block 141 and the draft ZBA, in a subsequent scoped submission. Upon review of that submission, CH staff will provide a recommendation on the DPS and ZBA applications, and potentially draft plan conditions. We trust these comments are of assistance and should you have any questions, please contact me at stewart@hrca.on.ca.

Appendix A and B provided in separate PDF.

18 **Rogers**

Alaa Azam – gtaw.newarea@rci.rogers.com

Circulation 2

Rogers Reference Number: M23BC99A01

Rogers Communications Canada Inc. (“**Rogers**”) has reviewed the application for the above Subdivision and has determined that it intends to offer its communications services to residents of the Subdivision. Accordingly, we request that municipal approval for the Subdivision be granted subject to the following conditions:

- (1) The Owner shall agree in the Subdivision Agreement to (a) permit all CRTC-licensed telecommunications companies intending to serve the Subdivision (the “**Communications Service Providers**”) to install their facilities within the Subdivision, and (b) provide joint trenches for such purpose.
- (2) The Owner shall agree in the Subdivision Agreement to grant, at its own cost, all easements required by the Communications Service Providers to serve the Subdivision, and will cause the registration of all such easements on title to the property.
- (3) The Owner shall agree in the Subdivision Agreement to coordinate construction activities with the Communications Service Providers and other utilities, and prepare an overall composite utility plan that shows the locations of all utility infrastructure for the Subdivision, as well as the timing and phasing of installation.
- (4) The Owner shall agree in the Subdivision Agreement that, if the Owner requires any existing Rogers facilities to be relocated, the Owner shall be responsible for the relocation of such facilities and provide where applicable, an easement to Rogers to accommodate the relocated facilities.

In addition, we kindly request to, where possible, receive copies of the following documents:

- (1) the comments received from any of the Communications Service Providers during circulation;
- (2) the proposed conditions of draft approval as prepared by municipal planners prior to their consideration by Council or any of its committees; and
- (3) the municipal planners’ report recommending draft approval before it goes to Council or any of its committees.

Should you require further information or have any questions, please do not hesitate to contact me at gtaw.newarea@rci.rogers.com

19 **Canada Post**

Anna Burdz – anna.burdz@canadapost.postescanada.ca

Circulation 1

Canada Post has reviewed the proposal for the above noted Development Application and has determined that the completed project will be serviced by centralized mail delivery provided through Canada Post Community Mail Boxes.

In order to provide mail service to this development, Canada Post requests that the owner/developer comply with the following conditions:

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- The owner/developer will consult with Canada Post to determine suitable permanent locations for the placement of Community Mailboxes and to indicate these locations on appropriate servicing plans.
 - The Builder/Owner/Developer will confirm to Canada Post that the final secured permanent locations for the Community Mailboxes will not be in conflict with any other utility; including hydro transformers, bell pedestals, cable pedestals, flush to grade communication vaults, landscaping enhancements (tree planting) and bus pads.
 - The owner/developer will install concrete pads at each of the Community Mailbox locations as well as any required walkways across the boulevard and any required curb depressions for wheelchair access as per Canada Post's concrete pad specification drawings.
 - The owner/developer will agree to prepare and maintain an area of compacted gravel to Canada Post's specifications to serve as a temporary Community Mailbox location. This location will be in a safe area away from construction activity in order that Community Mailboxes may be installed to service addresses that have occupied prior to the pouring of the permanent mailbox pads. This area will be required to be prepared a minimum of 30 days prior to the date of first occupancy.
 - The owner/developer will communicate to Canada Post the excavation date for the first foundation (or first phase) as well as the expected date of first occupancy.
 - The owner/developer agrees, prior to offering any of the residential units for sale, to place a "Display Map" on the wall of the sales office in a place readily available to the public which indicates the location of all Canada Post Community Mailbox site locations, as approved by Canada Post and the Town of Oakville.
 - The owner/developer agrees to include in all offers of purchase and sale a statement, which advises the prospective new home purchaser that mail delivery will be from a designated Community Mailbox, and to include the exact locations (list of lot #s) of each of these Community Mailbox locations; and further, advise any affected homeowners of any established easements granted to Canada Post.
 - The owner/developer will be responsible for officially notifying the purchasers of the exact Community Mailbox locations prior to the closing of any home sales with specific clauses in the Purchase offer, on which the homeowners do a sign off.

Canada Post further requests the owner/developer be notified of the following:

1. The owner/developer of any condominiums will be required to provide signature for a License to Occupy Land agreement and provide winter snow clearance at the Community Mailbox locations
 2. Enhanced Community Mailbox Sites with roof structures will require additional documentation as per Canada Post Policy
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3. There will be no more than one mail delivery point to each unique address assigned by the Municipality
4. Any existing postal coding may not apply, the owner/developer should contact Canada Post to verify postal codes for the project
5. The complete guide to Canada Post's Delivery Standards can be found at:
https://www.canadapost.ca/cpo/mc/assets/pdf/business/standardsmanual_en.pdf

The Location of the Local Post Office is **2420 Speers Rd, Oakville Ontario L6L 0C9**

20 **Bell Canada**

Juan Corvalan – planninganddevelopment@bell.ca

Circulation 1

Re: ZBLA (Z.1310.18) & Draft Plan of Subdivision (24T-22009/1310) Application; 1086 Burnhamthorpe Rd. E., Oakville; Your File No. Z.1310.18,24T-22009/1310

We have reviewed the circulation regarding the above noted application. The following paragraphs are to be included as a condition of approval:

"The Owner acknowledges and agrees to convey any easement(s) as deemed necessary by Bell Canada to service this new development. The Owner further agrees and acknowledges to convey such easements at no cost to Bell Canada.

The Owner agrees that should any conflict arise with existing Bell Canada facilities where a current and valid easement exists within the subject area, the Owner shall be responsible for the relocation of any such facilities or easements at their own cost."

Upon receipt of this comment letter, the Owner is to provide Bell Canada with servicing plans/CUP at their earliest convenience to planninganddevelopment@bell.ca to confirm the provision of communication/telecommunication infrastructure needed to service the development.

It shall be noted that it is the responsibility of the Owner to provide entrance/service duct(s) from Bell Canada's existing network infrastructure to service this development. In the event that no such network infrastructure exists, in accordance with the Bell Canada Act, the Owner may be required to pay for the extension of such network infrastructure.

If the Owner elects not to pay for the above noted connection, Bell Canada may decide not to provide service to this development.

To ensure that we are able to continue to actively participate in the planning process and provide detailed provisioning comments, we note that we would be pleased to receive circulations on all applications received by the Municipality and/or recirculations.

We note that WSP operates Bell Canada's development tracking system, which includes the intake and processing of municipal circulations. However, all responses to circulations and requests for

DRAFT Comments Report

Date:	October 25, 2023	REVISED: October 31, 2023
To:	Robert Russell , Planning Consultant Tom Baskerville , Owner	rob.russell@russellplanning.com tbaskerville@coscorp.ca
From:	Brandon Hassan , Senior Planner, Planning Services	
Contact Info:	T: 905-845-6601 ext. 3006 F: 905-338-4414 E: brandon.hassan@oakville.ca	
Re:	Circulation Comments (2nd submission)	
Application:	Rampen Holding Inc. (Coscorp)	
Description:	Zoning By-law Amendment and Plan of Subdivision for 188 residential units	
Address:	1086 Burnhamthorpe Road East	
File #s:	Z.1310.18 & 24T-22009.1310	

The above-noted Zoning By-law Amendment and Plan of Subdivision applications have been circulated to various municipal departments and external agencies for review. Comments which have been received with respect to the applications are included below. Please be aware that comments from some departments and/or agencies may still be pending.

Please contact the staff member responsible for each set of comments, as listed below, in order to resolve any outstanding comments/issues. Kindly request the responsible staff member to send me an email of all correspondence for our records.

Revised and coordinated plans and documents which fully address the attached comments must be submitted according to the process outlined in the [Step by Step Digital Submissions Guide](#) on the Town's website. Digital materials must be named in an organized and descriptive manner according to format outlined in Planning's [Digital Submission Naming Conventions](#) document.

You are also required to submit the following items (forming a complete resubmission package):

- **a cover letter describing how each comment within this report has been addressed.**
- a transmittal provided in .doc (Word) format listing the materials submitted, with their revision number and date and the titles and information presented in the format as provided at the end of this report

Furthermore, all reports, documents and drawings submitted must:

- be presented in metric measure that can be accurately scaled,
- be prepared, stamped and signed by a qualified professional architect (for site plan and architectural drawings), engineer (for site plan and engineering drawings/reports), or landscape architect (for landscape and tree protection drawings/reports)

Circulation Comments:

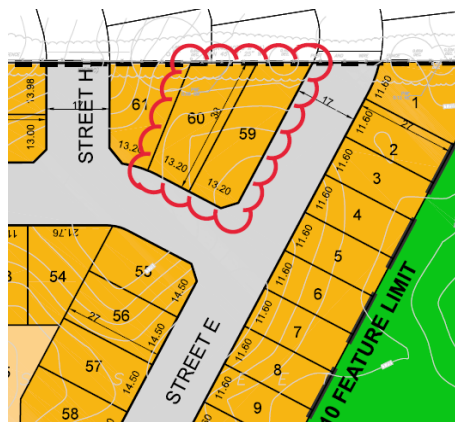
PLANNING SERVICES

1 Current Planning

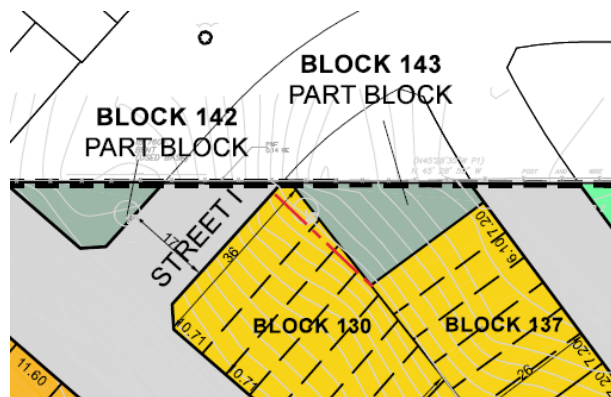
Brandon Hassan ext. 3006

Circulation 2

- A 3rd Submission is required to address the comments noted in this Report, prior to bringing a Recommendation Report to the Planning and Development Council:
 - **Comments** – outstanding matters to be addressed
 - **Comments** – not yet received
 - **Comments** – cleared
- **[Comment addressed]** Please provide a plan and advise the potential for Lots 60 and 59 to face Street E in order to have a contiguous streetscape of front yards, rather than a flankage yard which would result in an elongated privacy fence:

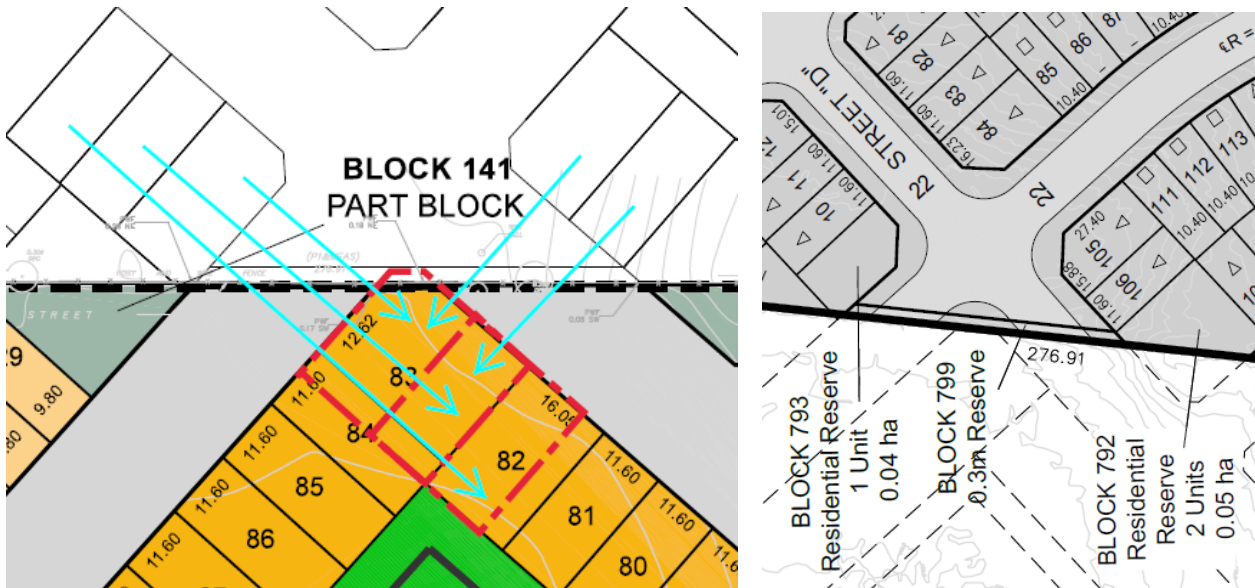


- Please provide a plan and advise how the proposed property line between Block 130 and Block 143 can be realigned the dissect the center of Street I:

