Flow
Building our future, faster.

Central Brampton

Appendix J

Transportation

J1: Official Plan Transportation Schedules

J2: Traffic Impact Assessment

AECOM

Peel Region

Flow
Building our future, faster.

Central Brampton

J1: Official Plan Transportation Schedules

AECOM

Peel Region

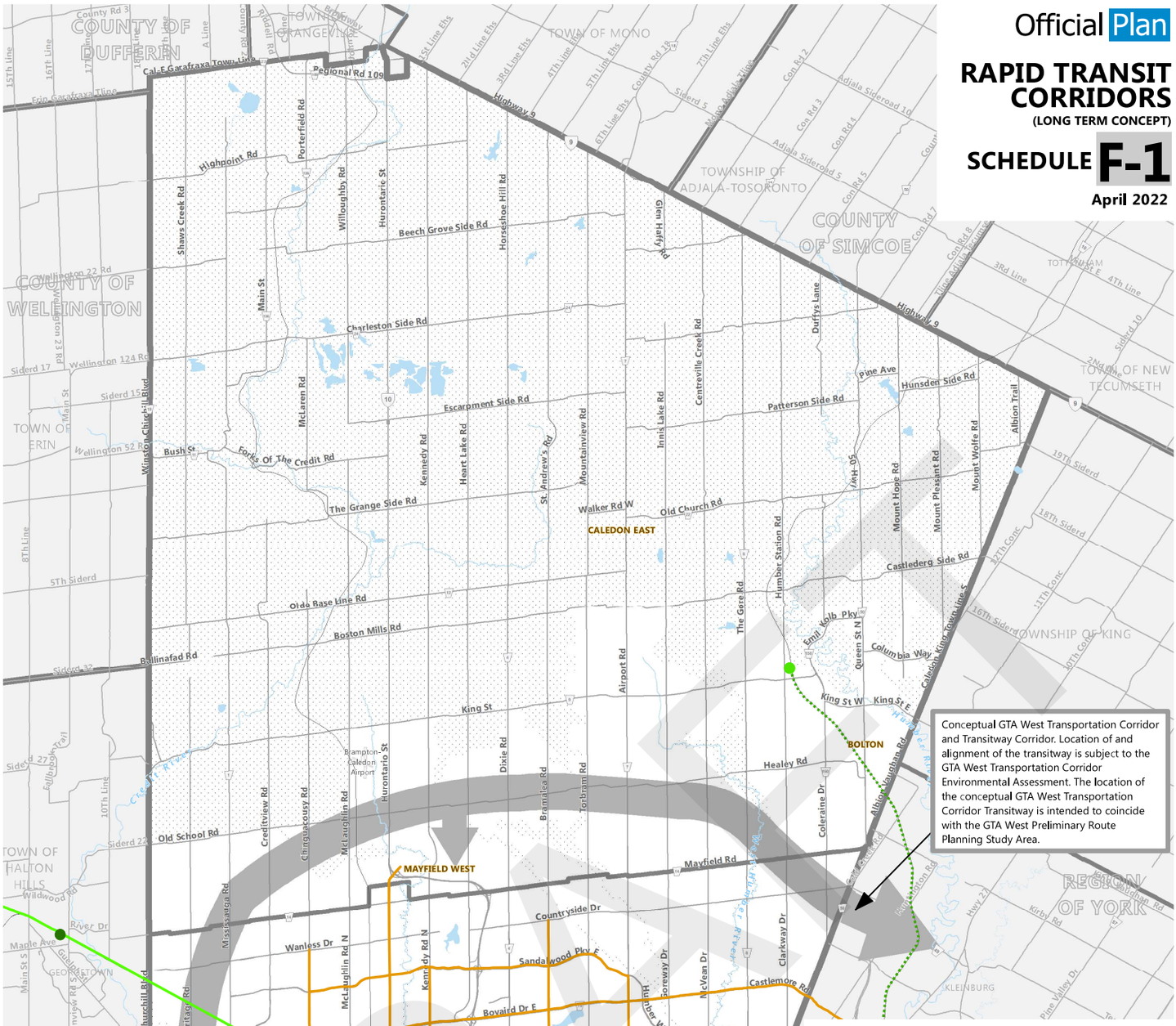
Official Plan

RAPID TRANSIT CORRIDORS

(LONG TERM CONCEPT)

SCHEDULE F-1

April 2022



Legend

- Multi-modal Transportation Hub (Conceptual)
- Existing GO Rail Station
- Proposed GO Rail Station
- Planned GO Rail Station
- Go Rail Line - 15 Minute Two-Way All Day
- Go Rail Line - Two-Way All-Day
- Proposed GO Rail Line
- Union-Pearson Rail Link
- LRT (Light Rail Transit)
- BRT (Bus Rapid Transit)/Highway 407 Transitway
- Other Rapid Transit Corridors
- Conceptual GTA West Transportation Corridor and Transitway Corridor
- Areas Subject to Provincial Plans (As shown on Figure 1)

Rapid Transit Corridors are shown as identified by transit providers, the Metrolinx 2041 Regional Transportation Plan, and the Region's advocacy positions. This map depicts both existing and proposed Rapid Transit Corridor to provide a long term concept. The corridors and alignments of the proposed corridors are subject to change.

Bolton Rail Service has been identified in the Metrolinx 2041 Regional Transportation Plan as a project with a horizon beyond 2041. The precise location of the Bolton GO Station will be determined through a future study and Official Plan Amendment.

The UP express route overlaps the Kitchener GO rail line up until Pearson Airport.



0 1 2 3 4 5

Kilometres

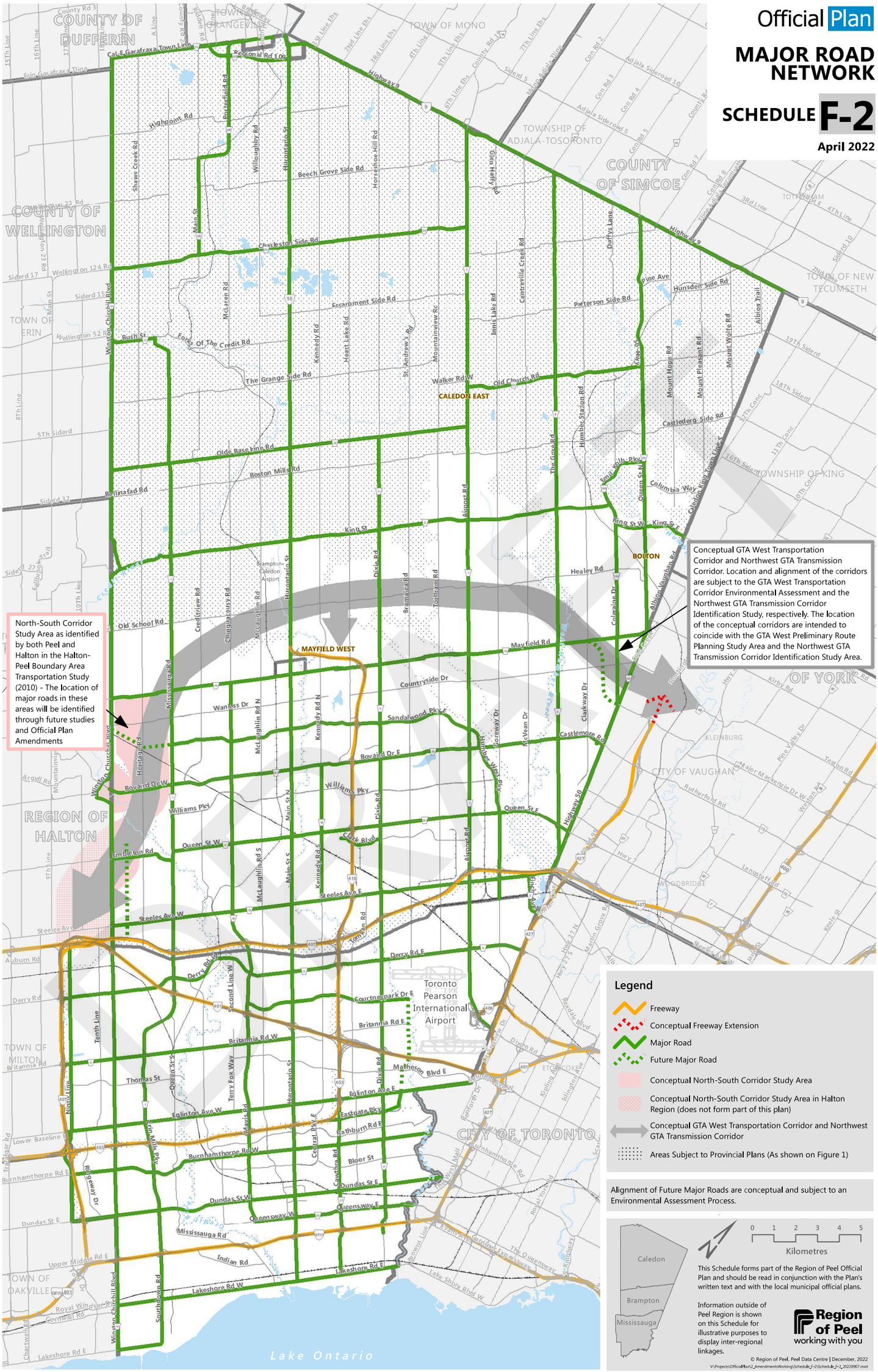
This Schedule forms part of the Region of Peel Official Plan and should be read in conjunction with the Plan's written text and with the local municipal official plans.

Information outside of Peel Region is shown on this Schedule for illustrative purposes to display inter-regional linkages.

Region of Peel working with you

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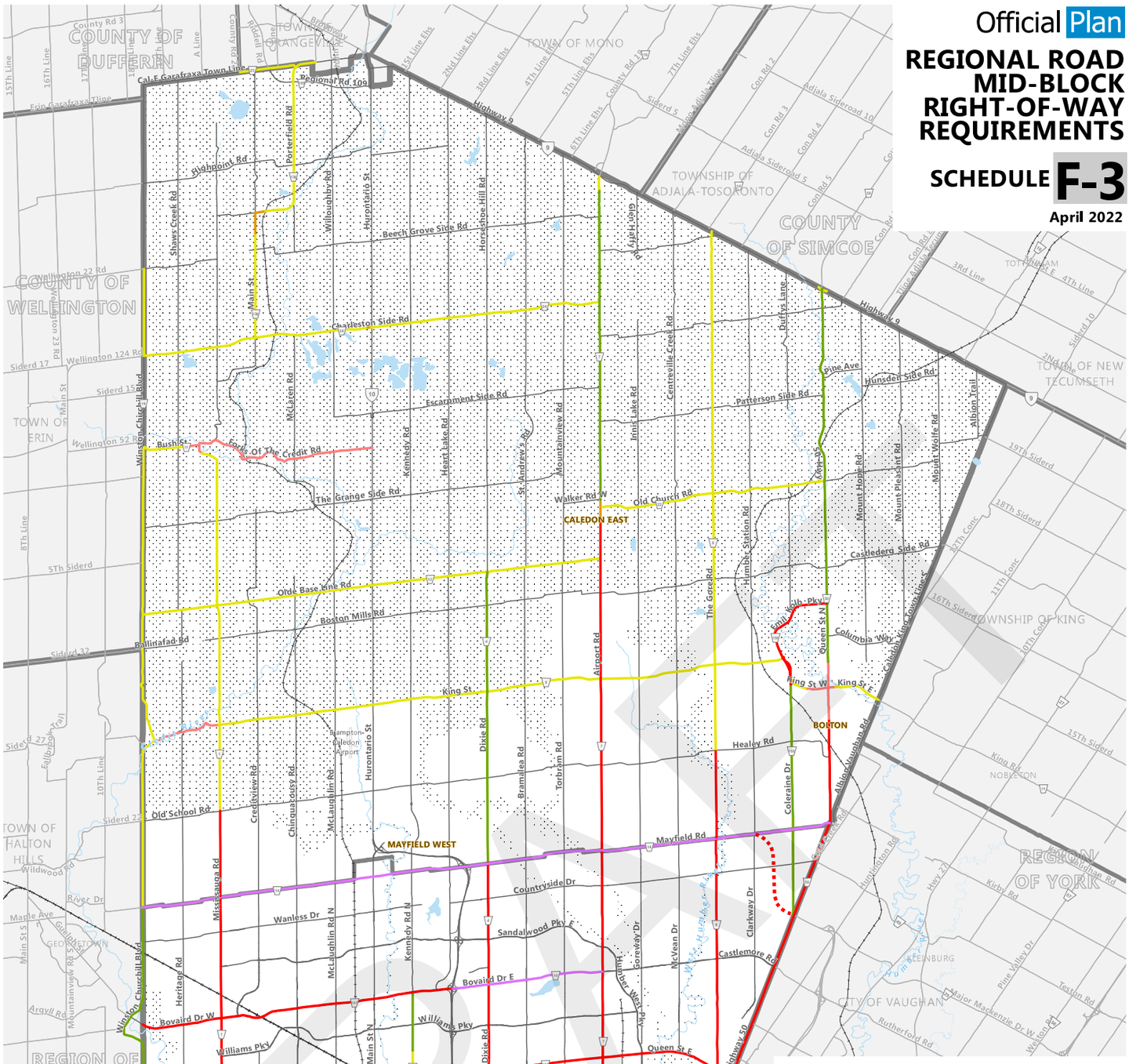

Official Plan
MAJOR ROAD NETWORK
SCHEDULE F-2
April 2022
North-South Corridor Study Area as identified by both Peel and Halton in the Halton-Peel Boundary Area Transportation Study (2010) - The location of major roads in these areas will be identified through future studies and Official Plan Amendments
Conceptual GTA West Transportation Corridor and Northwest GTA Transmission Corridor. Location and alignment of the corridors are subject to the GTA West Transportation Corridor Environmental Assessment and the Northwest GTA Transmission Corridor Identification Study, respectively. The location of the conceptual corridors are intended to coincide with the GTA West Preliminary Route Planning Study Area and the Northwest GTA Transmission Corridor Identification Study Area.
CALEDON EAST
MAYFIELD WEST
BOLTON
Toronto Pearson International Airport
REGION OF HALTON
CITY OF VAUGHAN
CITY OF TORONTO
Lake Ontario
Legend
Freeway
Conceptual Freeway Extension
Major Road
Future Major Road
Conceptual North-South Corridor Study Area
Conceptual North-South Corridor Study Area in Halton Region (does not form part of this plan)
Conceptual GTA West Transportation Corridor and Northwest GTA Transmission Corridor
Areas Subject to Provincial Plans (As shown on Figure 1)
Alignment of Future Major Roads are conceptual and subject to an Environmental Assessment Process.
Caledon
Brampton
Mississauga
0 1 2 3 4 5
Kilometres
This Schedule forms part of the Region of Peel Official Plan and should be read in conjunction with the Plan's written text and with the local municipal official plans.
Information outside of Peel Region is shown on this Schedule for illustrative purposes to display inter-regional linkages.
Region of Peel
working with you
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Official Plan

REGIONAL ROAD MID-BLOCK RIGHT-OF-WAY REQUIREMENTS

SCHEDULE F-3

April 2022



Legend

Metres	Feet
20	60
26	86
30	100
36	120
38	125
40	130
43.5	145
45	150
50	165

Proposed New Road

Areas Subject to Provincial Plans (As shown on Figure 1)

The general extent of the Rights-of-Way for Regional Roads are shown on this Schedule. For a precise interpretation contact the Regional Transportation Division.

Rights-of-Way for other Major Roads, as shown on Schedule F-2, are identified in Local Municipal Official Plans.

Protect wider rights of way at intersections, where necessary.

The information on this schedule is based on the 2019 Long Range Transportation Plan and does not reflect growth requirements to 2051.



0 1 2 3 4 5

Kilometres

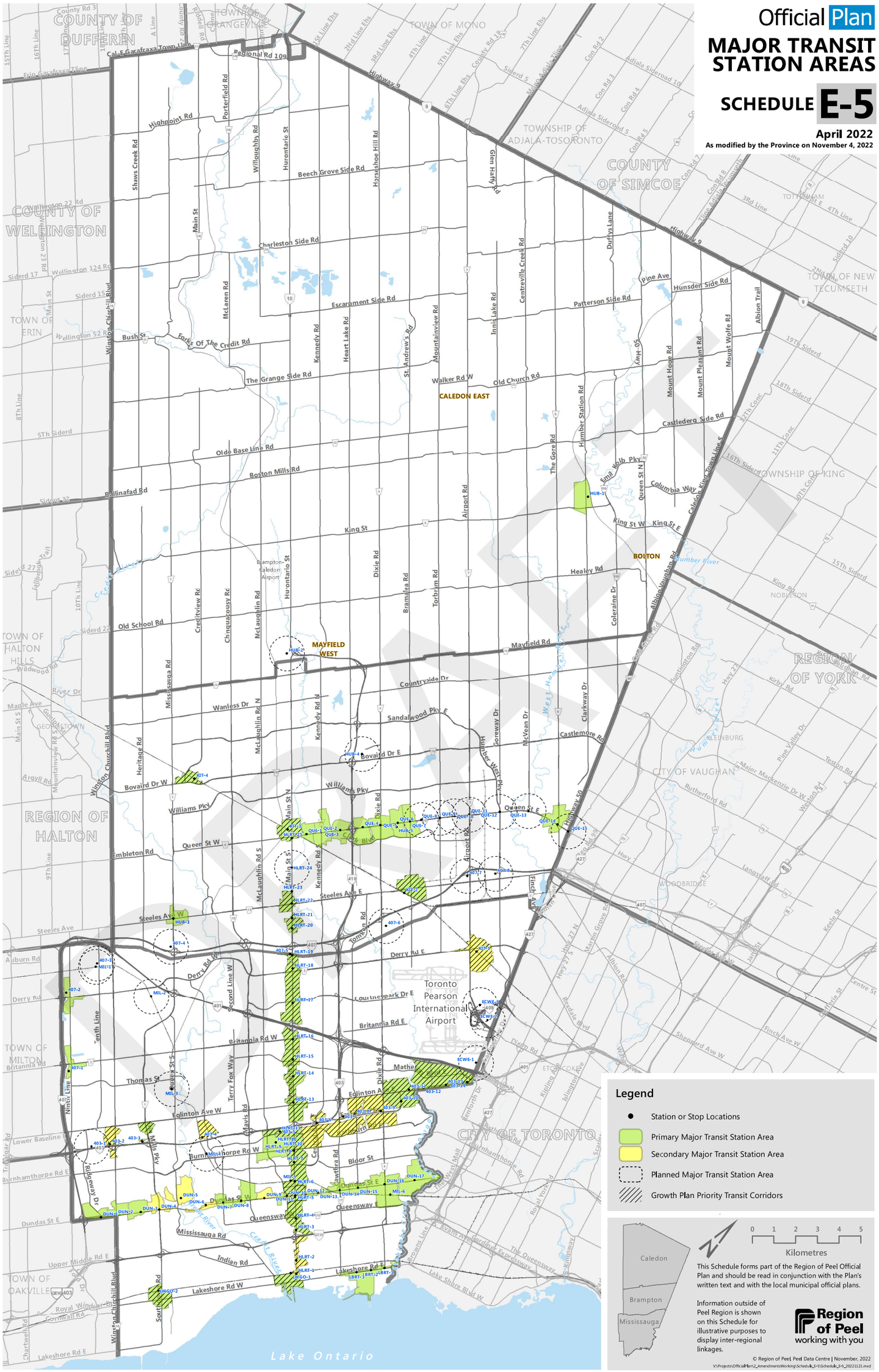
This Schedule forms part of the Region of Peel Official Plan and should be read in conjunction with the Plan's written text and with the local municipal official plans.

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Region of Peel
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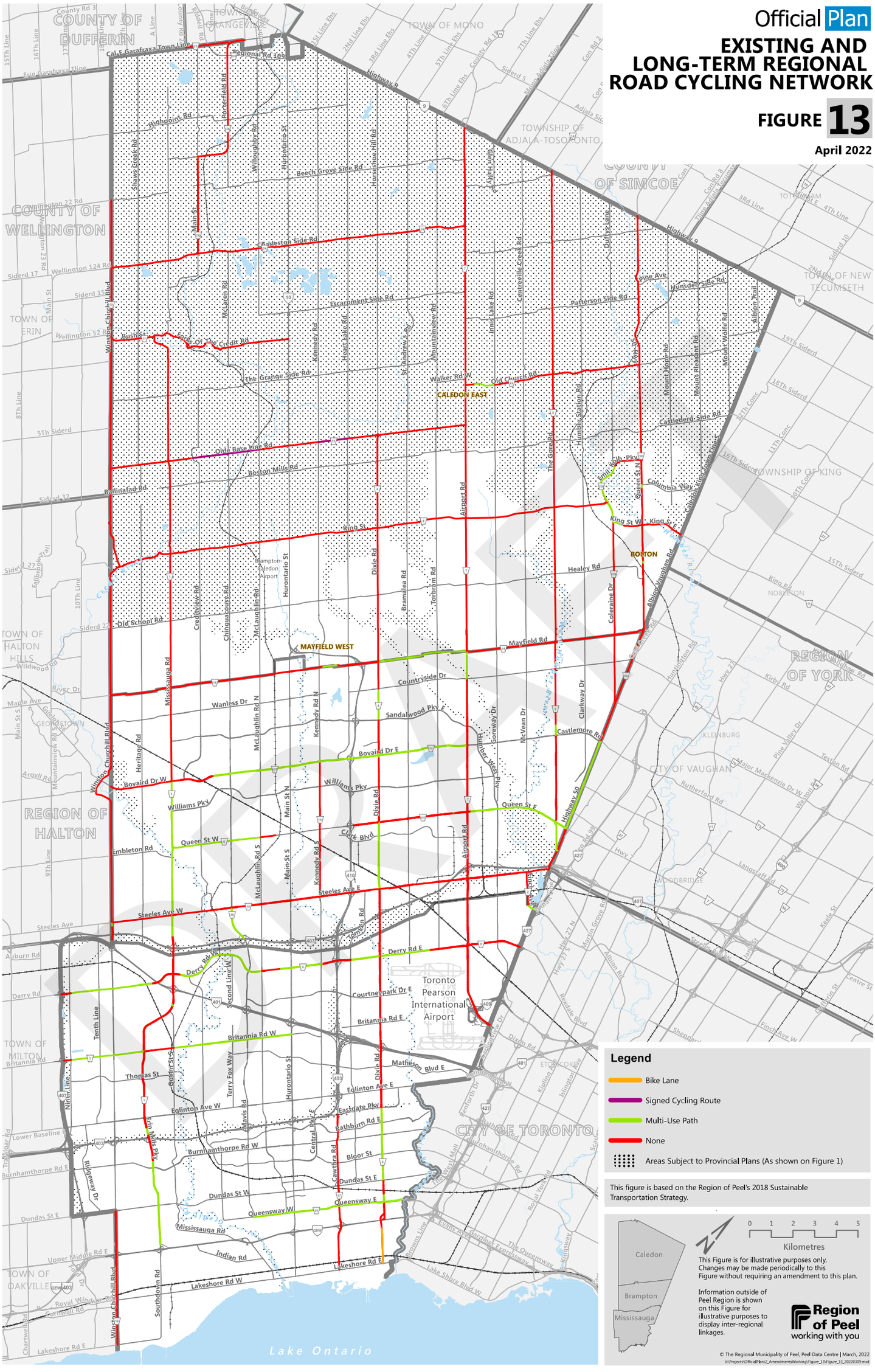

Official Plan
MAJOR TRANSIT STATION AREAS
SCHEDULE E-5
April 2022
As modified by the Province on November 4, 2022
Legend
Station or Stop Locations
Primary Major Transit Station Area
Secondary Major Transit Station Area
Planned Major Transit Station Area
Growth Plan Priority Transit Corridors
Caledon
Brampton
Mississauga
0 1 2 3 4 5
Kilometres
This Schedule forms part of the Region of Peel Official Plan and should be read in conjunction with the Plan's written text and with the local municipal official plans.
Information outside of Peel Region is shown on this Schedule for illustrative purposes to display inter-regional linkages.
Region of Peel
working with you
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DRAFT
Lake Ontario
CALEDON EAST
BOLTON
MAYFIELD WEST
Toronto Pearson International Airport
REGION OF HALTON
REGION OF PEEL
REGION OF YORK
CITY OF TORONTO
CITY OF VAUGHAN
TOWN OF MILTON
TOWN OF HALTON HILLS
TOWN OF ORANGEVILLE
TOWN OF MONO
TOWNSHIP OF ADJALA-TOSORONTO
COUNTY OF SIMCOE
COUNTY OF DUFFERIN
COUNTY OF WELLINGTON
TOWN OF ERIN
TOWN OF OAKVILLE
TOWNSHIP OF KING
TOWN OF NEW TECUMSETH
Brampton Caledon Airport
Highway 9
Regional Rd 109
Mayfield Rd
Countryside Dr
Wanless Dr
Sandalwood Pky E
Bovaird Dr E
Bovaird Dr W
Williams Pky
Queen St W
Embleton Rd
Steeles Ave E
Steeles Ave W
Steeles Ave
Derry Rd E
Derry Rd W
Courtneypark Dr E
Britannia Rd E
Britannia Rd W
Eglinton Ave W
Thomas St
Burnhamthorpe Rd W
Dundas St E
Queensway
Mississauga Rd
Indian Rd
Lakeshore Rd E
Lakeshore Rd W
Upper Middle Rd E
Dundas St W
Lower Baseline
Derry Rd
Auburn Rd
Argyll Rd
Maple Ave
Wildwood Rd
River Dr
Old School Rd
Boston Mills Rd
Old Base Line Rd
Ballinafad Rd
Charleston Side Rd
Escarpment Side Rd
Patterson Side Rd
Hunsden Side Rd
Pine Ave
Beech Grove Side Rd
Highpoint Rd
Cal-E Garafraxa Town Line
Erin Garafraxa Town Line
Bush St
Forks Of The Credit Rd
The Grange Side Rd
Walker Rd W
Old Church Rd
Castlederg Side Rd
Healey Rd
Columbia Way
King St
King St W
King St E
Mayfield Rd
Countryside Dr
Wanless Dr
Sandalwood Pky E
Bovaird Dr E
Bovaird Dr W
Williams Pky
Queen St W
Embleton Rd
Steeles Ave E
Steeles Ave W
Steeles Ave
Derry Rd E
Derry Rd W
Courtneypark Dr E
Britannia Rd E
Britannia Rd W
Eglinton Ave W
Thomas St
Burnhamthorpe Rd W
Dundas St E
Queensway
Mississauga Rd
Indian Rd
Lakeshore Rd E
Lakeshore Rd W
Upper Middle Rd E
Dundas St W
Lower Baseline
Derry Rd
Auburn Rd
Argyll Rd
Maple Ave
Wildwood Rd
River Dr
Old School Rd
Boston Mills Rd
Old Base Line Rd
Ballinafad Rd
Charleston Side Rd
Escarpment Side Rd
Patterson Side Rd
Hunsden Side Rd
Pine Ave
Beech Grove Side Rd
Highpoint Rd
Cal-E Garafraxa Town Line
Erin Garafraxa Town Line
Bush St
Forks Of The Credit Rd
The Grange Side Rd
Walker Rd W
Old Church Rd
Castlederg Side Rd
Healey Rd
Columbia Way
King St
King St W
King St E
Mayfield Rd
Countryside Dr
Wanless Dr
Sandalwood Pky E
Bovaird Dr E
Bovaird Dr W
Williams Pky
Queen St W
Embleton Rd
Steeles Ave E
Steeles Ave W
Steeles Ave
Derry Rd E
Derry Rd W
Courtneypark Dr E
Britannia Rd E
Britannia Rd W
Eglinton Ave W
Thomas St
Burnhamthorpe Rd W
Dundas St E
Queensway
Mississauga Rd
Indian Rd
Lakeshore Rd E
Lakeshore Rd W
Upper Middle Rd E
Dundas St W
Lower Baseline
Derry Rd
Auburn Rd
Argyll Rd
Maple Ave
Wildwood Rd
River Dr
Old School Rd
Boston Mills Rd
Old Base Line Rd
Ballinafad Rd
Charleston Side Rd
Escarpment Side Rd
Patterson Side Rd
Hunsden Side Rd
Pine Ave
Beech Grove Side Rd
Highpoint Rd
Cal-E Garafraxa Town Line
Erin Garafraxa Town Line
Bush St
Forks Of The Credit Rd
The Grange Side Rd
Walker Rd W
Old Church Rd
Castlederg Side Rd
Healey Rd
Columbia Way
King St
King St W
King St E

Official Plan

EXISTING AND LONG-TERM REGIONAL ROAD CYCLING NETWORK

FIGURE 13

April 2022



Legend

- Bike Lane
- Signed Cycling Route
- Multi-Use Path
- None
- Areas Subject to Provincial Plans (As shown on Figure 1)

This figure is based on the Region of Peel's 2018 Sustainable Transportation Strategy.

0 1 2 3 4 5

Kilometres

This Figure is for illustrative purposes only. Changes may be made periodically to this Figure without requiring an amendment to this plan.

Information outside of Peel Region is shown on this Figure for illustrative purposes to display inter-regional linkages.

Region of Peel
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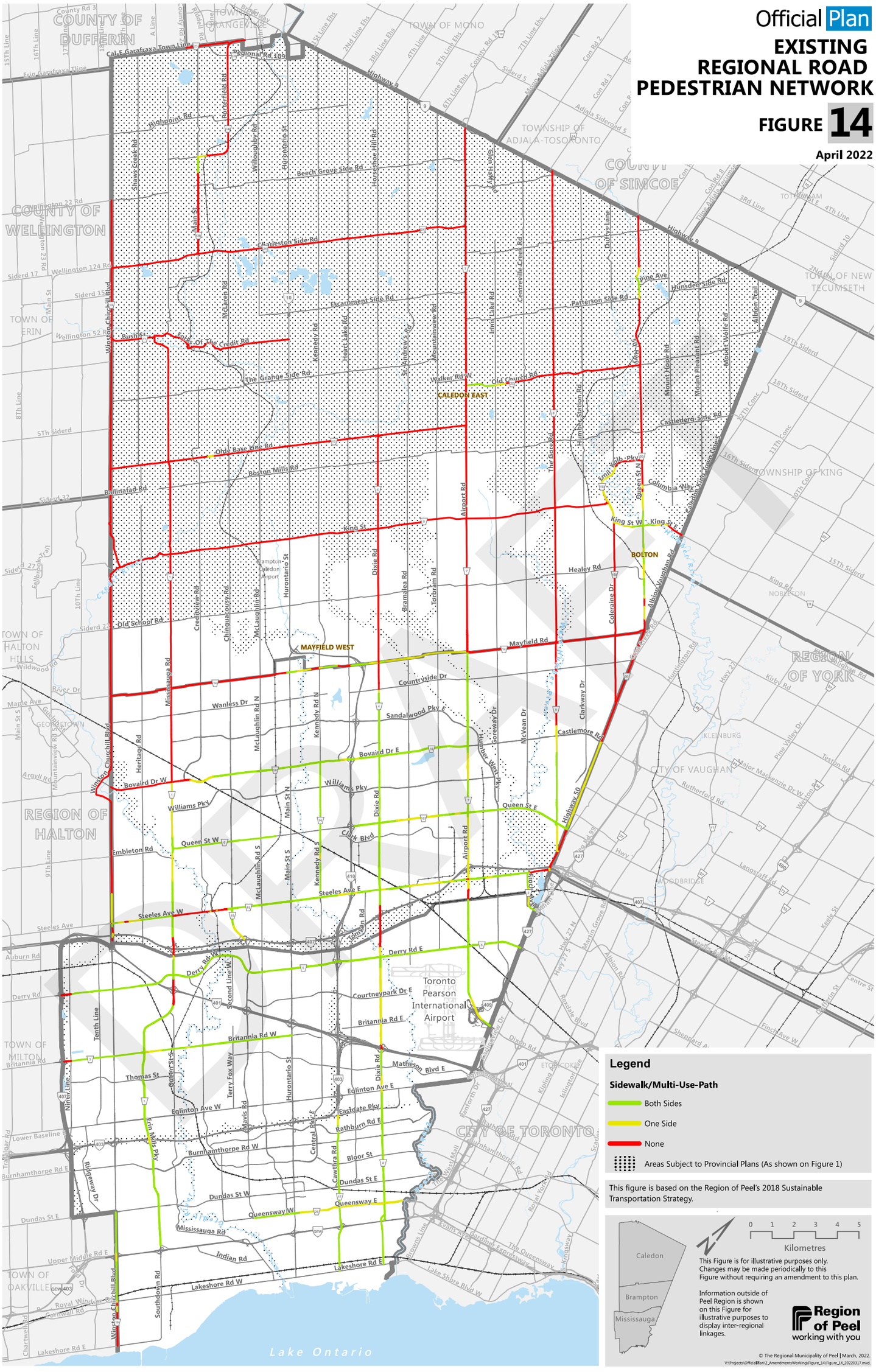
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Official Plan

EXISTING REGIONAL ROAD PEDESTRIAN NETWORK

FIGURE 14

April 2022



Legend

Sidewalk/Multi-Use-Path

- Both Sides
- One Side
- None
- Areas Subject to Provincial Plans (As shown on Figure 1)

This figure is based on the Region of Peel's 2018 Sustainable Transportation Strategy.

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Information outside of Peel Region is shown on this Figure for illustrative purposes to display inter-regional linkages.

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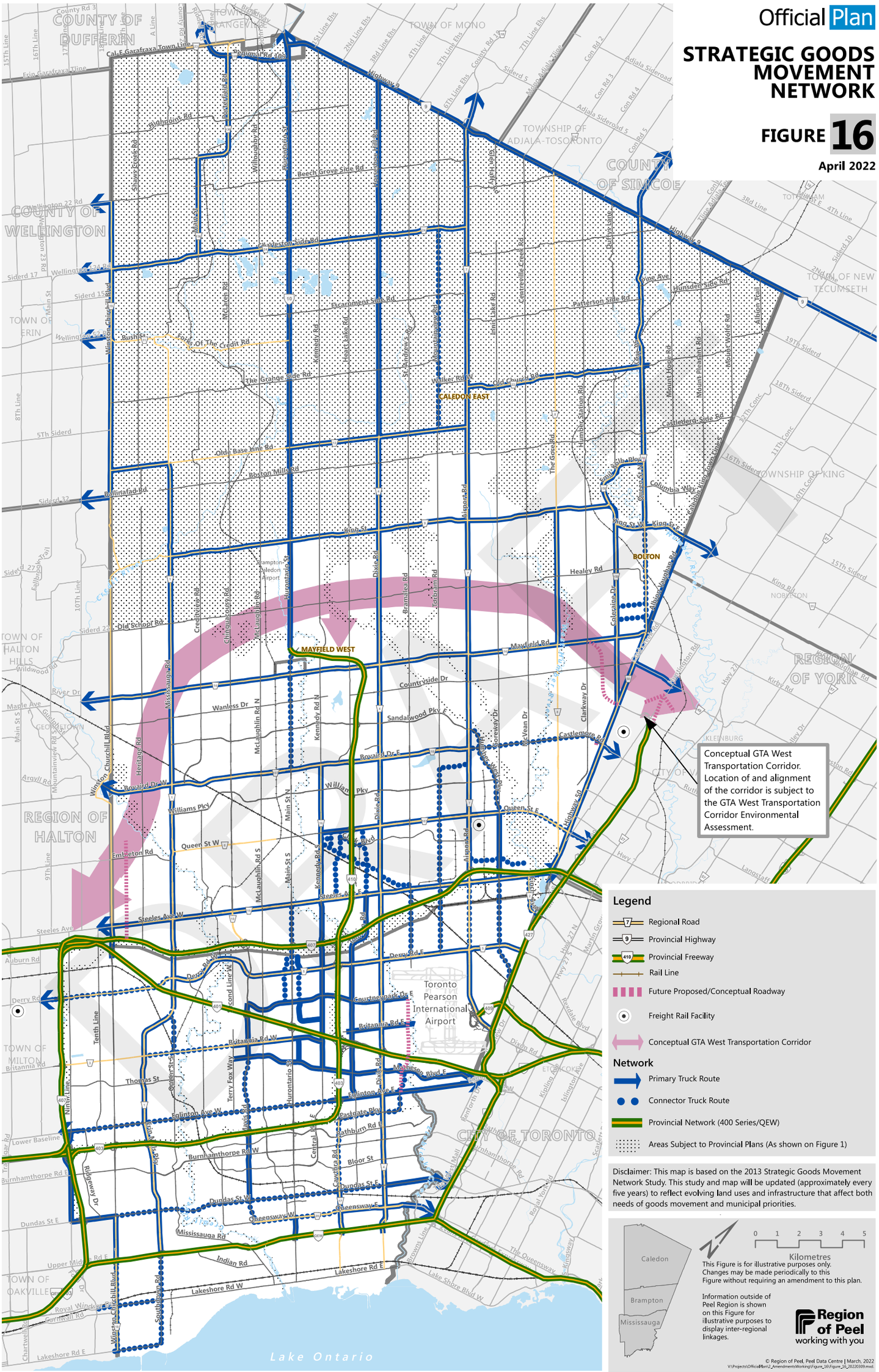
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Official Plan

STRATEGIC GOODS MOVEMENT NETWORK

FIGURE 16

April 2022



Disclaimer: This map is based on the 2013 Strategic Goods Movement Network Study. This study and map will be updated (approximately every five years) to reflect evolving land uses and infrastructure that affect both needs of goods movement and municipal priorities.

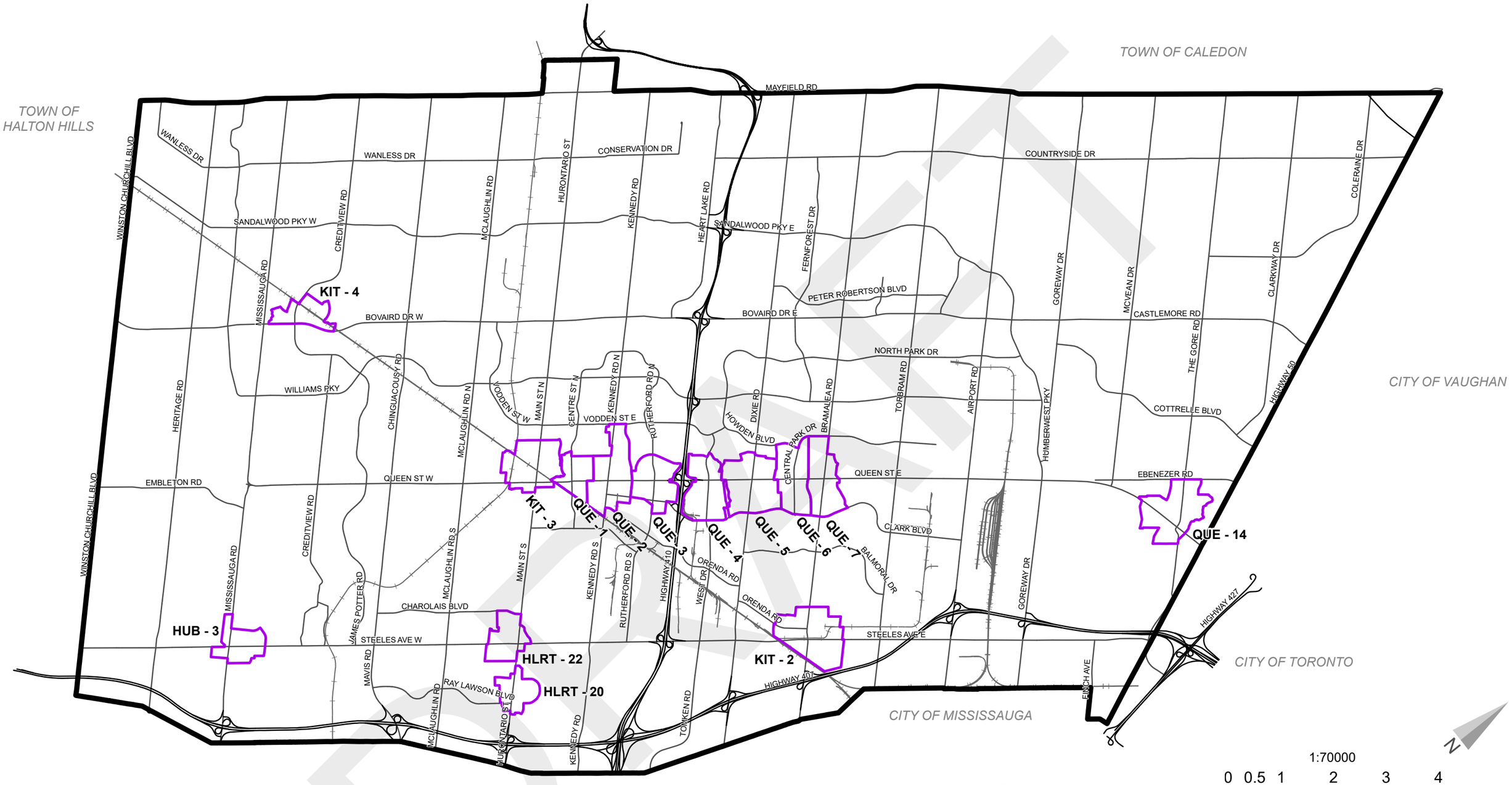
0 1 2 3 4 5
Kilometres

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Primary Major Transit Station Areas

Base Map Features

- Railway
- Highway
- Major Streets

1:70000

0 0.5 1 2 3 4 Kilometres

Date: June 2024
Planning, Building and Growth Management
Brampton Plan

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text, other schedules and secondary plans. The boundaries and alignments of designations and overlays on this schedule are approximate and are not intended to be scaled.