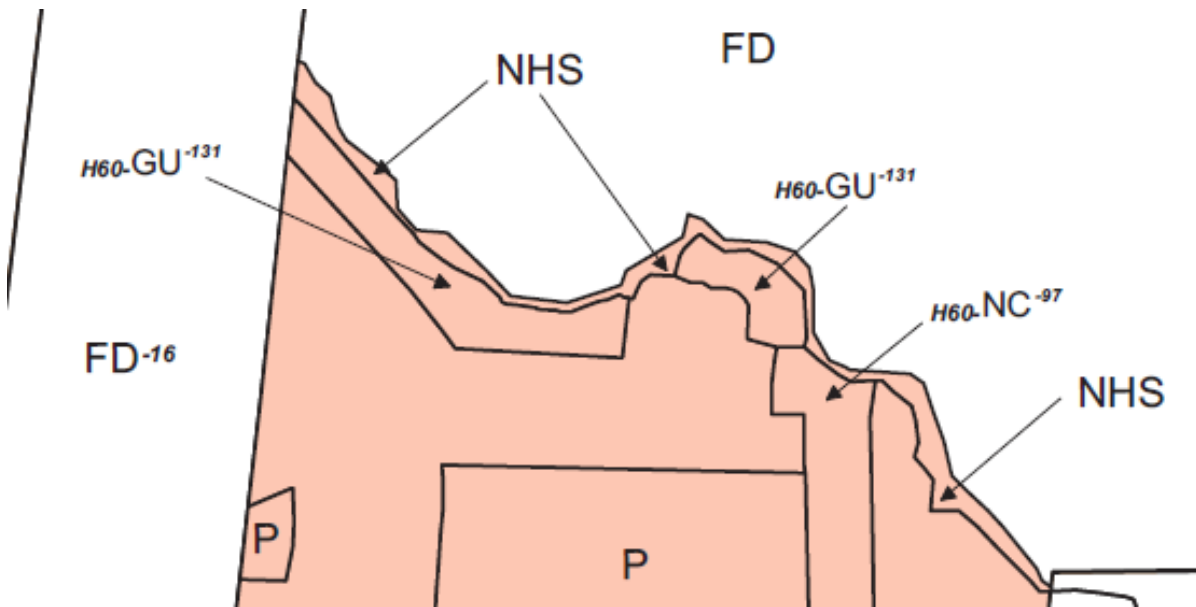


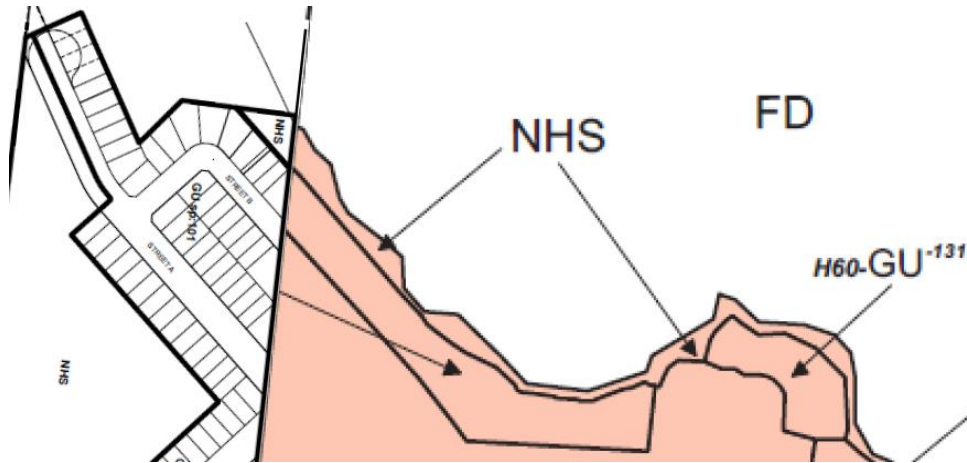
- **[Circ 2]** It still appears that the now Block 133 lots are deeper than the abutting now Block 146 lots – additional dimensions would help clarify to show the centerline.

- **[Comment addressed]** Please provide a plan and advise if it's possible to reconfigure Lots 82, 83 and 84 in order for them to interface with the intersection and face Street C and Street A as the lots on the other corners of the intersection do:



- **[Comment addressed]** Please confirm that the proposed lots will comply with the lot area, frontage and depth for the S and GU zones.
- Please be advised that the Mattamy Phase 3 Zoning will be used on the shared lots to avoid split zoning.
 - **[Circ 2]** Lots along the north side of Street B in Mattamy are Zoned GU sp: 131 – the zone should extend up to the Block 148 walkway on this Draft Plan for consistency (to be confirmed by our GIS Staff when the Draft Schedule is prepared):





- **[Circ 2]** Blocks 133-140 should be zoned GU, as sp: 101 would not be applicable for townhomes since it relates to architectural details for singles in Mattamy.
- **[Circ 2]** Part Block 146 should also be zoned GU as well, unless a townhouse cannot be accommodated with the abutting Mattamy Part Block 770 – please advise. It would be more appropriate for townhomes, rather than two single lots.
- Please provide a Phasing Plan. All lands that do not have sufficient allocation will be subject to a Holding Provision relating to allocation.
 - **[Circ 2]** H# to be provided for the ZBA Schedule.
- Please be advised that the entire subdivision will be subject to a Holding Provision until such time that road access is provided from the Mattamy lands to the east.
 - **[Circ 2]** H# to be provided for the ZBA Schedule.
 - **[Circ 2]** Block 141 should remain as (FD) to be rezoned at a later date with the Capobianco lands based on future floodplain studies, to not presuppose its zone/use.
- **[Comment addressed]** Please provide a Concept Plan illustrating how Block 138 is intended to be developed with the lands to the west to ensure the approval of the current subdivision would not preclude the ultimate development of the lands to the west. Staff note that Street D may need to be extended to provide access.
- Please provide dwelling siting plans for any irregular lots such as 19, 33, 35, 46, 54 and 61.
 - Further to the conceptual drawings in the submitted Urban Design brief.
 - **[Circ 2]** Although Lot 19 will be irregular in shape and oversized due to the curve in the road, the alignment with the rear of Lot 34 should be squared off and the frontage along Street G should be the same as Lot 59 along Street F – this should result in a dwelling on Lot 33 with the same width as Lots 27-32 (approximately 8.6 m according to the Prelim Lot Siting Plan if the lot line is shifted 1.2 m):



- **[Comment addressed]** Please ensure you follow the Master Plan with respect to the land use category for example:
 - The lots on the east side of Street F should be GU
 - The lots bounded by Street H, Street F and Street E should be GU
 - The lots bounded by Street D, Street G, Street E and Street F should be GU
- **[Comment addressed]** With the changes requested above, please update the Density Map and ensure you are within the density range for each land use category.
- **[Comment addressed]** Please ensure that there is sufficient area between the wetland buffer and rear lots line to accommodate a trail without infringing on privacy of the residential lots.
- Please review the North Oakville Parking Strategy for on-street parking stall dimensions and revise the on-street parking plan accordingly.
 - **[Circ 2]** Please submit the revised Preliminary On-Street Parking Plan (i.e. separate from Figure 26 in the TIS) showing the parking space locations, rather than a count along the street – the Plan states +/- 115 spaces, whereas Figure 26 states 26 spaces, which is a substantial difference:



Figure 26 – On-Street Parking for the Internal Streets



-
- **[Comment addressed]** Please ensure the Draft Plan of Subdivision is signed by the owner and the surveyor.
 - **[Circ 2]** Matters to be Addressed from the June 26, 2023 Planning and Development Council Meeting (to be included in future Recommendation Report):
 - a. *details on the Village Square including the facilities to be provided.*
 - b. *explanation of the optional Natural Heritage System linkage.*
 - c. *details about the overall traffic plan and timing, and use of a temporary turning circle and future connection to Burnhamthorpe Road.*
 - d. *details about access/servicing to the subject lands through abutting lands.*

Conditions of Draft Plan Approval

- *TBD* – **[Circ 2]** A draft of the Conditions will be provided for review, prior to the Planning and Development Council Meeting Agenda being set.

Re-Circulation Fee

- A re-circulation fee of 15% of the in-effect application fee will be required after the 3rd submission and every resubmission thereafter (per Schedule 'A' Section 10 of the applicable fee by-law).

File Naming

Future submission materials must be named according to the following format:

- File Number _ Condensed Name _ Version Number _ Date (with no spaces)

For example, your set of files should look like the following list:

- 00_CoverLetter_v1_2020-02-28
- 01_Aerial_v1_2020-02-14
- 02_Survey_v1_2020-02-23
- 03_SitePlan_v1_2020-02-23
- 04_FloorPlan_v1_2020-02-23
- etc.

Requirements:

- NO spaces in the file name.
- NO special characters within the file name (i.e. @ # \$ % & * / \ |).
- ONLY Letters, Numbers, Dashes, Underscores and Periods are permitted in the file name.

Final Note:

- All submission of plans and/or studies must be clearly labelled and in a larger font size in the title block as the next submission by number, corresponding to the version number and date in the file name.

2 Policy Planning, Heritage

Susan Schappert ext. 3870

Circulation 1

Heritage Planning has concerns with the four lots included at the end of the temporary turning circle located in Part 2 of the R-Plan (that used to designate the adjacent cultural heritage landscape). While no heritage attributes are directly impacted within this area, Part 2 was intended to be a buffer between the future development and the cultural heritage landscape of the Joshua Creek Heritage Art Centre. This area should remain clear of building lots, although roads and park or open space would be acceptable to Heritage Planning staff. The tip of lot 98 does overlap into Part 2; however Heritage Planning staff would accept this minor intrusion into the buffer area.

3 Urban Design

Philip Wiersma ext. 3795, Nada Almasri ext. 3132

Circulation 2

The following comments are based on materials circulated September 13, 2023 [Circ 2]. These comments reflect the Town's concerns identified in the high-level assessment as noted below and provide direction on necessary modifications. Additional and/or modified comments may be provided after review of subsequently submitted revised materials.