SCHEDULE 1B | MAJOR TRANSIT STATION AREAS

BRAMPTON

Streets Network subject to further refinement through Precinct Planning

TOWN OF HALTON HILLS

TOWN OF CALEDON

CITY OF VAUGHAN

CITY OF TORONTO

CITY OF MISSISSAUGA

MAYFIELD RD
WANLESS DR
CONSERVATION DR
COUNTRYSIDE DR
COLERAINE DR
WINSTON CHURCHILL BLVD
CREDITVIEW RD
MCLAUGHLIN RD
HURONTARIO ST
KENNEDY RD
HEART LAKE RD
HEART LAKE CONSERVATION AREA
SANDALWOOD PKY W
SANDALWOOD PKY E
FERNFOREST DR
GOREWAY DR
MCVEAN DR
CLARKWAY DR
MISSISSAUGA RD
BOVAIRD DR W
BOVAIRD DR E
PETER ROBERTSON BLVD
CASTLEMORE RD
LAKELANDS LAKE
PROFESSOR'S LAKE
NORTH PARK DR
HERITAGE RD
CHINGUACOUSY RD
WILLIAMS PKY
MAIN ST N
CENTRE ST N
VODDEN ST W
VODDEN ST E
HOWDEN BLVD
DIXIE RD
BRAMALEA RD
TORBRAM RD
AIRPORT RD
HOMBERWEST PKY
THE GORE RD
COTTRELLE BLVD
HIGHWAY 50
EMBLETON RD
QUEEN ST W
QUEEN ST E
EBENEZER RD
CLARENCE ST
ORENDA RD
CENTRAL PARK DR
CLARK BLVD
BALMORAL DR
WEST DR
HIGHWAY 410
RUTHERFORD RD S
KENNEDY RD S
MAIN ST S
MCLAUGHLIN RD S
CHAROLAIS BLVD
JAMES POTTER RD
MAVIS RD
RAY LAWSON BLVD
STEELES AVE W
STEELES AVE E
HIGHWAY 407
FINCH AVE
HIGHWAY 427
TOMKEN RD

Proposed Facilities

- Existing Facilities
- Parks
- Waterbodies
- Heritage Heights
- Protected Bike Lane or Cycle Track
- Bike Lane or Buffered Bike Lane
- Shared Roadway
- Multi Use Path
- Recreational Trail
- Desired GO Connection

Base Map Features

- Railway
- Highway
- Major Streets
- Local Roads

1:70000

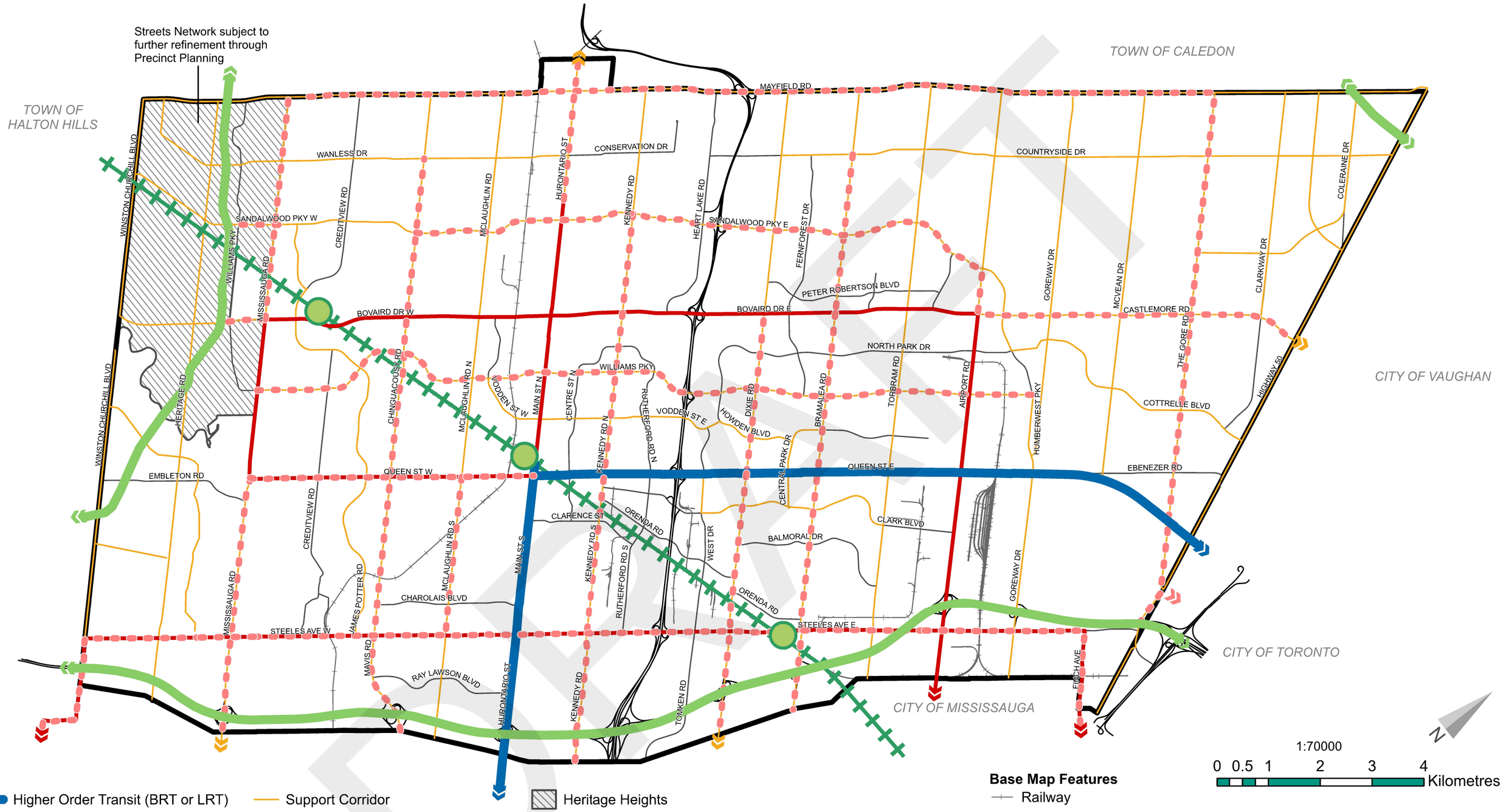
0 0.5 1 2 3 4 Kilometres

Date: June 2024
Planning, Building and Growth Management
Brampton Plan

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SCHEDULE 3A | ACTIVE TRANSPORTATION NETWORK

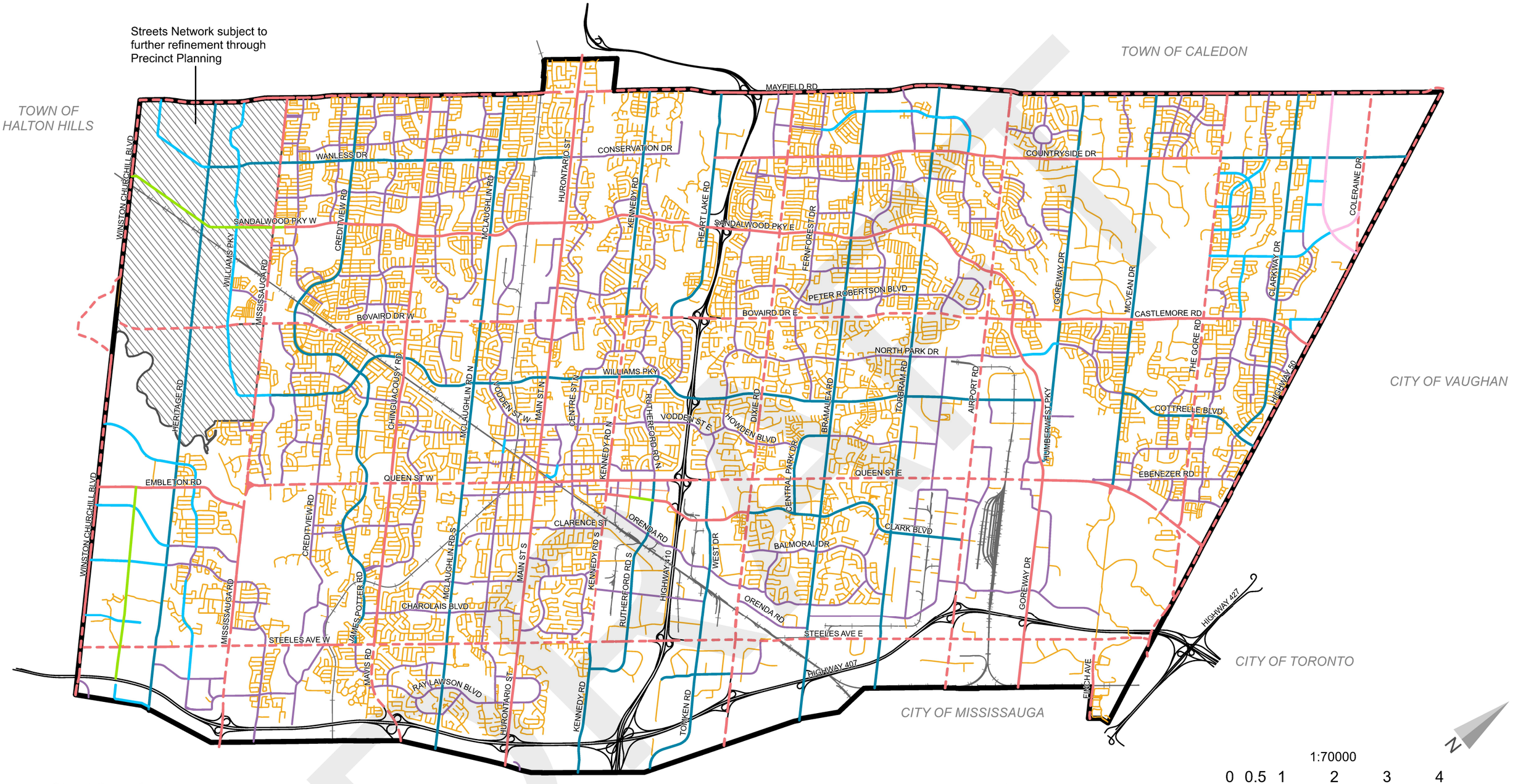
BRAMPTON



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SCHEDULE 3B | TRANSIT NETWORK TO 2051

BRAMPTON



Functional Street Classification

- Major Arterial (City)
- Major Arterial (Regional)
- Future Major Arterial (Regional)
- Future Major Arterial (City)
- Minor Arterial
- Future Minor Arterial
- Collector
- Future Local
- Local
- Heritage Heights

Base Map Features

- Railway
- Highway

1:70000

0 0.5 1 2 3 4 Kilometres

Date: June 2024
Planning, Building and Growth Management
Brampton Plan

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text, other schedules and secondary plans. The boundaries and alignments of designations and overlays on this schedule are approximate and are not intended to be scaled.

SCHEDULE 3C | STREETS NETWORK TO 2051

BRAMPTON

Streets Network subject to further refinement through Precinct Planning

TOWN OF HALTON HILLS

TOWN OF CALEDON

CITY OF VAUGHAN

CITY OF TORONTO

CITY OF MISSISSAUGA

MAYFIELD RD
WANLESS DR
CONSERVATION DR
COUNTRYSIDE DR
COLERAINE DR
SANDALWOOD PKY W
SANDALWOOD PKY E
HURONTARIO ST
MCLAUGHLIN RD
KENNEDY RD
HEART LAKE RD
FERNFOREST DR
GOREWAY DR
MCVEAN DR
CLARKWAY DR
MISSISSAUGA RD
BOVAIRD DR W
BOVAIRD DR E
PETER ROBERTSON BLVD
CASTLEMORE RD
NORTH PARK DR
WILLIAMS PKY
CHINGUACOUSY RD
VODDEN ST W
VODDEN ST E
MAIN ST N
CENTRE ST N
KENNEDY RD N
RUTHERFORD RD N
DIXIE RD
HOWDEN BLVD
BRAMALEA RD
TORBRAM RD
AIRPORT RD
HUMBERMILLS PKY
THE GORE RD
COTTRELLE BLVD
HIGHWAY 50
HERITAGE RD
EMBLETON RD
QUEEN ST W
QUEEN ST E
EBENEZER RD
WINSTON CHURCHILL BLVD
CREDITVIEW RD
CLARENCE ST
ORENDA RD
CENTRAL PARK DR
CLARK BLVD
BALMORAL DR
WEST DR
MCLAUGHLIN RD S
MAIN ST S
KENNEDY RD S
RUTHERFORD RD S
HIGHWAY 410
JAMES POTTER RD
CHAROLAIS BLVD
STEELES AVE W
STEELES AVE E
MAVIS RD
RAY LAWSON BLVD
TOMKEN RD
HIGHWAY 407
FINCH AVE
HIGHWAY 427

20 Metres
20-25 Metres
23-26 Metres
25-30 Metres
26-30 Metres
30 Metres
31.5 Metres
30-35 Metres
35-65 Metres
36 Metres
40-100 Metres
40-45 Metres
50-55 Metres
50-100 Metres
95-115 Metres
Corridor Protection Area
Heritage Heights

Base Map Features
Railway
Highway
Regional Roads
Local Roads (17-20 Metres)

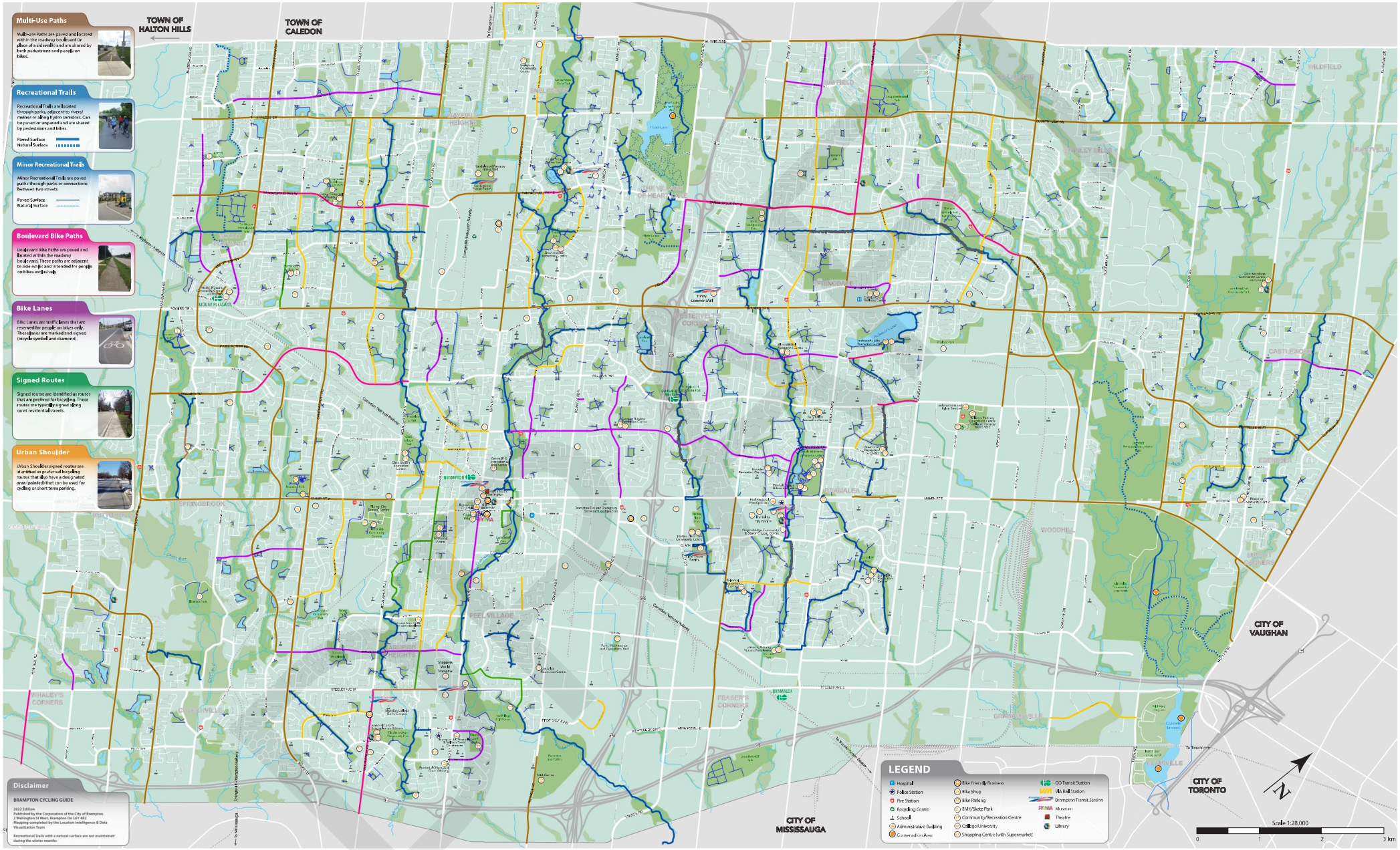
1:70000
0 0.5 1 2 3 4 Kilometres

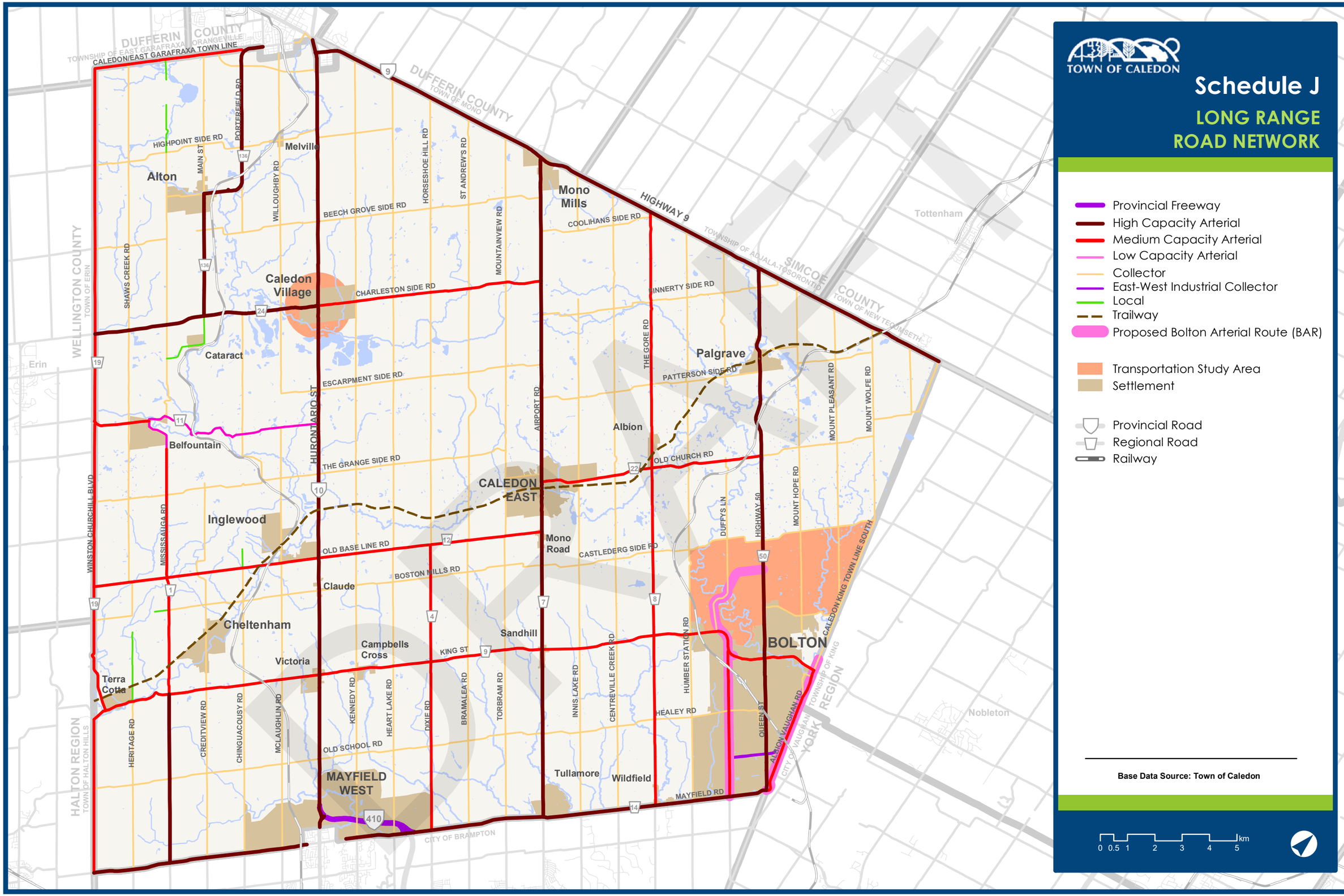
Date: June 2024
Planning, Building and Growth Management
Brampton Plan

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text, other schedules and secondary plans. The boundaries and alignments of designations and overlays on this schedule are approximate and are not intended to be scaled.

SCHEDULE 4 | CITY ROAD RIGHT-OF-WAY WIDTHS

BRAMPTON


Multi-Use Paths
Multi-use Paths are paved and located within the roadway boulevard (in place of a sidewalk) and are shared by both pedestrians and people on bikes.
Recreational Trails
Recreational Trails are located through parks, adjacent to rivers/ravines or along hydro corridors. Can be paved or unpaved and are shared by pedestrians and bikes.
Paved Surface
Natural Surface
Minor Recreational Trails
Minor Recreational Trails are paved paths through parks or connections between two streets.
Paved Surface
Natural Surface
Boulevard Bike Paths
Boulevard Bike Paths are paved and located within the roadway boulevard. These paths are adjacent to sidewalks and intended for people on bikes exclusively.
Bike Lanes
Bike Lanes are traffic lanes that are reserved for people on bikes only. These lanes are marked and signed (bicycle symbol and diamond).
Signed Routes
Signed routes are identified as routes that are preferred for bicycling. These routes are typically signed along quiet residential streets.
Urban Shoulder
Urban Shoulder signed routes are identified as preferred bicycling routes that also have a designated area (painted) that can be used for cycling or short term parking.
Disclaimer
BRAMPTON CYCLING GUIDE
2022 Edition
Published by the Corporation of the City of Brampton
2 Wellington St West, Brampton On L6Y 4R2
Mapping completed by the Location Intelligence & Data Visualization Team
Recreational Trails with a natural surface are not maintained during the winter months
TOWN OF HALTON HILLS
TOWN OF CALEDON
CITY OF MISSISSAUGA
CITY OF VAUGHAN
CITY OF TORONTO
LEGEND
Hospital
Police Station
Fire Station
Recycling Centre
School
Administrative Building
Bike Friendly Business
Bike Shop
Bike Parking
BMX/Skate Park
Community/Recreation Centre
College/University
Shopping Centre (with Supermarket)
GO Transit Station
VIA Rail Station
Brampton Transit Station
Museum
Theatre
Library
N
Scale 1:28,000
0
1
2
3 km



Schedule J

LONG RANGE ROAD NETWORK

- Provincial Freeway
- High Capacity Arterial
- Medium Capacity Arterial
- Low Capacity Arterial
- Collector
- East-West Industrial Collector
- Local
- Trailway
- Proposed Bolton Arterial Route (BAR)

- Transportation Study Area
- Settlement

- Provincial Road
- Regional Road
- Railway

Base Data Source: Town of Caledon

0 0.5 1 2 3 4 5 km

March 2024 Office Consolidation

Schedule K

ROAD RIGHT-OF--WAY WIDTHS

TOWN OF CALEDON

- 50 Metre
- 36 Metre
- 30 Metre
- 26 Metre
- 22 Metre
- 20 Metre

- Settlement Area

- Provincial Road
- Regional Road
- Local Road
- Railway

Base Data Source: Town of Caledon

0 0.5 1 2 3 4 5 km

March 2024 Office Consolidation

Flow
Building our future, faster.

Central Brampton

J2: Traffic Impact Assessment

AECOM

Peel Region

Flow
Building our future, faster.

Central Brampton

Traffic Impact Assessment

Regional Municipality of Peel

60736820

June 2026

AECOM

Peel Region

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Revision History

Revision #	Revision Date	Revised By	Details
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00	June 25, 2026	Noah Staudte Abbas Babazadeh	Addressed comments from Peel Region, dated February 20, 2026 Updated Study Purpose and Objectives (Report Section 1.2) Updated shaft compound locations and associated analysis (primarily report Sections 5 and 6 as well as Appendices C, D, E, and F)

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1. Introduction

1.1 Background

BILL 23 – More Homes Built Faster Act (the Act)

This Traffic Impact Assessment (TIA) Report was prepared in support of the Kennedy Road Sanitary Trunk Sewer (STS) Environmental Assessment (EA). The Kennedy Road STS EA is being conducted under the Region's FLOW Program, which came about as a result of Bill 23, the "More Homes Built Faster Act" (the Act). This Ontario Act supports the Province's Housing Supply Action Plan and aims to build more homes for Ontario families. With Bill 23, Peel's water and wastewater infrastructure needs are drastically accelerated. Housing targets for 2051 need to be met almost 20 years sooner, which mean construction of more than 245,000 residential units in Peel Region; 113,000 in Brampton to meet these targets. Peel's accelerated water and wastewater infrastructure program will meet this need for both the community and province.

Kenney Road STS EA

As noted previously, the Kennedy Road STS EA project is a result of the Bill 23 "More Homes Built Faster Act" (the Act) to meet the City of Brampton and Town of Caledon housing targets. The Act requires expediting the construction of essential water and wastewater infrastructure to meet community and provincial needs.

Considering forecasted population growth to 2051 and beyond, there is a need to enhance the conveyance capacity of key sanitary trunk sewers that service the urban growth areas within Peel Region including Central Brampton and Town of Caledon. There has also been a confirmed need for a new large diameter north to south STS from soon to be constructed Etobicoke Creek STS twinning at Kennedy Road South (north of Hwy 407), north to Old School Road at Hurontario Street.

The proposed STS will be about 10 to 48 m deep and constructed by trenchless method. The In-service date of the proposed STS (Kennedy Road, Vodden Street and Orangeville Brampton Railway Corridor to Old School Road) is by 2030 to meet assigned Provincial housing targets. The construction of this STS will coincide with other construction projects in Brampton, many projects with a similar objective of supporting the Act and resulting population growth targets. This traffic report considers the potential impacts to traffic, transit, cyclists and pedestrians during construction and mitigation measures to be implemented to minimize construction impacts.

1.2 Study Purpose and Objectives

Appendix 7.17 of the RFP, which outlines the Traffic Impact Assessment requirements for the Kennedy Road EA, identifies a TIA in sufficient detail to allow for preliminary but full understanding of potential traffic management issues that may arise during construction for the preferred design solution. This Traffic Impact Assessment is developed in the following sections to satisfy RFP requirements:

- EA Phase 1 and 2: conduct a qualitative analysis to assess impacts of construction works for the shortlist of trunk alternatives for trunk sewer route alignment.
- EA Phase 3: assess traffic impacts for the preferred STS route and the preferred construction method(s). Identify anticipated impacts on pedestrians, transit operations, cyclists. Where necessary, identify impacts to private property access and emergency services. This analysis will be conducted us follows:
  - Use Synchro 11 software packages to assess network capacity constraints and existing traffic operations at key intersections along the preferred route (excluding local roads).
  - Model the 'worst-case' scenario for lane closures incorporating assumptions on lane closures for concurrent construction projects to assess queues and Level of Service (LOS) to determine when a diversion/alternative is necessary.[1] As per the RFP, Appendix 7.17, Section 16.1, the diversion percentages for the LOS assessment are to be estimated.
  - Prepare a stand-alone traffic impact assessment report with modelling results as part of the MCEA ESR.

Following discussions with the Region of Peel's Transportation staff, the following out-of-scope items were also included as part of the EA Phase 3 section of the Traffic Impact Assessment for the purpose of capturing regional network changes resulting from multiple simultaneous high-profile construction projects:

- Using the City of Brampton's travel demand forecasting model to supplement the assessment of network capacity constraints and existing traffic operations at key intersections along the preferred route (excluding local roads).
  - Review the City's model to confirm it is applicable for use within the defined study area.

[1] *Assessment of construction staging plans will be completed as part of the detailed design to inform the preparation of Traffic Management Plans.*

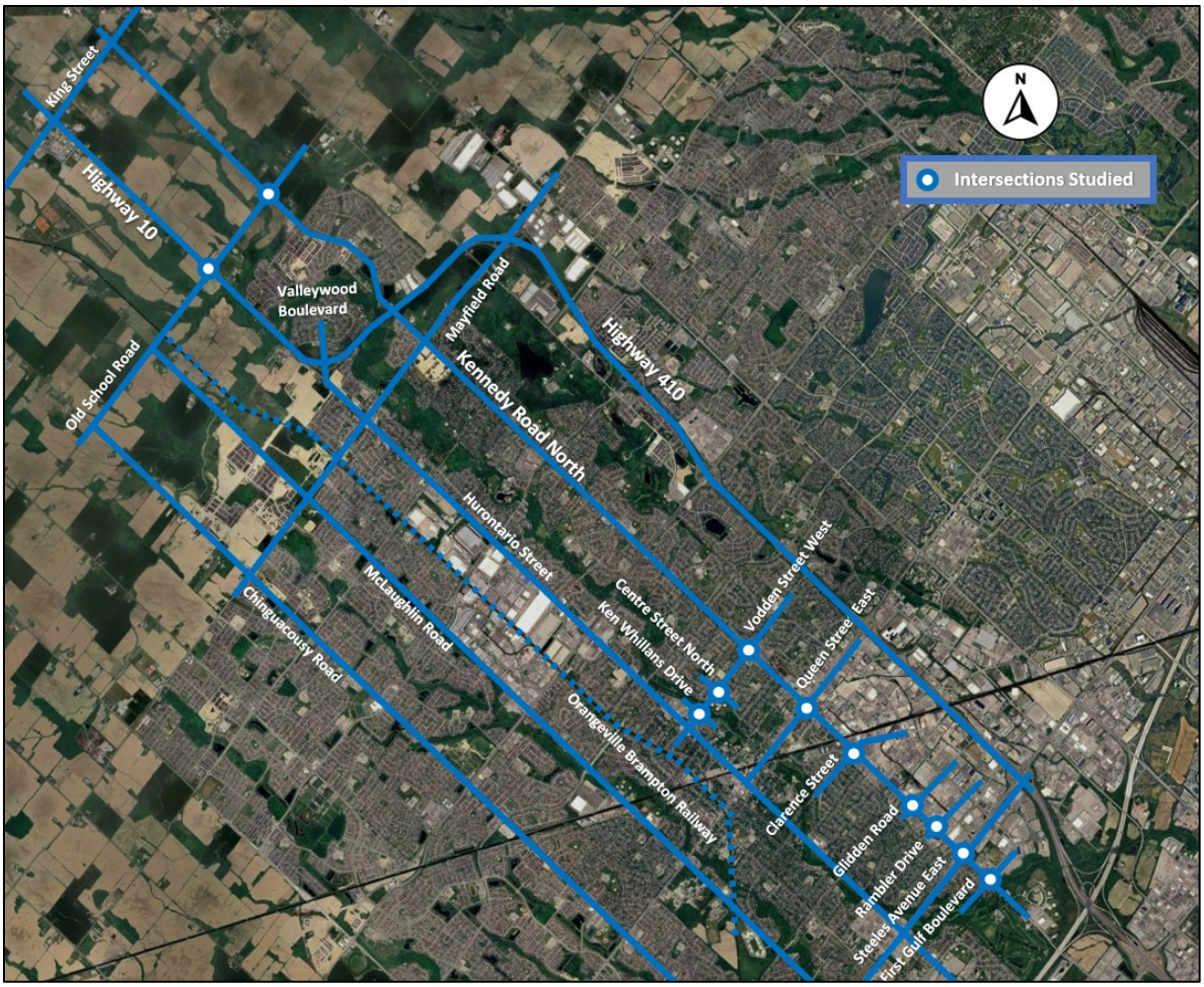
- Review preliminary design plans for the Kennedy Road STS project to identify anticipated compound staging locations and document assumptions for lane closures; input lane closure assumptions into the demand model representing a "worst-case" construction staging scenario along the preferred alignment.
- Gather details on concurrent construction projects and identify anticipated lane closures for those projects; input lane closure assumptions into the demand model to represent a "worst-case" concurrent construction projects scenario.
- In place of the RFP scope of work, Appendix 17.1, Section 16.1 where diversion percentages were to be estimated, use the travel demand model to identify diverted traffic and develop intersection volumes for further assessment in Synchro 11.

1.3 Study Area

The Study Area considered by the Traffic Impact Assessment generally falls to the south of King Street, west of Highway 410, north of Highway 407, and east of Chinguacousy Road, as depicted in Figure 1-1. The Study Area was selected for the travel demand modelling exercise and considers the potential opportunity to assess other projects that may come forward under the FLOW program.

The Study also considered multiple individual intersections within the broader Study Area boundaries, discussed in Section 1.

Figure 1-1: Study Area



1.4 Background Materials

A variety of existing background documents and information sources were reviewed as part of this assessment, including:

- Region of Peel Official Plan
  - Schedule E-5, Major Transit Station Areas
  - Schedule F-1, Rapid Transit Corridors
  - Schedule F-2, Major Road Network
  - Schedule F-3, Regional Road Mid-Block Right of Way Requirements
  - Figure 13, Existing and Long-Term Regional Road Cycling Network

  - Figure 14, Existing Regional Road Pedestrian Network
  - Figure 16, Regional Goods Movement Corridors
- City of Brampton Official Plan
  - Schedule 1B, Major Transit Station Areas (supported by Schedules 13b, 13d, 13e, 13f, 13l and 13m)
  - Schedule 3A, Active Transportation Network
  - Schedule 3B, Transit Network to 2051
  - Schedule 3C, Streets Network to 2051
  - Schedule 4, City Road Right-of-Way Widths
- City of Brampton 2022 Cycling Map
- Town of Caledon Official Plan
  - Schedule J Road Classification
  - Schedule K (Right of Way width)

These items are included for reference in **Appendix A**.

2. Existing and Planned Transportation Facilities

2.1 Road Network

The roads within the Study Area are under the jurisdiction of either the Ministry of Transportation Ontario (MTO), Peel Region, The City of Brampton, or the Town of Caledon. This includes Highway 410 in the northeast quadrant and along the east boundary of the Study Area. Roadways under Peel Region's or City of Brampton's jurisdiction include the following:

- McLaughlin Road, Hurontario Street / Main Street South, and Kennedy Road: for this study we refer these roadways as running north-south.
- Steeles Avenue East, Queen Street East, Williams Parkway East, Bovaird Drive East, Sandalwood Parkway East, Wanless Drive/Conservation Drive and Mayfield Road: for this study we refer these roadways as running east-west.

The above roads will be further broken down by Provincial, Regional, and Municipal jurisdiction in Sections 2.1.1, 2.1.2, and 2.1.3, respectively.

Within the Town of Caledon, the major roadways in this study are Old School Road, running east-west as well as Highway 10/Hurontario Street and McLaughlin Road with both running north to south.

In addition to the above-noted transportation corridors, there are multiple collector and local roadways that form the complete transportation network.

The north-to-south transportation corridors travel over major structures, including the Canadian National Railway/Metrolinx rail corridor and Etobicoke Creek. East-west transportation corridors also cross Etobicoke Creek and Fletchers Creek, and the former Orangeville Brampton Railway Corridor.

2.1.1 Provincial Road Network

The section of Highway 410 captured within the Study Area is the transition between the freeway and Hurontario Street where an interchange provides access to the nearby residential areas along Valleywood Boulevard, as well as allowing vehicles from Hurontario Street to access Highway 410 and vehicles on Highway 410 to exit north or south onto Hurontario Street.

The MTO has completed the preliminary design for the future Highway 413 that will cross the Study Area at the north end. The preferred Highway 413 route runs east to west north

of Old School Road through the Town of Caledon. It is important to note that the proposed McLaughlin Road and Old School Road alignments fall within the Highway 413 Focused Analysis Area, portions of which are gradually being released for development. This includes a small portion of land at the intersection of Old School Road and Hurontario Street (south side of Old School Road). A future Transit Way Station is proposed at the northwest intersection of Hurontario Street and Old School Road.

2.1.2 Regional Road Network

The Regional roadways within the Study Area are classified in the Peel Region Official Plan Schedule F-2 (Major Road Network) and Schedule F-3 (Regional Road Mid-Block Right of Way Requirements). The following Table 2-1 outlines the sections of regional roadways that were considered in the identification and evaluation of the long list of routes for the STS. Copies of the relevant Schedules are included in Appendix A.

Table 2-1: Regional Road Network Classification and Right of Way

Road Name	From/To	Schedule F2 Regional Road Classification	Schedule F3 Right of Way Width (Metres)
Kennedy Road	Bovaird Drive E. to south of Williams Parkway	Major Road	36
Kennedy Road[2]	South of Williams Parkway to just south of Steeles Avenue E.	Major Road	30
Steeles Avenue	Kennedy Road N. to Main Street S.	Major Road	45
Bovaird Drive E.	McLaughlin Road N. to Kennedy Road	Major Road	45
Mayfield Road	McLaughlin Road N. to Kennedy Road	Major Road	50

Regional Good Movement Corridors are identified in the Regional Official Plan, Figure 16. These corridors include the Primary Routes on the following roadway sections that were considered in the long-list of alternative routes:

- Kennedy Road from south of Steeles Avenue E. to Bovaird Drive E.
- Bovaird Drive between Kennedy Road N. and McLaughlin Road N.
- Queen Street east of Kennedy Road N.
- Mayfield Road between Kennedy Road N. and McLaughlin Road N.

A connector truck route exists along Hurontario Street between Bovaird Drive E., and Mayfield Road, continuing as a Primary Route north of Highway 410.