Policies and Guidelines

In framing our review and drafting our comments, we have utilized and relied upon the following:

- North Oakville East Secondary Plan
- North Oakville Master Plan
- North Oakville Urban Design and Open Space Guidelines
- North Oakville Urban Forest Strategic Management Plan
- Livable by Design Urban Design Manual (LbDM); specifically
 - [Urban Design Direction for Oakville \(LivDesignManual-v2-1.pdf \(oakville.ca\)\)](#);
 - [Site Design and Development Standards \(Livable by Design Manual \(Part C\) \(oakville.ca\)\)](#) [referenced to ensure site functionality]

Comments and Recommendations

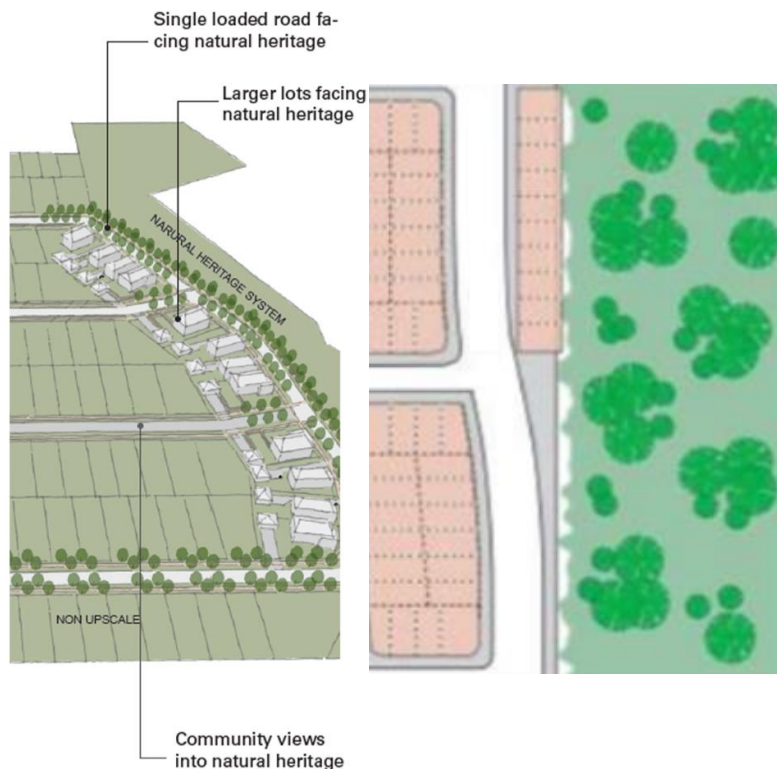
1. **[Circ 2] Comment addressed.**

[Circ 1] The NHS blocks (Blocks 147 and 150) to the northwest and southeast within the site contribute to the identity of this development as focal points. While views to Block 147 are provided, Block 150 is completely hidden from public views by the strip of rear-lotting dwellings along its edge. Explore the opportunity to extend the views to these natural features on this block from streets and public spaces where feasible.

The Urban Design Brief (Section 2.4 Views & Vistas from the Site and Section 6.1.3 Views and Vistas) considers “opportunities to provide strategic views and vistas towards the existing and proposed open space features (NHS /Joshua Creek Floodplain) within the Coscorp Joshua Inc. neighbourhood”. It further states that “These views and vista opportunities are primarily provided through the location of street frontage immediately adjacent to these open space features”, however, this is not reflected on the NHS Block 150 as per the below image. Please revise the plan and update the UDB as needed.



The below sketches show examples of neighborhood edge interfaces through single loaded road, fully or partially, facing the NHS areas which provide views and public access.



Circulation Comment Chronology

- November 21, 2022 [Circ 1]
- September 13, 2023 [Circ 2]

4 Development Engineering

Richard Renaud ext. 3631

Circulation 1

SECTION 1: General Comments

The following comments from Development Engineering are general only. Development Engineering cannot provide detailed comments on the draft plan prior to the Environmental Implementation Report (EIR) being finalized. The complete review on the draft plan and associated Functional Servicing Report (FSR) will be completed when the EIR for all subcatchments have been endorsed. Items such as creek block sizing, SWMF block sizing and functionality, road pattern and layout, for all relevant land holdings within the EIR drainage area are to be resolved. Approval from all other agencies such as Conservation Halton and Region of Halton are also required to be completed.

Each draft plan within the approved Environmental Implementation Report (EIR) drainage area shall be submitted with an implementation FSR which outlines how the individual draft plan meets the requirements of the EIR and identifies all of the temporary works and limitations of the plan proceeding without the adjoining lands. This is to provide the engineering background for determining which roads cannot be built or require temporary turnarounds, lots that will be frozen, and any interim stormwater management structures prior to the ultimate stormwater management scheme.

The applicant is to investigate the land requirements for hydro appurtenances such as switch gears. This may require to include designated lands within the draft plan. Hydro infrastructure is to be located within town lands.

Any streets that currently dead end and are not built in conjunction with the adjacent development lands, the street will require a temporary turnaround at the end of the street with a minimum radius of 13m and to the satisfaction of the Town. No roads shall dead end when more than one lot deep.

The minimum roadway profile gradient is 0.5%.

Draft Plan

Provide the turning circle diameter on the draft plan. All roads to be to town standards.

It is highly recommended to construct Street A to Burnhamthorpe Road as part of the Rampen subdivision development. The applicant is to explore with adjacent land owner to the west to obtain an easement on their lands in order to construct the road.

SECTION 2: Functional Servicing Report Comments

Development Engineering have reviewed the **second circulation** functional servicing material and offer the following comments:

Provide a response letter indication how each comment was addressed or an explanation why the comment was not addressed.

Conceptual Storm Servicing

A conceptual Servicing Plan is required. Any servicing within the subject Rampen lands road R.O.W. that is not within the scope of standard road sections (STD 7-20 to STD 7-24B) must have a detailed cross section showing all proposed services including all details such as depth, sizing, distances, utility locations, and lane dimensioning. If all servicing can be accommodated in accordance to the standards, provide a response to indicate as such.

Drawing 7J & 7K – Preliminary Grading Plan

The grading along the Joshua subdivision property line is not completely matching. What is the timing for the two developments? Provide a response as to what the timing is and match the grading accordingly.

Show all swales complete to location where swales drain to. Provide details that the swales will have the capacity for all storm events.

Drawing 8C - Sections

Section 2-2

Label the NHS and Core 10 on the Grading Plans. Unsure grade shown at Core 10 property line matches Grading Plan.

Section 5-5

The bank in the open space buffer is to be 3:1 max.

Figure 1.4 Land Ownership

Label all adjacent land developers, i.e., Bressa Phase 3, Bressa Phase 2.

5 Development Engineering, Forestry

Tony Molnar ext. 3869

Circulation 1

Pending.

6 Engineering and Construction, Transportation

Aquisha Khan ext. 3236

Circulation 2

Sustainable Transportation (M. Dimas)

1. Site Plan

- a. [Circ 2] Please ensure linkages from the road directly onto the proposed off road trail in the North Oakville Trails Plan. Please ensure a minimum of 4metres in width.
- a. [Circ. 1 Not Addressed] – Please indicate bicycling facilities, path as per Figure 6.1 of Design Brief. Please refer to OTM book 18 for details. Please indicate where the cycle parking will be located at the village square.

2. TDM

- a. [Circ 2] Please include in your TIS under TDM measures, a monitoring program/report to include surveys, and details information on the available modes of travel and within the first year of occupancy to promote sustainable choices in travel. This program will be reviewed with town staff and may be repeated to determine if any changes to the TDM measures are justified.
- a. [Circ. 1 Acknowledged] – Please indicate on-street parking details of proposed roads associated with future cycle lanes.

Oakville Transit (J. Phoenix)

1. [Circ. 2] – Staff has no comments at this time.
2. [Circ. 1] – Staff has no comments at this time.

Transportation Services (A. Khan)

1. Site Plan

- a. [Circ. 2] – Staff acknowledges that the proposed development will be collaborating with the adjacent development “Mattamy - Joshua Creek Phase 3” for the distribution of trips and road network, please note that access to 86 through 132 will not be accessible until the full completion of the road network for “Mattamy - Joshua Creek Phase 3B”.
- a. [Circ. 1] – Staff has no site plan comments at this time.

2. Traffic Impact Assessment/Study

Comments based on TIS dated July 11, 2023 (NexTrans)

- a. [Circ. 2] – General – Please address any outstanding comments identified in Circ. 1.
- b. [Circ. 2] – General – Please ensure that all comments addressed in the comment matrix for Circ. 1 are applied in the body of the report addendum.
- c. [Circ. 2] – Figure 3 – Please provide a box to indicate the connection to Burnhamthorpe with respect to the actual road network, rather than to have it floating in the figure.

- d. [Circ. 2] – Section 7.2 – Please provide detail support for the recommendation of an “All-way Stop Control” at Street A/Street C. Also, please confirm that this recommendation is consistent with recommendations as outlined by “Mattamy - Joshua Creek Phase 3B” report.
- e. [Circ. 2] – Section 7.4 – Please ensure that the dimensions on the on-street parking is consistent with the details provided in the comment matrix.

Comments based on TIS dated July 4, 2022 (NexTrans)

- a. [Circ. 1 – Addressed] – As per the Pre-consultation requirements, an approved Scope of Work from the Region of Halton/Town of Oakville was required. Please provide a copy of the approved scope of work from either the Region/Town in the Appendix.
- b. [Circ. 1 - Addressed] – All reports submitted for review should be finalized, signed and stamped by a Professional Engineer.
- c. [Circ. 1] – Executive Summary
 - i. [Not Addressed] – Proposed Development: The proposed development should not rely strictly on connection to “Mattamy Joshua Creek Phase 3” development for access as the it is unclear when the road network will be completed. The development land boundaries onto Burnhamthorpe Road, please provide information for access onto Burnhamthorpe Road. – **Please clearly identify the road access anticipated to be utilized for connection to Mattamy Joshua Creek Phase 3 as Phase 3 has been split into two phases A & B.**

Nextrans acknowledged that some of the information from this Study, especially the traffic turning movement counts, have utilized and referenced from the GHD Traffic Impact Study dated April, 2022 that was prepared on behalf of Mattamy Joshua Creek Phase 3 proposed draft plan of subdivision with permission from GHD and Mattamy. This is to ensure consistency.

- ii. [Not Addressed] – Auto- Mode Assessment: Please include support to the statement made.

Auto Mode Assessment

Based on the intersection capacity analysis, under the existing conditions, all intersections considered in the analysis are expected to operate at acceptable levels of service, with the exception of the westbound through movement at Dundas Street E/Ninth Line during the afternoon peak hour. This is due to the heavy through movement, however, it is a typical condition at the major arterial in the Region and in the Town of Oakville. **This critical movement will be addressed through the completion of William Halton Parkway and Burnhamthorpe Road E in the future.**

- iii. [Addressed] – Please include in this section, the study horizons for the proposed development.
- d. [Circ. 1 – Not Addressed] – Introduction: Please identify phases for anticipated access to proposed development. – **Phases for access was not identified.**
- e. [Circ. 1] – Section 2.0 Existing Condition Assessment:
 - iv. [Addressed] – Existing Road Network: Please review and confirm all the information provided for the existing road network description in Table 1 is accurate.

- v. [Addressed] – Please provide reference to the location of the figures provided, either in the body of the report or in the appendix. (E.g. Figure 3 is mentioned in the report but not illustrated in the report.)
- vi. [Addressed] – Walking & Cycling Section: There are no existing walking/cycling facilities within the study area. The 2017 ATMP illustrates the future active routes within the study area.
- vii. [Addressed] – Figure 4 & Figure 5: Please illustrate the site location bordering Burnhamthorpe as illustrated in the site plan.
- viii. [Addressed] – Transit Section: Please update statement to reflect the actual number of routes servicing this subdivision.

The area is current serviced by two existing Oakville Transit Bus Routes 1 Trafalgar, 24 South Common and 20 Northridge. Figure 6 illustrates the existing Oakville Transit System.

- ix. [Addressed] – Transit Section: Both Trafalgar Road and Dundas Road transit routes are more than 400m away from the proposed subdivision and do not currently service the study area as there are no existing developments. Please use the North Oakville Secondary Plan to identify future Transit Route in the “Future Conditions section”.
- x. [Addressed] – Section 2.3: This section seems to be referring to future operations, please update.

2.3. Existing Area Context

Nexttrans has conducted a comprehensive review of the area. The proposed development is located within the approved North Oakville East Secondary Plan, Joshua’s Meadows residential community bounded by Dundas Street E to the south, Burnhamthorpe Road E to the north, Trafalgar Road to the west and Ninth Line to the east, in the Town of Oakville.

- xi. [Addressed] – Section 2.4: GHD undertook their counts in 2019 which is over three (3) years old, please undertake/obtain the most recent turning movement counts for the approved study area intersections.
- xii. [Addressed] – Section 2.4: Similar to comment above, please remain consistent with the reference to figures provided in the report body/appendix.
- xiii. [Addressed] – Section 2.6: Please clarify the highlighted statement with respect to re-distribution of trips from Highway 403 from Dundas Street E to Burnhamthorpe Road.

analysis are operating at acceptable levels of service, with the exception of the westbound through movement at the Ninth Line/Dundas Street E. This is due to the heavy through traffic volumes in this direction coming from Highway 403 and Mississauga. However, this type of movement is typical at any major arterial intersections in the Great Toronto Area and in the Region of Halton. It is expected that with the future improvements on Burnhamthorpe Road E, the North Oakville Secondary Plan subdivision east-west road south of Burnhamthorpe Road E, as well as the completion of William Halton Parkway, it will provide much needed east-west capacity for the area.

- f. [Circ. 1] – Section 4.0 Future Background Conditions
 - xiv. [Not Addressed] – Section 4.1: The proposed development is anticipated to be built by 2024, however Joshua Creek Phase 3 is anticipating a 2027 build-out year. Please clarify how the horizon of the developments are anticipated to align.

-
- xv. [Not Addressed] – Section 4.1: A five year horizon should be completed post build-out. – Although, the halton TIS guideline request for 5 year post study, this development is unique and staff requests a study horizon of 5 years post build-out.
 - xvi. [Addressed] – Section 4.5: Please clarify how all the subdivision intersections along Dundas Street E are “operating at acceptable level of service” when the intersections are operating over the critical capacity of 0.85. – please include in the body of the addendum report.
 - xvii. [Addressed] – Figure 11: Please confirm that these volumes were obtained from the respective TIA reports identifies and are the summation of all background development site traffic.
 - xviii. [Addressed] – Figure 12: Please confirm that these volumes were obtained from the GHD.
 - g. [Circ. 1] – Section 5.0 Site Traffic
 - xix. [Addressed] – Non-modal split: Please provide confirmation that Regional Staff supports 18% non-auto modal split for the area.
 - xx. [Addressed] – Figure 14: Please clarify the distribution of the site trips, provide details as to why there were no trip distributed via William Cutmore Boulevard.
 - h. [Circ. 1] – Section 6.0 Future Total Traffic
 - xxi. [Addressed] – Section 6.1: Please clarify most of the subdivision intersections along Dundas Street E are operating at acceptable level of service when the intersections are operating over the critical capacity of 0.85.
 - i. [Circ. 1] – Section 7.0 Draft Plan of Subdivision Review
 - xxii. [Addressed] – Section 7.4: Please verify the width for on-street parking stall. It is typically not the width of a bicycle route.
 - xxiii. [Addressed] – Section 7.4: Since there is an approximate number of on-street parking identified on the site concept plan, please provide a summary of the total amount of anticipated on-street parking for the subdivision. Please note that 17m ROW do not allow for parking on both sides.
 - j. [Circ. 1 – Addressed] – Staff requires a sensitivity analysis report for the redistribution of trips to Burnhamthorpe Road based on the North Oakville Secondary Plan. Traffic counts will be required at the intersections of Burhamthorpe Road & Trafalgar Road and Burnhamthorpe Road & Ninth Line.
 - k. [Circ. 1 – Addressed] – Appendix
 - xxiv. Please identify the intersection under review that is provided in the future capacity analysis.
-

HCM Unsignalized Intersection Capacity Analysis												
3/ 06-28-2022												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Line Configurations	T			T			T			T		
Sign Control	T			T			T			T		
Traffic Volume (vph)	17	18	44	0	11	4	35	27	0	1	10	6
Peak Volume (vph)	11	16	44	0	11	4	35	27	0	1	10	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow rate (vph)	18	20	48	0	12	4	36	29	0	1	11	7
Direction Lane #	EB1	WB1	NB1	SB1								
Volume Total (vph)	56	19	67	19								
Volume Left (vph)	18	0	38	1								
Volume Right (vph)	48	4	0	7								
Head (s)	-0.29	-0.12	0.13	-0.19								
Departure Headway (s)	3.8	4.0	4.3	4.0								
Degree Utilization	0.09	0.02	0.08	0.02								
Capacity (veh/s)	917	863	817	873								
Control Delay (s)	7.2	7.1	7.6	7.1								
Approach Delay (s)	7.2	7.1	7.6	7.1								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay	7.3											
Level of Service	A											
Intersection Capacity Utilization	31.1%											
ICU Level of Service	A											
Analysis Period (min)	15											
Internal Intersection AM Peak 12:35 pm 06-28-2022 Baseline												
Synchro 11 Report Page 1												

HCM Unsignalized Intersection Capacity Analysis												
3/ 06-28-2022												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Line Configurations	T			T			T			T		
Sign Control	T			T			T			T		
Traffic Volume (vph)	6	10	50	0	12	3	54	19	0	4	30	10
Peak Volume (vph)	6	10	50	0	12	3	54	19	0	4	30	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow rate (vph)	7	11	54	0	13	3	59	21	0	4	33	11
Direction Lane #	EB1	WB1	NB1	SB1								
Volume Total (vph)	72	18	80	49								
Volume Left (vph)	7	0	59	4								
Volume Right (vph)	54	3	0	11								
Head (s)	-0.43	-0.08	0.16	-0.10								
Departure Headway (s)	3.8	4.2	4.3	4.1								
Degree Utilization	0.08	0.02	0.10	0.05								
Capacity (veh/s)	819	830	814	860								
Control Delay (s)	7.1	7.2	7.7	7.3								
Approach Delay (s)	7.1	7.2	7.7	7.3								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay	7.4											
Level of Service	A											
Intersection Capacity Utilization	30.6%											
ICU Level of Service	A											
Analysis Period (min)	15											
Internal Intersection PM Peak 12:35 pm 06-28-2022 Baseline												
Synchro 11 Report Page 1												

INTERNAL DEPARTMENTS

7 Environmental Planning

Elisa Bernier ext. 3476

Circulation 2

Pending.

8 Parks and Open Space

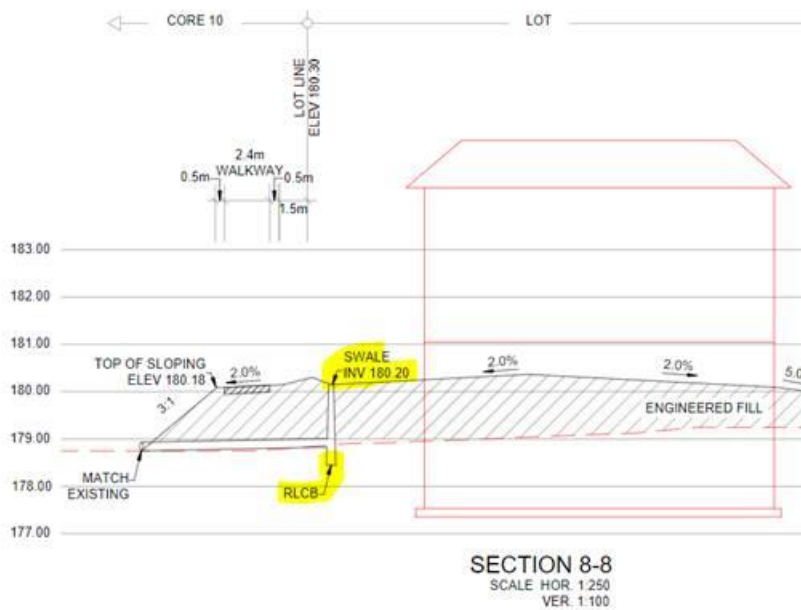
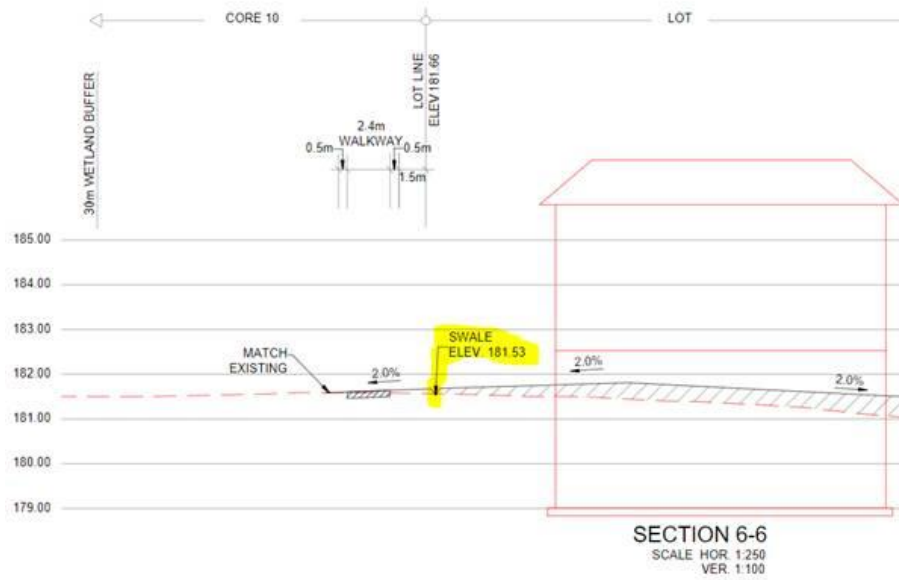
Janis Olbina ext. 3148

Circulation 1

My original comments from Sept 2021 are followed by updated comments highlighted, and in italics.

I would echo some of the comments made in Rita’s memo to you regarding final staking/trail layout walk on site being preferred when appropriate. There are a lot of generalized comments about trail being only 2.0m away from the property line, but some opportunities to meander away in select locations. From viewing many of the plans, I recognize there is a wetland feature impacting many of these detail design decisions. I also read that most areas are currently in agricultural state and void of significant (any) vegetation, so hopefully that creates more opportunities for realignment. I would also echo the request for a few cross-sections, especially where there is proposed cut-off swales.

DSEL (and team) have provided some updated cross-sections as part of their submission. In section 6-6 shown below, we would ask for clarification on exact location of proposed swale; is it entirely in rear lot area, or is it on property line? We ask, because section 8-8 (also below) is very similar, but clearly shows rear-yard catch basin collection, and a small berm at the property line, thus containing any potential surface runoff from the adjacent lot(s). We would see this as a ‘preferred’ scenario going forward.



My biggest concern/question is how this draft plan differs from our larger masterplan/secondary plans. I found it very difficult to try and compare our trails master plan with the proposed trail drawings attached to this EIR addendum. *This has been addressed through meetings with applicant and updated mapping.*

9 Finance
Matt Day ext. 6029

Circulation 1

Pending.

10 Building Services, Zoning

Matt Rubic ext. 3361

Circulation 2

We have reviewed the above noted development application circulation and have the following comments:

Zoning By-law Amendment

Based on the draft by-law provided by the applicant in the Planning Justification Report, zoning recommends the following:

1. When the applicant's draft by-law has been vetted by you (the planner), please prepare your draft by-law and circulate the draft for review. Further comments will be provided when the internal draft by-law is circulated.

Draft Plan of Subdivision

1. A surveyor's certificate providing lot areas, lot frontages and lot depths is required prior to draft approval.
2. For blocks which will be combined with adjacent lands to create future lots: Lot areas, frontages and lot depths will be confirmed for the combined blocks qualifying as lots prior to draft approval of adjacent lands. Please note that under section 4.11.4 of zoning by-law 2009-189, as amended, blocks not qualifying as lots until they are combined with additional land so as to qualify as lots, shall be used for the purpose of horticulture only and no building or structure may be erected thereon.