2. *At the time of writing there was a discrepancy between Peel Region Official Plan and the City of Brampton Official Plan. The information presented here is that shown in the Region's Official Plan, which is the more recent document. Note that the City's Official Plan shows a small section of Kennedy Road. between Queen Street and south of Vodden St. E as being under City jurisdiction.*

2.1.3 Municipal Road Network

The City roadways within the Study Area are classified in the City of Brampton Official Plan Schedule 3C (Streets Network to 2051) and Schedule 4 (City Road Right-of-Way Widths). The following Table 2-2 outlines the sections of City roadways that were considered in the identification and evaluation of the long list of routes for a new large diameter sanitary trunk sewer. Copies of the relevant Schedules are included in Appendix A.

Table 2-2: City of Brampton Road Network Classification and Right of Way

Road Name	From/To	Schedule 3C City Road Classification	Schedule 4 Right of Way Width (Metres)
Hurontario Street	Williams Parkway to Mayfield Road	Major Arterial[3]	40-45
Main Street	Williams Parkway to Harold Street	Major Arterial	26-30
Main Street	Harold Street to Nanwood Drive	Major Arterial	36
Main Street	Nanwood Drive to just south of Steeles Avenue	Major Arterial	50-55
McLaughlin Road N.	Bovaird Drive W. to Mayfield Road	Minor Arterial[4]	36
Kennedy Road	Bovaird Drive E. to Mayfield Road	Minor Arterial	36
Kennedy Road	Steeles Avenue to just south of Steeles Avenue	Minor Arterial	36
Sandalwood Parkway	McLaughlin Road to Kennedy Road	Major Arterial	40-45
Queen Street	Kennedy Road N. to Rutherford Road N.	Major Arterial	40-45
Wanless Drive	McLaughlin Road N. to Hurontario Street	Minor Arterial	36
Williams Parkway	Vodden Street W. to Kennedy Road N.	Minor Arterial	36
Conservation Drive	Hurontario Street to Kennedy Road	Collector[5]	23-26
Vodden Street W.	Orangeville Brampton Railway Corridor to Kennedy Road N.	Collector	23-26

The Town roadways are classified within the Town of Caledon Official Plan Schedule J (Road Classification) and Schedule K (Right of Way Width) as outlined in Table 2-3 were considered in the identification and evaluation of the long list of routes for the STS. Copies of the relevant Schedules are included in Appendix A.

3. *Major Arterial roads serve major centres of activity, intra-area travel between suburban centres, between larger communities and between major trip generators. Major arterial roads serve the longest trips and carry the major portions of the trip entering and leaving the overall area.*
4. *Minor Arterial roads interconnect with and augment the major arterial road system. They connect major arterials to collector arterials and small generators. They provide service to medium size trip generators and distribute travel to small geographical areas and communities than those identified within the major arterial system.*
5. *Collector roads distribute trips from major and minor arterial roads to the ultimate destination or may collect traffic from local roads and channel into the major/minor road systems. They carry a low proportion of traffic travelling through the entire subarea and also carry a high proportion of local traffic within that area.*

Table 2-3: Town of Caledon Road Network Classification and Right of Way

Road Name	From/To	Schedule J Town Road Classification	Schedule K Right of Way Width (Metres)
McLaughlin Road N.	Mayfield Road to Old School Road	Collector	26
Old School Road	McLaughlin Road N to Hurontario Street	Collector	26

There are many local roads throughout the Study Area that were not considered in the development of the long list of routing options for the proposed sanitary trunk sewer; routing alternatives consist only of arterial and collector roads.

2.2 Peel Region's Strategic Goods Movement Network

The Peel Region's Strategic Goods Movement Network includes Primary Truck Routes and Connector Truck Routes which may support better connectivity for trucks in the future. Applicable Primary and Connector Truck Routes are listed below:

- Primary Truck Routes:
  - Mayfield Road
  - Bovaird Drive West and East
  - Kennedy Road South of Bovaird Drive East
  - Steeles Avenue West and East
  - Hurontario Street north of Mayfield Road
- Connector Truck Routes:
  - Hurontario Street north of Bovaird Drive to Mayfield Road
  - Main Street South (South of Steeles Avenue)

2.3 Rail Corridors

The Canadian National Railway/Metrolinx Kitchener/Waterloo/Toronto Corridor generally runs east-west through the Study Area, with the Brampton Innovation GO Rail Station located at 27 Church Street West (immediately west of Main Street). The rail corridor is generally located south of Queen Street East, east of Main Street, but is north of Queen Street West, west of Main Street (see Figure 2-1).

This rail corridor passes over the following roadways:

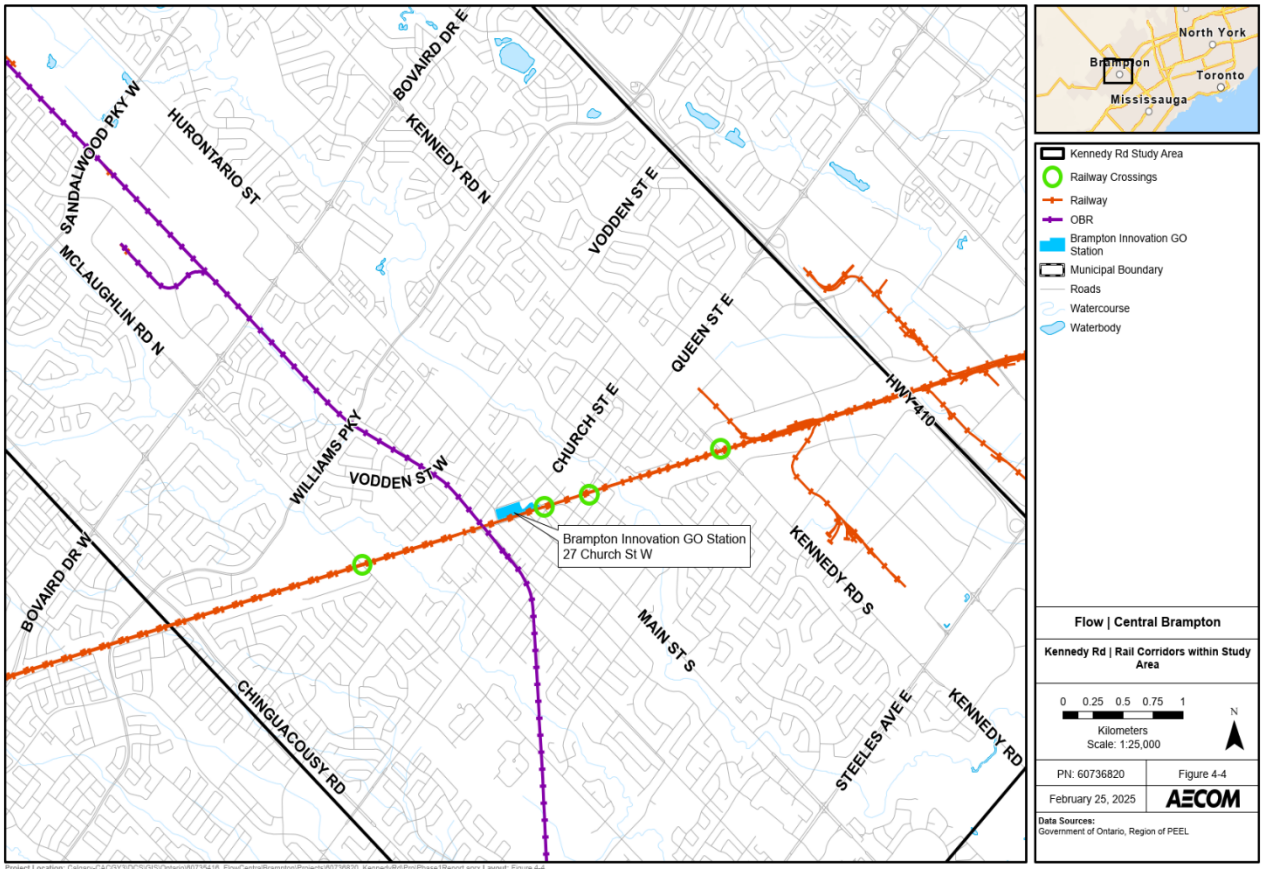
- Kennedy Road South, south of Queen Street

- Queen Street, east of Main Street
- Hurontario Street, north of Queen Street
- McLaughlin Road, south of Williams Parkway

The rail crossing structures pose potential restrictions for lane closures and other construction activities and were considered in determining the short-list of alternative routes.

The former Orangeville Brampton Railway (OBR) Corridor also runs north to south (east of McLaughlin Road) through the Study Area from the Canadian National Railway/Metrolinx corridor to Old School Road. This corridor was purchased by Peel Region and ownership has been transferred to the City of Brampton and Town of Caledon. The agreement allows Peel Region to use the railway corridor for infrastructure purposes. The railway corridor was identified as a potential route for the Kennedy Road STS at the outset of the Kennedy Road STS EA (see Figure 2-1).

Figure 2-1: Rail Corridors within Study Area



2.4 Transit Network

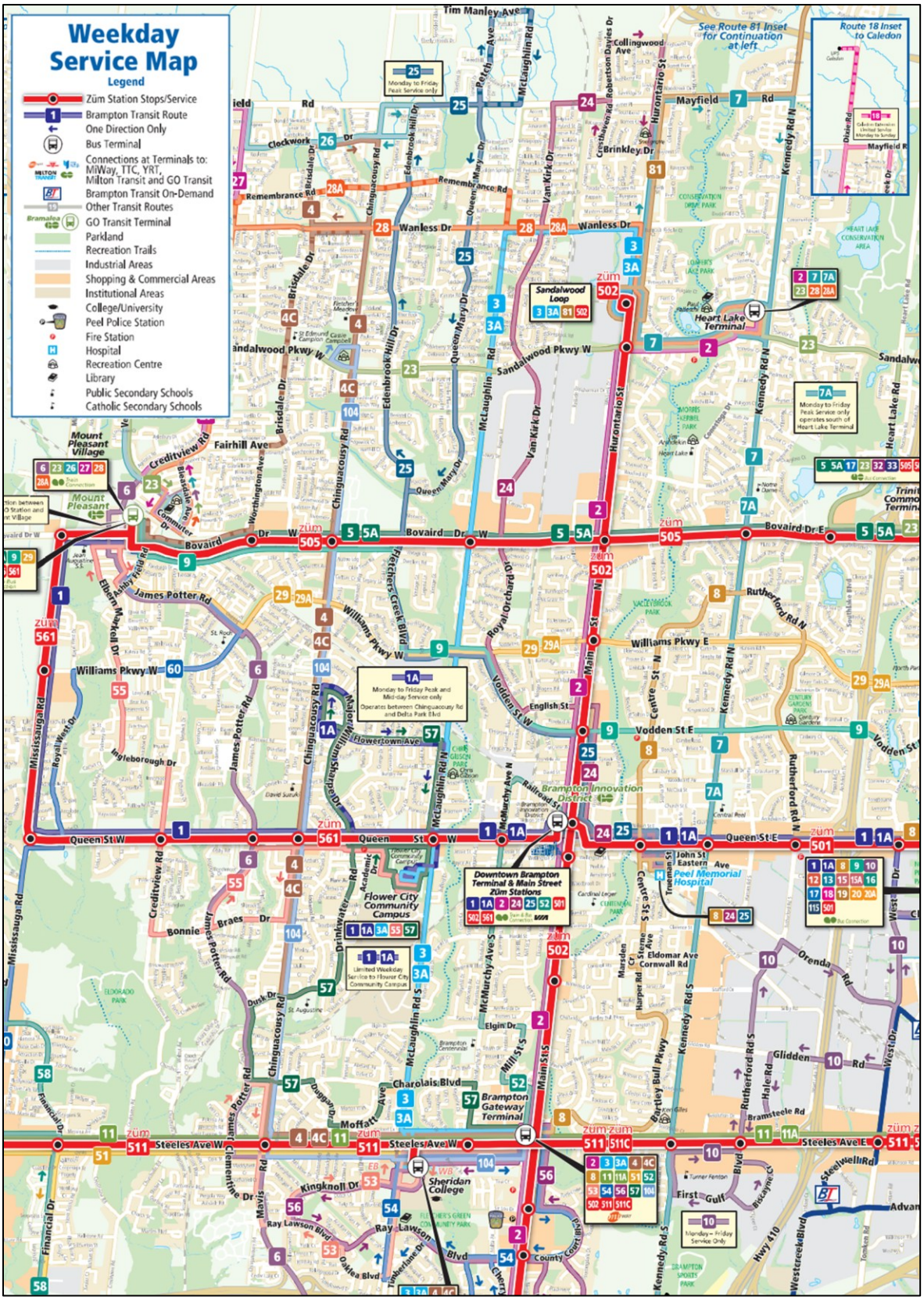
The existing transit network crossing through the Study Area includes the Canadian National Railway/Metrolinx GO rail corridor. As identified in the Region's Official Plan, Schedule F-1 (Rapid Transit Corridors), there is an existing GO Rail Station near the Main Street / Queen Street intersection, and the rail line along this corridor provides 15-minute, two-way, all-day service. Schedule F-1 is included in **Appendix A**.

The existing local transit network in the Study Area includes Brampton Transit (refer to **Figure 2-2**). Brampton Transit bus terminals are located at Steeles Avenue and Main Street (i.e., the Brampton Gateway Terminal), as well as in the area north of Queen Street and Main Street (i.e., the Downtown Terminal).

The City's Brampton Transit and Bus Rapid Transit "Züm" routes that run through the Study Area, include:

- Brampton Transit:
  - Route 3 (McLaughlin)
  - Route 7 (Kennedy)
  - Route 8 (Centre)
  - Route 9 (Vodden)
  - Route 23 (Sandalwood)
  - Route 29 (Williams)
  - Route 52 (McMurchy)
  - Route 81 (Mayfield West)
  - Route 202 (Mayfield 202)
  - Route 203 (Mayfield 203)
  - Route 204 (Mayfield 204)
- Züm:
  - 501 (Queen)
  - 501 (Main)
  - 505 (Bovaird)
  - 511 (Steeles)

Figure 2-2: Brampton Transit Weekday Service Map



There are many plans for transit service expansion. As per the City's Official Plan, Schedule 1B -Major Transit Station Areas and supporting Schedules 13b, 13d, 13e, 13f, 13l, and 13m, as well as Peel Region's Official Plan (Schedule E-5 – Major Transit Station Areas), within the Growth Plan Priority Transit Corridor, Primary Major Transit Station Areas are identified along Main Street South, at the intersections of Steeles Avenue and Queen Street as well as south of Steeles Avenue along Main Street. The Mayfield West Transit Hub between Queen Street and Steeles Avenue along Main Street is also identified as a Planned Major Transit Station Area. There is a section of Queen Street between Main Street and Kennedy Road that is identified as a Primary Major Transit Station Area but is not part of Peel Region's Growth Plan Priority Transit Corridors.

The City's Official Plan, Schedule 3B outlines the Transit Network to 2051. Building on the City's Official Plan, the long term conceptual Rapid Transit Corridors identified in Peel Region's Official Plan (Schedule F-1 – Rapid Transit Corridors), Main Street South is identified as a Light Rail Transit corridor and Queen Street East (i.e., east of Main Street) is identified as a Bus Rapid Transit corridor. Schedule F1 identifies Kennedy Road, Steeles Avenue, Bovaird Drive, Sandalwood Parkway and Main Street North as Other Rapid Transit Corridors.

All relevant Schedules are included in **Appendix A** for reference.

2.5 Active Transportation Network

The Study Area includes a pedestrian network of sidewalks and multiuse paths along the identified roads. Pedestrian and cycling infrastructure on local crossing streets within the Study Area are not mentioned here, only facilities on roadways that were considered as alternative routes for the STS.

As per Figure 14 (Existing Regional Road Pedestrian Network) of the Region's Official Plan, the following regional roads have sidewalk/multiuse paths:

- Kennedy Road (generally has sidewalks on both sides between Steeles Avenue and Bovaird Drive)
- Steeles Avenue (sidewalks on both sides between Kennedy Road and Main Street)
- Bovaird Drive (sidewalks on both sides between Kennedy Road and Main)

The Region's Official Plan does not contain additional information about the pedestrian network outside of the above-mentioned segments within the Study Area. Although not explicitly mentioned in Figure 14 of the Region's Official Plan, it can be confirmed that there are sidewalks on both sides of Kennedy Road from Main Street to Mayfield Road and Main Street has sidewalks on at least one side between Steeles Avenue and

Mayfield Avenue, although a majority of Main Street does have sidewalks on both sides in this section.

Figure 13 (Existing and Long-Term Regional Road Cycling Network) of the Region's Official Plan identifies that Kennedy Road between Steeles Avenue and Bovaird Drive, Steeles Avenue and Mayfield Road do not have planned cycling infrastructure. Bovaird Drive was identified as having a multi-use path for cyclists.

From the City of Brampton's 2022 Cycling Map the following cycling infrastructure has been identified along the Study Area roads:

- Kennedy Road between Conservation Drive and Arctic Tern Avenue (Multi-use path)
- Main Street between Nanwood Drive and Wellington Street (Bike lanes)
- Main Street between Quarry Edge Drive and Wanless Drive (Multi-use path)
- Bovaird Drive (Multi-use path)

The City of Brampton's Official Plan, Schedule 3A (Active Transportation Network) identifies the following proposed facilities within the Study Area:

- Kennedy Road between Bovaird Drive and Conservation Drive (protected bike lane or cycle track)
- Main Street between Steeles Avenue and Nanwood Drive (protected bike lane or cycle track)
- Main Street between Nanwood Drive and Wellington Street (bike lane or buffered bike lane)
- Main Street between Nelson Street East and Vodden Street (bike lane or buffered bike lane)
- Main Street/Hurontario Street between Vodden Street and Highway 410 (protected bike lane or cycle track)
- McLaughlin Road between Steeles Avenue and Sandalwood Parkway (protected bike lane or cycle track)
- Mclaughlin Road between Sandalwood Parkway and Wanless Drive (multiuse path)
- Queen Street between Kennedy Road and Centre Street (protected bike lane or cycle track)
- Conservation Drive between Kennedy Road and Hurontario Street (bike lane or buffered bike lane)

The City of Caledon Trails Map (online) identifies an on-road cycling route within the study area along Old School Road and Kennedy Road (i.e., the Etobicoke Creek Trail Connector). Signs are posted along the routes and identify that each route is maintained between May 1st and October 31st, annually.

Within the Study Area there is the Etobicoke Creek Recreation Trail, a paved trail following the Etobicoke Creek from the south end of the Study Area to the north end. This is a shared trail between pedestrians and cyclists. There are also several paved and unpaved trails through parks shared by cyclists and pedestrians in the Study Area.

All relevant Schedules are included in Appendix A for reference.

2.6 Problem and Opportunity Statement

To support growth through 2051, Peel Region must increase the capacity of key sanitary trunk sewers serving Central Brampton and the Town of Caledon. Currently, wastewater conveyance capacity in these areas is insufficient to meet future demands, requiring upgrades by 2030 to align with Provincial housing targets. The Kennedy Road Sanitary Trunk Sewer Schedule C Municipal Class Environmental Assessment study will help address this need by facilitating stakeholder consultations—including review agencies, Indigenous communities, and the public—to guide the selection of an optimal solution and associated design concept. Additionally, the study enables coordination with other infrastructure projects, improving efficiencies and informing Peel Region's 2025 Water and Wastewater Master Plan Update.

3. Identification of Alternative Routes

With such a large study area, there were several possible alternative routes that the proposed sanitary trunk sewer could follow. As such, a list of alternative sanitary trunk sewer routes that could reasonably be expected to be constructed was identified. Alternative sanitary trunk sewer routes were generated by first identifying a "long list" of potential alternative routes and then screening those routes to identify the most appropriate "short list" for comparative evaluation. This approach is outlined in the Phase 2 EA Interim Report, and the resulting alternatives (two north and two south alternative sanitary trunk sewer routes described below) were carried forward for comparative evaluation.

- South Study Area (shown in Figure 3-1):
  - Alternative Route S1: Kennedy Road North from future Etobicoke Creek Trunk Sewer to Bovaird Drive including Bovaird Drive from Kennedy Road North to McLaughlin Road (including westerly connection to existing Fletchers Creek sanitary trunk sewer.
  - Alternative Route S2: Kennedy Road from future Etobicoke Creek sanitary trunk sewer to Vodden Street including Vodden Street from Kennedy Road to Orangeville-Brampton Railway Corridor as well as Orangeville-Brampton Railway Corridor from Vodden Street to Bovaird Drive.
- North Study Area (Shown in Figure 3-2):
  - Alternative Route N1: Orangeville Brampton Railway Corridor from Bovaird Drive to Old School Road, including Old School Road from Orangeville Brampton Railway Corridor to Hurontario Street.
  - Alternative Route N2: McLaughlin Road from Bovaird Drive, including Old School Road from McLaughlin Road to Hurontario Street.

Figure 3-1: South Short-listed Routes

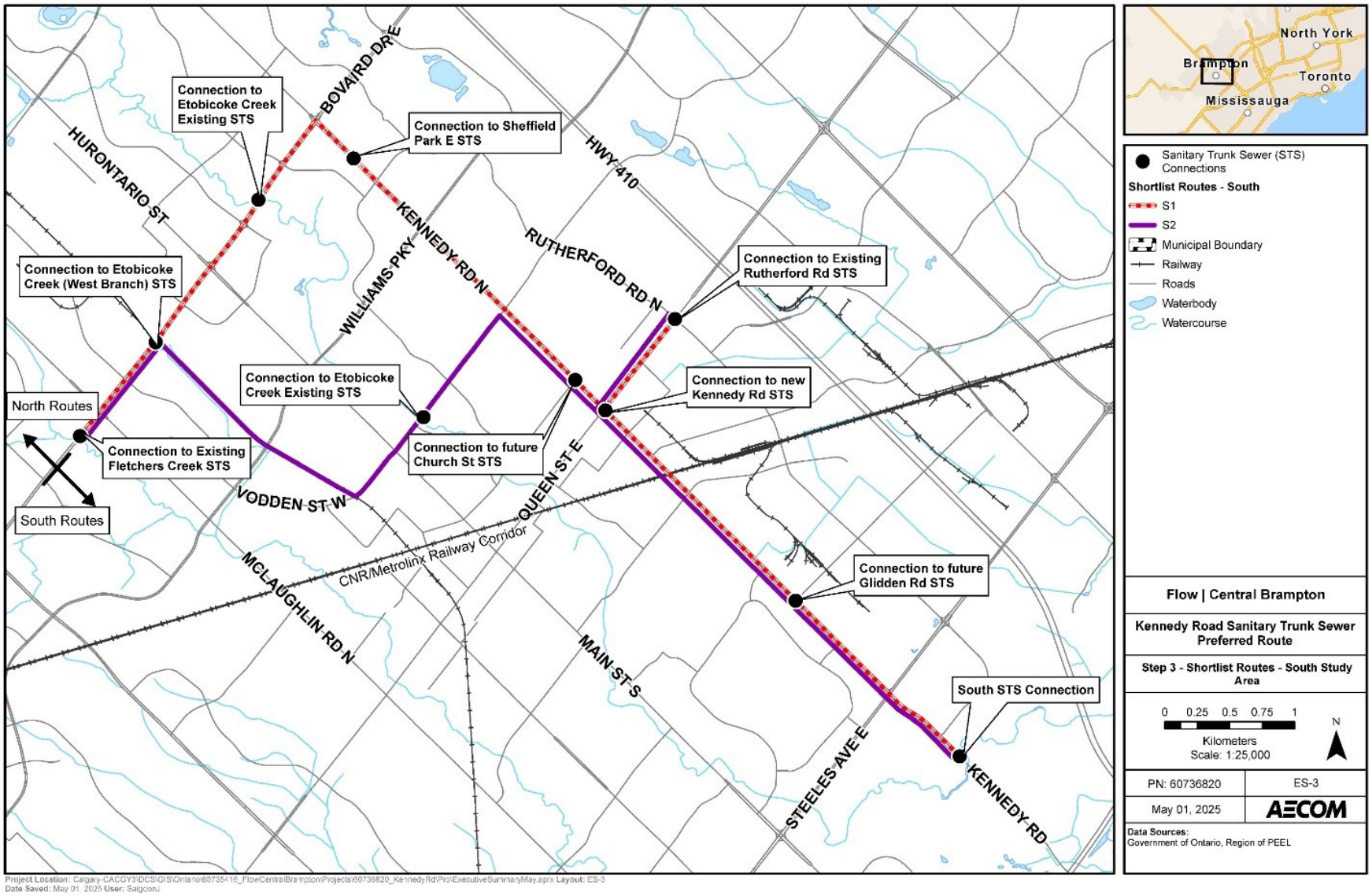
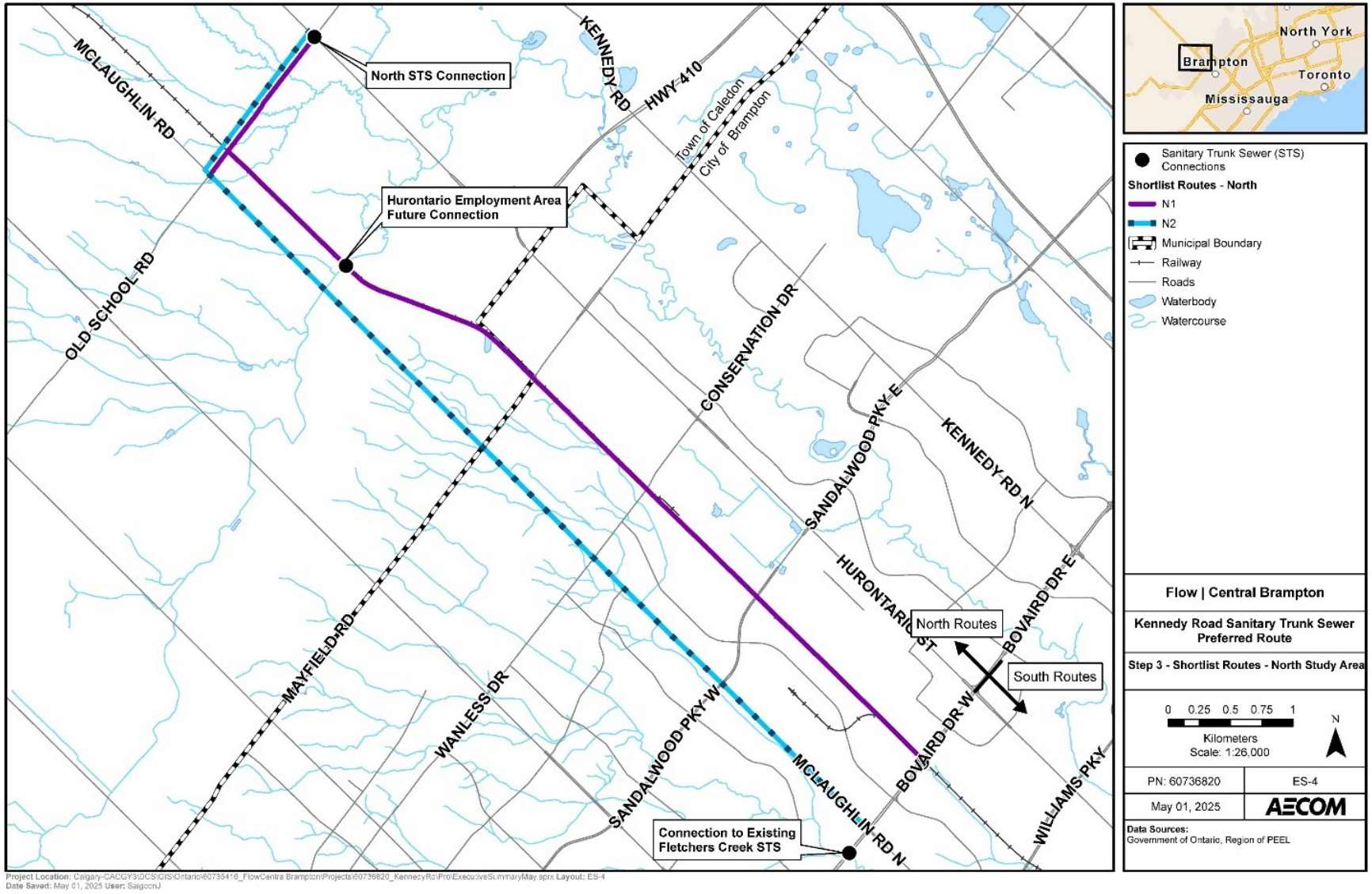


Figure 3-2: North Short-listed Routes



4. Evaluation of Short-Listed Alternative Routes

The short-listed sanitary trunk sewer routes identified in Section 3 were carried forward for evaluation. Section 4.1 outlines the Evaluation Criteria used in this assessment. Section 4.2 and Section 4.3 outline the evaluation of traffic and active transportation impacts for southern and northern routes, respectively, and Section 4.4 and Section 4.5 outline the evaluation of transit impacts for southern and northern routes, respectively. The overall impacts and identified preferred route are discussed in Section 4.6.

4.1 Evaluation Criteria and Indicator/Consideration

This traffic impact assessment for traffic, active transportation and transit impacts contributed to the Socio-Economic Environment Evaluation Criteria. Other Evaluation Criteria, each with their own indicators/considerations included Natural Environment, Cultural Environment, Legal/Jurisdictional, Technical, Climate Change, and Economic/Financial, all evaluated under separate reports or assessments.

There are several anticipated traffic and active transportation impacts during construction. Disruptions to services and facilities may include temporary closures of vehicle lanes, sidewalks, trails, and bike lanes. To evaluate these impacts, the routing alternatives were compared by considering the number of available travel lanes under existing conditions and the expected number/direction/duration of open lanes during construction. A qualitative comparison of the level of service with lane closures in place was also conducted. Additionally, the number of intersecting roads and potential opportunities to enhance active transportation were considered. In summary, the evaluation of traffic and active transportation impacts included the following indicators/considerations:

- Expected number/direction/duration of open lanes during construction and reduction in the number of intersecting roads affected by potential shaft locations
- Potential for increased public scrutiny related to inconvenience of higher traffic volumes/closures
- Opportunities to enhance active transportation

Sections 4.2 and Section 4.3 outline the detailed evaluation of traffic and active transportation impacts for the short-listed alternatives (south and north routes, respectively).

Construction activities have the potential to impact public transit services, requiring the relocation of bus shelters and transit stops, and/or temporarily interrupting services. Routes with higher order transit services were considered more disruptive than routes with local transit services. In summary, the evaluation of impacts to public transportation during construction included the following indicators/considerations:

- Relocation of bus shelters and transit stops
- Temporary service interruptions
- Consideration of higher order transit routes

Sections 4.4 and Section 4.5 outline the detailed evaluation of traffic and active transportation impacts for the short-listed alternatives (south and north routes, respectively).

4.2 Traffic and Active Transportation Impacts for Southern Routes

4.2.1 Alternative Route S1

Kennedy Road/Bovaird Drive to McLaughlin Road

Route S1, impacts vehicle traffic along both Kennedy Road and Bovaird Drive; both roadways have high traffic volumes. This route impacts vehicle traffic for a longer segment along Kennedy Road, a four-lane Major Arterial City/Regional roadway, in comparison with Route S2. At the time this assessment was completed it was anticipated that during construction there would be two lane closures on Kennedy Road and similarly 2 lane closures on Bovaird Drive to accommodate construction activities. These closures would centre around the shaft compounds and move through the corridor as construction progresses (note that at the time of writing the construction staging was not yet developed so it was not yet known how many locations within the corridor(s) will be under construction at the same time).

The identified preliminary shaft locations potentially impact three crossing roads where Route S1 intersects Regional or City roadways, including:

- Bovaird Drive - a six-lane Major Arterial Road (Regional) and Züm Rapid Transit corridor
- Main Street – a four-lane Major Arterial Road (City) and Züm Rapid Transit corridor
- Williams Parkway – a four-lane Minor Arterial Road (City) and Brampton Transit corridor

Route S1 would potentially increase delay at an additional five crossing roads where it intersects City roadways in different locations than Route S2. Access from other crossing roads to Kennedy Road would also be impacted by lane closures on Kennedy Road, including Rutherford Road and Linkdale Road. Access from other crossing roads to Bovaird Drive would also be impacted by lane closure on Bovaird Drive, including Conestoga Road, Sunforest Drive/Yellow Brick Road, and Gillingham Drive.

Kennedy Road and Bovaird Drive are both truck routes, and truck turning movements need to be accommodated.

It was assumed that along the Route S1 corridor there is limited opportunity to enhance active transportation. It was confirmed that there are currently sidewalks on both sides of Kennedy Road throughout the S1 route (extending from Etobicoke Creek to north of Sandalwood Parkway). As per the Peel Region Official Plan Figure 14, Existing Regional Road Pedestrian Network, the following facilities are planned or in place:

- Kennedy Road (generally has sidewalks on both sides between Steeles Avenue and Bovaird Drive)
- Bovaird Drive (sidewalks on both sides between Kennedy Road and McLaughlin Road)

The Region's Official Plan, Figure 13, Existing and Long-Term Regional Road Cycling Network, identifies that Route S1 along Kennedy Road between Steeles Avenue and Bovaird Drive does not have planned cycling infrastructure. Both the Regional Official Plan and the City of Brampton's 2022 Cycling Map identified multi-use path for cyclists along Bovaird Drive.

Within the Study Area there is the Etobicoke Creek Recreation Trail, a paved trail following the Etobicoke Creek from the south end of the Study Area to the north end. This is a shared trail between pedestrians and cyclists. There are also several paved and unpaved trails through parks shared by cyclists and pedestrians in the Study Area. Overall, there are limited opportunity for active transportation enhancements on Route S1.

4.2.2 Alternative Route S2

Kennedy Road/Vodden Street/Orangeville Railway Corridor

Route S2, impacts vehicle traffic along both Kennedy Road and Vodden Street; it was anticipated that Kennedy Road, a four-lane Major Arterial City/Regional roadway, would have higher traffic volumes compared to Vodden Street, a two-lane Collector Roadway (City road), and that in comparison to Route S1, Bovaird Drive would have higher traffic volumes than Vodden Street. This route impacts vehicle traffic for a shorter segment along Kennedy Road in comparison with Route S1.

Use of the Orangeville-Brampton Railway (OBR) Corridor alignment avoids or minimizes lane closures in comparison to Route S1. It was anticipated that during construction there would be two lane closures on Kennedy Road and a single-lane closure on Vodden Street, as there are only two lanes on Vodden Street, to accommodate construction activities. It was assumed that the lane closures would progress through the Study Area corridor as construction progresses (note that construction staging was not developed at the time of assessment, so it was not known how many locations within the corridor(s) would be under construction at the same time).

The identified preliminary shaft locations potentially impact 1 crossing road where Route S2 intersects a City roadway:

- Williams Parkway – a four-lane Minor Arterial Road (City) and Brampton Transit corridor.

Route S2 would potentially increase delay at an additional 9 crossing roads where it intersects City roadways in different locations than Route S1. Access from other crossing roads to Vodden Street would also be impacted by lane closures on Vodden Street, including Main Street, a four-lane Major Arterial Road (City Road) and Rapid Transit Corridor. Access from other crossing roads to Vodden Street would also be impacted by lane closure on Vodden Street including Post Road, Centre Street, Garfield Crescent, Vodden Court/Cumberland Drive, Cheryl Court, Isabella Street, Blossom Avenue, Mill Street/Rosebud Avenue.

There is potential opportunity to enhance active transportation related to the future OBR multi use trail that is not present with Route S1. It was confirmed that there are currently sidewalks on both sides of Kennedy Road throughout the S2 route (extending from Etobicoke Creek to north of Sandalwood Parkway). As per the Peel Region Official Plan Figure 14, Existing Regional Road Pedestrian Network, the following facilities are planned or in place:

- Kennedy Road (generally has sidewalks on both sides between Steeles Avenue and Bovaird Drive)

The Region's Official Plan, Figure 13, Existing and Long-Term Regional Road Cycling Network, identifies that Route S2 along Kennedy Road between Steeles Avenue and Vodden Street does not have planned cycling infrastructure. There is an existing on-road cycling lane on both sides of Vodden Street along Route S2 as part of the recently implemented Brampton East-West Cycling Corridor Project.

Within the Study Area there is the Etobicoke Creek Recreation Trail, a paved trail following the Etobicoke Creek from the south end of the Study Area to the north end. This is a shared trail between pedestrians and cyclists. There are also several paved and unpaved trails through parks shared by cyclists and pedestrians in the Study Area.

4.2.3 Summary for Southern Routes

From a traffic and active transportation perspective, Route S1 is less preferred as it is anticipated that there would be more traffic impacts related to higher traffic volumes and anticipated two lane closures on Kennedy Road and Bovaird Drive and limited opportunities to enhance active transportation.

Route S2 is preferred as there are fewer lane closures anticipated along this route (two lane closures on Kennedy Road and a single-lane closure on Vodden Street). There are also more opportunities to enhance active transportation related to the future OBR Corridor multi use trail.

4.3 Traffic and Active Transportation Impacts for Northern Routes

4.3.1 Alternative Route N1

Orangeville Brampton Railway from Bovaird Drive/Old School Road to Hurontario Street

Route N1 follows the OBR Corridor alignment, and as such avoids most lane closures, greatly minimizing impacts compared to Route N2 as there is no vehicle traffic in the OBR Corridor, except for on roadways that cross the OBR Corridor. It is recognized that during construction using the OBR Corridor, Route N1 may result in displacement of some pedestrian traffic currently using the OBR corridor. With the potential for significant enhancement of active transportation facilities (i.e., a future multi-use trail within the OBR Corridor), in conjunction with construction of the STS, the temporary displacement to accommodate construction activities may be more acceptable to the public in comparison to adopting Route N2, in addition to displacing pedestrians to complete upgrades to active transportation facilities in the OBR Corridor.

Route N1 impacts a shorter segment of vehicle traffic along Old School Road compared with Route N2. At the time of assessment it was thought that during construction there may be single-lane closure on all roads that intersect with the OBR Corridor, depending on shaft locations, including at Bovaird Drive/Range Road 107, Sandalwood Parkway, Wanless Drive, Mayfield Road, and Old School Road. These closures would move through the corridor as construction progresses (note that construction staging was not developed at the time of assessment, so it was not known how many locations within the corridor(s) would be under construction at the same time).

The identified preliminary shaft locations potentially impact five crossing roads where Route N1 intersects Regional or City roadways, including:

- Bovaird Drive – a six-lane Major Arterial Roads (Regional) and Züm Rapid Transit corridor
- Mayfield Road – a two-lane Major Arterial Roads (Regional) (not currently a transit corridor)
- Sandalwood Parkway – a four-lane divided Major Arterial Road (City) and Brampton Transit corridor
- Wanless Drive – a 4 lane Minor Arterial Road (City) and Brampton Transit corridor
- Old School Road – a two-lane Collector Road

4.3.2 Alternative Route N2

McLaughlin Road to Bovaird Drive/ Old School Road to Hurontario Street

Route N2, impacts vehicle traffic along McLaughlin Road, Old School Road (a longer segment in comparison with Route N1), and Bovaird Drive (from the McLaughlin Road to the Orangeville Brampton Railway Corridor, where this route differs from Route N1). Along McLaughlin Road there are traffic/transit and pedestrian/cyclist impacts throughout. McLaughlin Road is a four-lane Minor Arterial Road north of Bovaird Drive to south of Mayfield Road and a two-lane Minor Arterial Road from south of Mayfield Road to Old School Road. McLaughlin Road is also a Brampton Transit corridor.

At the time of assessment it was anticipated that during construction there would be two lane closures on McLaughlin Road, and a single lane closure on Old School Road. These closures would move through the corridor as construction progresses (note that at the time of assessment the construction staging was not developed so it was not known how many locations within the corridor(s) would be under construction at the same time).