11 Legal, Realty Services

Jim Knighton ext. 3022

Circulation 1

Planner has confirmed Rampen Holdings Inc. is part of the NOEMPA and added party Agreement. No CILP implications.

EXTERNAL AGENCIES

12 Region of Halton, Planning & Public Works Dept

Michaela Campbell – michaela.campbell@halton.ca

Circulation 2

Regional staff are forwarding comments in response to the circulation of the 2nd submission for the above-noted application circulated on September 13, 2023. The 1st submission application proposed a development consisting of 181 residential units (81 - 11.6m single detached, 48 - 9.8m single

detached, and 52 street townhouses). Regional staff understand that the 2nd submission proposes a Draft Plan of Subdivision (DPS) application seeking to develop the subject lands with 188 residential units (82 - 11.6m single detached, 54 - 9.8m single detached, and 52 street townhouses). The DPS development is proposed to include a village square, natural heritage system, roads, residential reserve blocks a future roadblock and walkway blocks.

The purpose of the Zoning By-law Amendment (ZBA) is to rezone the subject lands from Future Development (FD) to Natural Heritage System, Park, and site-specific General Urban and sub-urban to facilitate the creation of 187 dwelling units.

Staff notes the 'Environmental Implementation Report' and 'Functional Servicing Report (EIR/FSS) Addendum #4' (prepared by David Schaeffer Engineering Ltd)) was circulated with this 2nd submission of the Draft Plan of Subdivision and Zoning By-law Amendment.

Please note that this letter supersedes the previous letter issued on July 4, 2023. The comments in this letter specifically provide updates to the Regional Natural Heritage System, site contamination, allocation, and municipal servicing matters (please refer to the respective comment sections, including the conditions section). Regional comments per other planning policies, archaeological potential, and finance generally remain the same.

Regional staff acknowledge that the existing Joshua Creek Heritage Art Centre is part of the same ownership as the Draft Plan of Subdivision, therefore effectively creating a severance of the parcel, as a result of the proposed Draft Plan of Subdivision application.

Regional planning staff offer the following comments.

Matters of Provincial and Regional Interest

Provincial Policy:

The 2020 Provincial Policy Statement (PPS) PPS promotes within urban areas and settlement areas, development densities and a mix of land uses that are appropriate for, and efficiently use, the infrastructure and public service facilities that are planned or available, and avoid the need for their unjustified and/or uneconomical expansion where this can be accommodated, taking into account existing building stock or areas, and the availability of suitable existing or planned infrastructure facilities required to accommodate projected needs. Section 1.4 of the PPS also provides that the allocation of units by the upper-tier municipality shall be based on and reflect provincial plans where these exist.

The 2020 Growth Plan (GP) encourage municipalities to leverage infrastructure investment, to direct growth and development per the policies and schedules of the Plan, including the achievement of the minimum intensification and density targets in the Plan. The subject lands are located within the 'Designated Greenfield Area' of the Plan. Section 2.2.7 provides that development taking place in the designated Greenfield area will be in a manner that supports complete communities, active transportation, and encourages the integration of sustained viable transit service.

Subject to addressing technical comments/concerns identified in this letter, confirmation from the Town of Oakville that any matters related to the Regional Natural Heritage System are addressed,

and the inclusion of any requested conditions of draft approval (when Halton Region is in a position to issue conditions), Halton Region would consider the applications to be consistent with the PPS 2020 and conform to the GP.

Region of Halton Official Plan 2009:

The Region's Official Plan provides goals, objectives and policies to direct physical development and change in Halton. The lands are designated as 'Urban Area' and 'Regional Natural Heritage System (RNHS)' as shown on Map 1: Regional Structure of the 2009 Regional Official Plan (ROP).

Part III: Land Stewardship Policies:

Land Use Designations:

Section 72.1(1)-(3) of the Urban Area policies support the development of vibrant and healthy mixed use communities that afford maximum choices for residence, work and leisure. Section 77(2.4) of the Urban Area policies also requires development in the Greenfield Area (outside the Urban Built Boundary) to contribute to achieving development density targets established by the Plan, within healthy communities that will comprise of a range of mixed-use neighbourhoods. ROP policy 76 states that the range of permitted uses and the creation of new lots in the Urban Area will be per Local Official Plans and Zoning By-laws. All development, however, shall be subject to the policies of this Plan.

Regional Natural Heritage System:

Within the Regional Natural Heritage System (RNHS) designation, the subject lands contain key features within the ROP, being significant woodlands, and wetlands. Section 114 of the ROP provides for biological diversity and ecological functions, including a continuous natural open space system to provide separation of communities from key features and ecological functions.

Within the 1st submission of the Draft Plan of Subdivision and Zoning By-law Amendment applications, Regional staff, in conjunction with Conservation Halton staff as part of the Interim Ecological Services Agreement, had noted Conservation Halton (CH) provided environmental advisory and technical review services to the Region concerning the protection of certain natural heritage features and areas and natural hazard management. As such, Halton Region was deferring to CH for comments as part of our Memorandum of Understanding (MOU) for North Oakville. Regional staff were not in receipt of supportive CH comments.

On January 1, 2023, a new Minister's regulation (Ontario Regulation 596/22: Prescribed Acts – Subsections 21.1.1 (1.1) and 21.1.2 (1.1) of the Conservation Authorities Act) came into effect which provides that conservation authorities (CAs) may not provide a municipal (Category 2) or other (Category 3) program or service related to reviewing and commenting on proposals, applications, or other matters under a prescribed Act, including the Planning Act. As a result, technical review services (e.g., technical reviews related to natural heritage and select aspects of stormwater management) that CH formerly provided under to the Memorandums of Understanding (MOU, 1999 and 2018) and Interim Ecological Services Agreement (IESA, 2021) with Halton Region will no longer be provided for applications received after January 1, 2023.

Within the 2nd submission of the Draft Plan of Subdivision and Zoning By-law Amendment applications, Regional staff acknowledge receipt of the EIR/FSS addendum #3, as circulated on September 13, 2023. Per ROP sections 116.2 and 116.3, the delineation and implementation of the Regional Natural Heritage System within the North Oakville East Secondary Plan Area and the North Oakville West Secondary Plan (NOESP) Area shall be implemented by the Town of Oakville. As the limits of the RNHS is located within Conservation Halton's regulated area and within North Oakville, the Owner shall implement all CH and Town of Oakville recommendations as it relates to any RNHS, natural hazards, buffers, or storm water management related requirements.

Regional staff are **not** in receipt of supportive Town of Oakville comments. Regional staff will require the Owner to provide correspondence from the Town of Oakville indicating that matters have been sufficiently addressed to their satisfaction.

Those lands that are confirmed to form part of the Natural Heritage System and/or Regional Natural Heritage System are to be conveyed to/retained in Town ownership and placed in an appropriate zone category.

Please note that CH provides comments for matters within their regulatory jurisdiction related to Conservation Authority legislation, regulations, and guidelines. As such, it is recommended that CH staff concerns relating to these matters be addressed to their satisfaction.

Once Regional staff are in receipt of supportive Town of Oakville comments, that they are in a position to provide conditions and that they are satisfied that those lands that are confirmed to form part of the Regional Natural Heritage System are to be conveyed to/retained in Town ownership and placed in an appropriate zone category, Halton Region would be in a position to provide our conditions of draft approval, subject to addressing other matters raised in this letter.

Managing Growth – Allocation Program:

The ROP requires that the development industry absorb their share of the cost of the provision for infrastructure and that any financial impact of new development or redevelopment on existing residents be based on a financing plan communicated to the taxpayers and subsequently approved by Council (Section 77 (15)). Policy 77 (17) requires that prior to the Local Municipality approving development within any Regional phase that Regional Council approves a financial and implementation plan, including financial commitment by the private development sector to absorb its share of the cost of the provision of the necessary infrastructure and human services as permitted by applicable legislation. To this end, Halton Region has implemented Allocation Programs that require proponents of residential development applications to secure servicing allocation from Halton Region through an Allocation Agreement. The subject lands are located outside the urban built boundary, and are subject to the Regional Allocation program.

Within the 1st submission, Regional staff offered the following comments:

- The application proposes 181 residential units, comprised of:
 - 129 single detached dwelling units; and
 - 52 street townhouse units.
- Based on the residential units noted above, the proposed development would require 169 Single Detached Equivalent (SDE) to fully service the development. The Region does allow

for draft approval with a minimum of 40% allocation, which would require a minimum of 68 SDE's. The Region's records indicate that 76 SDE's of servicing allocation have been reserved for the subject lands through the 2020 Allocation Program (Law file number 2020-205). Therefore, sufficient allocation had been reserved to support the proposed development within the 1st submission.

- As 76 SDEs have been reserved for these lands, the owner can currently service approximately 45% of the development based on the above-mentioned 181 residential dwelling units, with approximately 93 additional low-medium density SDEs remaining required to enable the full build-out of the proposed development within the 1st submission.
- As there is sufficient allocation for the subdivision as a whole, the Region is in a position to support draft approval of the plan from an allocation perspective.
- Phasing of Development/Allocation Assignment Plan
 - **As a next step, Regional staff required the applicant to confirm their phasing strategy** (i.e. is the applicant looking to only develop the 169 residential units available from the 76 SDE's? Alternatively, was the Owner looking to develop the full 181 residential units?).
 - As noted at the 2022 Pre-consultation meeting, staff required an allocation assignment plan, which includes all applicable allocation agreements (i.e. transfer, top-up or amending agreements) and how many SDE's are being allocated to the proposal from each agreement. Please include the dwelling type(s), number of units proposed, allocation units required to accommodate the proposed development, and allocation units available to the Owner. The Owner should demonstrate that there is enough SDE's for the proposed units and how those SDE's will be allocated for the proposed development. This was not included in the 1st submission package.

Within the 2nd submission, Regional staff reviewed documents entitled 'Draft Plan of Subdivision' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) and 'Allocation Assignment Plan' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023). Staff offer the following comments:

Regional staff emailed the agent for the subject lands on both September 22, 26, and 27, 2023 with several questions concerning allocation to ensure staff understood the final total residential unit count and so all supporting documents were reflected as such. After correspondence with the Town of Oakville, Regional staff believes the application now proposes 188 residential units, comprised of:

- 136 single detached dwelling units; and
- 52 street townhouse units.

Staff note that the Draft Plan of Subdivision' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) and 'Allocation Assignment Plan' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) should be revised to reflect the above.

Based on the residential units noted above, the proposed development would require 176 Single Detached Equivalents (SDE) to fully service the development. The Region does allow for draft approval with a minimum of 40% allocation, which would require a minimum of 70 SDE's. The Region's records indicate that 76 SDE's of servicing allocation have been reserved for the subject

lands through the 2020 Allocation Program (Law file number 2020-205). Therefore, sufficient allocation had been reserved to support the proposed development within the 2nd submission.

As 70 SDEs have been reserved for these lands, the owner can currently service approximately 43% of the development based on the above-mentioned 188 residential dwelling units, with approximately 100 additional low-medium density SDEs remaining required to enable the full build-out of the proposed development.

As there is sufficient allocation for the subdivision as a whole, the Region is in a position to support draft approval of the plan from an allocation perspective.

Phasing of Development/Allocation Assignment Plan

Regional staff note if the proposed phasing plan changes, then the Owner should provide an update to Regional staff, accompanied by revised documentation.

Regional staff note the Owner has enough allocation secured for Phase 1 (as outlined in the 'Allocation Assignment Plan' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023)). It is the Owner's responsibility to secure allocation from a future Regional allocation program to deal with subsequent phases (including Phase 2).

The Owner should provide an updated 'Allocation Assignment Plan' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) to reflect the correct number of units in both Phase 1 and 2.

Residential Reserve Blocks

There are six blocks of residential reserves within the draft plan of subdivision (to be combined with different landowners).