The identified preliminary shaft locations potentially impact 5 crossing roads where Route N1 intersects Regional or City/Town roadways, including:

- Bovaird Drive – a six-lane Major Arterial Roads (Regional) and Züm Rapid Transit corridor
- Wanless Drive – a 4 lane Minor Arterial Road (City) and Brampton transit corridor
- Old School Road – a two-lane Collector Road
- Potters Wheel Gate – a local road

- Lormel Gate/Lowry Drive – a local road

Route N2 would potentially increase delay at an additional seven crossing roads where McLaughlin Road intersects other roadways in different locations than Route N1., including: Marycroft Court, Sandalwood Parkway, Narcissus Gate, Bramtrail Gate, Whitepoppy Drive, Madawaska Road, and Tweechill Avenue

It is assumed that along the N2 route corridor there is limited opportunity to enhance active transportation. There are existing sidewalks or multi-use pathways on both sides of McLaughlin Road from Bovaird Drive to south of Mayfield Road, and from north of Mayfield Road to Tim Manley Avenue. There are no active transportation facilities on Old School Road.

4.3.3 Summary for Northern Routes

Route N1 is preferred as it avoids major traffic impacts on roads with high traffic volumes and provides significant opportunity for enhancing active transportation. Route N2 is less preferred as there are major traffic impacts on heavily travelled roads and minimal opportunity for enhancing active transportation.

4.4 Potential Impacts on Public Transit during Construction for Southern Routes

4.4.1 Alternative Route S1

Kennedy Road/Bovaird Drive to McLaughlin Road

With respect to transit services and facilities, Route S1 impacts the Bovaird Drive, Main Street/Hurontario Street, and Queen Street Rapid Transit Corridors. Route S1 also impacts a longer section of the Kennedy Road transit corridor, most likely requiring at least one to two more locations for potential bus shelter/transit stop relocation along Kennedy Road (i.e., Williams Parkway and Bovaird Drive), compared to Alternative S2.

4.4.2 Alternative Route S2

Kennedy Road/Vodden Street/Orangeville Railway Corridor

With respect to transit services and facilities, Route S2 impacts the Vodden Street and Kennedy Road Brampton Transit Corridors and potentially introduces delay to the Main Street (Züm) Rapid and Brampton Transit Corridor where S2 crosses this corridor. These impacts may be less than Route S1 which impacts higher order rapid transit (Züm) corridors. Route S1 impacts a longer section of the Kennedy Road Transit Corridor most

likely with two more locations for potential bus shelter/transit stop relocation along Kennedy Road (i.e., Williams Parkway and Bovaird Drive) compared to Alternative S2. However, while there are still potential relocations of bus shelters and transit stops along Kennedy Road and Vodden Street, Route S2 avoids relocation of bus shelters and transit stops along the OBR Corridor (i.e., fewer relocations required compared to Route S1).

4.4.3 Summary for Southern Routes

Route S2 is preferred as it avoids impacts to higher order transit routes (e.g., Bovaird Drive) and may result in less impacts to bus shelters and transit stops.

4.5 Potential Impacts on Public Transit during Construction for Northern Routes

4.5.1 Alternative Route N1

Orangeville Brampton Railway from Bovaird Drive/Old School Road to Hurontario Street

With respect to transit services and facilities, Route N1 avoids relocation of bus shelters and transit stops. It avoids most higher order transit routes but crosses three transit corridors and may introduce delays to transit services at these route/roadway crossings of the OBR Corridor with Bovaird Drive, Sandalwood Parkway and Wanless Drive.

4.5.2 Alternative Route N2

McLaughlin Road to Bovaird Drive/ Old School Road to Hurontario Street

With respect to transit services and facilities, Route N2 potentially introduces delays to transit routes along McLaughlin Road, Bovaird Drive and Wanless Drive and to the transit corridor where Route N2 crosses Sandalwood Parkway, introducing more impacts than that anticipated with Alternative N1. There are potential relocation of bus shelters and transit stops along McLaughlin Road, Bovaird Drive and Wanless Drive (Transit Corridors) with Route N2, introducing more impacts than that anticipated with Route N1.

4.5.3 Summary for Northern Routes

Route N1 is preferred as it avoids impacts to public transit shelters, stops and service.

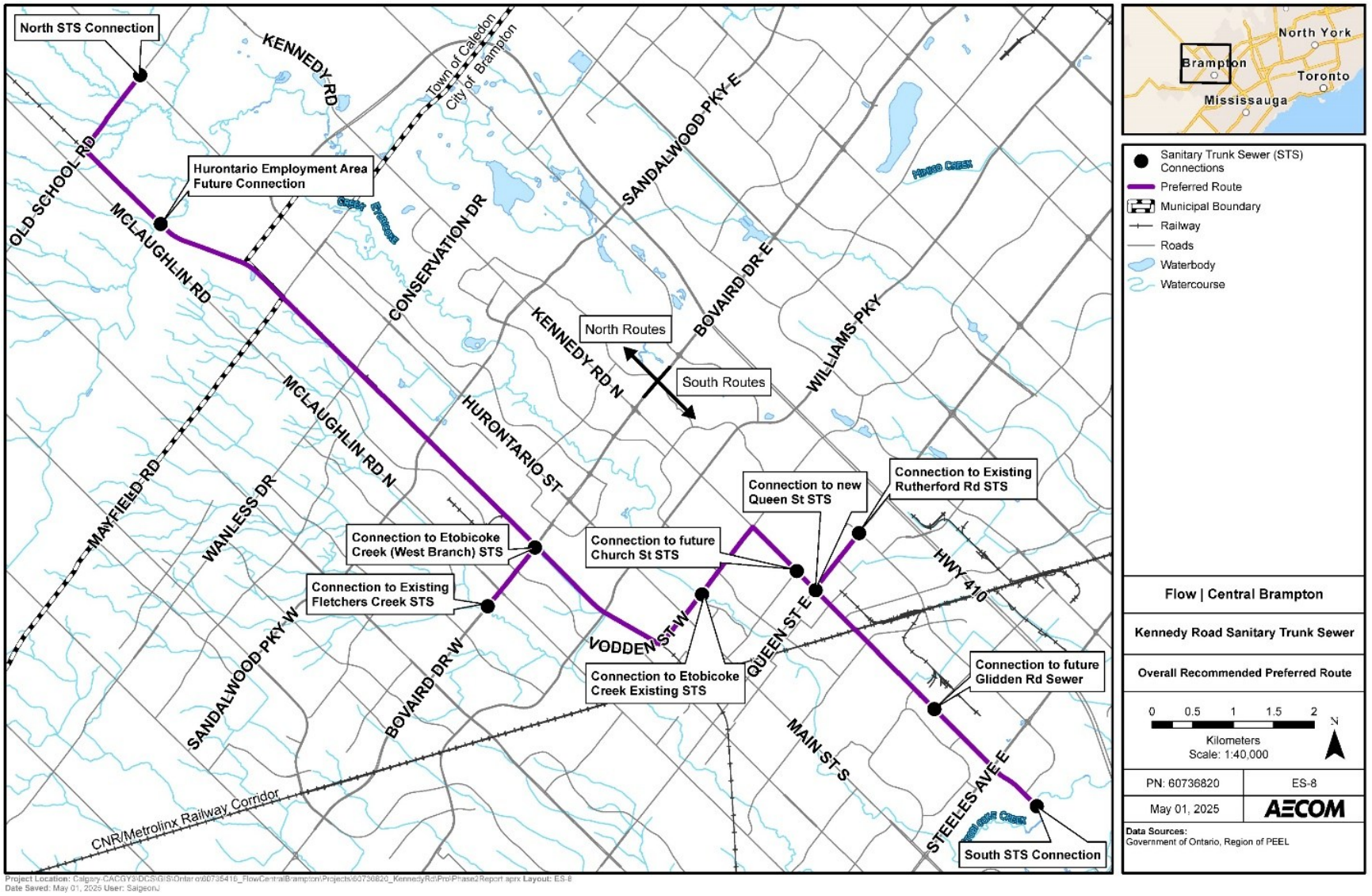
4.6 Overall Evaluation Summary and Preferred Route

As described in the Kennedy Road Sanitary Trunk Sewer EA Phase 2 Interim report, the preferred routes after the short-list evaluation of alternatives are:

- Route S2: Kennedy/Vodden/Orangeville-Brampton Railway
- Route N1: Orangeville-Brampton Railway/Old School Road

These preferred routes, shown in Figure 4-1, were carried forward for further assessment to identify impacts during construction based on preliminary design drawings considering the preferred construction method and staging.

Figure 4-1: Preferred Routes S2 and N1



5. Evaluation of Preferred Route

With the selection of the preferred route identified in Section 4.6 a more detailed analysis was conducted to determine mitigation measures that may be needed to facilitate construction. The following sections outline the data and analysis completed in support of the preferred sanitary trunk sewer route and preferred locations for shaft compounds.

5.1 Data Collection

5.1.1 Turning Movement Counts

Several discussions were carried out with Peel Region and the City of Brampton to identify areas of concern for analysis, including intersection operations at specified locations. Turning movement count (TMC) data for these intersections of concern was provided by Peel Region, the City of Brampton, and the Town of Caledon to capture signalized intersections within the Study Area. The turning movement count data used in the assessment covers volumes for ten intersections with most counts captured in 2024, as listed in Table 5-1.

Table 5-1: Turning Movement Count Data

Intersection	Date of Count	Received From
Kennedy Road and First Gulf Boulevard	April 14, 2021	City of Brampton
Kennedy Road and Steeles Avenue	April 17, 2024	Peel Region
Kennedy Road and Rambler Drive	April 17, 2024	Peel Region
Kennedy Road and Glidden Road	April 17, 2024	Peel Region
Kennedy Road and Clarence Road	April 17, 2024	Peel Region
Kennedy Road and Queen Street East	April 17, 2024	Peel Region
Kennedy Road and Vodden Street	April 25, 2024	Peel Region
Vodden Street and Centre Street	February 29, 2024	City of Brampton
Vodden Street and Ken Whillans Drive	February 29, 2024	City of Brampton
Old School Road and Hurontario Street	June 27, 2024 (MTO) March 7, 2018 (Peel Region)	MTO & Peel Region
Old School Road and Kennedy Road	Not Available	Not Available

One intersection did not have available data (i.e., Old School Road and Kennedy Road); for this location the intersection turning movements were approximated from EMME model output and upstream intersections with available data, as discussed in Section 5.4.1.

TMC data is included in Appendix B. A "data repository" has been located in the FLOW program SharePoint site, and all TMC data received for the Kennedy Road STS

EA has been saved to this repository for use by others working on FLOW program assignments.

5.1.2 Heavy Vehicle / Truck Percentages

Heavy vehicle / truck percentages were included in the turning movement counts and recorded by movement. This information is included in Appendix B.

Long-combination vehicles (LCV) access commercial properties within the Study Area. It was determined that two separate companies have LCV permits to operate on City and Regional roadways to travel to and from a specific property and the 400 series highway. Within the Study Area, roads that accommodate LCVs include Kennedy Road, First Gulf Boulevard, Biscayne Crescent, and Steeles Avenue. There are limited numbers of LCV's operating on the route. Permit information was available for one of the LCVs and it identified travel was restricted between 6 a.m. and 7 a.m. weekdays on Steeles Avenue (inbound) as well as between 7 a.m. to 9:30 a.m. and 3:30 p.m. and 6:30 p.m. on First Gulf Boulevard and Kennedy Road (outbound). As our modelling assignments considered peak periods, we did not make adjustments to the TMC truck percentages to adjust for LCVs.

5.1.3 Signal Timing Plans

Current Signal Timing Plans (STP) were provided by Peel Region and the City of Brampton and are included in Appendix B. The Signal Timing Plans used in the Synchro model are listed in Table 5-2.

Table 5-2: Signal Timing Plan Data

Intersection	Date of Signal Timing Plan	Received From
Kennedy Road and First Gulf Boulevard	December 2, 2025	City of Brampton
Kennedy Road and Steeles Avenue	November 11, 2025	Peel Region
Kennedy Road and Rambler Drive	November 24, 2025	Peel Region
Kennedy Road and Glidden Road	November 24, 2025	Peel Region
Kennedy Road and Clarence Road	November 24, 2025	Peel Region
Kennedy Road and Queen Street East	November 24, 2025	Peel Region
Kennedy Road and Vodden Street	November 25, 2025	Peel Region
Vodden Street and Centre Street	December 2, 2025	City of Brampton
Vodden Street and Ken Whillans Drive	December 2, 2025	City of Brampton
Old School Road and Hurontario Street	Not Available	Not Available
Old School Road and Kennedy Road	November 25, 2025	Peel Region

One intersection did not have available data (Old School Road and Hurontario Street); for this location the signal timing plan was developed using the recommended values in OTM Book 12, and consequently optimized by Synchro as discussed in Section 5.4.1.

A "data repository" has been located in the FLOW program SharePoint site, and all STP data received for the Kennedy Road STS EA has been saved to this repository for use by others working on FLOW program assignments.

5.1.4 Pedestrian Traffic

Pedestrian counts for intersections and crosswalks were obtained from the turning movement counts identified in Section 5.1.1 (Appendix B), as provided by Peel Region and the City of Brampton.

5.1.5 Cycling Traffic

Cyclist counts at intersections and crosswalks were obtained from the turning movement counts identified in Section 5.1.1 (Appendix B), as provided by Peel Region and the City of Brampton.

5.1.6 Public Transit

The existing transit stops were considered in the analysis. This information was previously discussed in Section 2.4.

5.1.7 Other Construction Projects

Using the City of Brampton Active Construction Map, the Peel Region Projects map, and in consultation with other projects that are part of the Region's FLOW program, the traffic team gathered as much information as possible on current construction projects, their timelines, and potential transportation network impacts. Where detailed information was unavailable, the traffic team made and documented assumptions on potential lane closures. Table 5-3 summarizes the collected data, and a detailed table outlining assumptions for construction timelines and lane closures incorporated in the modelling exercise is documented in Appendix C.

Table 5-3: Relevant Construction Projects within the Study Area

Project Name	Start Year	End Year	Description
Valve Replacements	2025	2027	Valve Replacements Along West Drive (From Clark Boulevard. to Queen Street) and Queen Street (From West Drive to Bramalea

Project Name	Start Year	End Year	Description
			Road). New 300 mm watermain installation along West Drive and several water service transfers.
Springbrook SSU	2026	2026	Replace the existing 450 mm sanitary sewer along Queen Street West from Royal West Drive to Mississauga Road in the City of Brampton with a larger 525 mm sewer.
Hansen, Orenda, Rutherford SSU	2026	2027	Trunk sewer phase 1 Kennedy-Rutherford, Queen Street corridor/ BRT (West of Highway 410). In service Date 2032.
Baker/Colony WM	2025	2026	Supply and installation of approximately 500 m of 300 mm to 100 mm diameter watermain along Baker Road and Colony Court from Summerlea Road to Cul-de-Sac in the City of Brampton.
FS Highway 410	2027	2027	New Subtransmission main on Queen Street. Need to confirm boundaries, connection locations of project and review sizing and future needs to confirm size. A new distribution main may be required and will need to be considered as part of the Feasibility Study. DDCA component will be task ordered into the program upon completion of the feasibility Study.
Clak WM	2026	2027	City of Brampton will be extending Clark Boulevard from Rutherford Drive to Hansen Road. There are watermains to be designed and constructed as part of the work. This DDCA assignment will be for the watermains. As of now Vendor shall assume a separate tender will be required however this work may be designed and ultimately incorporated into the City's Tender for the Clark Boulevard extension.
MTSA FS WW	2025	2025	Complete a peer review of the 600 mm Watermain Feasibility Study for the Major Transit Station Area at Downtown Brampton completed by R.V. Anderson Associates Limited back in November 2024. The primary goal of this review is to confirm whether the preferred routing options put forth feasibility study will trigger a Municipal Class Environmental Assessment.
Ray Lawson SS	2026	2027	Proposed 450 mm Sanitary Replacement on County Court Boulevard from Havelock Drive to Main Street, 600 mm Sanitary Replacement on Ray Lawson Road from Main Street to Malta Avenue, and 600 mm Sanitary Replacement on Malta Avenue from Ray Lawson Road to Sir Lou Drive in the City of Brampton.
Denison WWW	2026	2027	DDCA for sanitary sewer and watermain replacement, including the abandonment of the existing watermain and sanitary sewers, along the following streets listed below: ■ 200 mm Sanitary Sewer Replacement: Denison Avenue from McLaughlin Road North to Haggert Avenue North ■ 200 mm Sanitary Sewer Replacement: Braemore Road from McLaughlin Road North to Haggert Avenue North ■ 150 mm and 50 mm Watermain Replacement: Braemore Road from Braemore Road to Braemore Road (Court looping)

Project Name	Start Year	End Year	Description
			■ 200 mm Sanitary Sewer Replacement: Dusty Lane from McLaughlin Road North to Braemore Road
Salisbury WM	2026	2027	DDCA for a 150 mm watermain replacement along Salisbury Circle including the abandonment of the existing watermain.
Creditview WM	2026	2027	Construction of a 600 mm water main on Creditview Road from the proposed 1200 mm sub-transmission main on Williams Parkway to the existing 600 mm water main on Queen Street West. No service connections on the proposed 600 mm water main.
Downtown Brampton	2026	2028	Includes the following sewer servicing (moderate complexity, open-cut, urban): ■ 750 mm sanitary sewer along the old Orangeville-Brampton Railway corridor from Fletchers Creek Sanitary Trunk Sewer to Queen Street West. ■ 675 mm sanitary sewer along the Old Orangeville-Brampton Railway corridor from Queen Street West to Nelson Street. ■ 600 mm sanitary sewer along the old Orangeville-Brampton Railway corridor from Nelson Street West to Joseph Street. ■ 525 mm sanitary sewer along the old Orangeville-Brampton Railway corridor from Joseph Street to Rosedale Avenue West. ■ 525 mm sanitary sewer on Nelson Street from Elizabeth Street North to the alignment of the old Orangeville-Brampton Railway corridor; and ■ 525 mm sanitary sewer on Nelson Street from McMurchy Avenue North to the alignment of the Old Orangeville-Brampton Railway corridor."
Queen Street	2024	2026	Replacement of the watermain along Queen Street West from McLaughlin Road to Mill Street South. Resurfacing the Queen Street West and James Potter intersection (this intersection is not included on the map) and Queen Street bridge deck replacement over Fletcher's Creek. Also, replacement of the sanitary sewer on Wellington Street West from Mill Street South to Elizabeth Street South
Queen Street	2026	2027	900 mm Subtransmission Watermain on Queen Street East from Centre Street to Dixie Road. High Complexity, Trenchless, Urban
Peel Center Drive SS	2026	2027	Replace the existing Sanitary Sewer with 375 mm to 450 mm pipes is a new alignment in some locations.
East Brampton FM	2025	2030	■ Contract 1: Approximately 2.8 km of twinned 900 mm, 1050 mm, and 1500 mm watermains along Dixie Road using deep tunneling methods ■ Contract 2: Approximately 3.1 km of twinned 1050 mm/1200 mm and 1500 mm watermains along Heart Lake Road (from Beckett Sproule Pumping Station to Clark Boulevard) and Clark Boulevard (from Heart Lake Road to the northeast corner of Dixie Road and Clark Boulevard)"

Project Name	Start Year	End Year	Description
Centre Street	2026	2026	Watermain replacement on Church Street East from Center Street North to Main Street (Highway 10)
Centre Street	2026	2028	■ Installation of a new 450 mm Sewer on Center Street and John Street South of Queen Street. In association with 19-1156 ■ New Subtransmission main on Center Street from Williams Parkway to Vodden Street East. Includes 19-2300 - Centre Street/John Street and area sewer rehabilitation projects.
Kensington SS	2025	2026	The Construction of a 450 mm Sanitary Sewer along Central Park Drive, Knightsbridge Road and Kind Cross Road.
Church Street SOGR PMI	2026	2026	State of Good Repair works
Downtown Brampton Phase 4	2026	2027	Phase 4 of Downtown Brampton SOGR works along Main Street South, South of Wellington Street

5.2 Shaft Compound Locations and Preferred Route Lane Closures

The preferred Shaft Compound Locations are identified in the Phase 3 EA Interim Report and provided in **Appendix D**. A detailed table of assumptions made for at each Shaft Compound Location are documented in **Appendix C.** Through the development of the shaft compound locations, and initial work on the preliminary design and construction staging it was determined that three separate design packages are likely to be issued for the work, and that the three design packages would each cover one segment of the preferred route as follows:

- Segment 1: Kennedy Road from Etobicoke Creek to Vodden Street, including Queen Street from Rutherford Road to Kennedy Road
- Segment 2: Vodden St to Bovaird Dr from Kennedy Rd; OBR- Bovaird Dr to Fletcher's Creek
- Segment 3: Orangeville-Brampton Railway corridor to Old School Road and Old School Road from OBR to Hurontario Street

Several assumptions have been determined through the development of modelling scenarios. For example, for the travel demand modelling exercise, we have assumed that there will be a worst-case scenario where there are lane closures throughout all three segments (representing the three separate construction packages) to accommodate each shaft compound that impacts adjacent lanes. This includes lane closures at four shaft compound locations along Kennedy Road, one location along

Queen Street, and three locations along Old School Road. It is assumed that there are no traffic lane closures for the shaft compounds on Vodden Street; however, there is an expected bicycle lane closure.

The schedule for each construction area will vary. The construction period for most shafts is 9 to 12 months; however, some deep drop structures and diversion chambers may take as long as 15 to 18 months to complete.

The lane closures for each of the three segments are identified as follows:

5.2.1 Segment 1: Kennedy Road from Etobicoke Creek to Vodden Street, including Queen Street from Rutherford Road to Kennedy Road

Segment 1 includes the following shaft compounds: K1-SHFT1A, K1-SHFT2[6], TBM-SHFT2A/K1-GLIDDENSHFTA, K1-SHFT3D, K1-SHFT4A, K1-SHFT5A, Q1-SHFT1A, Q1-SHFT2A.

There are several potential lane closures along Kennedy Road that are required to accommodate the shaft compound construction staging area and extend into the road right-of-way, including:

- One-lane closure (northbound or southbound depending on final shaft location) for shaft compound K1-SHFT2, and one lane closure at shafts K1-SHFT1A (Kennedy Rd), K1-SHFT3D (Clarence St), TBM-SHFT2A/K1-GLIDDENSHFTA, and Q1-SHFT1A (Queen St).
- Two lane closures at K1-SHFT4, including a one lane-closure on southbound Kennedy Road (south approach of Kennedy Road / Queen Street intersection) and one lane closure on eastbound Queen Street (west approach of Kennedy Road / Queen Street intersection)
- No lane closures at K1-SHFT5A and Q1-SHFT2A.

6. *There are two potential "preferred" locations for K1-Shaft 2: Alternative K1-SHFT2A on the west side and Alternative K1-SHFT2E on the east side of Kennedy Road, south of Rambler Drive. In Alternative K1-SHFT2A, one southbound through lane would be closed, whereas in Alternative K1-SHFT2E, one northbound through lane would be closed. In both alternatives, the sidewalk on the shaft side would be closed, requiring pedestrians to be redirected to the opposite side of Kennedy Road, and one bus stop would need to be temporarily relocated to the nearest accessible location. Overall, while the pedestrian and transit adjustments are similar between the two options, the key difference remains the extent of through lane impacts.*

5.2.2 Segment 2: Vodden St to Bovaird Dr from Kennedy Rd; OBR- Bovaird Dr to Fletcher's Creek

Segment 2 includes the following shaft compounds, V1-SHFT1A, OBR1-SHFT1A, Provisional SHAFTB, OBR1-SHFT2[7], and B3-SHFT1A.

There are no anticipated lane closures due to the shaft compound construction locations identified in Segment 2. It is anticipated that vehicle lanes will be shifted north on Vodden Street at V1-SHFT1A to avoid the shaft compound, but that both eastbound and westbound travel lanes will remain open.

5.2.3 Segment 3: Orangeville-Brampton Railway corridor to Old School Road and Old School Road from OBR to Hurontario Street

There are several potential lane closures along Old School Road that are required to accommodate the shaft compound construction staging area and extend into the road right-of-way, including:

- Eastbound lane closures on Old School Road for shaft compound OBR2-SHFT10A and OS1-SHFT1A
- Full eastbound roadway closure on Old School Road, east of Hurontario Street, for shaft compound OS1-SHFT2A[8], or closure of eastbound through/right lane and conversion of left-turn lane to a shared left-through-right-lane on Old School Road, west of Hurontario Street for shaft compound OS1-SHFT2D,
- Because of the full eastbound roadway closure at shaft compound OS1-SHFT2A, all eastbound turning movements at the Old School Road / Hurontario Street intersection will be prohibited (i.e., receiving lanes on Old School Road east of Hurontario Street are closed). Two-way traffic was considered at shaft compound OS1-SHFT2A, however, due to concern for potential queues to impact intersection operations at the Old School Road / Hurontario Street, a full eastbound closure is preferred.

7. *There are two potential "preferred" locations for OBR1-SHFT2. OBR1-SHFT2B is south of Williams Parkway, and OBR1-SHFT2A is north of Williams Parkway.*
8. *There are two potential "preferred" locations for OS1-SHFT2. OS1-SHFT2A is east of Hurontario Street, and OS1-SHFT2D is west of Hurontario Street.*

5.3 Greater Golden Horseshoe EMME Travel Demand Model Development

5.3.1 Background

The Brampton Travel Demand Model is based on "GTAModel" created by the Demand Modelling Group of the University of Toronto. The City of Brampton provided models for the 2031 and 2041 horizon years. In discussion with Peel Region and the City of Brampton, it was determined that the 2031 EMME model is most reasonable for use in assessing impacts as it is closest to the anticipated time of construction (2027 to 2030).

Table 5-4 provides a summary of the current EMME model status and anticipated use for FLOW program projects.

Table 5-4: Traffic Model (EMME) Status

Model Owner – Model Type	Model Purpose
City of Brampton – EMME	Assessment of lane closures and network impact analysis to identify capacity issues as well as assist with determining detour requirements during construction
Development Timeline for FLOW Program	**Date**
Modelling scope discussed with Region/City	Mar. 2025
City 2031 model selected for FLOW program	Apr. 2025
City updates model to reflect land use projections	Jun. – Aug. 2025
FLOW program team evaluates model for use in the study	Jul. - Aug. 2025
Model is used for lane closure assessment in the Riverwalk assignment	Aug. 2025
Model inputs are updated to incorporate other anticipated construction projects as a base model	Sep. – Nov. 2025
Model is used for network impact assessment in the Kennedy Road STS EA	Nov - Dec. 2025
Model was approved by the Region for near-term use on the following assignments: Queen Street Watermain Design and Downtown Brampton Environmental Assessment	Jan. 2026
When will this model be used going forward?	
The model will be used for multiple assignments such as Environmental Assessments, Preliminary through Detailed Design, as well as during Construction.	

In April 2025, AECOM clarified that access to the full GTA model was not necessary. A subarea extraction covering the Study Area and key intersections would be sufficient.

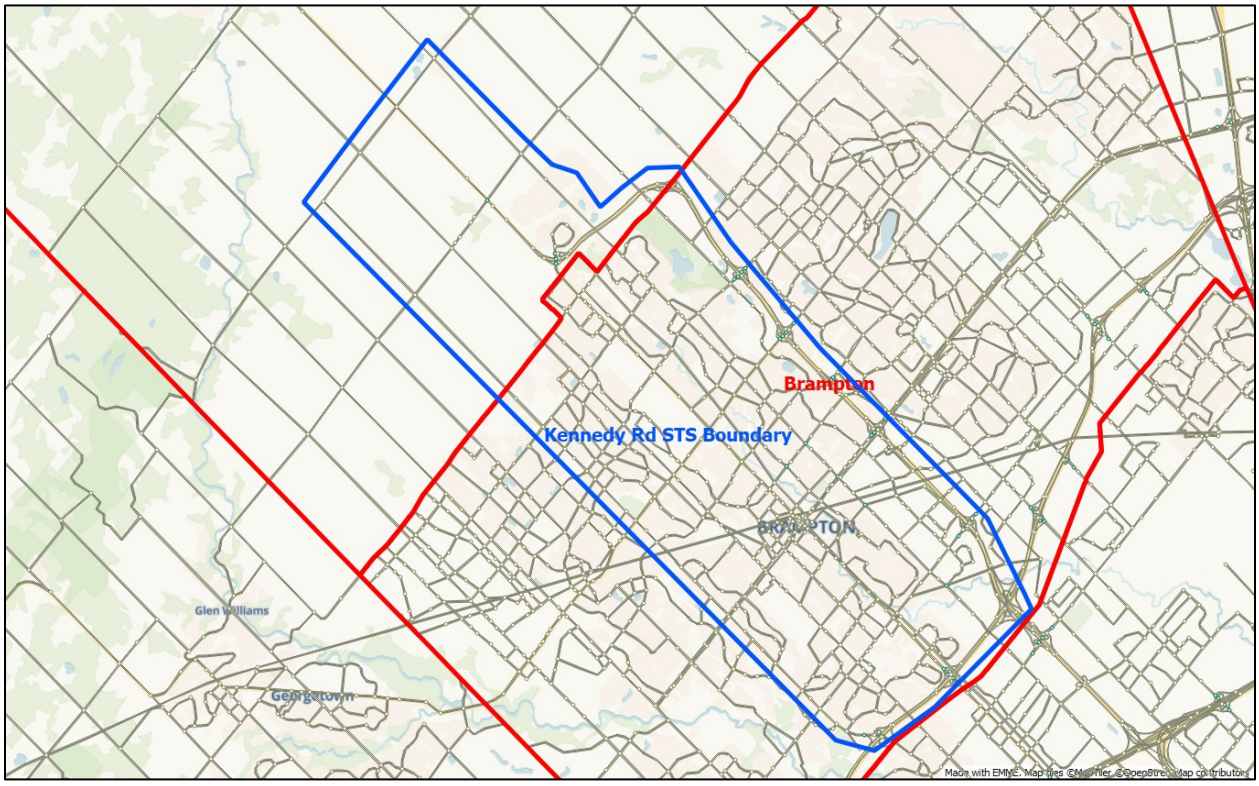
Some updates were made to the GTA model, including modifications to the network. For example, Queen Street from Kennedy Road west to Chappell Street, which was previously modeled as a single lane, has been updated to a two-lane configuration. It was also confirmed that the proposed subarea boundary would be reviewed and

approved by the City before any modeling work began, and this exercise was completed.

5.3.2 Road Network Refinement

The AECOM project team held several meetings with Peel Region and the City of Brampton to review and confirm use of the City's EMME model. In June and July of 2025, AECOM worked in tandem with the City to ensure that the EMME model was sufficiently detailed for the required traffic analysis. As a result, the City updated the EMME model by incorporating the new land use projections and implementing revised 2031 and 2041 highway networks. The updated 2031 model forms the basis for the traffic analysis presented in this report. Figure 5-1 shows the raw road network in and around the study area included in the Greater Golden Horseshoe Model (GGHM). The EMME model captures the entirety of the Study Area as well as all municipalities in the Greater Golden Horseshoe area.

Figure 5-1: Greater Golden Horseshoe Model Road Network in the Study Area



The road network illustrated in **Figure 5-1** reflects additional refinements applied by AECOM to the base EMME model to better represent existing conditions within the Study Area. The network refinements are as follows[9]:

- All roadway links along Kennedy Road, from First Gulf Boulevard south to Derry Road, were updated to reflect two lanes per direction with a posted speed limit of 60 km/h. These links were previously coded in the base model as one lane per direction with a posted speed limit of 80 km/h, which did not reflect existing conditions.
- Similarly, roadway links along Queen Street, from Kennedy Road west to Chapel Street, were updated to reflect two lanes per direction. In the City's base EMME model, these links were previously coded as one lane per direction.
- Several signalized intersections requiring detailed turning movement representation for subsequent Synchro analysis (discussed in **Section 5.4**) were coded as explicit nodes in the EMME network. These intersections include:
  - First Gulf Boulevard / Kennedy Road
  - Clarence Street / Kennedy Road
  - Queen Street / Kennedy Road
  - Vodden Street / Kennedy Road
  - Old School Road / Highway 10
  - Old School Road / Kennedy Road

5.3.3 Staging Scenario

All staging scenarios and assumption made for each respective scenario are documented in **Appendix C.** Assumptions considered the following: shaft type, tapers/barriers, estimated transportation network impacts, comments from the Region and City, estimated schedule of each stage, and road closures in proximity of the project.

Initially it was identified that the maximum number of shafts to be constructed at one time would be limited to no more than three, with a high probability of the shaft compounds being adjacent. Each construction stage was initially anticipated to take no

[9] *It should be noted that through the modelling exercise it was identified that in the base conditions model as well as the construction staging scenario model, the segment of Queen Street between Rutherford Road and Highway 410 is modelled as a four-lane cross-section, whereas, for existing conditions it is a six-lane cross-section. This may result in overstated capacity constraints within and in adjacent corridors compared to actuality.*

longer than six months. More recently, after further refinement of the preferred route and shaft compound locations, the anticipated construction staging was also refined, and it was identified that a likely "worst-case" scenario would have all shaft compounds in a state of construction simultaneously. Additional details and graphics are included in Section 5.6.

Due to shaft compound locations that extend into the road right-of-way, as noted above, the resulting lane reductions also result in posted speed reductions. Speeds are reduced to 50 km/h to reflect construction zone speeds where lane reductions are expected.

5.3.4 EMME Evaluation Methodology

The network operational performance for the Study Area road network was extracted from the EMME model and were assessed to highlight links with a volume-to-capacity ratio greater than 1.0 (demand exceeding capacity).

5.4 Traffic Volume and Synchro Model Development

5.4.1 Traffic Turning Movement Volumes

Two sets of traffic volume data were prepared:

- Existing conditions for use in model calibration
- Construction Stage scenario, for use in the operational assessment

As the Study Area intersections were non-adjacent or had multiple driveways between them, traffic volumes were generally not balanced. The first exception to this was at Old School Road / Kennedy Road, where due to the lack of available turning movement count data, the turning movement volumes were developed using the GGHM EMME model and consequently balanced with the Old School Road / Hurontario Street intersection.

Also, the turning movement count at First Gulf Boulevard / Kennedy Road (collected in 2021 during the COVID-19 pandemic) was balanced with the adjacent Steeles Avenue / Kennedy Road intersection that had counts collected in 2024.

The existing conditions (2024) turning movement volume diagrams for the modelled study area used in the Synchro model calibration (Section5.4.5) are included in Appendix E.

The construction stage scenario traffic volumes used in the Synchro models are primarily derived from 2024 traffic counts, except for the Kennedy Road and First Gulf

Boulevard intersection, for which 2021 counts were used. A 1% growth rate was applied to develop the future base volumes. Traffic diversions associated with construction activities were quantified by comparing each EMME staged scenario with its corresponding EMME base scenario; the resulting percentage changes in volumes for each approach capture the expected diversions. These percentage changes were then applied to the future base volumes to generate the final total future traffic volumes.

5.4.2 Pedestrian Traffic

Pedestrian counts for intersections and crosswalks were obtained from the turning movement counts provided by Peel Region and the City of Brampton. The pedestrian counts are entered into the Synchro model as conflicting pedestrian counts and pedestrian calls at the intersection level, complete with appropriate walk and flash don't walk times. Appendix E includes network volume diagrams displaying the pedestrian volume at each intersection for the AM and PM peak hours.

5.4.3 Cycling Network and Volumes

Within the Study Area, there are painted bike lanes on Vodden Street East eastward of Ken Whillans Drive. Cyclist volumes were included as part of the pedestrian count in the Synchro analysis.

5.4.4 Model Parameters and Input Assumptions

The Synchro model contains all intersections identified in the Study Area, which includes intersections along Kennedy Road, Vodden Avenue East, and Old School Road. The model captures the existing weekday AM and PM peak hours. A list of key inputs and assumptions applied to the Synchro model are summarized below:

- Geometry
  - Lane Configurations & Widths based on existing geometry
  - Left and right-turn lanes and lengths per existing conditions
- Volumes Input Data
  - Vehicle Traffic Volumes: As per Turning Movement Count data in Appendix B
  - Pedestrian volumes as per Turning Movement Count data
  - Cyclist volumes included as part of pedestrian volumes
  - Truck percentages as per Turning Movement Count data on a turn-by-turn basis

- Traffic Signal Operations
  - Traffic signal timing per existing signal timing plans
  - Coordinated signal systems not used - not applicable
- Synchro Setup and Details
  - Peak Hour Factor used the Synchro default value of 0.92 where 15-minute turning movement count data was unavailable. For staging conditions, a network-wide Peak Hour Factor of 1.0 was used.
  - Right Turn on Red as per existing conditions
  - Lost Time Adjust set as Synchro default, increased (not exceeding Amber) for specific movements exceeding capacity for calibration purposes
- Existing Heavy Vehicle / Truck Percentages
  - Heavy vehicle / truck percentages were included in the turning movement counts and recorded by movement. The heavy vehicle percentages were incorporated into the Synchro model on a turn-by-turn basis. The existing conditions turning movement heavy vehicle percentages for the modelled study area are included in Appendix B
- Signal Timing Plans
  - Current Signal Timing Plans (STP) were provided by Peel Region and the City of Brampton and were coded in the Synchro model. The timings were input to match the actuation type, phasing sequence and clearance times used in the field. Appendix B includes the signal timing plans used in the development of the Synchro model. Where signal timing plans were unavailable, signal timings were developed using the recommended values in the Ontario Traffic Manual Book 12, then optimized using Synchro.
- Lane Assumptions for Construction Staging
  - One of the main inputs to the Synchro Model are the assumed lane closures. Table 5-5 identifies the lane closures implemented in the Synchro staging model with corresponding modifications to lane arrangements.

Table 5-5: Lane Closures Implemented in Synchro

Intersection	Lane Closure	Modification to Lane Arrangement
Kennedy Road and First Gulf Boulevard	One lane westbound, from intersection to 140 metres east of the intersection	Single westbound shared left-/through-/right- turn lane on east approach
Kennedy Road and Rambler Drive	One lane southbound, from intersection to 200 metres south of the intersection	Curbside southbound-through lane on north approach becomes must-exit right-turn
Kennedy Road and Glidden Road	One lane northbound, from intersection to 130 metres north of the intersection	Curbside northbound-through lane on south approach becomes must-exit right-turn
Kennedy Road and Glidden Road	One lane westbound, from intersection to 125 metres east of the intersection	Single westbound shared left-/through-/right- turn lane on east approach
Kennedy Road and Clarence Road	One lane westbound, from intersection to 150 metres east of the intersection	Single westbound shared through/ right lane with auxiliary left turn lane on east approach
Kennedy Road and Queen Street East	One lane southbound, from intersection to 70 metres south of the intersection	Removal of bus bay does not affect through lanes. No southbound queue-jump lane
Kennedy Road and Queen Street East	One lane eastbound, from intersection to 130 metres west of the intersection	Right-most eastbound through lane becomes shared through/right on west approach
Old School Road and Hurontario Street	Full eastbound closure on the east leg of the intersection	Closure of southbound left-turn lane. Westbound through/right lane becomes right-turn only

5.4.5 Synchro Model Calibration and Validation

As Synchro uses a static analysis of input volumes and parameters to assess intersection performance, calibration and validation of the Synchro model was based on the operational outputs. The turning movement volumes were input into the Synchro model for calibration following City of Toronto's Guidelines[10] for Using Synchro 11 which requires all movements to report a volume-to-capacity ratio below the threshold of 1.0.

According to the City of Toronto's Guidelines, parameter changes that are accepted to meet volume-to-capacity ratio requirements are:

10. *While the City of Brampton has its own Traffic Impact and Parking Study terms of Reference, they do not provide guidance on model calibration. The Guidelines for Using Synchro 11 from the City of Toronto provides detailed guidance on the calibration of the Synchro model, and was referenced in this assessment.*

- Lost Time Adjustment
- Ideal Saturation Flow Rates
- Peak Hour Factors
- Lane Utilization Factors

Table 5-6 shows the list of intersections where model parameters per the City of Toronto's Guidelines were adjusted in the existing conditions AM and PM model to meet volume-to-capacity ratio requirements.

Table 5-6: Synchro Parameter Changes for Calibration

Intersection	Movement	AM Peak Hour	PM Peak Hour
Kennedy Road and Queen Street	Westbound Left Turn	Lost Time Adjust (-0.6)	None
Kennedy Road and Queen Street	Southbound Left Turn	Lost Time Adjust (-1.8)	None

5.4.6 Synchro Evaluation Methodology

Traffic operation results for the 11 key intersections, identified in discussion with Peel Region and the City of Brampton, and flagged for evaluation in Appendix C, will be assessed in accordance with the methodologies outlined in the Highway Capacity Manual.

Table 5-7 summarizes the Level of Service criteria for signalized and unsignalized intersections. For the operational assessment, critical movements were identified to evaluate the performance of the study area network. A critical movement is defined as a movement operating at Level of Service E or Level of Service F and/or with a volume-to-capacity ratio of 0.85 or higher.

Table 5-7: Intersection Level of Service Criteria

Level of Service	Description	Average Delay (Signalized Intersection)
A	Very seldom does a vehicle wait longer than one red light. The approach appears open, turns are easily made, and drivers have freedom of operation.	≤ 10 seconds
B	An occasional green light is fully used, and many greens approach full use. Many drivers begin to feel somewhat restricted within groups of vehicles approaching the intersection.	10 ≤ 20 seconds
C	Intersection operation is stable but often has fully used greens. Drivers feel more restricted and occasionally may wait for more than one red light. Queues may develop behind turning vehicles.	20 ≤ 35 seconds
D	Drivers experience increasing restrictions and instability of traffic flow. There are substantial delays to vehicles during short peaks within the peak hour, but there is enough time with lower demand to permit occasional clearing of queues and prevent excessive backups.	35 ≤ 55 seconds
E	The capacity of the road is reached. There are long queues of vehicles waiting upstream of the intersection and delays to vehicles may extend to several signal cycles.	55 ≤ 80 seconds
F	Vehicle demand exceeds the available capacity and delays extending through the peak hour are experienced.	>80 seconds

5.5 Vehicle Traffic Impacts by Segment

Considering the assumed lane closures for the Kennedy Road STS EA along with other anticipated and concurrent construction projects and associated lane closure assumptions, the study corridor was assessed by segment to identify impacts along Kennedy Road and adjacent corridors.

As a first step the existing conditions were modelled in EMME and it was identified that several major roadways are currently operating at capacity and will continue to operate at capacity during the simultaneous construction projects, including:

- Mayfield Road (eastbound in the AM peak, westbound in the PM peak)
- Bovaird Drive (eastbound in the AM peak, westbound in the PM peak)
- Vodden Street (eastbound in the AM peak, westbound in the PM peak)
- Steeles Avenue (eastbound in the AM peak, westbound in the PM peak)
- McLaughlin Road (southbound in the AM peak, northbound in the PM peak)

- Hurontario Street (southbound in the AM peak, northbound in the PM peak)

The following subsections discusses impacts to vehicular traffic by segment, identifying roadways predicted to operate at capacity due to the simultaneous ongoing construction projects.

5.5.1 Segment 1: Kennedy Road from Etobicoke Creek to Vodden Street, including Queen Street from Rutherford Road to Kennedy Road

Segment 1 includes the following shaft compounds: K1-SHFT1A, K1-SHFT2[11], TBM-SHFT2A/K1-GLIDDENSHFTA, K1-SHFT3D, K1-SHFT4A, K1-SHFT5A, Q1-SHFT1A, Q1-SHFT2A. Considering these shaft compound locations and associated lane closure details for the Kennedy Road STS EA, along with other anticipated and concurrent construction projects discussed previously, the study corridor was assessed to identify impacts along Kennedy Road and adjacent corridors.

5.5.1.1 EMME Model Operational Results

Within Segment 1, as shown in Figure 5-2 and Figure 5-3, the following roadways were identified as operating at capacity in 2027 due to the multiple simultaneous construction projects:

- Queen Street (eastbound in the AM and PM peak, westbound in the PM peak)
- Orenda Street (eastbound in the AM peak, westbound in the PM peak)
- Clarence Street (eastbound in the AM peak, westbound in the PM peak)
- Steeles Avenue (westbound in the PM peak)
- Main Street (southbound in the AM peak)
- Kennedy Road (southbound in the AM peak)

The anticipated road closures, lane reductions and transit impacts, including assumed construction projects that will be underway concurrent with the Kennedy Road STS construction, are shown in Figure 5-4.

11. *There are two potential "preferred" locations for K1-Shaft 2: Alternative K1-SHFT2A on the west side and Alternative K1-SHFT2E on the east side of Kennedy Road, south of Rambler Drive. In Alternative K1-SHFT2A, one southbound through lane would be closed, whereas in Alternative K1-SHFT2E, one northbound through lane would be closed. In both alternatives, the sidewalk on the shaft side would be closed, requiring pedestrians to be redirected to the opposite side of Kennedy Road, and one bus stop would need to be temporarily relocated to the nearest accessible location. Overall, while the pedestrian and transit adjustments are similar between the two options, the key difference remains the extent of through lane impacts.*

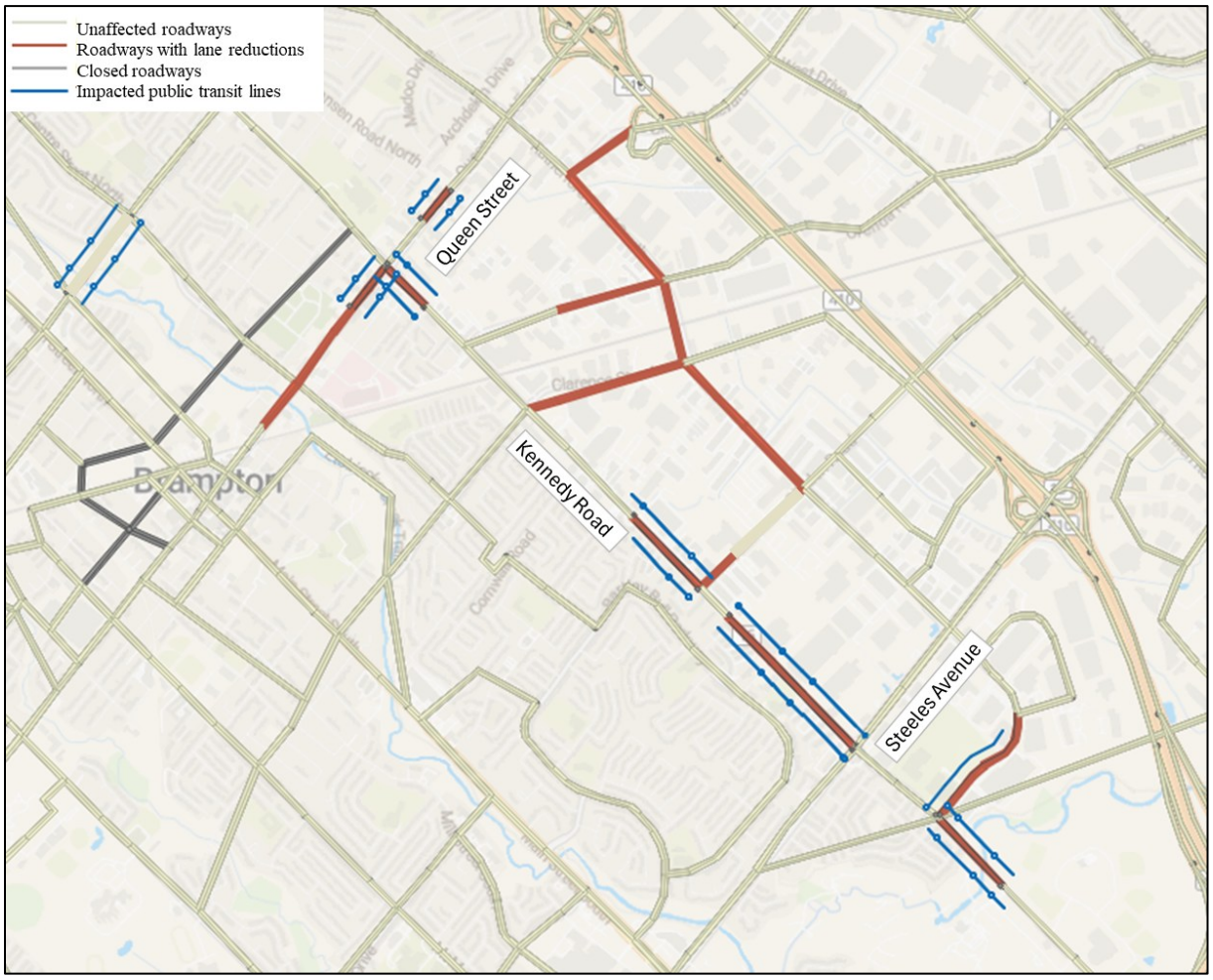
Figure 5-2: AM Peak Road Network Capacity Impacts during Construction (Segment 1)



Figure 5-3: PM Peak Road Network Capacity Impacts during Construction (Segment 1)



Figure 5-4: Anticipated Roadway and Transit Impacts during Construction (Segment 1)



5.5.1.2 Synchro Model Operational Results

The results of the traffic operations at the identified study area intersections under staging conditions are shown in Table 5-8. All Synchro Reports are included in Appendix F.

The following intersections were identified as having movements exceeding capacity with existing signal timing plans:

- Kennedy Road and Clarence Street in the PM peak hour

Table 5-8: Synchro Model Results – Staging Conditions, Existing Timings (Segment 1)

Intersection	Movement	Staging 2030 AM - Existing Timings					Staging 2030 PM - Existing Timings				
		Delay (s)	LOS	v/c	Percentile Queue		Delay (s)	LOS	v/c	Percentile Queue	
					95th (m)	50th (m)				95th (m)	50th (m)
Kennedy Road & 1st Gulf Blvd (Signalized)	EBL	48.6	D	0.03	5.2	1.2	49.9	D	0.07	8.6	2.7
	EBT/R	26.0	C	0.27	21.9	7.2	31.6	C	0.13	14.2	4.2
	WBL/T/R	81.0	F	0.73	48.2	27.1	75.1	E	0.73	59.6	35.7
	NBL	5.0	A	0.00	1.1	0.2	4.8	A	0.09	11.6	4.8
	NBT/R	3.4	A	0.12	12.8	6.0	4.8	A	0.27	38.1	22.3
	SBL	4.8	A	0.06	7.4	2.5	4.8	A	0.02	2.5	0.6
	SBT/R	4.8	A	0.21	32.3	18.2	4.1	A	0.08	12.2	6.2
	Overall	13.8	B	0.73	-	-	14.2	B	0.73	-	-
Kennedy Rd & Steeles Ave E (Signalized)	EBL	26.1	C	0.52	47.0	30.2	92.3	F	0.84	#108.2	65.1
	EBT	47.2	D	0.89	231.8	198.1	36.0	D	0.64	150.4	126.9
	EBR	13.0	B	0.54	63.3	26.5	4.9	A	0.21	15.1	0.5
	WBL	41.2	D	0.60	37.3	16.8	27.7	C	0.46	24.9	14.0
	WBT	37.0	D	0.47	94.7	74.5	63.6	E	0.96	#239.0	194.7
	WBR	6.2	A	0.24	15.9	0.0	16.4	B	0.59	68.7	29.5
	NBL	72.4	E	0.55	38.4	25.4	75.6	E	0.51	32.4	20.7
	NBT/R	40.6	D	0.41	59.1	41.4	68.9	E	0.94	#204.9	156.0
	SBL	73.7	E	0.64	48.8	33.4	75.6	E	0.53	35.2	23.0
	SBT	46.6	D	0.54	93.4	69.5	41.4	D	0.20	38.0	25.7
	SBR	15.6	B	0.34	31.6	10.1	7.4	A	0.31	18.2	0.0
	Overall	40.9	D	0.89	-	-	51.2	D	0.96	-	-
Kennedy Road & Rambler Dr (Signalized)	EBL	65.9	E	0.52	37.3	20.6	58.0	E	0.41	36.9	20.5
	EBT/R	6.3	A	0.44	9.1	0.0	11.9	B	0.39	17.5	0.3
	WBL/T/R	64.3	E	0.48	20.9	8.5	46.5	D	0.01	3.0	0.5
	NBL	5.4	A	0.09	7.8	1.7	7.2	A	0.25	28.7	8.2
	NBT/R	4.3	A	0.16	29.5	11.3	7.5	A	0.47	107.5	43.8
	SBL	5.0	A	0.00	1.1	0.1	6.8	A	0.01	1.7	0.2
	SBT	8.7	A	0.58	179.2	67.6	7.1	A	0.36	83.9	30.0
	SBR	2.0	A	0.04	4.9	0.4	1.5	A	0.08	5.5	0.0
	Overall	11.2	B	0.58	-	-	9.2	A	0.47	-	-
Kennedy Rd & Chamney Crt / Glidden Rd (Signalized)	EBL/T/R	35.9	D	0.16	14.9	4.2	40.2	D	0.11	15.4	5.1
	WBL/T/R	54.6	D	0.58	46.0	23.8	104.3	F	0.99	#142.9	79.6
	NBL	5.3	A	0.03	2.4	0.7	5.3	A	0.01	2.0	0.5
	NBT	6.0	A	0.30	56.8	42.2	26.3	C	0.90	403.8	293.5
	NBR	1.4	A	0.04	3.3	0.0	1.8	A	0.09	6.3	1.6
	SBL	6.4	A	0.27	29.6	18.7	64.9	E	0.75	#20.2	10.9
	SBT/R	5.9	A	0.36	66.2	55.8	6.4	A	0.24	37.1	30.1
	Overall	9.5	A	0.58	-	-	30.3	C	0.99	-	-

Intersection	Movement	Staging 2030 AM - Existing Timings					Staging 2030 PM - Existing Timings				
		Delay (s)	LOS	v/c	Percentile Queue		Delay (s)	LOS	v/c	Percentile Queue	
					95th (m)	50th (m)				95th (m)	50th (m)
Kennedy Road & Clarence St (Signalized)	EBL	73.1	E	0.88	#95.4	63.6	116.5	F	1.05	#107.8	~51.6
	EBT/R	45.4	D	0.63	89.1	67.7	39.4	D	0.42	77.3	60.0
	WBL	57.3	E	0.24	16.3	6.7	52.1	D	0.21	23.9	11.3
	WBT/R	62.7	E	0.61	61.3	37.2	88.8	F	0.94	#189.9	127.5
	NBL	9.7	A	0.19	18.0	6.6	26.4	C	0.71	67.9	49.2
	NBT/R	16.3	B	0.30	71.8	39.3	33.8	C	0.73	207.2	176.6
	SBL	9.3	A	0.17	19.9	7.6	31.1	C	0.67	37.8	20.9
	SBT	17.6	B	0.41	106.1	60.5	25.8	C	0.39	90.8	74.6
	SBR	2.9	A	0.19	12.5	0.0	7.3	A	0.47	44.7	17.3
	Overall	**29.6**	C	0.88	-	-	**39.4**	D	1.05	-	-
Kennedy Road & Queen Street (Signalized)	EBL	22.7	C	0.21	19.4	10.4	36.8	D	0.61	51.1	29.7
	EBT/R	45.5	D	0.74	173.0	145.9	53.5	D	0.77	162.6	135.9
	WBL	49.9	D	0.80	#58.7	31.8	46.7	D	0.79	#80.4	44.3
	WBT	40.3	D	0.56	125.5	103.8	56.8	E	0.82	182.3	154.1
	WBR	4.9	A	0.28	16.8	0.0	29.9	C	0.76	126.6	75.5
	NBL	75.5	E	0.44	31.6	20.1	72.3	E	0.45	38.9	25.9
	NBT	47.4	D	0.56	106.5	85.8	54.3	D	0.77	165.1	138.6
	NBR	27.9	C	0.58	84.8	49.4	10.3	B	0.30	25.4	6.3
	SBL	100.0	F	0.89	#75.3	48.4	80.0	E	0.67	54.8	39.1
	SBT	58.9	E	0.84	183.1	154.4	44.7	D	0.45	88.8	70.6
	SBR	3.6	A	0.13	6.5	0.0	7.7	A	0.18	13.8	0.0
	Overall	**48.1**	D	0.89	-	-	**49.5**	D	0.82	-	-

5.5.2 Segment 2: Vodden St to Bovaird Dr from Kennedy Rd; OBR- Bovaird Dr to Fletcher's Creek

Segment 2 includes the following shaft compounds, V1-SHFT1A, OBR1-SHFT1A, Provisional SHAFTB, OBR1-SHFT2[12], and B3-SHFT1A. There are no anticipated lane closures due to the shaft compound construction locations identified in Segment 2. Because of construction traffic (i.e., construction vehicles) and vehicle diversions from other east-west roadways, localized delays are expected at the Vodden Street / Centre Street intersection.

5.5.2.1 EMME Model Operational Results

Within Segment 2, as shown in **Figure 5-5** and **Figure 5-6**, the following major roadways were identified as operating at capacity in 2027 due to the multiple simultaneous construction projects:

- Williams Parkway (eastbound in the AM peak, westbound in the PM peak)

12. There are two potential "preferred" locations for OBR1-SHFT2. OBR1-SHFT2B is south of Williams Parkway, and OBR1-SHFT2A is north of Williams Parkway.

The anticipated road closures, lane reductions and transit impacts, including assumed construction projects that will be underway concurrent with the Kennedy Road STS construction are shown below in Figure 5-7.

Figure 5-5: AM Peak Road Network Capacity Impacts during Construction (Segment 2)

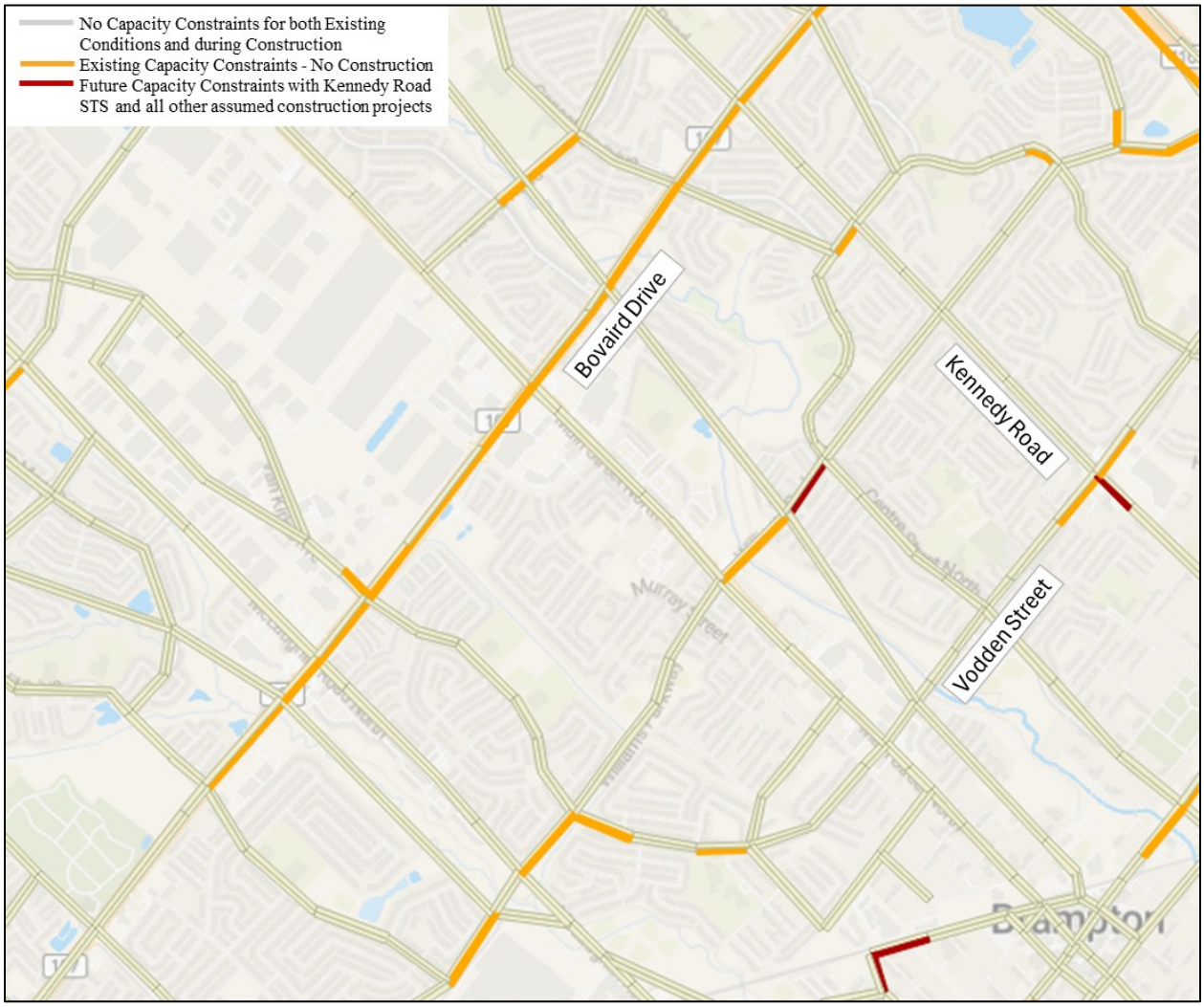
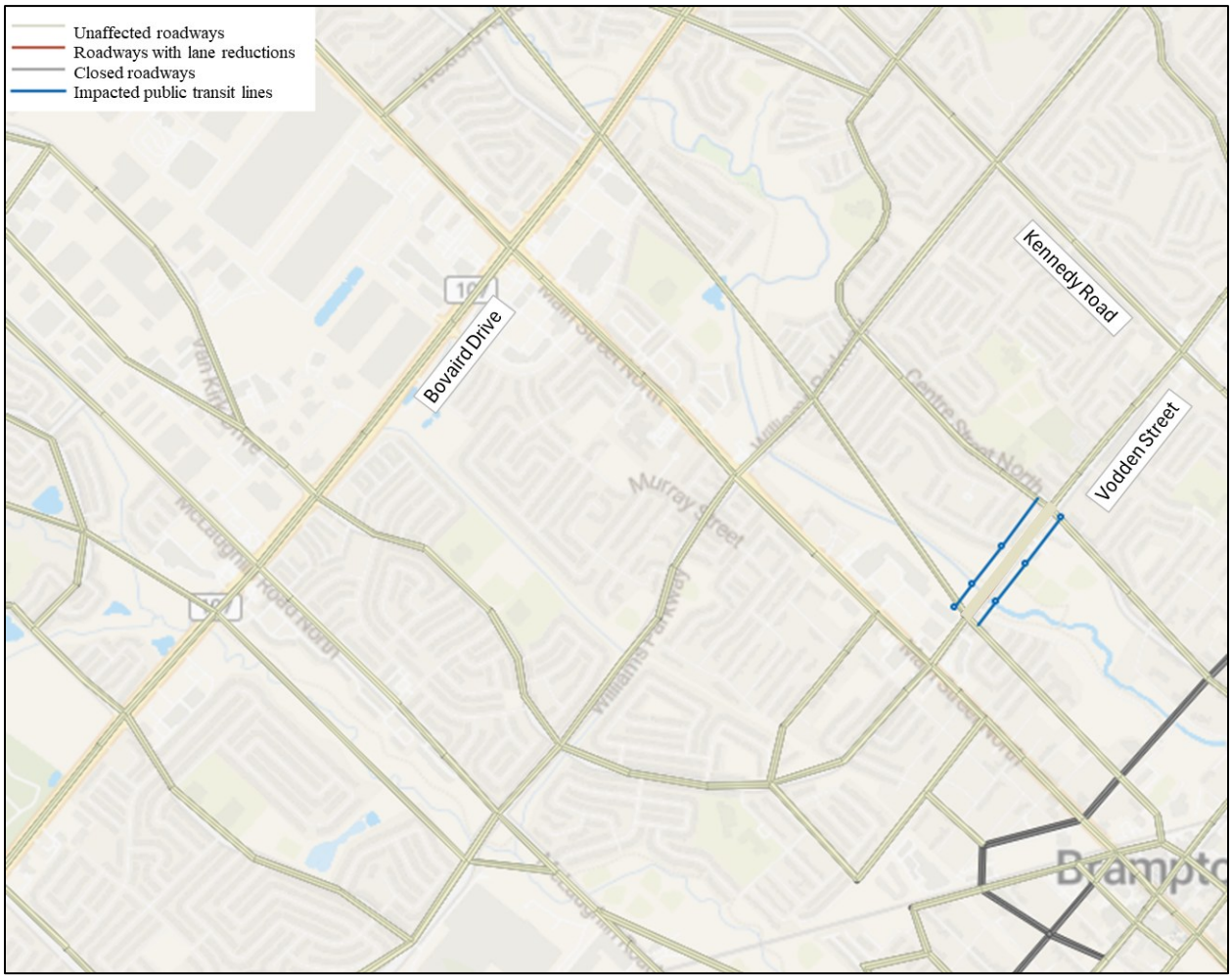


Figure 5-6: PM Peak Road Network Capacity Impacts during Construction (Segment 2)



Figure 5-7: Anticipated Roadway and Transit Impacts during Construction (Segment 2)



5.5.2.2 Synchro Model Operational Results

The results of the traffic operations at the identified study area intersections under staging conditions are shown in Table 5-9. All Synchro Reports are included in Appendix F.

The following intersections were identified as having movements exceeding capacity with existing signal timing plans:

- Vodden Street and Centre Street in the PM peak hour

Table 5-9: Synchro Model Results – Staging Conditions with Existing Timings (Segment 2)

Intersection	Movement	Staging 2030 AM - Existing Timings					Staging 2030 PM - Existing Timings				
		Delay (s)	LOS	v/c	Percentile Queue		Delay (s)	LOS	v/c	Percentile Queue	
					95th (m)	50th (m)				95th (m)	50th (m)
Kennedy Road & Vodden St (Signalized)	EBL	40.8	D	0.16	20.4	9.5	93.7	F	0.85	#70.9	32.8
	EBT	68.1	E	0.86	147.5	106.7	80.3	F	0.95	#205.2	136.9
	EBR	18.0	B	0.46	42.0	17.0	14.9	B	0.35	31.6	10.8
	WBL	47.6	D	0.63	36.4	21.6	50.5	D	0.64	#33.1	18.5
	WBT	36.4	D	0.33	62.9	41.6	48.7	D	0.74	163.1	120.2
	WBR	7.6	A	0.13	10.7	0.0	10.1	B	0.25	22.9	6.4
	NBL	22.1	C	0.53	21.7	12.6	22.6	C	0.61	47.5	32.3
	NBT/R	22.1	C	0.43	86.2	69.0	41.1	D	0.91	252.8	215.0
	SBL	18.8	B	0.52	40.5	26.6	49.4	D	0.73	#44.1	13.4
	SBT/R	29.5	C	0.72	181.8	152.6	23.2	C	0.42	83.3	66.8
	Overall	**31.6**	**C**	0.86	-	-	**42.1**	**D**	0.95	-	-
Centre St N & Vodden St E (Signalized)	EBL	9.0	A	0.18	16.0	5.6	250.6	F	1.40	#53.1	~33.1
	EBT/R	13.8	B	0.65	110.6	51.8	16.3	B	0.71	142.0	94.0
	WBL	9.3	A	0.13	8.2	2.1	11.5	B	0.24	12.1	4.6
	WBT/R	9.1	A	0.33	45.0	20.3	27.7	C	0.90	#253.8	150.9
	NBL/T/R	38.3	D	0.78	53.7	29.4	54.8	D	0.88	#105.0	58.5
	SBL/T	30.4	C	0.62	45.9	25.9	30.7	C	0.39	40.0	22.4
	SBR	5.9	A	0.26	10.7	0.0	6.6	A	0.25	12.7	0.0
	Overall	**17.6**	**B**	0.78	-	-	**38.0**	**D**	1.40	-	-
Ken Whillans Dr & Vodden St E (Signalized)	EBL/T	5.5	A	0.53	77.0	41.9	9.7	A	0.69	135.1	64.9
	EBR	0.8	A	0.09	3.8	0.0	1.1	A	0.07	3.5	0.0
	WBL/T/R	3.8	A	0.36	39.7	21.8	10.2	B	0.71	147.8	71.0
	NBL	33.0	C	0.16	10.4	3.8	37.3	D	0.35	19.0	8.2
	NBT/R	19.0	B	0.16	8.9	1.5	12.7	B	0.25	10.7	0.6
	SBL/T/R	23.9	C	0.31	14.8	4.7	19.3	B	0.21	10.8	2.2
	Overall	**6.0**	**A**	0.53	-	-	**10.6**	**B**	0.71	-	-

5.5.3 Segment 3: Orangeville-Brampton Railway corridor to Old School Road and Old School Road from OBR to Hurontario Street

Segment 3 includes the following shaft compounds: OBR2-SHFT1A, OBR2-SHFT2A, OBR2-SHFT3A, OBR2-SHFT4A, OBR2-SHFT5A, OBR2-SHFT6A, OBR2-SHFT10A, OS1-SHFT1A, and OS1-SHFT2[13]. The following shaft compounds are also part of Segment 3 but were excluded from the assessment as they were deemed to have no impact to the

13. *There are two potential "preferred" locations for OS1-SHFT2. OS1-SHFT2A is east of Hurontario Street, and OS1-SHFT2D is west of Hurontario Street.*

transportation network: OBR2-SHFT7A, OBR2-SHFT8A, OBR2-SHFT9A, and Provisional Shaft A.

5.5.3.1 EMME Model Operational Results

Within Segment 3, as shown in **Figure 5-8** and **Figure 5-9,** the following roadways were identified as operating at capacity in 2027 due to the multiple simultaneous construction projects:

- King Street (eastbound in the AM peak)[14]
- Dixie Road (southbound in the AM peak)[15]

The anticipated road closures, lane reductions and transit impacts, including assumed construction projects that will be underway concurrent with the Kennedy Road STS construction, are shown below in **Figure 5-10**.

14. *Lane closures at either potential "preferred" locations for OS1-SHFT2 (OS1-SHFT2A and OS1-SHFT2D) result in King Street operating at capacity.*
15. *Only lane closures at the OS1-SHFT2A shaft location alternative for shaft compound OS1-SHFT2 result in Dixie Road operating at capacity; lane closures at OS1-SHFT2D did not show this same result.*

Figure 5-8: AM Peak Road Network Capacity Impacts during Construction (Segment 3)

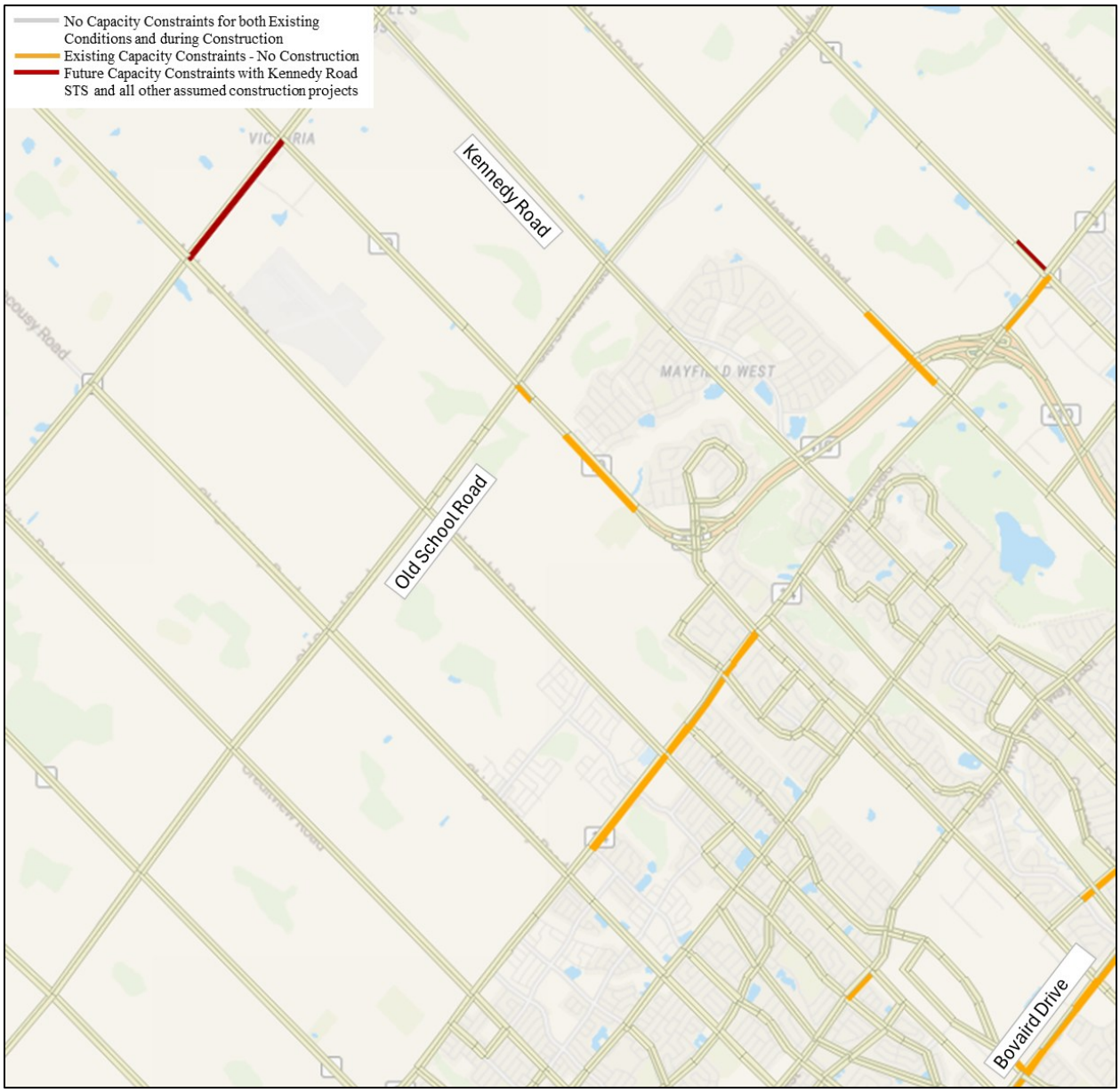


Figure 5-9: PM Peak Road Network Capacity Impacts during Construction (Segment 3)

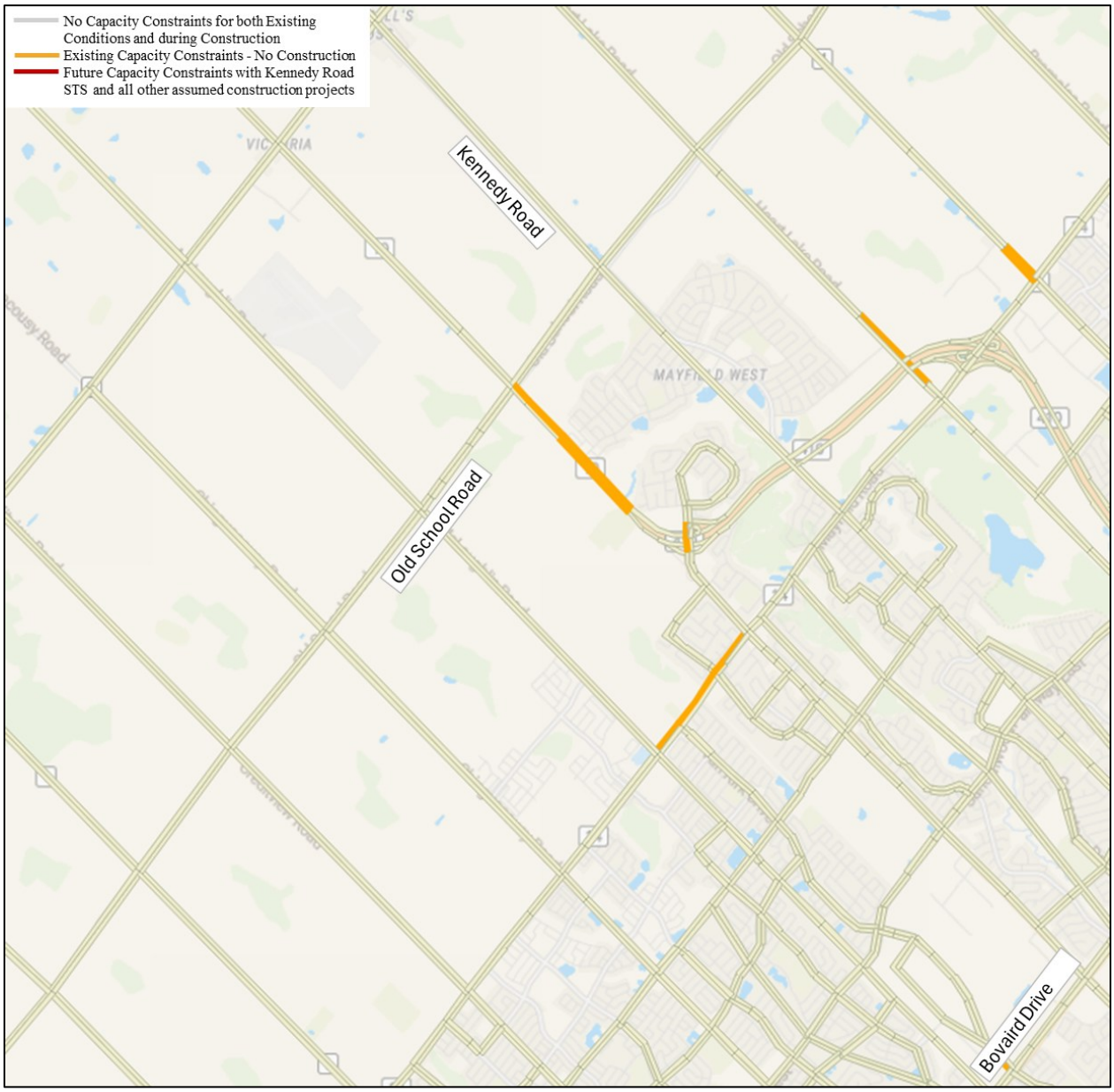
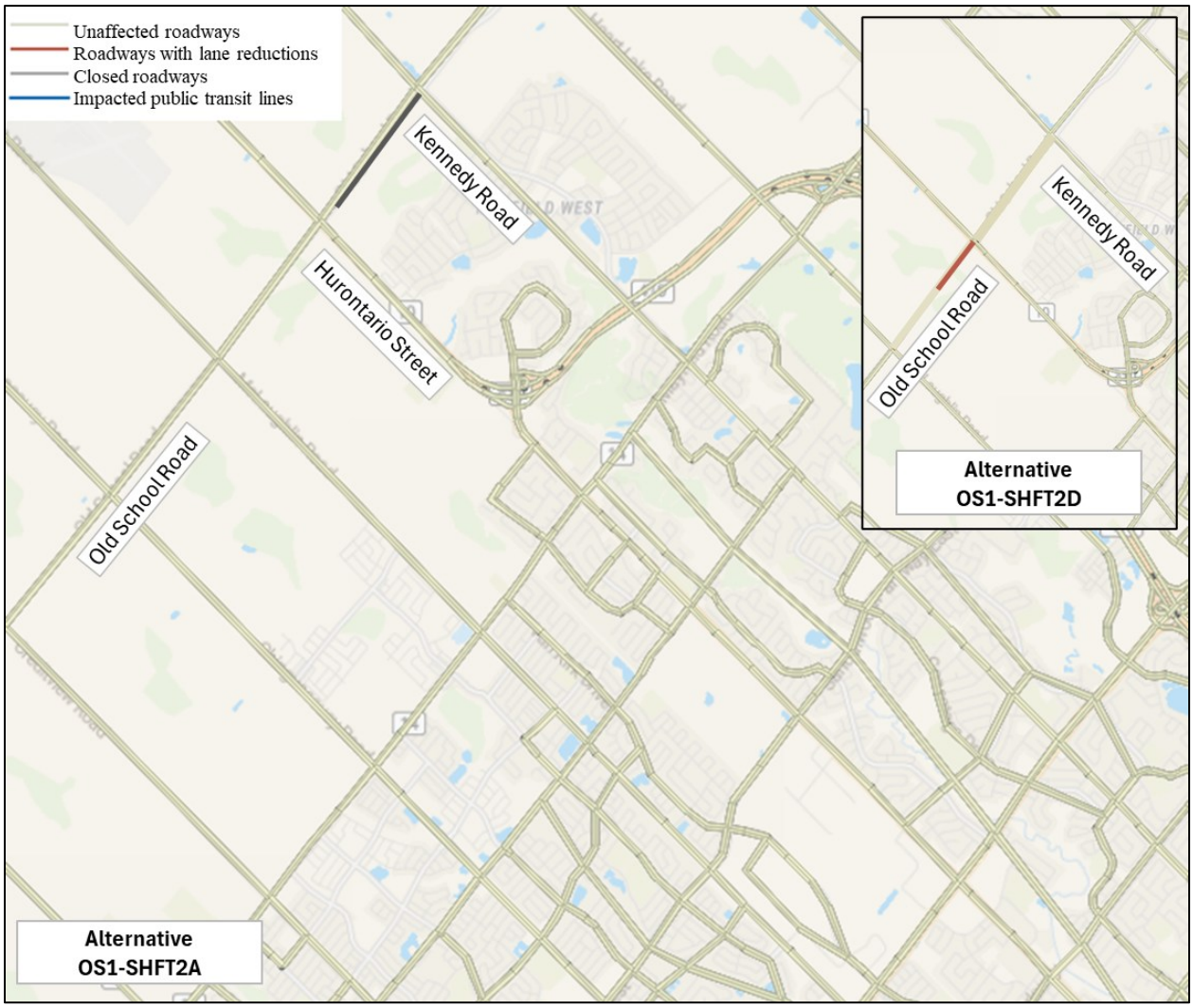


Figure 5-10: Anticipated Roadway and Transit Impacts during Construction (Segment 3)



5.5.3.2 Synchro Model Operations Results

The results of the traffic operations at the identified study area intersections under staging conditions are shown in Table 5-10. All Synchro Reports are included in Appendix F. There are no movements identified that exceed capacity (volume-to-capacity ratio more than 1.0) at the intersections evaluated in Segment 3.