It is the developer's responsibility to determine how they wish to address the seven reserve blocks (e.g. top-up, landowner agreement) per the applicable agreement. It is the Region's standard that through the registration process, should these blocks be included, appropriate allocation will be required or alternatively an agreement between both the applicant and the neighbouring landowner will be required indicating that the adjacent landowner will be securing for these lots for servicing allocation.

Securing Additional SDE Shortfall Prior to Registration of Draft Plan of Subdivision

It is the Region's standard that through the registration process, all residential lots and blocks within the proposed development must have appropriate SDE allocation. It is the Owner /developer's responsibility to determine how they wish to address the 100 SDE shortfall (either through an allocation top-up request, or through an allocation transfer from another residential development site having surplus SDEs or through the use of a Holding provision) in accordance with the applicable allocation program agreement.

Please note that:

-
- There is a process involved in obtaining approval/sign-off by the Region for allocation top-ups or transfers. The developer should consider this in their project timelines in order to prevent delays in the condition clearance and registration stage of the process.
 - In accordance with Section 5.5 of the 2012 and 2020 Allocation program agreements, a Public Works Commissioner's Notice (PWCN) letter will be required prior to obtaining a building permit. A condition draft plan approval will require that all matters related to the Allocation Program be addressed to the Region's satisfaction.

Unallocated Lots/Blocks

The implementing zoning by-law will be required to include a Holding provision for the residential portions of the lands that have no allocation and/or where the Owner will not secure allocation through a top-up or transfer as part of this subdivision process. The wording for such a holding provision is as follows:

"That prior to the lifting of the H, the Owner shall have addressed the following requirements for all the units proposed for development to the satisfaction of the Region of Halton. The Region of Halton shall provide written confirmation that these matters have been addressed:

- a) The Owner shall secure the appropriate amount of water and wastewater Servicing Allocation under the Region of Halton Allocation Program;
- b) The Owner shall have signed the applicable Allocation Agreement or any required Amending Agreements;
- c) The Owner shall have made all required payments associated with the Allocation Program; and,
- d) The Owner shall be in receipt of the Region of Halton Public Works Commissioner's Notice (PWCN) letter."

PWCN/Zone 3/4/5 Boundary Adjustment

In order to obtain a Public Works Commissioner's Notice (PWCN), please provide a formal request in an email or letter along with the following information to the Regional Planner on file thus:

- The number of single detached equivalents (SDEs) that the PWCN is being requested for, the respective law file number and corresponding allocation program, including a copy of the draft plan drawing.
- A Functional Servicing Report (FSR) OR a Design Brief rationalizing the most current FSR that was approved for the proposed development.
- Confirmation that the Zone 3/4/5 Boundary Realignment Assessment in relation to your proposed development is deemed satisfactorily by the Region's Development Project Manager (Please contact the Ron MacKenzie, Development Project Manager for more details: ron.mackenzie@halton.ca).

Important Note: A PWCN cannot be issued until all projects listed in the respective group as set out in Schedule G (Engineering and Construction projects) of the applicable Allocation Agreement(s) have been completed.

Part IV: Healthy Community Policies

Cultural Heritage Policies - Archaeological Resources:

The ROP also contains policies concerning archaeological potential, and the preservation and mitigation and documentation of artifacts. It should be noted the site is identified as having archaeological potential. Within the 1st submission, Regional staff reviewed a Stage 1 and 2 Archaeological Assessment (Prepared by Archaeological & Cultural Heritage Services, dated February 23, 2017) that was completed for the subject lands, which noted no archaeological resources were encountered for the assessments. An Ontario Ministry of Tourism, Culture and Sport acknowledgement letter (MTCS File number 0004969) was issued on April 28, 2017, confirming the Ministry is satisfied with the fieldwork and reporting completed and accepting the report into the Ontario Public Register of Archaeological Reports. As such, Regional staff have no further concerns in this regard.

The proponent is cautioned that during development activities, should archaeological materials be found on the property, the Archaeology Program Unit of the Ministry of Citizenship and Multiculturalism must be notified immediately (archaeology@ontario.ca). If human remains are encountered during construction, the proponent should immediately contact the appropriate authorities (police or coroner) and all soil disturbances must stop to allow the authorities to investigate and the Registrar, Ontario Ministry of Public and Business Service Delivery, who administers provisions of that Act related to burial sites, to be consulted.

Environmental Quality-Land:

Section 147(17) of the Regional Official Plan requires the proponent of a development proposal to determine whether there is any potential contamination on the site they wish to develop, and if there is, to undertake the steps necessary to bring the site to a condition suitable for its intended use. The applicant is required to follow the processes outlined in O.Reg. 153/04 in the preparation of all Environmental Site Assessment (ESA) reports and supporting documentation. As such, ESA reports must be no older than 18 months old and completed per part VII and VIII and Schedule D and E of the regulation. Regional staff have reviewed this application within the context of the Halton Region's "Protocol for Reviewing Development Applications concerning Contaminated Sites".

Within the 1st submission, an ESSQ and 'Phase Two Environmental Site Assessment' (Prepared by WSP, dated April 24, 2017) was provided. Regional staff noted that the ESA report did not satisfy Regional requirements as the report is older than 18 months. Regional staff requested that an updated Phase Two ESA report (Ontario Regulations 153/04 compliant) be submitted for review to establish any potential further requirements. Staff noted any further work recommended by the Qualified Person (QP) in the Phase Two ESA will be required to be submitted to the Region for review. The author of the environmental reports must extend third party reliance to Halton Region.

Within the 2nd submission, a document entitled 'Phase Two Environmental Site Assessment Update, 1086 Burnhamthorpe Road East, Oakville, Ontario' (Prepared by WSP, dated July 20, 2023) was submitted. Regional staff offer the following comments which require submission of a previously prepared Phase One ESA report and letter of reliance:

- Staff are satisfied with the submitted update report, which confirms no exceedances of the applicable site condition standards indicating the site is suitable for its proposed use.

-
- Staff request that the applicant submit the March 2017 Phase One ESA report and also provide a letter of reliance that meet's Halton Region's Reliance Letter template, which extends reliance for the three ESA reports prepared for the site.

Conditions related to Environmental Site Contamination will be requested by Halton Region once we are in a position to provide conditions of draft approval.

Summary:

Subject to addressing the technical comments/concerns identified in this letter, confirmation from the Town of Oakville that any matters related to the Regional Natural Heritage System are addressed, the inclusion of any requested conditions of draft approval (when Halton Region is in a position to issue conditions), Regional staff would consider the applications to conform with the Region's Official Plan.

Other Regional Comments

Water and Wastewater Servicing:

Regional Staff note the proposed use is to connect to the Regional water and wastewater system per section 89(3) of the ROP. Section 58-1.1 (Part 3: Land Stewardship Policies – Development Criteria) states that uses are permitted as specified for each land use designation provided that an adequate supply of water and treatment of wastewater for the proposed use has been secured to the satisfaction of the Region.

Existing Services:

Water:

- No existing watermains are located adjacent to the property.

Sanitary Sewer:

- No existing sanitary sewers are located adjacent to the property.

Within the 1st submission, it was noted that a Functional Servicing Study (FSS) was submitted with the application as part of the Environmental Implementation Report (EIR) prepared by multiple consultants in support of the application. Addendum 5 to the EIR/FSS was submitted in support of this subdivision titled: Rampen Holdings Inc. (Coscorp) Environmental Implementation Report and Functional Servicing Study (Joshua Creek Tributaries EIR#FSS) and was dated August 2022.

Within the 2nd submission, a revised report entitled Environmental Implementation Report and Functional Servicing Report (EIR/FSS) Addendum – circulation 4 (revised Addendum 5) (Prepared by David Schaeffer Engineering Ltd, dated July 2023) was circulated concurrently.

The servicing of the North Oakville East Secondary Plan is addressed in the Area Servicing Plan (ASP) for this area. The ASP provides the overall servicing plan for the ultimate servicing and infrastructure requirements for the NOESP.

Wastewater Servicing:

The FSS notes that the wastewater servicing of this subdivision will be by an internal gravity sewer system that will convey flows eastward to the gravity sewer system in the Mattamy (Joshua Creek) Phase 3 Subdivision. These flows will eventually be conveyed southward to the Regional pump station (Dundas Street East PS) located north of Dundas Street East. Please note that the Dundas Street East Sewage Pump Station has just recently been constructed and is now operational.

The sanitary sewage flow in this subdivision is divided into two catchments and will connect to two locations to the future sanitary sewer system to be constructed as part of the Mattamy (Joshua Creek) Phase 3 Subdivision. The sanitary sewer system that is in the adjacent subdivision will have to be constructed and operational prior to occupancies being considered for the units draining to this sewer.

Water Servicing:

Please note that no water modeling or sizing of the proposed watermains was provided in the FSS, however, the FSS noted that sizing of the local watermain system within this subdivision would be addressed at the detailed design stage.

The FSS notes that the proposed development will be serviced for water by connecting to the proposed watermains that are to be constructed as part of the Mattamy (Joshua Creek) Phase 3 Subdivision. There will also be a future watermain connection to the west once the lands west of this subdivision are developed.

The FSS also does not address dead end watermains. The proposed road and lot fabric proposed for this subdivision will result in two streets being temporary dead ends until the adjacent lands located west of this subdivision are developed. The watermains on these streets that have temporary dead ends are a concern to the Region due to the water quality issues associated with dead end watermains and the Regional resources required to flush these mains regularly. Consideration should be given in the FSS that addresses a program for flushing of dead end watermains or providing temporary looping of these mains. Some temporary looping of watermains may require external temporary easements on the adjacent lands.

The revised Addendum 5 included water modelling of the water system for this development. The water modelling analysis indicated that the proposed water system would meet all Regional requirements for pressures and flows and would adequately service the development for water supply.

Water Pressure Zone Realignment:

The Region is currently undergoing a program to realign the water pressure zones in the Region. As part of this program, it is proposed to implement both an interim zone condition and an ultimate zone condition within the Region's water distribution system. The timing of implementing the new pressure zone boundaries may take several years to complete. The proposed development may be impacted by the changes to the pressure zones in both the interim and ultimate conditions depending on the timing of the implementation of these changes. Please note that minimum service levels for both

water pressure and flow will be maintained throughout the Region during this process. Residents may notice changes to their water pressure when the zones are changed over from the existing zone to the interim zone and also when the interim zone is changed to the ultimate zone.

The revised Addendum 5 included water modelling that determined the impact of the Region's zone realignment program on this development. The analysis included in the report indicated there were no adverse impacts of the zone realignments on this development.

Lands Outside of the Draft Plan:

Please note that the proposed draft plan of subdivision will divide the subject property into two parts that includes the lands included in the draft plan of subdivision and the northern portion of the property that is located adjacent to Burnhamthorpe Road. The northern parcel is located outside of the draft plan of subdivision but has an existing museum facility located on it. It is assumed that the existing facility is currently serviced by private well and septic system. The application is creating a parcel of land that is located within the urban area that will not be servicing by municipal infrastructure.

The revised Addendum 5 notes that this parcel of land will serviced sometime in the future once municipal services are available on Burnhamthorpe Road. This applicant would be responsible to service the northern parcel of land once servicing becomes available and/or municipal servicing is near be extended to the property.

Existing Private Water Well & Septic System Decommissioning:

All existing private wells and septic systems are to be decommissioned prior to construction commencing on the site. Both existing wells and septic systems, if present on the site are to be decommissioned and removed from the site according to the proper MOE guidelines.

Summary:

Please note that the Owner is required to submit a revised Functional Servicing Study outlining in detail the proposed servicing of this property that includes water modelling and that addresses secondary watermain connections, flows, pressures and dead-end watermains

Please note that the Owner is required to submit a revised Functional Servicing Study that includes water modelling for both the interim and ultimate water pressure conditions for the Region's zone realignment that demonstrates the impact these changes will have on the development.