Table 5-10: Synchro Model Results – Staging Conditions with Existing Timings (Segment 3)

Intersection	Movement	Staging 2030 AM - Existing Timings					Staging 2030 PM - Existing Timings				
		Delay (s)	LOS	v/c	Percentile Queue		Delay (s)	LOS	v/c	Percentile Queue	
					95th (m)	50th (m)				95th (m)	50th (m)
Hurontario Street & Old School Rd (Signalized) OS1-SHFT2A [16]	EBL	35.9	D	0.29	19.8	8.9	39.4	D	0.34	18.3	7.6
	EBR	8.4	A	0.33	13.3	0.0	7.7	A	0.27	13.5	0.0
	WBL	33.1	C	0.21	19.7	9.1	32.1	C	0.19	23.1	11.4
	WBT/R	36.1	D	0.48	39.5	21.7	45.7	D	0.74	80.5	52.4
	NBL	10.6	B	0.34	16.0	3.1	34.2	C	0.72	#62.0	20.7
	NBT	9.0	A	0.52	94.9	35.5	13.0	B	0.69	141.5	87.2
	SBT/R	24.1	C	0.85	#257.7	113.6	29.3	C	0.87	#197.0	121.3
	Overall	19.0	B	0.85	-	-	23.6	C	0.87	-	-
Kennedy Rd N & Old School Rd (Signalized) OS1-SHFT2A	WBL/T/R	16.8	B	0.14	17.5	8.2	15.1	B	0.55	84.1	41.7
	NBT/R	44.3	D	0.95	#137.9	69.2	36.8	D	0.80	77.5	47.4
	SBL/T	46.1	D	0.94	#129.7	64.7	20.1	C	0.34	34.0	18.8
	Overall	43.1	D	0.95	-	-	23.7	C	0.80	-	-
Hurontario Street & Old School Rd (Signalized) OS-SHFT2D [16]	EBL/T/R	46.9	D	0.76	74.9	47.0	82.8	F	0.97	#87.7	47.1
	WBL	43.3	D	0.44	24.8	11.5	40.9	D	0.40	24.5	11.3
	WBT/R	34.5	C	0.42	44.5	25.9	43.4	D	0.68	75.7	48.9
	NBL	20.0	B	0.48	18.9	4.8	41.6	D	0.78	#70.8	22.8
	NBT/R	16.7	B	0.63	130.5	77.6	22.7	C	0.83	#229.0	133.8
	SBL	7.5	A	0.12	7.5	2.2	12.5	B	0.33	9.2	3.1
	SBT/R	34.4	C	0.96	#295.7	177.8	30.5	C	0.89	#217.0	130.5
	Overall	29.3	C	0.96	-	-	32.1	C	0.97	-	-
Kennedy Rd N & Old School Rd (Signalized) OS-SHFT2D	EBL/T/R	18.1	B	0.39	46.8	23.9	6.3	A	0.30	26.5	9.9
	WBL/T/R	15.8	B	0.13	17.8	7.4	19.5	B	0.67	101.6	52.0
	NBL/T/R	34.2	C	0.89	#110.8	53.9	38.5	D	0.83	86.4	53.6
	SBL/T/R	30.5	C	0.83	#86.3	45.5	18.6	B	0.27	28.5	15.0
	Overall	28.5	C	0.89	-	-	22.3	C	0.83	-	-

Increased truck traffic is expected on roads adjacent to shaft compound construction staging areas which may result in localized delays. For example, there are no required lane closures on Mayfield Road or Van Kirk Drive to access the shaft compound; however, increased construction truck traffic may result in localized congestion on local roadways.

16. *Due to the lack of available Signal Timing Plans at the intersection of Hurontario Street & Old School Road, signal timings were developed using the Ontario Traffic Manual Book 12 recommended timings, then optimized in Synchro. Should the Signal Timing Plan for the intersection become available, a review of intersection performance with existing timings should be undertaken.*

5.6 Active Transportation Impacts by Segment

5.6.1 Segment 1: Kennedy Road from Etobicoke Creek to Vodden Street, including Queen Street from Rutherford Road to Kennedy Road

There are several potential sidewalk closures along Kennedy Road, Queen Street, and Vodden Street that are required to accommodate the shaft compound construction staging areas, including:

- Sidewalk closure (east side of Kennedy Road) for shaft compounds K1-SHFT1A, TBM-SHFT2A/K1-GLIDDENSHFTA
- Sidewalk closure (north side of Queen Street) for shaft compounds Q1-SHFT1A and Q1-SHFT2A.
- Sidewalk closure (east or west side depending on final shaft location) for shaft compound K1-SHFT2.
- Sidewalk closures in southwest quadrant of the Kennedy Road / Queen Street intersection (south side of Queen Street, west side of Kennedy Road) for shaft compound K1-SHFT4.
- Sidewalk closures in the southeast quadrant of the Kennedy Road / Vodden Street intersection for shaft compound K1-SHFT5A.

The eastbound bicycle lane on the west leg of the Kennedy Road / Vodden Street intersection is expected to remain open.

5.6.2 Segment 2: Vodden St to Bovaird Dr from Kennedy Rd; OBR- Bovaird Dr to Fletcher's Creek

There are several potential active transportation facility closures along Kennedy Road, Queen Street, and Vodden Street that are required to accommodate the shaft compound construction staging areas, including:

- Sidewalk closure (south side of Vodden Street, 75 metres due eats of Ken Whillans Drive) for shaft compound V1-SHFT1
- Sidewalk closure (south side of Vodden Street, at OBR corridor) for shaft compound OBR1-SHFT1A
- McLaughlin Valley Trail access closure (south of Bovaird Drive) due to shaft compound B3-SHFT1A

- The eastbound bicycle lane on the east leg of the Vodden Street / Ken Whillans Drive intersection is expected to be closed to accommodate two vehicle travel lanes.

5.6.3 Segment 3: Orangeville-Brampton Railway corridor to Old School Road and Old School Road from OBR to Hurontario Street

There is anticipated impact to active transportation users due to the shaft compound construction of Segment 3. The on-road cycling facility along Old School Road and Kennedy Road (i.e., the Etobicoke Creek Trail Connector) will be impacted.

5.7 Public Transit Impacts by Segment

5.7.1 Segment 1: Kennedy Road from Etobicoke Creek to Vodden Street, including Queen Street from Rutherford Road to Kennedy Road

Minor transit delays are expected as buses travel along areas of Kennedy Road and Queen Street that see lane reductions due to planned construction staging areas. Routes 7, 10 and 200 bus stops near First Gulf Blvd (for K1-SHFT1), Rambler Drive, and Queen Street will need to be relocated to accommodate the shaft compound construction staging areas.

5.7.2 Segment 2: Vodden St to Bovaird Dr from Kennedy Rd; OBR- Bovaird Dr to Fletcher's Creek

There are no anticipated impacts to public transit due to the shaft compound locations within Segment 2.

5.7.3 Segment 3: Orangeville-Brampton Railway corridor to Old School Road and Old School Road from OBR to Hurontario Street

At the Old School Road / Hurontario Street intersection, the northbound and southbound stops for GO Transit Bus Route 37 are located in the southeast and northwest quadrants, respectively. While not directly adjacent to any shaft compound, pedestrian connectivity to the bus stops may be restricted due to the construction staging area of shaft compound OS1-SHFT2D, located in the southwest quadrant of the intersection. There are no other anticipated public transit impacts in Segment 3.

6. Conclusion and Recommendations

6.1 Recommended Mitigation by Segment

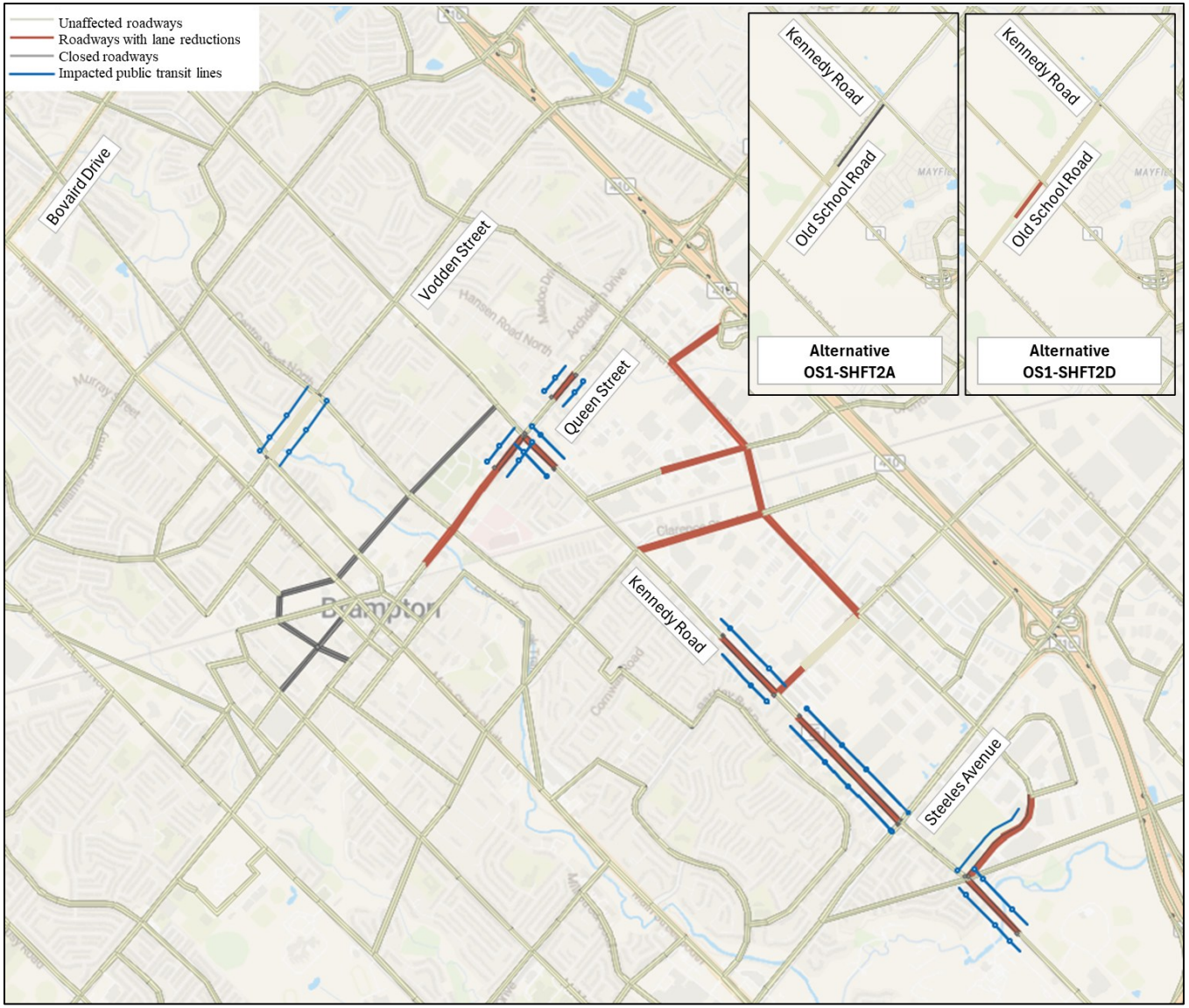
The traffic assessment analyzed the broader City and Regional Road network considering multiple concurrent construction projects to identify network capacity concerns. The shaft compound locations along Kennedy Road, Vodden Street, Queen Street, the OBR corridor, and Old School Road were assessed to identify localized construction impacts to vehicle traffic, transit, cyclists, and pedestrians.

With multiple concurrent construction projects and lane closures between 2027 and 2030, it is critical to co-ordinate the various construction projects to maintain as many available travel lanes, pedestrian and cyclist facilities, and transit facilities as possible and manage congestion. The traffic impact assessment informs the preparation of traffic management plans and identifies mitigative measures to lessen construction impacts where possible for all travel modes (transit, active transportation, auto). All temporary traffic control measures will comply with OTM Book 7 guidelines.

The following discussion on each of the three segments identifies mitigation measures for each segment by vehicle traffic, active transportation and transit travel modes. As noted in the previous sections, the existing conditions were modelled and it was identified that several major roadways are currently operating at capacity and will continue to operate at capacity during the simultaneous construction projects, as discussed in Section 5.5. The vehicle traffic mitigation measures do not address these existing conditions capacity issues, but rather those stemming from the construction projects.

Figure 6-1 identifies the anticipated roadway and transit impacts for all three segments. The following discussion considers only the preferred shaft locations.

Figure 6-1: Anticipated Roadway and Transit Impacts during Construction



6.1.1 Segment 1: Kennedy Road from Etobicoke Creek to Vodden Street, including Queen Street from Rutherford Road to Kennedy Road

Vehicle Traffic

The identified lane closures are anticipated to contribute to delays at multiple intersections along Kennedy Road in Segment 1. To address capacity issues, signal timing plans were optimized as a first mitigation measure. The following signal timing plan improvement was implemented:

- Signal Splits were optimized in the PM peak hour at the intersection of Kennedy Road and Clarence Street.

The results of this implemented mitigation measure are shown in Table 6-1. As a result of this first mitigation measure, the Kennedy Road / Clarence Street intersection operates within capacity.

Table 6-1: Synchro Model Results – Staging Conditions, Optimized Timings (Segment 1)

Intersection	Movement	Staging 2030 PM - Optimized Timings				
		Delay (s)	LOS	v/c	Percentile Queue	
					95th (m)	50th (m)
Kennedy Road & Clarence St (Signalized)	EBL	61.0	E	0.83	#82.8	46.1
	EBT/R	34.4	C	0.39	71.4	55.3
	WBL	49.8	D	0.20	23.3	11.1
	WBT/R	81.2	F	0.91	#177.4	123.9
	NBL	25.6	C	0.69	76.1	53.9
	NBT/R	39.6	D	0.79	226.6	191.3
	SBL	45.4	D	0.72	#58.4	22.9
	SBT	35.9	D	0.47	116.2	88.3
	SBR	8.2	A	0.51	46.1	12.4
	Overall	39.3	D	0.91	-	-

Due to the anticipated lane reductions adjacent to the shaft compounds, the intersection of Kennedy Road and Glidden Road was identified has having a potentially excessive queue (95th percentile queue exceeding 400 metres) on the northbound approach. As a result, an additional analysis was undertaken where the north-south auxiliary left-turn lanes are temporarily removed/converted into an additional northbound through lane. Left turns onto Glidden Road and Chamney Court are still permitted but occur in a shared left-through lane. The results are shown in Table 6-2. With the adjustment to the lane configuration, the 95th percentile queue for the northbound leg shortens to less than 150 metres.

Table 6-2: Synchro Model Results – Staging Conditions, Queue Optimization (Segment 1)

Intersection	Movement	Staging 2030 AM – Lane Reconfiguration					Staging 2030 PM – Lane Reconfiguration				
		Delay (s)	LOS	v/c	Percentile Queue		Delay (s)	LOS	v/c	Percentile Queue	
					95th (m)	50th (m)				95th (m)	50th (m)
Kennedy Rd & Chamney Crt/Glidden Rd (Signalized)	EBL/T/R	35.9	D	0.16	14.8	4.2	40.2	D	0.11	15.4	5.1
	WBL/T/R	54.5	D	0.58	46.0	23.8	100.6	F	0.97	#141.5	79.3
	NBL/T	4.8	A	0.18	25.8	20.0	8.9	A	0.50	94.3	80.9
	NBR	1.4	A	0.04	3.3	0.0	1.2	A	0.09	4.8	0.2
	SBL/T/R	8.4	A	0.56	103.5	85.8	7.9	A	0.39	48.5	38.6
	Overall	10.8	B	0.58	-	-	19.4	B	0.97	-	-

As discussed in Section 5.1.2, there are two companies that have LCV permits to operate on Steeles Avenue, First Gulf Boulevard and Kennedy Road. The Traffic Management Plans may need to account for the larger turning movements of LCVs depending on the configuration of any lane closures that restrict available space where LCVs operate. The LCV operators should be informed of the upcoming construction work and lane closures so they can adjust their own operating schedules if they see fit. MTO should also be consulted to confirm whether a potential long-term closure would require any adjustments to the LCV permits, such as an extension of the restricted operating periods to minimize potential delays at signalized intersections due to LCV turning movements, such as the left-turn movement from First Gulf Boulevard to Kennedy Road, which would depend on the final lane closure configuration at First Gulf Boulevard and south of this intersection on Kennedy Road.

There are no recommended detours within Segment 1.

Active Transportation

Sidewalk closures in southwest quadrant of the Kennedy Road / Queen Street intersection for shaft compound K1-SHFT4. Detour via the adjacent plaza was identified but considered not viable for travel between Kennedy Road and Vodden Street. Pedestrians will also need to be redirected along a safe alternate route to the opposite side of Kennedy Road / Queen Street.

The eastbound bicycle lane on the west leg of the Kennedy Road / Vodden Street intersection is expected to remain open at the Vodden Street / Kennedy Road intersection. Appropriate signage for necessary detours and corresponding pavement markings for temporary bicycle lanes should be implemented to alleviate impacts incurred to the active transportation network.

Public Transit

Minor transit delays are expected as buses travel along areas of Kennedy Road and Queen Street that see lane reductions due to planned construction staging areas. Routes 7, 10 and 200 bus stops near First Gulf Blvd (for K1-SHFT1), Rambler Drive, and

Queen Street will need to be relocated to accommodate the shaft compound construction staging areas. These bus stops should be relocated to the nearest accessible location to mitigate impacts to transit riders. Temporary bus stop relocations should be coordinated with Brampton Transit.

6.1.2 Segment 2: Vodden St to Bovaird Dr from Kennedy Rd; OBR- Bovaird Dr to Fletcher's Creek

Vehicle Traffic

There are no anticipated lane closures due to the shaft compound construction locations identified in Segment 2. Because of construction traffic (i.e., construction vehicles) and vehicle diversions from other east-west roadways, localized delays are expected at the Vodden Street / Centre Street intersection.

To address capacity issues, signal timing plans were optimized as a first mitigation measure. The following signal timing plan improvements were implemented:

- Signal Splits were optimized in the PM peak hour at the intersection of Vodden Street and Centre Street.
- At the intersection of Vodden Street and Centre Street, the cycle length was increased from 90 seconds to 120 seconds to accommodate increased east-west traffic. Consideration should be given to provide an advanced eastbound left turn phase.

The results of these implemented mitigation measures are shown in Table 6-3. As a result of this first mitigation measure, the Vodden Street / Centre Street intersection operates within capacity. As the cycle length at the Vodden Street / Centre Street intersection has been reduced, there may be a need to adjust the signal timing plans at the adjacent Vodden Street / Ken Whillans Drive intersection. It is recommended to monitor traffic operations and adjust timings as required.

Table 6-3: Synchro Model Results – Staging Conditions, Optimized Timings (Segment 2)

Intersection	Movement	Staging 2030 PM - Optimized Timings				
		Delay (s)	LOS	v/c	Percentile Queue	
					95th (m)	50th (m)
Centre St N & Vodden St E (Signalized)	EBL	83.7	F	0.94	#73.4	27.1
	EBT/R	15.6	B	0.66	153.2	110.0
	WBL	10.3	B	0.20	12.1	5.3
	WBT/R	23.5	C	0.84	252.1	176.4
	NBL/T/R	88.7	F	0.98	#148.9	85.7
	SBL/T	42.6	D	0.42	53.0	31.7
	SBR	7.8	A	0.25	15.1	0.0
	Overall	32.9	C	0.98	-	-

There are no recommended detours within Segment 2. Warning signs will be required on Bovaird Drive to notify motorists of adjacent construction zones near Shaft Compound Locations OBR1-SHFT3A and B3-SHFT1A.

Active Transportation

The sidewalk on the south side of Vodden Street (75 metres due east of Ken Whillans Drive) is expected to be closed to accommodate the V1-SHFT1 shaft compound construction staging area. Similarly, the eastbound bicycle lane on Vodden Street (75 metres due east of Ken Whillans Drive) is expected to be closed to accommodate two vehicle travel lanes. There is the potential to shift the vehicle travel lanes and increase the cycle lane width on the north side of the road to accommodate a bi-directional cycle lane between Ken Whillans Drive and Centre Street; another potential option is to narrow the traffic lanes and increase the width of the existing buffer between the roadway and the current cycling facility, allowing this expanded buffer to be re-allocated for an eastbound cycle lane. However, the final arrangement for cycling lanes must be confirmed in detailed design.

There is an anticipated sidewalk closure at the OBR1-SHFT1A location, on the south side of Vodden Street at the OBR corridor. Pedestrians will be detoured to the north side of Vodden Street between Mill Street N and Pleasant View Avenue. As the distance between Mill Street N and Pleasant View Avenue is approximately 275 m, a potential mid-block crossing west of the shaft location should be considered in detailed design.

At B3-SHFT1A, the McLaughlin Valley Trail will be closed where it connects to the pedestrian sidewalk on the south of Bovaird Drive; however, the sidewalk adjacent to Bovaird Drive will remain open and outside of the shaft compound area. Signage will be required along the trail to warn of the closure.

Public Transit

There are no anticipated impacts to public transit due to the shaft compound locations within Segment 2.

6.1.3 Segment 3: Orangeville-Brampton Railway corridor to Old School Road and Old School Road from OBR to Hurontario Street

Vehicle Traffic

At shaft compounds OBR2-SHFT10A and OS1-SHFT1A, single-lane, two-way traffic will be maintained by using signal control (i.e., for our model assumptions we considered

that Portable Temporary Traffic Signal (PTTS)[17] will be used to stop traffic in one-direction and allow traffic to clear for the opposing direction). There may be an opportunity to temporarily convert the westbound shoulder into a travel lane to maintain two-way travel.

Two-way traffic was considered at shaft compound OS1-SHFT2A, however, due to concern for potential queues to impact intersection operations at the Old School Road / Hurontario Street, a full eastbound closure is preferred. Because of the full eastbound roadway closure at shaft compound OS1-SHFT2A, all eastbound turning movements at the Old School Road / Hurontario Street intersection will be prohibited (i.e., receiving lanes on Old School Road east of Hurontario Street are closed). Due to this closure, eastbound traffic on King Street in the AM peak was identified as operating at capacity in 2027. Appropriate signage will be implemented well in advance of the Old School Road / Hurontario Street intersection to avoid unnecessarily long detours for motorists. Warning signs will be required to notify motorists of adjacent construction zones.

Alternatively, the implementation of shaft compound OS1-SHFT2D would require the closure of the eastbound through-/right-turn lane, and conversion of the auxiliary left-turn lane into a shared left-/through-/right-turn lane. Due to this lane reduction, eastbound traffic on King Street in the AM peak was identified as operating at capacity in 2027.

Increased truck traffic is expected on roads adjacent to shaft compound construction staging areas which may result in localized delays. For example, there are no required lane closures on Mayfield Road or Van Kirk Drive to access the shaft compound; however, increased construction truck traffic may result in localized congestion on local roadways. Depending on resulting congestion levels, truck restrictions may be imposed during peak hours to manage congestion.

The identified lane closures are anticipated to contribute to moderate delays at intersections along Old School in Segment 3. Existing signal timing plans are expected to be able to accommodate projected traffic volumes at the Old School Road / Hurontario Street[18] and Old School Road / Kennedy Road intersections.

If Alternative OS1-SHFT2A is carried forward as the preferred alternative, a detour will need to be implemented to accommodate the eastbound closure of Old School Road between Hurontario Street and Kennedy Road. Given the spacing between adjacent intersections (approximately 1.4 kilometres east/west and 2 kilometres north/south),

---

[17] *Note that to use PTTS for long duration construction contracts and in the absence of a contractor on site a PHM-125 drawing must be prepared and approved.*

18. *Due to the lack of available Signal Timing Plans at the intersection of Hurontario Street & Old School Road, signal timings were developed using the Ontario Traffic Manual Book 12 recommended timings, then optimized in Synchro. Should the Signal Timing Plan for the intersection become available, a review of intersection performance with existing timings should be undertaken.*

appropriate detour signage must be implemented well in advance of the Old School Road / Hurontario Street intersection to avoid unnecessarily long detours for motorists.

Active Transportation

There is anticipated impact to active transportation users due to the shaft compound construction of Segment 3. There is a paved shoulder on both north and south sides of the roadway. OBR-SHFT 10, OS1-SHFT1, OS1-SHFT2A/OS1-SHFT2D will force a closure/relocation of the eastbound paved shoulder, resulting in active transportation facilities being detoured with regular traffic. Potentially these shaft compound areas could be organized to include a separated cycling facility to maintain the eastbound active transportation route on Old School Road.

Public Transit

At the Old School Road / Hurontario Street intersection, the northbound and southbound stops for GO Transit Bus Route 37 are located in the southeast and northwest quadrants, respectively. While not directly adjacent to any shaft compound, pedestrian connectivity to the bus stops may be restricted due to the construction staging area of shaft compound OS1-SHFT2D, located in the southwest quadrant of the intersection. There are no other anticipated public transit impacts in Segment 3.

6.2 Detailed Design Traffic Impact Assessment

This Traffic Impact Assessment will be updated at the detailed design stage. It is anticipated that refinements to the shaft compound locations, the stages to be implemented for construction, and the details on lane closures and construction schedules for other construction projects will be available for use in model updates. New turning movement count data, particularly for locations where data was not currently available, may be collected in advance of the detailed design assignment.

Signal timing optimization, excessive queueing, and the necessity for detours should be reviewed at a later design stage once the input parameters such as concurrent construction projects and lane closure assumptions are further refined. Potentially new seasonal TMC data can be collected at intersections of concern for use in an updated assessment at the detailed design stage.

6.3 Traffic Management Plans

The preparation of traffic management plans (TMPs) will be informed by this traffic impact assessment, and the traffic team will work closely with the design team to review and provide feedback on the TMPs as they are developed.

Flow
Building our future, faster.

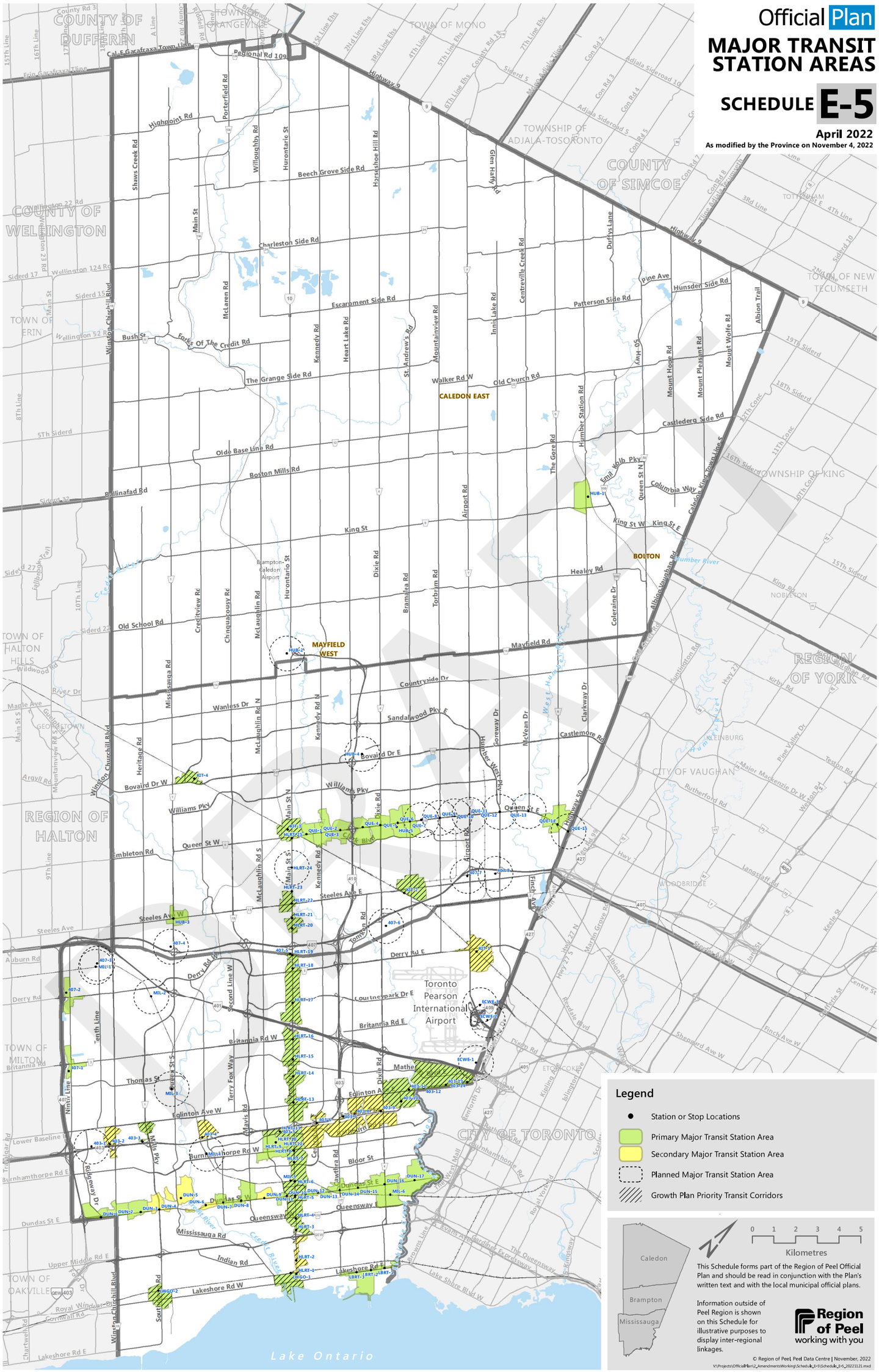
Central Brampton

Appendix A

Relevant Region and City Official Plan Schedules

AECOM

Peel Region


Official Plan
MAJOR TRANSIT STATION AREAS
SCHEDULE E-5
April 2022
As modified by the Province on November 4, 2022
Legend
Station or Stop Locations
Primary Major Transit Station Area
Secondary Major Transit Station Area
Planned Major Transit Station Area
Growth Plan Priority Transit Corridors
Caledon
Brampton
Mississauga
0 1 2 3 4 5
Kilometres
This Schedule forms part of the Region of Peel Official Plan and should be read in conjunction with the Plan's written text and with the local municipal official plans.
Information outside of Peel Region is shown on this Schedule for illustrative purposes to display inter-regional linkages.
Region of Peel
working with you
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V:\Projects\OfficialPlan\2_Amendments\Working\Schedule_E-5\Schedule_E-5_20221121.mxd
DRAFT
Lake Ontario
CALEDON EAST
BOLTON
MAYFIELD WEST
Toronto Pearson International Airport
REGION OF HALTON
REGION OF PEEL
REGION OF YORK
CITY OF TORONTO
CITY OF VAUGHAN
TOWN OF MILTON
TOWN OF HALTON HILLS
TOWN OF ORANGEVILLE
TOWN OF MONO
TOWNSHIP OF ADJALA-TOSORONTO
COUNTY OF SIMCOE
COUNTY OF DUFFERIN
COUNTY OF WELLINGTON
TOWN OF ERIN
TOWN OF OAKVILLE
TOWNSHIP OF KING
TOWN OF NEW TECUMSETH
Brampton Caledon Airport
Highway 9
Regional Rd 109
Mayfield Rd
Countryside Dr
Wanless Dr
Sandalwood Pky E
Bovaird Dr E
Bovaird Dr W
Williams Pky
Queen St W
Embleton Rd
Steeles Ave E
Steeles Ave W
Steeles Ave
Derry Rd E
Derry Rd W
Courtneypark Dr E
Britannia Rd E
Britannia Rd W
Eglinton Ave W
Thomas St
Burnhamthorpe Rd W
Dundas St E
Queensway
Mississauga Rd
Indian Rd
Lakeshore Rd E
Lakeshore Rd W
Upper Middle Rd E
Dundas St W
Lower Baseline
Derry Rd
Auburn Rd
Argyll Rd
Maple Ave
Wildwood Rd
River Dr
Old School Rd
Boston Mills Rd
Old Base Line Rd
Ballinafad Rd
Charleston Side Rd
Escarpment Side Rd
Patterson Side Rd
Hunsden Side Rd
Pine Ave
Beech Grove Side Rd
Highpoint Rd
Cal-E Garafraxa Town Line
Erin Garafraxa Town Line
Bush St
Forks Of The Credit Rd
The Grange Side Rd
Walker Rd W
Old Church Rd
Castlederg Side Rd
Healey Rd
Columbia Way
King St
King St W
King St E
Mayfield Rd
Countryside Dr
Wanless Dr
Sandalwood Pky E
Bovaird Dr E
Bovaird Dr W
Williams Pky
Queen St W
Embleton Rd
Steeles Ave E
Steeles Ave W
Steeles Ave
Derry Rd E
Derry Rd W
Courtneypark Dr E
Britannia Rd E
Britannia Rd W
Eglinton Ave W
Thomas St
Burnhamthorpe Rd W
Dundas St E
Queensway
Mississauga Rd
Indian Rd
Lakeshore Rd E
Lakeshore Rd W
Upper Middle Rd E
Dundas St W
Lower Baseline
Derry Rd
Auburn Rd
Argyll Rd
Maple Ave
Wildwood Rd
River Dr
Old School Rd
Boston Mills Rd
Old Base Line Rd
Ballinafad Rd
Charleston Side Rd
Escarpment Side Rd
Patterson Side Rd
Hunsden Side Rd
Pine Ave
Beech Grove Side Rd
Highpoint Rd
Cal-E Garafraxa Town Line
Erin Garafraxa Town Line
Bush St
Forks Of The Credit Rd
The Grange Side Rd
Walker Rd W
Old Church Rd
Castlederg Side Rd
Healey Rd
Columbia Way
King St
King St W
King St E
Mayfield Rd
Countryside Dr
Wanless Dr
Sandalwood Pky E
Bovaird Dr E
Bovaird Dr W
Williams Pky
Queen St W
Embleton Rd
Steeles Ave E
Steeles Ave W
Steeles Ave
Derry Rd E
Derry Rd W
Courtneypark Dr E
Britannia Rd E
Britannia Rd W
Eglinton Ave W
Thomas St
Burnhamthorpe Rd W
Dundas St E
Queensway
Mississauga Rd
Indian Rd
Lakeshore Rd E
Lakeshore Rd W
Upper Middle Rd E
Dundas St W
Lower Baseline
Derry Rd
Auburn Rd
Argyll Rd
Maple Ave
Wildwood Rd
River Dr
Old School Rd
Boston Mills Rd
Old Base Line Rd
Ballinafad Rd
Charleston Side Rd
Escarpment Side Rd
Patterson Side Rd
Hunsden Side Rd
Pine Ave
Beech Grove Side Rd
Highpoint Rd
Cal-E Garafraxa Town Line
Erin Garafraxa Town Line
Bush St
Forks Of The Credit Rd
The Grange Side Rd
Walker Rd W
Old Church Rd
Castlederg Side Rd
Healey Rd
Columbia Way
King St
King St W
King St E

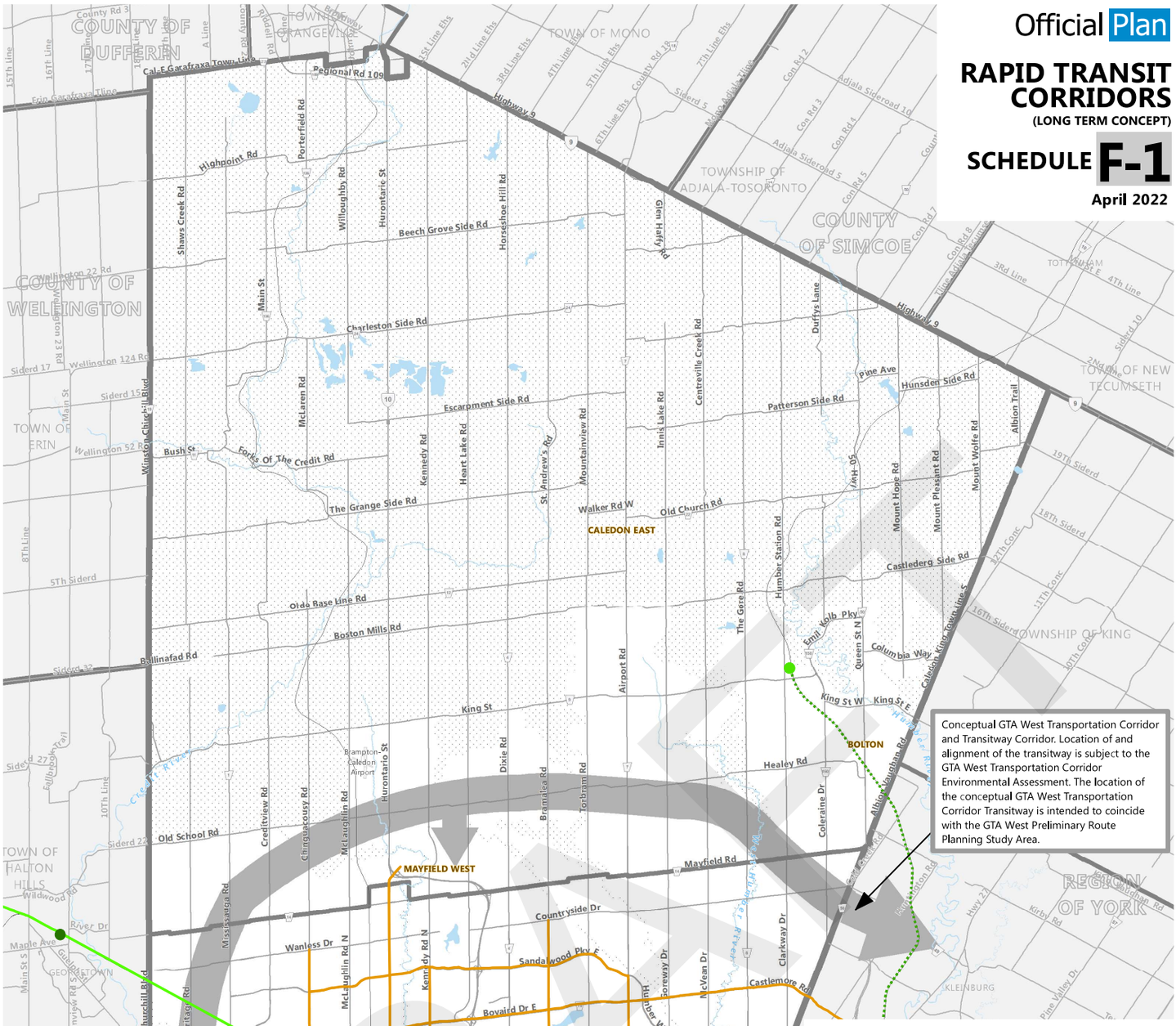
Official Plan

RAPID TRANSIT CORRIDORS

(LONG TERM CONCEPT)

SCHEDULE F-1

April 2022



Legend

- Multi-modal Transportation Hub (Conceptual)
- Existing GO Rail Station
- Proposed GO Rail Station
- Planned GO Rail Station
- Go Rail Line - 15 Minute Two-Way All Day
- Go Rail Line - Two-Way All-Day
- Proposed GO Rail Line
- Union-Pearson Rail Link
- LRT (Light Rail Transit)
- BRT (Bus Rapid Transit)/Highway 407 Transitway
- Other Rapid Transit Corridors
- Conceptual GTA West Transportation Corridor and Transitway Corridor
- Areas Subject to Provincial Plans (As shown on Figure 1)

Rapid Transit Corridors are shown as identified by transit providers, the Metrolinx 2041 Regional Transportation Plan, and the Region's advocacy positions. This map depicts both existing and proposed Rapid Transit Corridor to provide a long term concept. The corridors and alignments of the proposed corridors are subject to change.