Since the site is currently not serviced and will require the extensions of both a watermain and a sanitary sewer through the adjoining developments the servicing of the development is an issue.

Accordingly, Regional staff request that a holding provision be included on the zoning application to accommodate the Region's concerns in regards to the lack of servicing for this site. The holding provision could be lifted at such a time that the servicing extensions have been constructed or possibly should an alternate arrangement be made with the Region to secure these servicing extensions to the satisfaction of the Region.

The following wording is recommended:

“That the external local watermains and sanitary sewer extensions that are proposed on the lands and that are required to service this property have been constructed and are operational to the satisfaction of the Region of Halton or that alternative provisions have been made by the Owner for the design and construction of the external watermain and sanitary sewer extensions to the satisfaction of the Region of Halton.”

Once we are in a position to issue conditions of draft approval, they will include conditions to servicing.

Waste Management:

The Region has considered the subject application from a Regional waste collection perspective and notes the subject site is eligible for curbside residential waste collection once construction is completed and the units are occupied.

Once we are in a position to issue conditions of draft approval, they will include a condition to waste collection.

Finance:

This development requires Regional Allocation for the single detached equivalents units (SDEs) proposed. The payments and contributions are payable per the terms and conditions set out in the applicable allocation program agreement in which the SDEs are being reserved for the Owner.

The Owner is also required to pay all other applicable Regional Development Charges (DCs) and Front-ending Recovery Payments prior to the issuance of any building permits, unless a subdivision (or other form of development) agreement is required in which case a portion of the DC's and Front-ending Recovery Payment may be payable upon execution of the agreement. Please visit our website at <https://www.halton.ca/The-Region/Finance-and-Transparency/Financing-Growth/Development-Charges-Front-ending-Recovery-Payment> to obtain the most current Development Charge and Front-ending Recovery Payment information, which is subject to change.

Disclaimer: It is the Owner's responsibility to ensure that all applicable payments and development charges for the single detached equivalents units (SDEs) being requested are paid for as required by the terms and conditions of the applicable allocation program agreement.

It does not appear that the Owner currently owns sufficient Allocation SDE for this complete the full draft plan of Subdivision.

All residential Lots/Blocks on a Subdivision Agreement require sufficient Allocation SDE unless there is a Holding Provision in place by the Local Municipality.

Six residential reserves must be covered by the first developer in for Subdivision Agreement unless they have written agreement from the adjoining Owner(s).

Conclusion:

The Region is not in a position at this time to provide conditions of draft approval until:

- The Town of Oakville has:
 - Provided supportive comments;
 - Conditions of draft approval; and
 - Indicated that they are satisfied that those lands that are confirmed to form part of the Regional Natural Heritage System are to be conveyed to/retained in Town ownership and placed in an appropriate zone category.

- The Owner has addressed the servicing of the existing Joshua Creek Heritage Art Centre, to the satisfaction of Halton Region.

Halton Region also requests the following at this time:

- That the Draft Plan of Subdivision' (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) and 'Allocation Assignment Plan (Prepared by Robert Russell Planning Consultants, dated June 21, 2023) be revised to reflect the above noted allocation comments, including reflecting the correct number of units in both Phase 1 and 2.

- As outlined in this letter, Halton Region requests that the implementing zoning by-law include a Holding provision related to servicing on all the residential-zoned lands and a Holding provision related to allocation on those lands for which there is no allocation:

“That the external local watermains and sanitary sewer extensions that are proposed on the lands and that are required to service this property have been constructed and are operational to the satisfaction of the Region of Halton or that alternative provisions have been made by the Owner for the design and construction of the external watermain and sanitary sewer extensions to the satisfaction of the Region of Halton.”

“That prior to the lifting of the H, the Owner shall have addressed the following requirements for all the units proposed for development to the satisfaction of the Region of Halton. The Region of Halton shall provide written confirmation that these matters have been addressed:

1. The Owner shall secure the appropriate amount of water and wastewater Servicing Allocation under the Region of Halton Allocation Program;
 2. The Owner shall have signed the applicable Allocation Agreement or any required Amending Agreements;
 3. The Owner shall have made all required payments associated with the Allocation Program; and,
 4. The Owner shall be in receipt of the Region of Halton Public Works Commissioner's Notice (PWCN) letter.”
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- That the Owner submit the March 2017 Phase 1 ESA report and letter of reliance, to the satisfaction of Halton Region. The author of the environmental reports must extend third party reliance to Halton Region, according to Halton Region's template. The Owner is required to comply with Ontario Regulation 153/04 and Halton's Protocol for Reviewing Development Applications with respect to Contaminated or Potentially Contaminated Sites.

Please note the applicant will be required to execute the allocation transfer and top-up requests as required.

We trust that these comments are of assistance. Should you have any questions or require additional information, please do not hesitate to contact the undersigned. Please send notice of the Town's decision on this application.

Sincerely,

Michaela Campbell

Michaela Campbell
Intermediate Planner
michaela.campbell@halton.ca

cc: Michael Di Febo, Acting Senior Planner (via email)
Andrew Suprun, Multi-Residential Waste Diversion Coordinator (via email)
Ron MacKenzie, Development Engineer (South) (via email)
Cathie Boyle, Finance, Halton Region (via email)
Greg Bowie, Allocations Program Manager (via email)
Elisa Bernier, Environmental Planner, Town of Oakville (via email)

Appendix "A"

Guidelines for Zone 3/4/5 Boundary Realignment Assessment

Zone 3/4/5 Boundary Assessment:

The Region of Halton's Infrastructure Planning team provides this general guidance to complete the assessment for the Zone 3/4/5 Boundary Realignment. Please note that the Region will not prescribe the exact method for the assessment, as the complexity, built form and size of the development may impact the approach. Regional staff would be happy to discuss and assist as needed to support your consultant in this assessment. General guidance and requirements are outlined below:

Modeling:

The Zone 3/4/5 Boundary Re-alignment assessment can include the use of the Region's Hydraulic Model, which the Region will make available, but it is not a requirement for approval and may be overly complex in some instances. Any modeling exercise or theoretical calculation which can demonstrate adequate servicing under all pressure scenarios is considered suitable. In general, it is expected that the pressure boundary assessment will build on the servicing assessment done as part of the Functional Servicing Study.

Required Information for Regional Approval:

The Zone 3/4/5 Boundary Re-alignment assessment must demonstrate the following at a minimum:

- That fire flow/pressure will be suitable for all residents/buildings within the development under existing, interim and future pressure scenarios.

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- That residential/employment water flow/pressure within the development (i.e., general servicing) will adhere to both Regional guidelines and Building Code guidelines under existing interim and pressure scenarios.
 - If any requirement will not be met under one or more pressure scenarios, the developer must outline what provisions or mitigating measures will be put in place to address the deficiency.
 - It is required that the assessment is carried out by a reputable consultant. The submission must include a covering letter with a summary of the assessment as well as results and mitigating measures (as required). The letter will be signed and stamped by a qualified professional.
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13 **Enbridge**

Barbara M.J. Baranow – ONTLands@enbridge.com

Circulation 1

It is Enbridge Gas Inc.'s request that as a condition of final approval that the owner/developer provide to Enbridge the necessary easements and/or agreements required by Enbridge for the provision of gas services for this project, in a form satisfactory to Enbridge.

14 **Oakville Hydro**

Chris Gaunt – cgaunt@oakvillehydro.com

Circulation 2

Supply for the development to come from Burnhamthorpe R E.

Once the development is draft approved, Oakville Hydro will submit to the Developer an "Offer to Connect" for the electrical distribution system. The Developer will have several options to choose from at that time. Under Ontario Energy Board regulations, an economic evaluation will be done to determine the funding split (between the developer and Oakville Hydro) for the distribution system expansion. The developer will have to up-front the cost of the electrical distribution system expansion. Contact Oakville Hydro Engineering for further information.

15 **Halton District School Board**

Laureen Choi – choil@hdsb.ca

Circulation 2

Thank you for the opportunity to review the proposed development application. It is understood that the application is a proposal to include the construction of 185 residential units (133 detached units, 52 townhouses).

According to the Board's projections many of the existing schools in the vicinity are projected to be over building and portable capacity. Long range projections for schools can be viewed in our [Long Term Accommodation Plan \(LTAP\)](#) which can be found on the Board's website. The Board has identified a need for new elementary school sites in North Oakville. The next identified elementary school sites are **Oakville NE #3 ps** located in file #24T-12003, [Joshua Creek Mattamy](#) and **Oakville**

NE #5 ps located in files #24T-19004, [Preserve North Phase 4](#) and #24T-21004, [Docasa Group](#). As a result, options for student accommodations will be reviewed in the future. Attendance at these schools is not guaranteed for existing and new students. Currently, any students generated from this development would attend **Falgarwood PS, Munn's PS** and **T.A. Blakelock HS**.

Please be advised that the Halton District School Board has no objection to the proposed application as submitted. Please notify us of the adoption of the proposed application and include us in the circulation of any future applications, including site plans, related to this development. The Halton District School Board will provide comments and conditions on each proposed development application received.

The Halton District School Board has no objection to the development application subject to the following:

1. The owner agrees to place the following notification in all offers of purchase and sale for all lots/units and in the Town's subdivision agreement, to be registered on title:
 - a. Prospective purchasers are advised that schools on sites designated for the Halton District School Board in the community are not guaranteed. Attendance at schools in the area yet to be constructed is also not guaranteed. Pupils may be accommodated in temporary facilities and/or be directed to schools outside of the area.
 - b. Prospective purchasers are advised that school busses will not enter cul- de- sacs and pick up points will be generally located on through streets convenient to the Halton Student Transportation Services. Additional pick up points will not be located within the subdivision until major construction activity has been completed.
2. That in cases where offers of purchase and sale have already been executed, the owner sends a letter to all purchasers which include the above statement.
3. That the developer agrees that, should the development be phased, a copy of the phasing plan must be submitted prior to final approval to the Halton District School Board. The phasing plan will indicate the sequence of development, the land area, the number of lots and blocks and units for each phase.
4. That the Owner shall supply, erect and maintain signs at all major entrances into the new development advising prospective purchasers that pupils may be directed to schools outside of the area. The Owner will make these signs to the specifications of the Halton District School Board and erect them prior to the issuance of building permits.
5. That a copy of the approved sidewalk plan, prepared to the satisfaction of the Town of Oakville be submitted to the Halton District School Board.
6. The Owner shall provide Halton District School Board a geo-referenced AutoCAD file of the Draft M-plan once all Lot and Block numbering has been finalized. Should any changes occur after the initial submission to Lot and Block configuration or numbering on the draft M-plan the Owner shall provide a new AutoCAD file and a memo outlining the changes.

In addition, the following note should be included in the conditions:

Educational Development Charges are payable in accordance with the applicable Education Development Charge By-law and are required at the issuance of a building permit. Any building permits which are additional to the maximum unit yield which is specified by the Subdivision

Agreement are subject to Education Development Charges prior to the issuance of a building permit, at the rate in effect at the date of issuance.

16 Halton Catholic District School Board

Kathie Panzer – panerk@hcdsb.org

Circulation 2

In response to the above noted revised application to permit the development of 132 single family dwellings and 52 townhouse units, the Halton Catholic District School Board (“HCDSB”) has no objection. Conditions and notes provided on December 12, 2022 still apply for this development.

1st Submission Comments:

In response to the above noted application to permit the development of 133 single family dwellings and 52 townhouse units, the Halton Catholic District School Board (“HCDSB”) has no objection.

In terms of school accommodation, if the development were to proceed today, elementary students generated from this proposal would be accommodated at St. Gregory the Great CES located 138 Sixteen Mile Drive.