Bolton Rail Service has been identified in the Metrolinx 2041 Regional Transportation Plan as a project with a horizon beyond 2041. The precise location of the Bolton GO Station will be determined through a future study and Official Plan Amendment.

The UP express route overlaps the Kitchener GO rail line up until Pearson Airport.



0 1 2 3 4 5

Kilometres

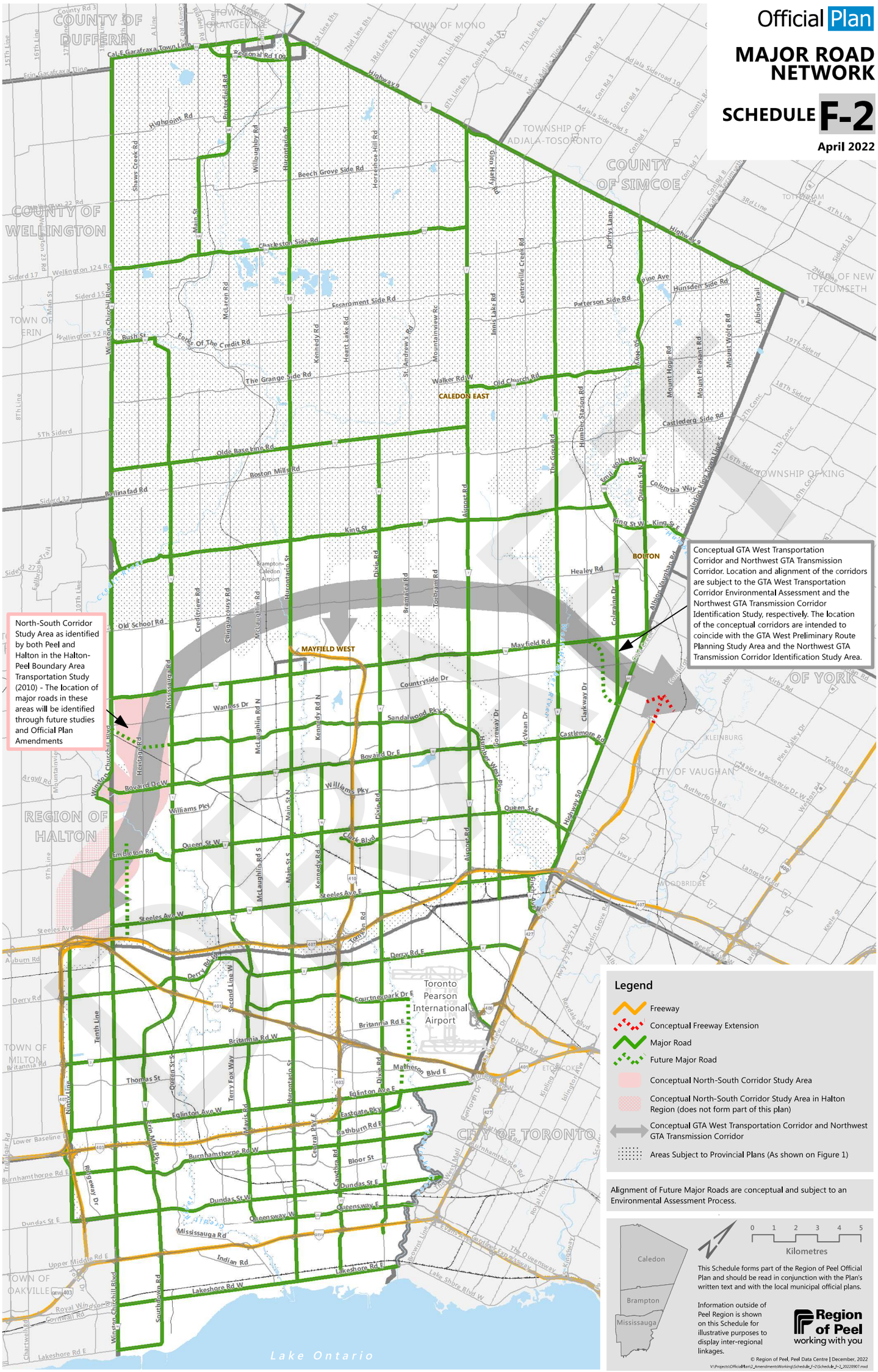
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Region of Peel working with you

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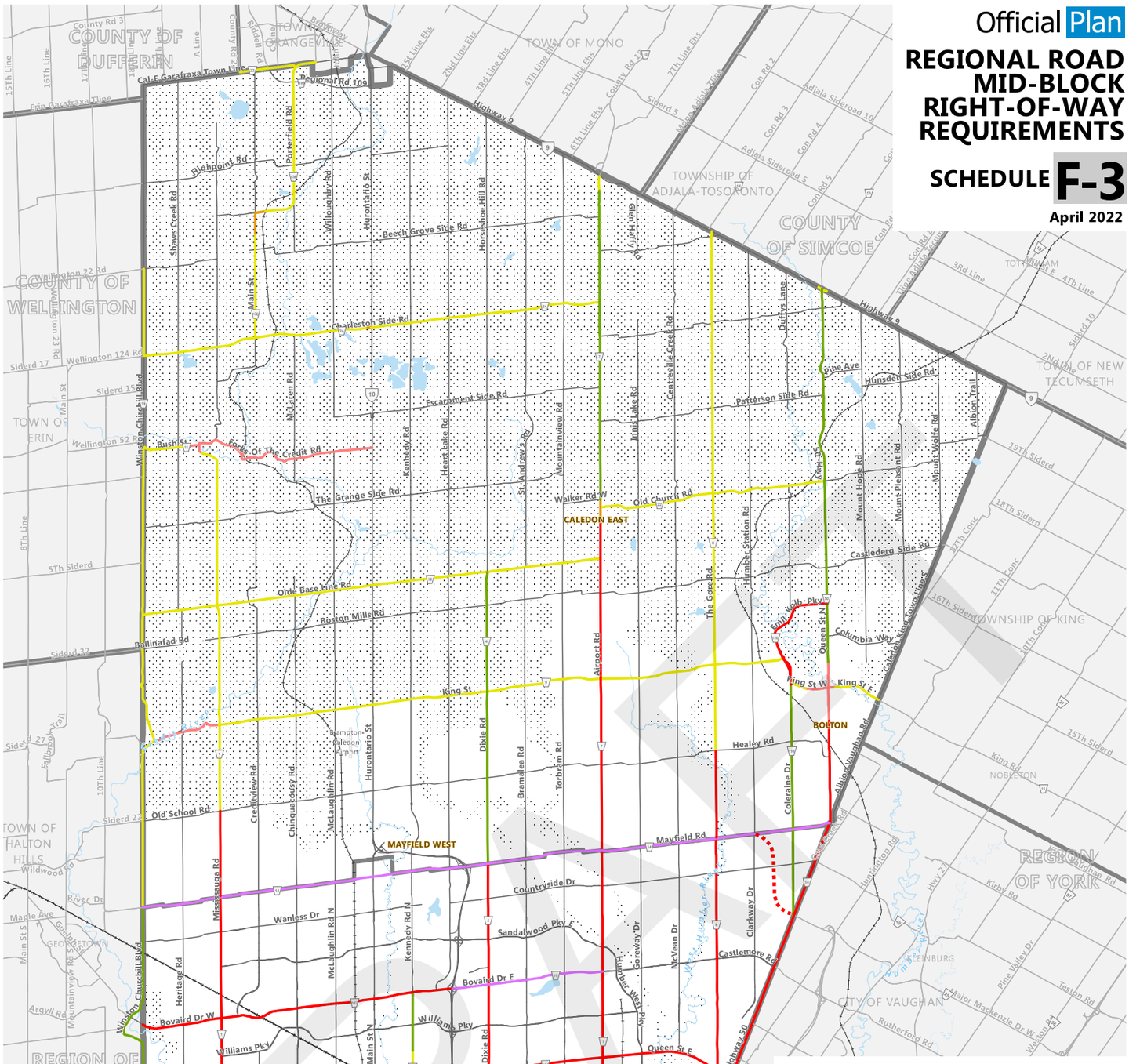

Official Plan
MAJOR ROAD NETWORK
SCHEDULE F-2
April 2022
North-South Corridor Study Area as identified by both Peel and Halton in the Halton-Peel Boundary Area Transportation Study (2010) - The location of major roads in these areas will be identified through future studies and Official Plan Amendments
Conceptual GTA West Transportation Corridor and Northwest GTA Transmission Corridor. Location and alignment of the corridors are subject to the GTA West Transportation Corridor Environmental Assessment and the Northwest GTA Transmission Corridor Identification Study, respectively. The location of the conceptual corridors are intended to coincide with the GTA West Preliminary Route Planning Study Area and the Northwest GTA Transmission Corridor Identification Study Area.
CALEDON EAST
MAYFIELD WEST
BOLTON
Toronto Pearson International Airport
REGION OF HALTON
CITY OF VAUGHAN
CITY OF TORONTO
Lake Ontario
Legend
Freeway
Conceptual Freeway Extension
Major Road
Future Major Road
Conceptual North-South Corridor Study Area
Conceptual North-South Corridor Study Area in Halton Region (does not form part of this plan)
Conceptual GTA West Transportation Corridor and Northwest GTA Transmission Corridor
Areas Subject to Provincial Plans (As shown on Figure 1)
Alignment of Future Major Roads are conceptual and subject to an Environmental Assessment Process.
Caledon
Brampton
Mississauga
0 1 2 3 4 5
Kilometres
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Official Plan

REGIONAL ROAD MID-BLOCK RIGHT-OF-WAY REQUIREMENTS

SCHEDULE F-3

April 2022



Legend

Metres	Feet
20	60
26	86
30	100
36	120
38	125
40	130
43.5	145
45	150
50	165

Proposed New Road

Areas Subject to Provincial Plans (As shown on Figure 1)

The general extent of the Rights-of-Way for Regional Roads are shown on this Schedule. For a precise interpretation contact the Regional Transportation Division.

Rights-of-Way for other Major Roads, as shown on Schedule F-2, are identified in Local Municipal Official Plans.

Protect wider rights of way at intersections, where necessary.

The information on this schedule is based on the 2019 Long Range Transportation Plan and does not reflect growth requirements to 2051.



0 1 2 3 4 5

Kilometres

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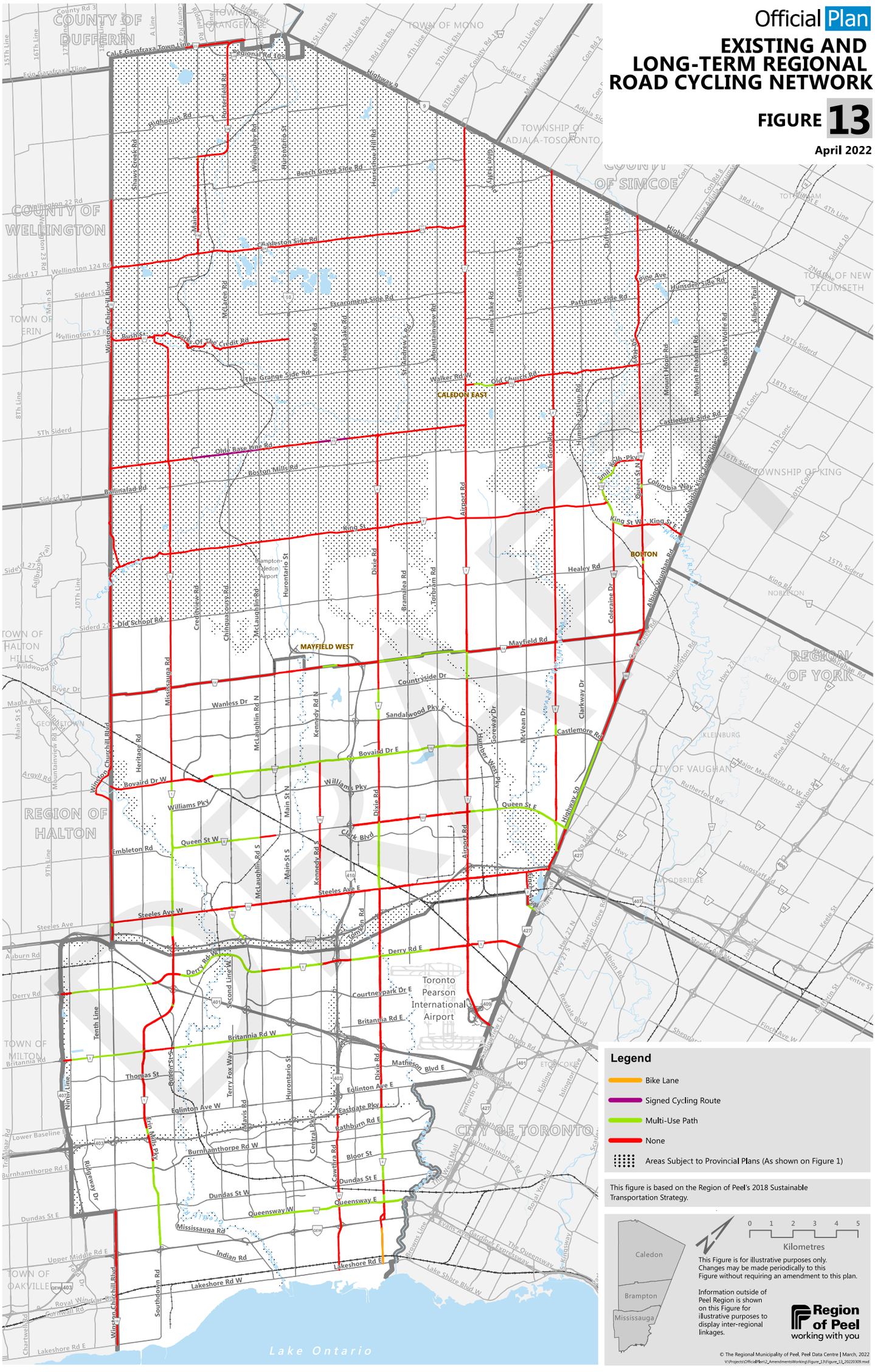
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Official Plan

EXISTING AND LONG-TERM REGIONAL ROAD CYCLING NETWORK

FIGURE 13

April 2022



Legend

- Bike Lane
- Signed Cycling Route
- Multi-Use Path
- None
- Areas Subject to Provincial Plans (As shown on Figure 1)

This figure is based on the Region of Peel's 2018 Sustainable Transportation Strategy.

0 1 2 3 4 5

Kilometres

This Figure is for illustrative purposes only. Changes may be made periodically to this Figure without requiring an amendment to this plan.

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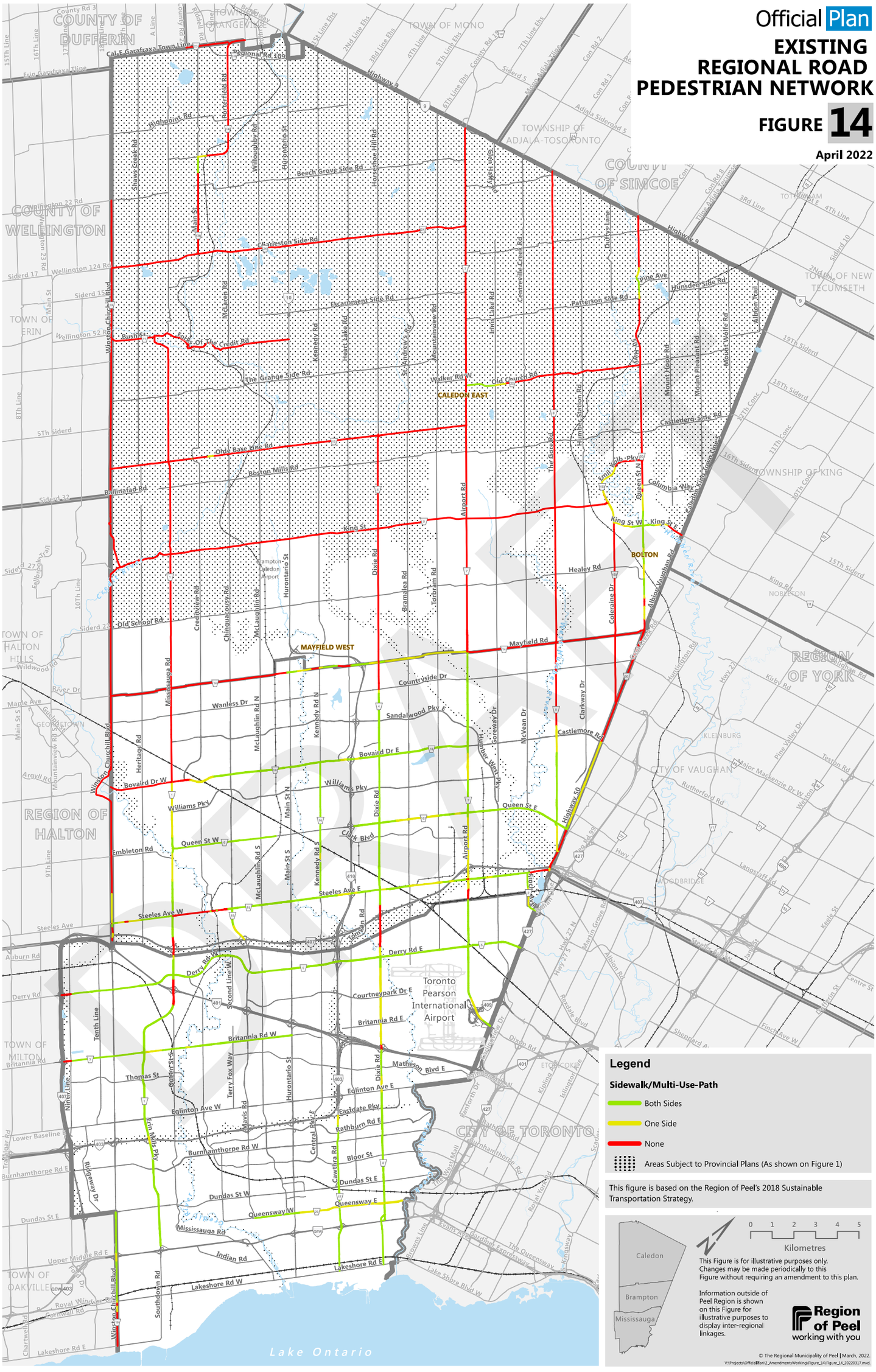
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Official Plan

EXISTING REGIONAL ROAD PEDESTRIAN NETWORK

FIGURE 14

April 2022



Legend

Sidewalk/Multi-Use-Path

- Both Sides
- One Side
- None
- Areas Subject to Provincial Plans (As shown on Figure 1)

This figure is based on the Region of Peel's 2018 Sustainable Transportation Strategy.

This Figure is for illustrative purposes only. Changes may be made periodically to this Figure without requiring an amendment to this plan.

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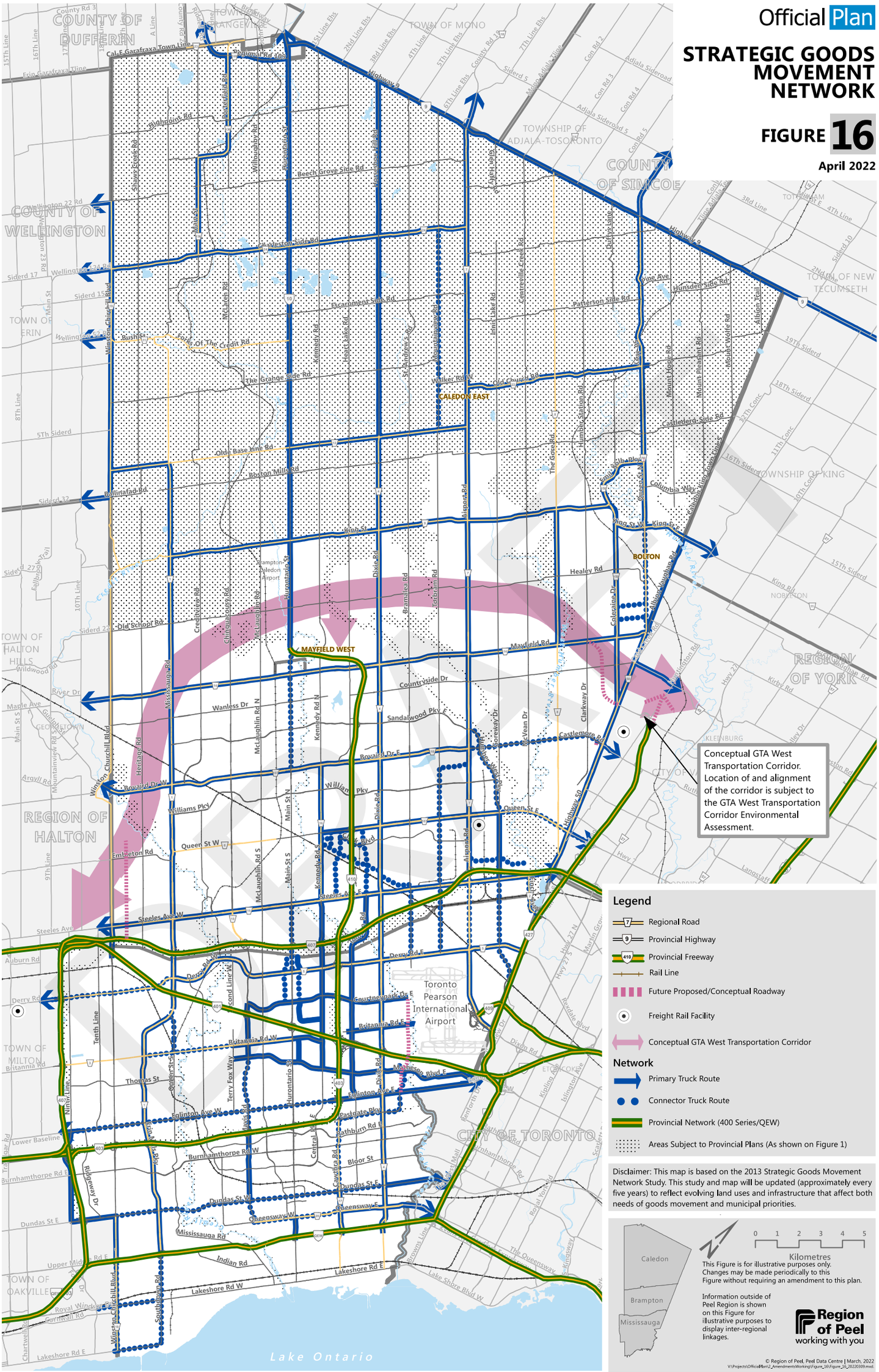
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Official Plan

STRATEGIC GOODS MOVEMENT NETWORK

FIGURE 16

April 2022



Disclaimer: This map is based on the 2013 Strategic Goods Movement Network Study. This study and map will be updated (approximately every five years) to reflect evolving land uses and infrastructure that affect both needs of goods movement and municipal priorities.

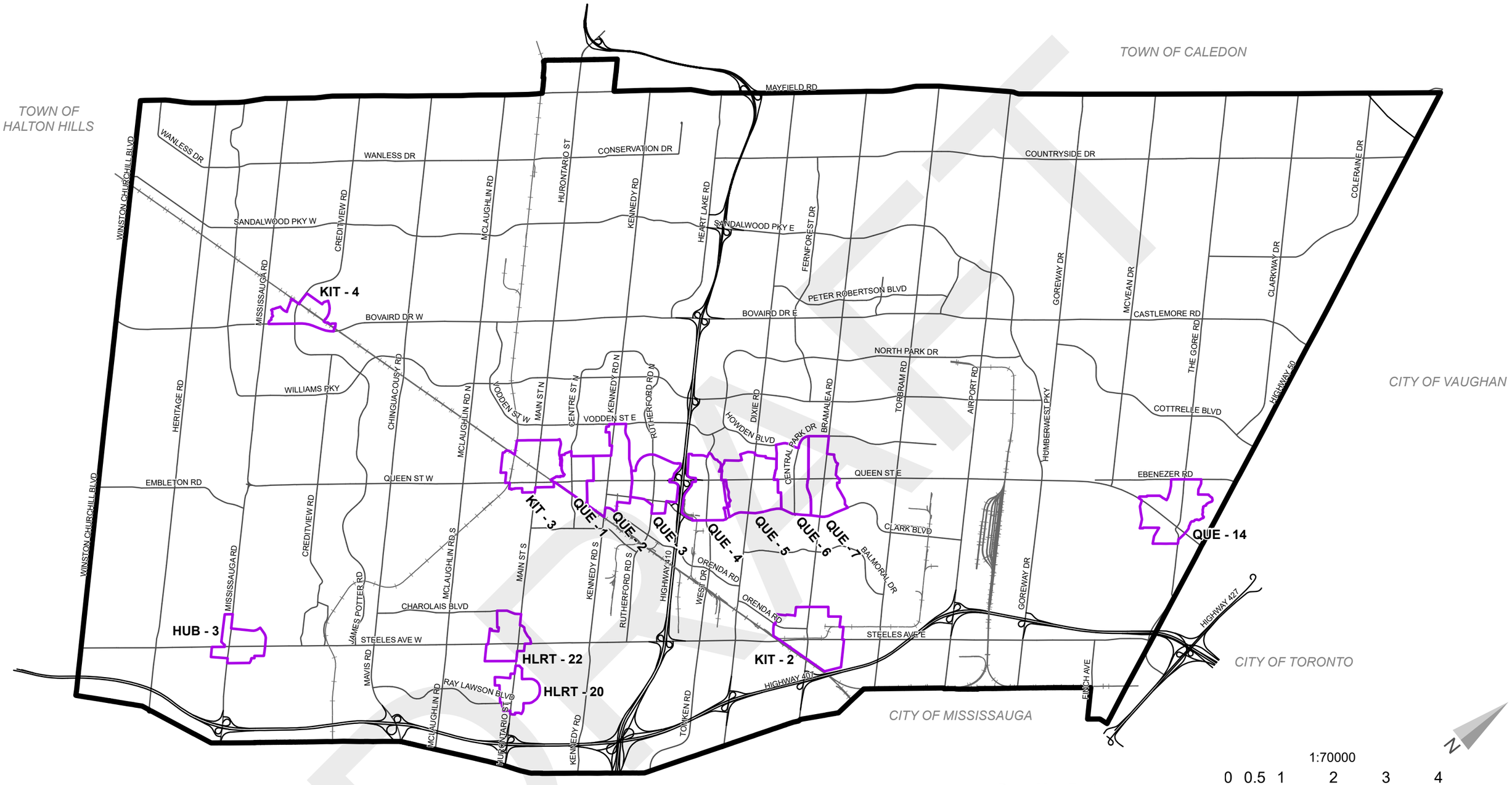
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Kilometres

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Primary Major Transit Station Areas

Base Map Features

- Railway
- Highway
- Major Streets

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0 0.5 1 2 3 4 Kilometres

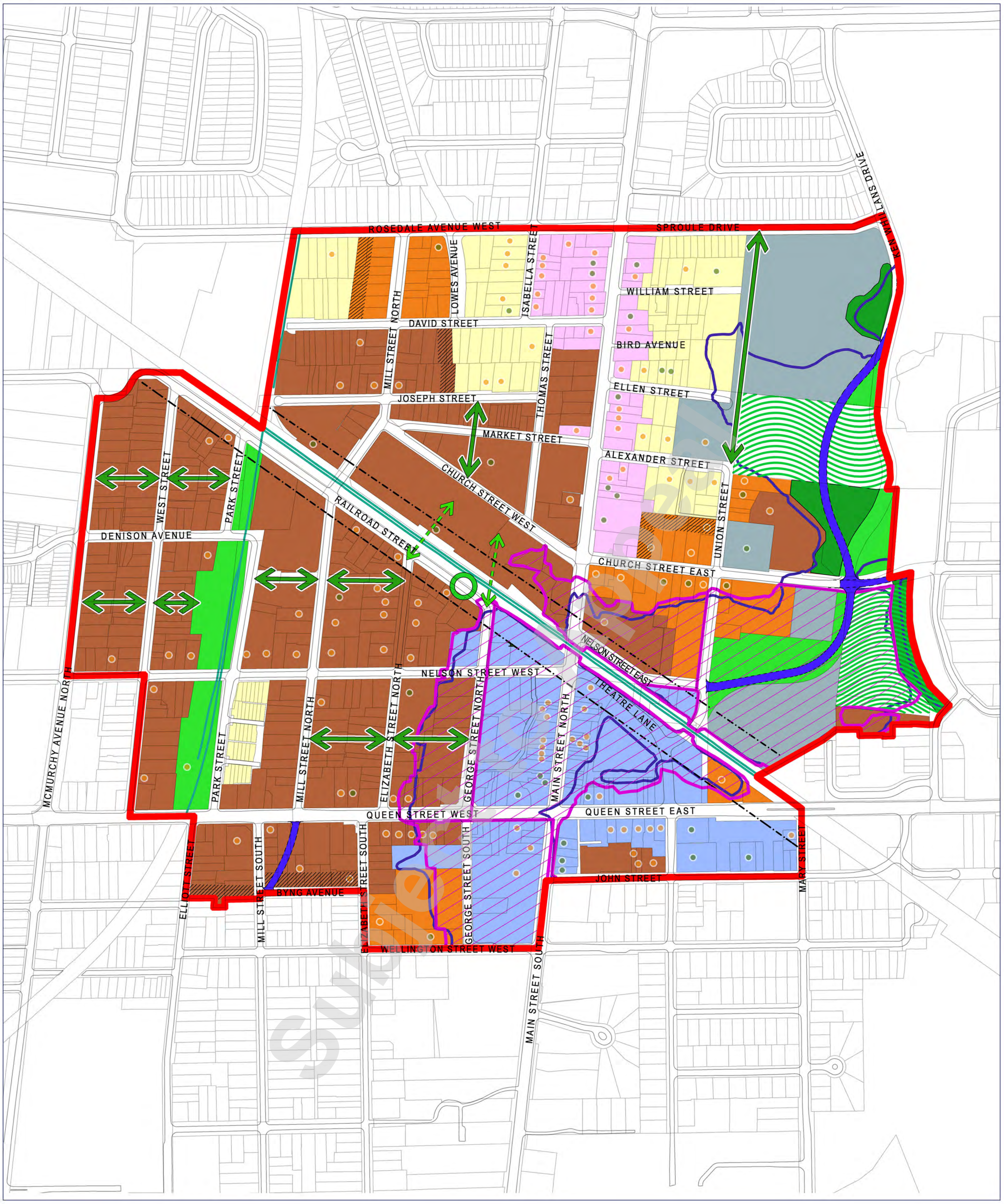
Date: June 2024
Planning, Building and Growth Management
Brampton Plan

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text, other schedules and secondary plans. The boundaries and alignments of designations and overlays on this schedule are approximate and are not intended to be scaled.

SCHEDULE 1B | MAJOR TRANSIT STATION AREAS

BRAMPTON

Draft for Consultation



- NEIGHBOURHOOD (LOW-RISE RESIDENTIAL)
- NEIGHBOURHOOD (INSTITUTIONAL)
- MIXED-USE (MID-RISE MIXED-USE)
- MIXED-USE (HIGH-RISE MIXED-USE)
- MIXED-USE (MAIN STREET NORTH DPS)
- MIXED-USE (DOWNTOWN MIXED-USE)
- NATURAL SYSTEM
- EXISTING PARK
- PLANNED OPEN SPACE
- RAILWAY 30M BUFFER
- RAIL LINE
- PROPOSED PUBLIC OR PRIVATE STREET NETWORK
- POTENTIAL MID-BLOCK CONNECTION
- PEDESTRIAN CONNECTION
- TRCA FLOOD PLAIN
- DESIGNATED HERITAGE PROPERTY
- LISTED HERITAGE PROPERTY
- HEIGHT TRANSITION AREA
- DOWNTOWN SPECIAL POLICY AREA
- MTSA BOUNDARY
- MTSA TRAIN STATION

N

0 100 200 metres

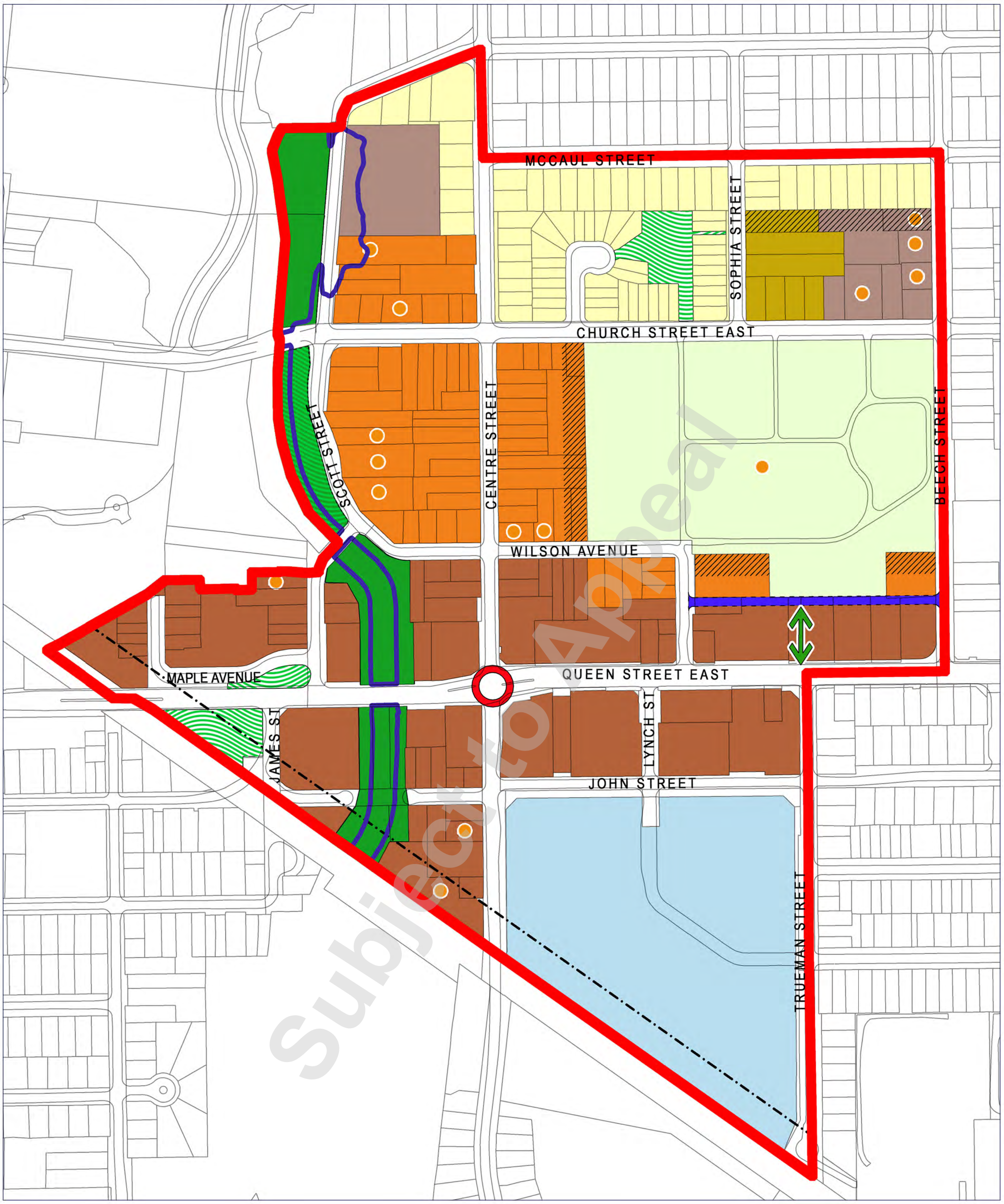
Date: September 2023
Planning, Building and Growth Management
Brampton Plan

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text and other schedules.