Secondary school students would be directed to Holy Trinity CSS located at 2420 Sixth Line. Should you proceed with the approval of the draft plan of subdivision and zoning by-law amendment, we require that the following conditions be placed in the draft plan conditions and the subdivision agreement, as well as any future agreements (e.g. Site Plan, Condominium). The conditions are to be fulfilled prior to final approval:

1. The owner agrees to place the following notification in all offers of purchase and sale for all lots/units and in the Town’s agreements, to be registered on title:
 - a. Prospective purchasers are advised that Catholic school accommodation may not be available for students residing in this area, and that you are notified that students may be accommodated in temporary facilities and/or bused to existing facilities outside the area.
 - b. Prospective purchasers are advised that the HCDSB will designate pick up points for the children to meet the bus on roads presently in existence or other pick up areas convenient to the Board, and that you are notified that school busses will not enter cul-de-sacs and private roads.
 2. In cases where offers of purchase and sale have already been executed, the owner is to send a letter to all purchasers which include the above statements.
 3. That the owner agrees to the satisfaction of the HCDSB, to erect and maintain signs at all major entrances into the new development advising prospective purchasers that if a permanent school is not available alternative accommodation and/or busing will be provided. The owner will make these signs to the specifications of the HCDSB and erect them prior to final approval.
 4. That the developer agrees that should the development be phased, a copy of the phasing plan must be submitted prior to final approval to the HCDSB. The phasing plan will indicate
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the sequence of development, the land area, the number of lots and blocks and units for each phase.

5. That a copy of the approved sidewalk plan, prepared to the satisfaction of the Town of Oakville be submitted to the HCDSB.
6. The owner shall provide HCDSB a geo-referenced AutoCAD file of the Draft M-plan once all Lot and Block numbering has been finalized. Should any changes occur after the initial submission to Lot and Block configuration or numbering on the draft M-plan the Owner shall provide a new AutoCAD file and a memo outlining the changes.

It should be noted that Education Development Charges are payable in accordance with the applicable Education Development Charge By-law and are required at the issuance of a building permit. Any building permits that are additional to the maximum unit yield that is specified by the Subdivision Agreement are subject to Education Development Charges prior to the issuance of a building permit, at the rate in effect at the date of issuance.

17 **Conservation Halton**

Sean Stewart – sstewart@hrcs.on.ca

Circulation 1

Conservation Halton (CH) staff has reviewed the above-noted application as per our responsibilities under Ontario Regulation 162/06; provincially delegated responsibilities under Ontario Regulation 686/21 (i.e., represent provincial interests for Sections 3.1.1-3.1.7 of the Provincial Policy Statement (PPS)); the Memorandums of Understanding (MOU, 1999 and 2018) and Interim Ecological Services Agreement (IESA, 2021) with Halton Region, and as a public body under the *Planning Act*. These responsibilities are not mutually exclusive. Comments that pertain to items contained in the MOUs may also apply to areas regulated under Ontario Regulation 162/06. Comments under Ontario Regulation 162/06 are clearly identified and are requirements. Other comments are advisory. Comments will need to be addressed in a subsequent submission.

Proposal

A Draft Plan of Subdivision and Zoning By-Law Amendment Application has been submitted to rezone the site from Future Development (FD) to Natural Heritage System, Park and site-specific General Urban, Sub-Urban, and to facilitate the creation of 185 dwelling units.

Ontario Regulation 162/06

CH regulates all watercourses, valleylands, wetlands, Lake Ontario and Hamilton Harbour shoreline and hazardous lands, as well as lands adjacent to these features. The subject property is traversed to the north east of the proposed Plan of Subdivision by a tributary of Joshua's Creek (JC 7) and contains the flooding and erosion hazards associated with that watercourse. The property also contains Provincially Significant Wetlands (PSW). CH regulates 7.5m from the greater of the flooding or erosion hazards and 120 m from PSWs. Permission is required from CH prior to undertaking any development within CH's regulated area and must meet CH's *Policies and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document*, dated April 27, 2006 (last amended, November 26, 2020) (<https://conservationhalton.ca/policies-and-guidelines>).

MOU/IESA

CH staff has reviewed the application as per our Memorandums of Understanding (MOUs) and Interim Ecological Services Agreement (IESA) with Halton Region. Under the terms of the Interim Ecological Services Agreement (IESA) with Halton Region, CH provides ecological technical review services for all planning applications for conformity with the natural heritage policies of the Regional Official Plan (ROP). Detailed comments pertaining to the MOUs and IESA will be provided in a subsequent comprehensive resubmission which incorporates CH comment on the EIR dated November 18, 2022.

Key Comments

CH staff provided extensive comments relating to the 2nd EIR/FSS submission on November 18, 2022. The outstanding comments could affect the design of the current Draft Plan of Subdivision (DPS) and Zoning By-Law Amendment (ZBA) application and as such, CH staff recommend that updated DPS and ZBA accompany the 3rd EIR/FSS submission to reflect any revisions required based on the EIR. This will ensure that submission documents and comments on the DPS and ZBA are based on the most current EIR/FSS submission, to which CH staff can provide more comprehensive comment.

Recommendation

Given the above, CH recommends that the applicant provide a revised circulation submission which reflects the comments provided regarding the most recent EIR/FSS submission. CH staff can review the 3rd EIR/FSS and revised DPS and ZBA materials in tandem and provide comprehensive comment.

To facilitate CH's review, the applicant is asked to include the following in the next submission:

- Cover letter listing all documents submitted; and,
- A digital copy of all resubmission materials in reduced file size format for fast loading and viewing (digital download preferred). No resubmission fee is required.

Please note that CH has not circulated these comments to the applicant, and we trust that you will provide them as part of your report.

18 Rogers

Alaa Azam – gtaw.newarea@rci.rogers.com

Circulation 2

Rogers Reference Number: M23BC99A01

Rogers Communications Canada Inc. ("**Rogers**") has reviewed the application for the above Subdivision and has determined that it intends to offer its communications services to residents of the Subdivision. Accordingly, we request that municipal approval for the Subdivision be granted subject to the following conditions:

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- (1) The Owner shall agree in the Subdivision Agreement to (a) permit all CRTC-licensed telecommunications companies intending to serve the Subdivision (the “**Communications Service Providers**”) to install their facilities within the Subdivision, and (b) provide joint trenches for such purpose.
 - (2) The Owner shall agree in the Subdivision Agreement to grant, at its own cost, all easements required by the Communications Service Providers to serve the Subdivision, and will cause the registration of all such easements on title to the property.
 - (3) The Owner shall agree in the Subdivision Agreement to coordinate construction activities with the Communications Service Providers and other utilities, and prepare an overall composite utility plan that shows the locations of all utility infrastructure for the Subdivision, as well as the timing and phasing of installation.
 - (4) The Owner shall agree in the Subdivision Agreement that, if the Owner requires any existing Rogers facilities to be relocated, the Owner shall be responsible for the relocation of such facilities and provide where applicable, an easement to Rogers to accommodate the relocated facilities.

In addition, we kindly request to, where possible, receive copies of the following documents:

- (1) the comments received from any of the Communications Service Providers during circulation;
- (2) the proposed conditions of draft approval as prepared by municipal planners prior to their consideration by Council or any of its committees; and
- (3) the municipal planners’ report recommending draft approval before it goes to Council or any of its committees.

Should you require further information or have any questions, please do not hesitate to contact me at gtaw.newarea@rci.rogers.com

19 **Canada Post**

Anna Burdz – anna.burdz@canadapost.postescanada.ca

Circulation 1

Canada Post has reviewed the proposal for the above noted Development Application and has determined that the completed project will be serviced by centralized mail delivery provided through Canada Post Community Mail Boxes.

In order to provide mail service to this development, Canada Post requests that the owner/developer comply with the following conditions:

- The owner/developer will consult with Canada Post to determine suitable permanent locations for the placement of Community Mailboxes and to indicate these locations on appropriate servicing plans.

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- The Builder/Owner/Developer will confirm to Canada Post that the final secured permanent locations for the Community Mailboxes will not be in conflict with any other utility; including hydro transformers, bell pedestals, cable pedestals, flush to grade communication vaults, landscaping enhancements (tree planting) and bus pads.
 - The owner/developer will install concrete pads at each of the Community Mailbox locations as well as any required walkways across the boulevard and any required curb depressions for wheelchair access as per Canada Post's concrete pad specification drawings.
 - The owner/developer will agree to prepare and maintain an area of compacted gravel to Canada Post's specifications to serve as a temporary Community Mailbox location. This location will be in a safe area away from construction activity in order that Community Mailboxes may be installed to service addresses that have occupied prior to the pouring of the permanent mailbox pads. This area will be required to be prepared a minimum of 30 days prior to the date of first occupancy.
 - The owner/developer will communicate to Canada Post the excavation date for the first foundation (or first phase) as well as the expected date of first occupancy.
 - The owner/developer agrees, prior to offering any of the residential units for sale, to place a "Display Map" on the wall of the sales office in a place readily available to the public which indicates the location of all Canada Post Community Mailbox site locations, as approved by Canada Post and the Town of Oakville.
 - The owner/developer agrees to include in all offers of purchase and sale a statement, which advises the prospective new home purchaser that mail delivery will be from a designated Community Mailbox, and to include the exact locations (list of lot #s) of each of these Community Mailbox locations; and further, advise any affected homeowners of any established easements granted to Canada Post.
 - The owner/developer will be responsible for officially notifying the purchasers of the exact Community Mailbox locations prior to the closing of any home sales with specific clauses in the Purchase offer, on which the homeowners do a sign off.

Canada Post further requests the owner/developer be notified of the following:

1. The owner/developer of any condominiums will be required to provide signature for a License to Occupy Land agreement and provide winter snow clearance at the Community Mailbox locations
2. Enhanced Community Mailbox Sites with roof structures will require additional documentation as per Canada Post Policy
3. There will be no more than one mail delivery point to each unique address assigned by the Municipality
4. Any existing postal coding may not apply, the owner/developer should contact Canada Post to verify postal codes for the project

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5. The complete guide to Canada Post's Delivery Standards can be found at:
https://www.canadapost.ca/cpo/mc/assets/pdf/business/standardsmanual_en.pdf

The Location of the Local Post Office is **2420 Speers Rd, Oakville Ontario L6L 0C9**

20 **Bell Canada**

Juan Corvalan – planninganddevelopment@bell.ca

Circulation 1

Re: ZBLA (Z.1310.18) & Draft Plan of Subdivision (24T-22009/1310) Application; 1086 Burnhamthorpe Rd. E., Oakville; Your File No. Z.1310.18,24T-22009/1310

We have reviewed the circulation regarding the above noted application. The following paragraphs are to be included as a condition of approval:

"The Owner acknowledges and agrees to convey any easement(s) as deemed necessary by Bell Canada to service this new development. The Owner further agrees and acknowledges to convey such easements at no cost to Bell Canada.

The Owner agrees that should any conflict arise with existing Bell Canada facilities where a current and valid easement exists within the subject area, the Owner shall be responsible for the relocation of any such facilities or easements at their own cost."

Upon receipt of this comment letter, the Owner is to provide Bell Canada with servicing plans/CUP at their earliest convenience to planninganddevelopment@bell.ca to confirm the provision of communication/telecommunication infrastructure needed to service the development.

It shall be noted that it is the responsibility of the Owner to provide entrance/service duct(s) from Bell Canada's existing network infrastructure to service this development. In the event that no such network infrastructure exists, in accordance with the Bell Canada Act, the Owner may be required to pay for the extension of such network infrastructure.

If the Owner elects not to pay for the above noted connection, Bell Canada may decide not to provide service to this development.

To ensure that we are able to continue to actively participate in the planning process and provide detailed provisioning comments, we note that we would be pleased to receive circulations on all applications received by the Municipality and/or recirculations.

We note that WSP operates Bell Canada's development tracking system, which includes the intake and processing of municipal circulations. However, all responses to circulations and requests for information, such as requests for clearance, will come directly from Bell Canada, and not from WSP. WSP is not responsible for the provision of comments or other responses.

Please fill out this chart when preparing a resubmission and submit in WORD format.