SCHEDULE 13b | BRAMPTON MAJOR TRANSIT STATION AREAS
KIT-3 BRAMPTON GO LAND USE PLAN

BRAMPTON

Draft for Consultation



- NEIGHBOURHOOD (LOW-RISE RESIDENTIAL)
- NEIGHBOURHOOD (MID-RISE RESIDENTIAL)
- NEIGHBOURHOOD (HIGH-RISE RESIDENTIAL)
- MIXED-USE (MID-RISE MIXED-USE)
- MIXED-USE (HIGH-RISE MIXED-USE)
- MIXED-USE (INSTITUTIONAL)
- NATURAL SYSTEM
- EXISTING PARK
- CEMETERY
- RAILWAY 30M BUFFER

- PROPOSED PUBLIC OR PRIVATE STREET NETWORK
- POTENTIAL MID-BLOCK CONNECTION
- TRCA FLOOD PLAIN
- LISTED HERITAGE PROPERTY
- HEIGHT TRANSITION AREA
- MTSA BOUNDARY
- MTSA STATION

N

0 50 100 200 metres

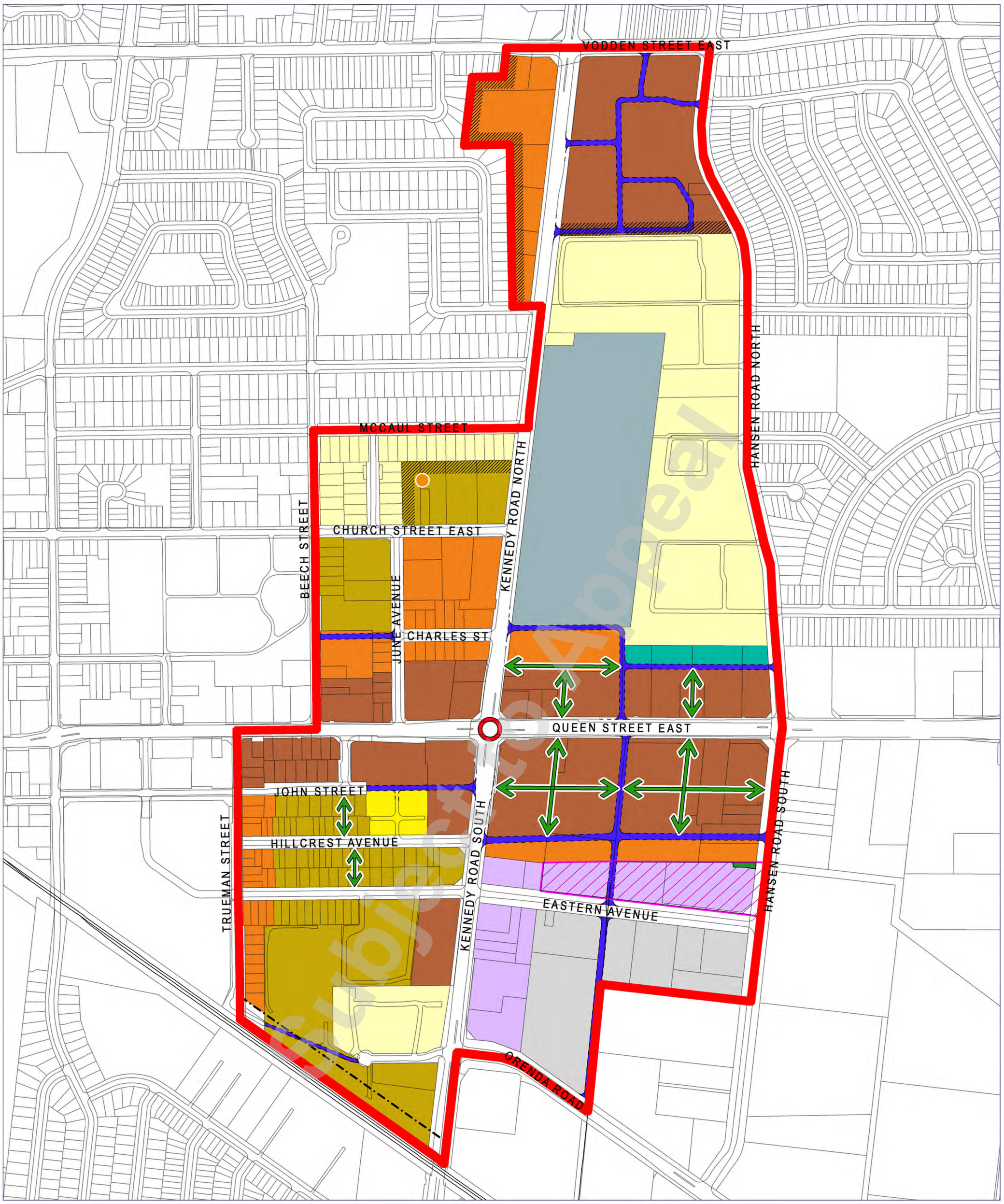
Date: September 2023
Planning, Building and Growth Management
Brampton Plan

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text and other schedules.

SCHEDULE 13d | BRAMPTON MAJOR TRANSIT STATION AREAS
QUE-1 CENTRE ST. LAND USE PLAN

BRAMPTON

Draft for Consultation



- NEIGHBOURHOOD (LOW-RISE RESIDENTIAL)
- NEIGHBOURHOOD (LOW-RISE PLUS RESIDENTIAL)
- NEIGHBOURHOOD (MID-RISE RESIDENTIAL)
- NEIGHBOURHOOD (HIGH-RISE RESIDENTIAL)
- NEIGHBOURHOOD (INSTITUTIONAL)
- MIXED-USE (MID-RISE MIXED-USE)
- MIXED-USE (HIGH-RISE MIXED-USE)
- EMPLOYMENT (PRESTIGE INDUSTRIAL)
- EMPLOYMENT (INDUSTRIAL)
- NATURAL SYSTEM
- RAILWAY 30M BUFFER
- PROPOSED PUBLIC OR PRIVATE STREET NETWORK
- POTENTIAL MID-BLOCK CONNECTION
- PROPOSED LANDSCAPE BUFFER
- LISTED HERITAGE PROPERTY
- HEIGHT TRANSITION AREA
- SPECIAL POLICY AREA
- MTSA BOUNDARY
- MTSA STATION

N

0 100 200 metres

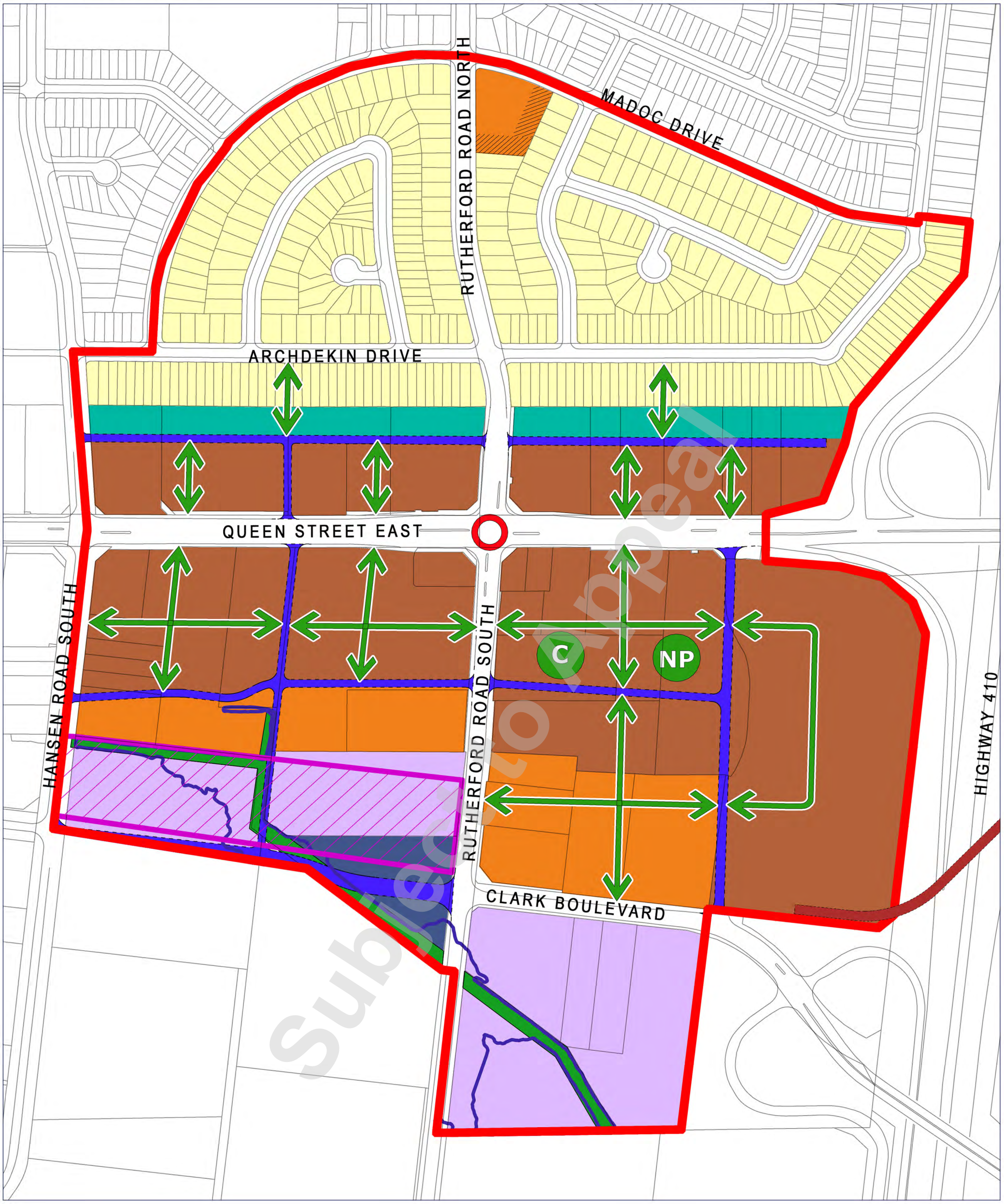
Date: September 2023
Planning, Building and Growth Management
Brampton Plan

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text and other schedules.

SCHEDULE 13e | BRAMPTON MAJOR TRANSIT STATION AREAS QUE-2 KENNEDY LAND USE PLAN

BRAMPTON

Draft for Consultation



- NEIGHBOURHOOD (LOW-RISE RESIDENTIAL)
- MIXED-USE (MID-RISE MIXED-USE)
- MIXED-USE (HIGH-RISE MIXED-USE)
- EMPLOYMENT (PRESTIGE INDUSTRIAL)
- EMPLOYMENT (FIRE STATION)
- NATURAL SYSTEM
- PROPOSED LANDSCAPE BUFFER
- NP PROPOSED NEIGHBOURHOOD PARK
- C POTENTIAL COMMUNITY HUB
- PROPOSED PUBLIC OR PRIVATE STREET NETWORK
- POTENTIAL MID-BLOCK CONNECTION
- TRCA FLOOD PLAIN
- PROPOSED PEDESTRIAN BRIDGE
- HEIGHT TRANSITION AREA
- SPECIAL POLICY AREA
- MTSA BOUNDARY
- MTSA STATION

N

0 50 100 200 metres

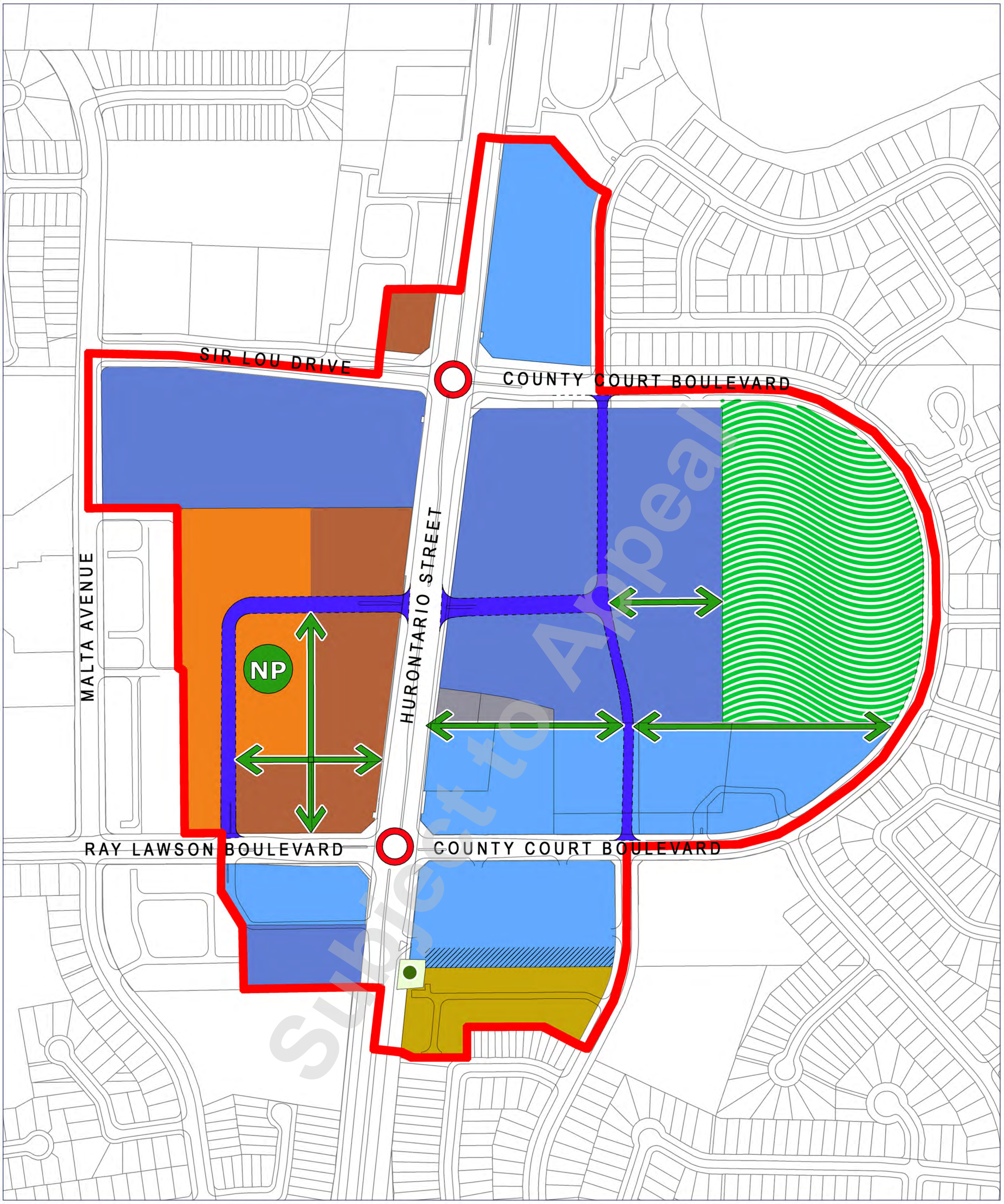
Date: September 2023
Planning, Building and Growth Management
Brampton Plan

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text and other schedules.

SCHEDULE 13f | BRAMPTON MAJOR TRANSIT STATION AREAS QUE-3 RUTHERFORD LAND USE PLAN

BRAMPTON

Draft for Consultation



Subject to Appeal

- NEIGHBOURHOOD (MID-RISE RESIDENTIAL)
- MIXED-USE (MID-RISE MIXED-USE)
- MIXED-USE (HIGH-RISE MIXED-USE)
- MIXED-USE EMPLOYMENT (OFFICE MIXED-USE)
- MIXED-USE EMPLOYMENT (INSTITUTIONAL)
- UTILITY
- EXISTING PARK
- CEMETERY
- PROPOSED NEIGHBOURHOOD PARK

- PROPOSED PUBLIC OR PRIVATE STREET NETWORK
- POTENTIAL MID-BLOCK CONNECTION
- DESIGNATED HERITAGE PROPERTY
- HEIGHT TRANSITION AREA
- MTSA BOUNDARY
- MTSA STATION

N

0 50 100 200 metres

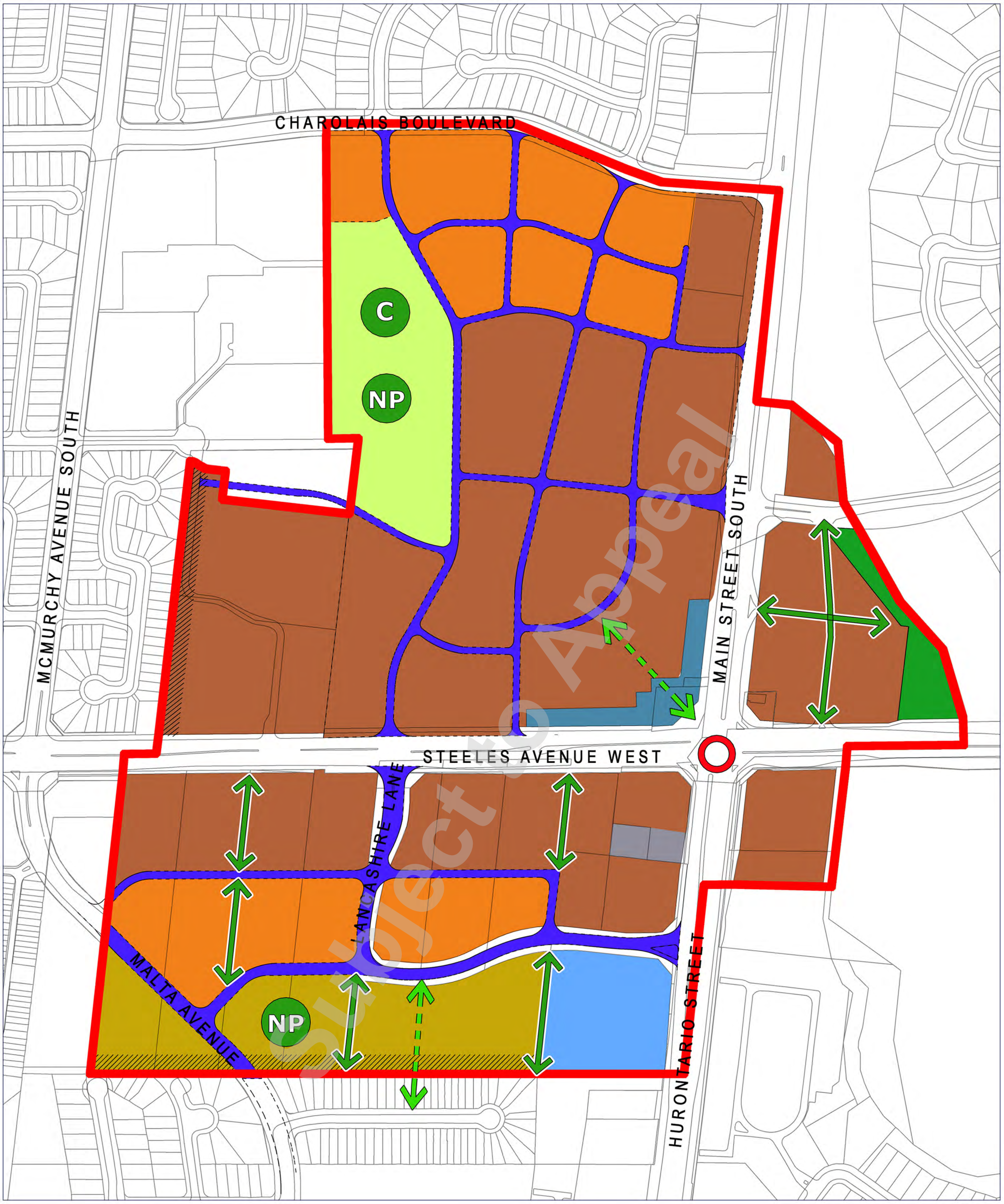
Date: September 2023
Planning, Building and Growth Management
Brampton Plan

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text and other schedules.

SCHEDULE 13I | BRAMPTON MAJOR TRANSIT STATION AREAS HLRT-20 RAY LAWSON COUNTY COURT LAND USE PLAN

BRAMPTON

Draft for Consultation



Subject to Appeal

- NEIGHBOURHOOD (MID-RISE RESIDENTIAL)
- MIXED-USE (MID-RISE MIXED-USE)
- MIXED-USE (HIGH-RISE MIXED-USE)
- MIXED-USE EMPLOYMENT (OFFICE MIXED-USE)
- TRANSIT STATION
- UTILITY
- NATURAL SYSTEM
- PLANNED NEIGHBOURHOOD PARK
- PROPOSED NEIGHBOURHOOD PARK
- POTENTIAL COMMUNITY HUB

- PROPOSED PUBLIC OR PRIVATE STREET NETWORK
- POTENTIAL MID-BLOCK CONNECTION
- PEDESTRIAN CONNECTION
- HEIGHT TRANSITION AREA
- MTSA BOUNDARY
- MTSA STATION

N

0 50 100 200 metres

Date: September 2023
Planning, Building and Growth Management
Brampton Plan

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SCHEDULE 13m | BRAMPTON MAJOR TRANSIT STATION AREAS HLRT-22 GATEWAY TERMINAL LAND USE PLAN

BRAMPTON

Streets Network subject to further refinement through Precinct Planning

TOWN OF HALTON HILLS

TOWN OF CALEDON

CITY OF VAUGHAN

CITY OF TORONTO

CITY OF MISSISSAUGA

MAYFIELD RD
WANLESS DR
CONSERVATION DR
COUNTRYSIDE DR
COLERAINE DR
WINSTON CHURCHILL BLVD
CREDITVIEW RD
MCLAUGHLIN RD
HURONTARIO ST
KENNEDY RD
HEART LAKE RD
HEART LAKE CONSERVATION AREA
SANDALWOOD PKY W
SANDALWOOD PKY E
FERNFOREST DR
GOREWAY DR
MCVEAN DR
CLARKWAY DR
MISSISSAUGA RD
BOVAIRD DR W
BOVAIRD DR E
PETER ROBERTSON BLVD
CASTLEMORE RD
LAKELANDS LAKE
PROFESSOR'S LAKE
NORTH PARK DR
HERITAGE RD
CHINGUACOUSY RD
WILLIAMS PKY
MAIN ST N
CENTRE ST N
VODDEN ST W
VODDEN ST E
HOWDEN BLVD
DIXIE RD
BRAMALEA RD
TORBRAM RD
AIRPORT RD
HOMBERWEST PKY
THE GORE RD
COTTRELLE BLVD
HIGHWAY 50
EMBLETON RD
QUEEN ST W
QUEEN ST E
EBENEZER RD
CLARENCE ST
ORENDA RD
CENTRAL PARK DR
CLARK BLVD
BALMORAL DR
WEST DR
HIGHWAY 410
RUTHERFORD RD S
KENNEDY RD S
MAIN ST S
MCLAUGHLIN RD S
CHAROLAIS BLVD
JAMES POTTER RD
MAVIS RD
RAY LAWSON BLVD
STEELES AVE W
STEELES AVE E
HIGHWAY 407
FINCH AVE
HIGHWAY 427
TOMKEN RD

Proposed Facilities

- Existing Facilities
- Parks
- Waterbodies
- Heritage Heights
- Protected Bike Lane or Cycle Track
- Bike Lane or Buffered Bike Lane
- Shared Roadway
- Multi Use Path
- Recreational Trail
- Desired GO Connection

Base Map Features

- Railway
- Highway
- Major Streets
- Local Roads

1:70000

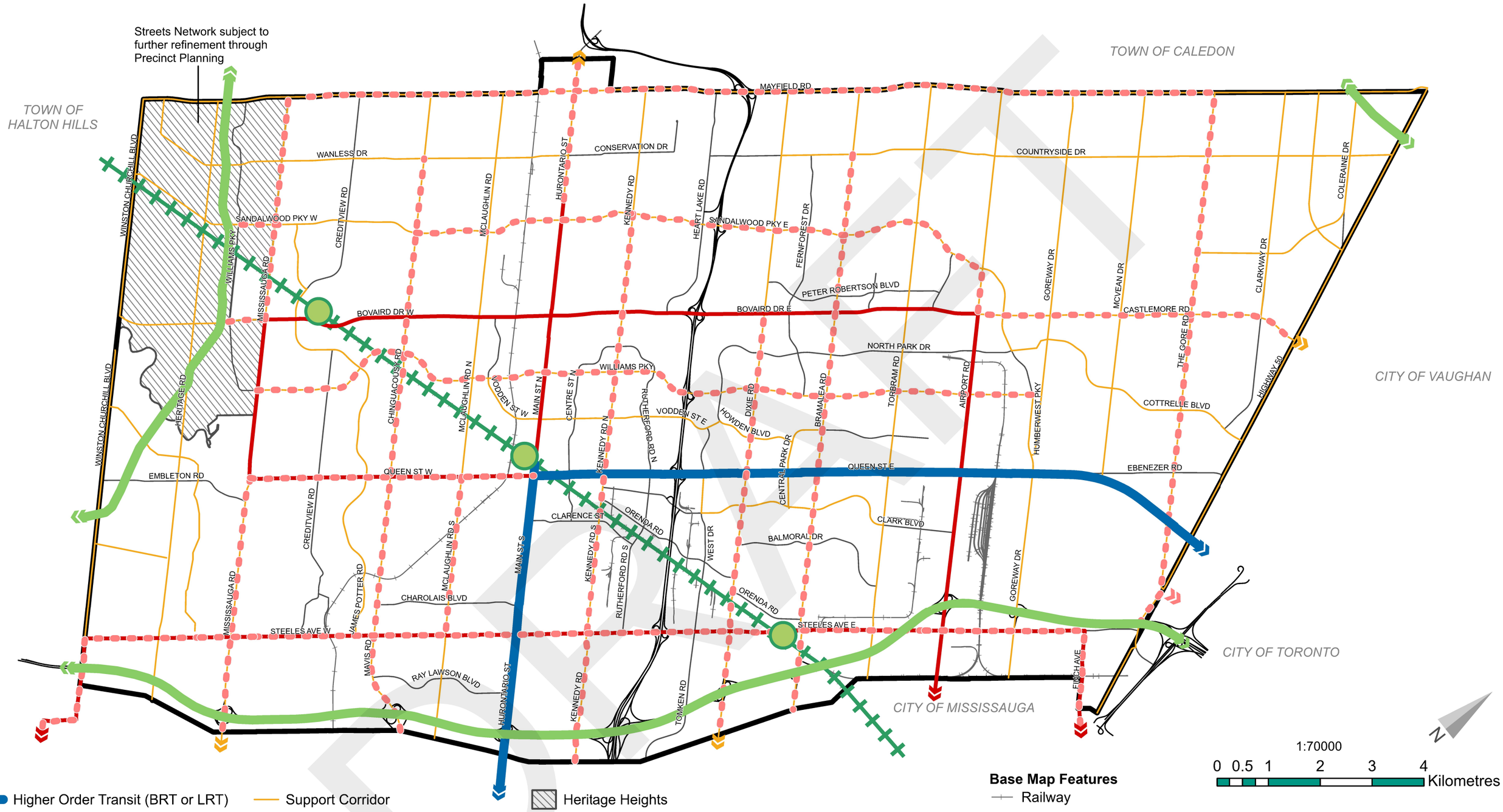
0 0.5 1 2 3 4 Kilometres

Date: June 2024
Planning, Building and Growth Management
Brampton Plan

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text, other schedules and secondary plans. The boundaries and alignments of designations and overlays on this schedule are approximate and are not intended to be scaled.

SCHEDULE 3A | ACTIVE TRANSPORTATION NETWORK

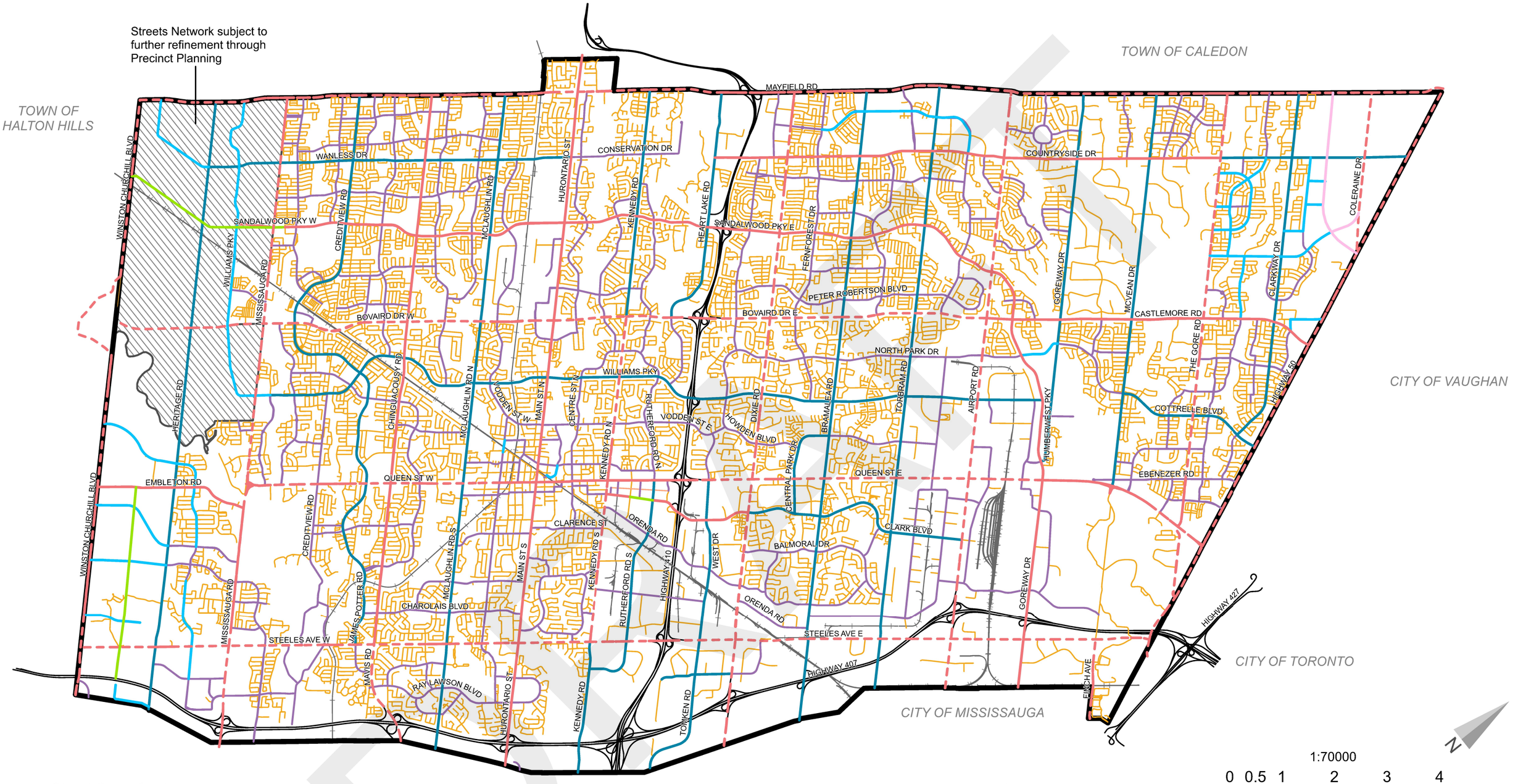
BRAMPTON



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SCHEDULE 3B | TRANSIT NETWORK TO 2051

BRAMPTON



Functional Street Classification

- Major Arterial (City)
- Major Arterial (Regional)
- Future Major Arterial (Regional)
- Future Major Arterial (City)
- Minor Arterial
- Future Minor Arterial
- Collector
- Future Local
- Local
- Heritage Heights

Base Map Features

- Railway
- Highway

1:70000

0 0.5 1 2 3 4 Kilometres

Date: June 2024
Planning, Building and Growth Management
Brampton Plan

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SCHEDULE 3C | STREETS NETWORK TO 2051

BRAMPTON

Streets Network subject to further refinement through Precinct Planning

TOWN OF HALTON HILLS

TOWN OF CALEDON

CITY OF VAUGHAN

CITY OF TORONTO

CITY OF MISSISSAUGA

MAYFIELD RD
WANLESS DR
CONSERVATION DR
COUNTRYSIDE DR
COLERAINE DR
SANDALWOOD PKY W
SANDALWOOD PKY E
HURONTARIO ST
MCLAUGHLIN RD
KENNEDY RD
HEART LAKE RD
FERNFOREST DR
GOREWAY DR
MCVEAN DR
CLARKWAY DR
MISSISSAUGA RD
BOVAIRD DR W
BOVAIRD DR E
PETER ROBERTSON BLVD
CASTLEMORE RD
NORTH PARK DR
WILLIAMS PKY
CHINGUACOUSY RD
VODDEN ST W
VODDEN ST E
MAIN ST N
CENTRE ST N
KENNEDY RD N
RUTHERFORD RD N
DIXIE RD
HOWDEN BLVD
BRAMALEA RD
TORBRAM RD
AIRPORT RD
HUMBERMILLS PKY
THE GORE RD
COTTRELLE BLVD
HIGHWAY 50
HERITAGE RD
EMBLETON RD
QUEEN ST W
QUEEN ST E
EBENEZER RD
WINSTON CHURCHILL BLVD
CREDITVIEW RD
CLARENCE ST
ORENDA RD
CENTRAL PARK DR
CLARK BLVD
BALMORAL DR
WEST DR
MCLAUGHLIN RD S
MAIN ST S
KENNEDY RD S
RUTHERFORD RD S
HIGHWAY 410
JAMES POTTER RD
CHAROLAIS BLVD
STEELES AVE W
STEELES AVE E
MAVIS RD
RAY LAWSON BLVD
TOMKEN RD
HIGHWAY 407
FINCH AVE
HIGHWAY 427

20 Metres
20-25 Metres
23-26 Metres
25-30 Metres
26-30 Metres
30 Metres
31.5 Metres
30-35 Metres
35-65 Metres
36 Metres
40-100 Metres
40-45 Metres
50-55 Metres
50-100 Metres
95-115 Metres
Corridor Protection Area
Heritage Heights

Base Map Features
Railway
Highway
Regional Roads
Local Roads (17-20 Metres)

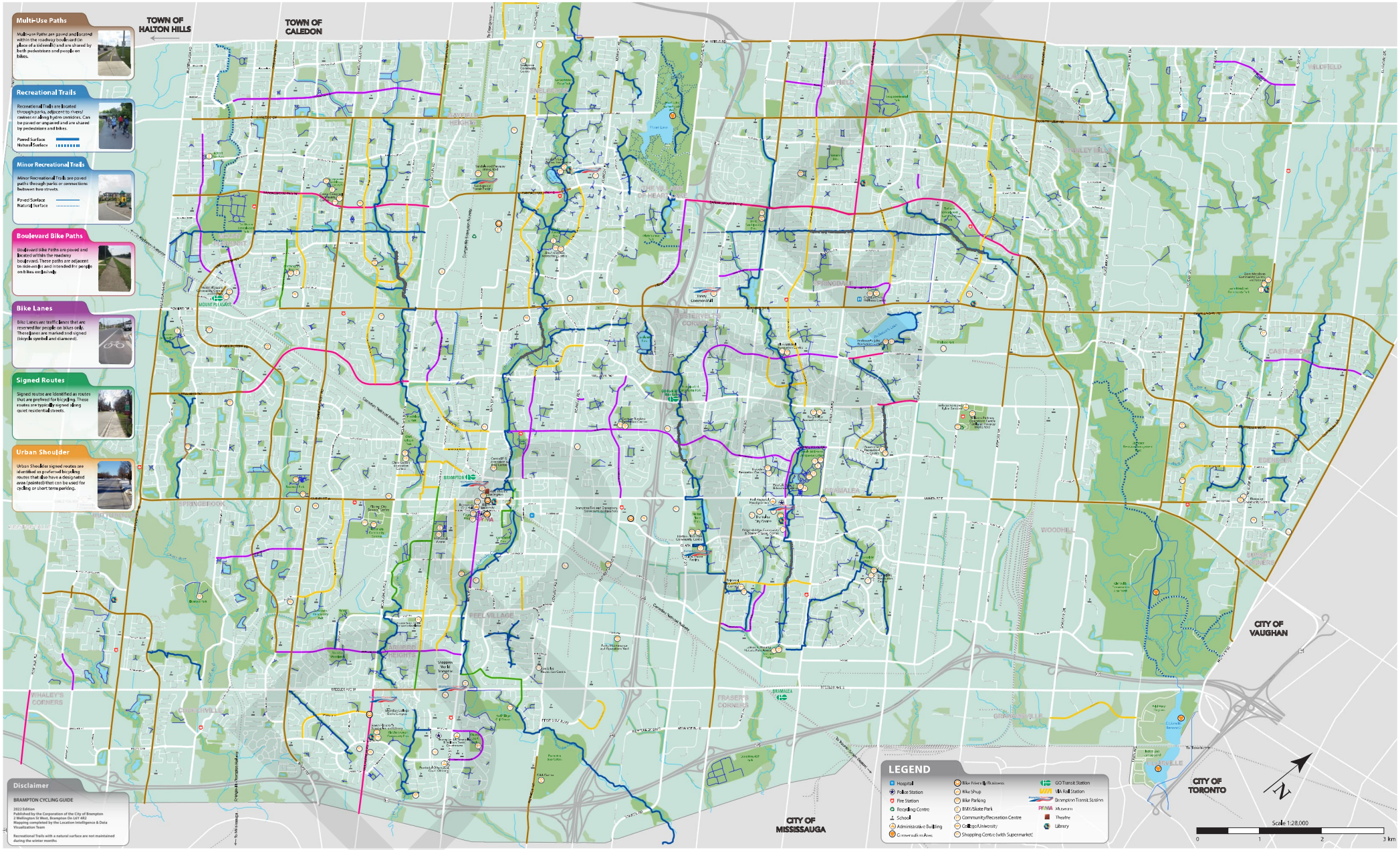
1:70000
0 0.5 1 2 3 4 Kilometres

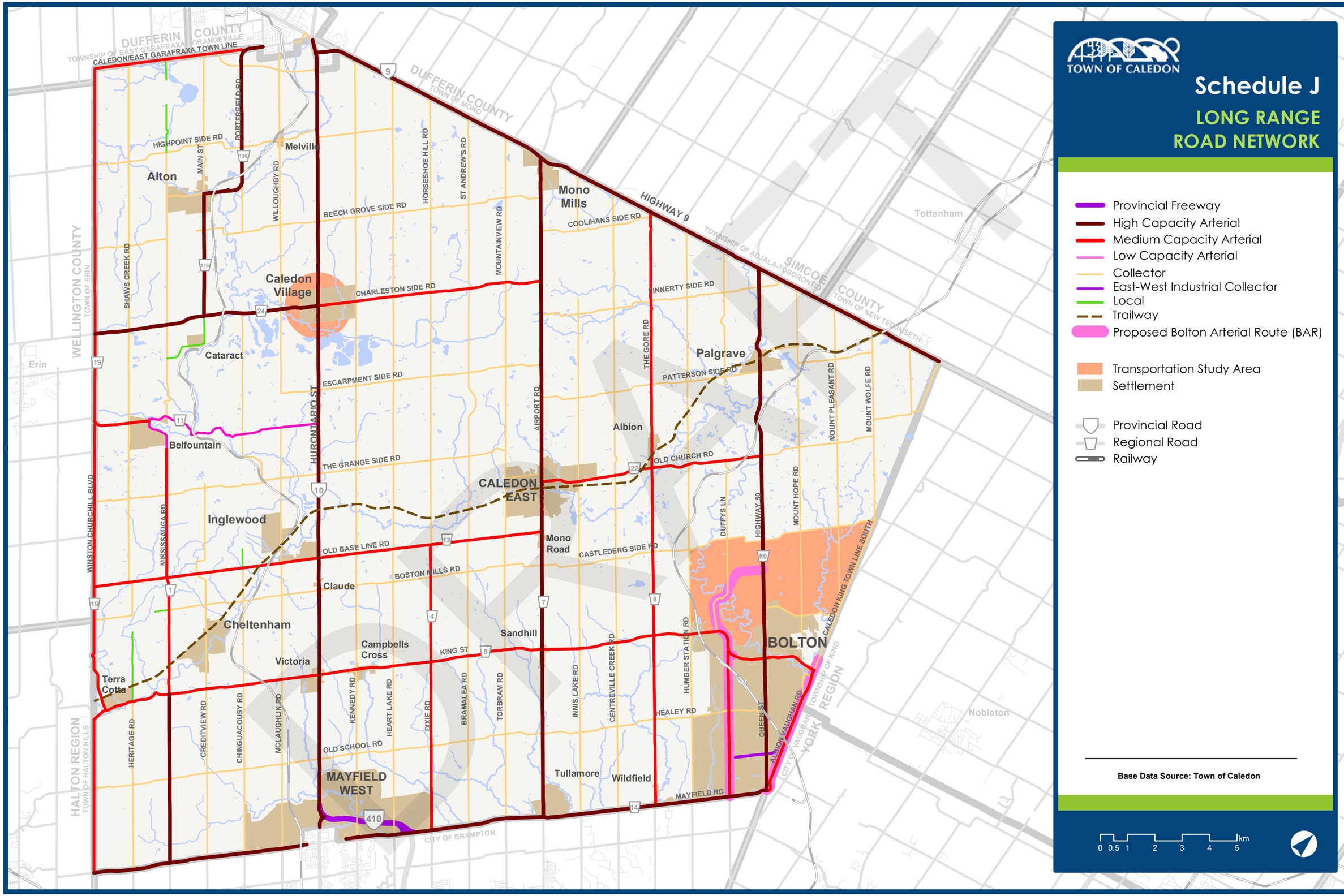
Date: June 2024
Planning, Building and Growth Management
Brampton Plan

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SCHEDULE 4 | CITY ROAD RIGHT-OF-WAY WIDTHS

BRAMPTON


Multi-Use Paths
Multi-use Paths are paved and located within the roadway boulevard (in place of a sidewalk) and are shared by both pedestrians and people on bikes.
Recreational Trails
Recreational Trails are located through parks, adjacent to rivers/ravines or along hydro corridors. Can be paved or unpaved and are shared by pedestrians and bikes.
Paved Surface
Natural Surface
Minor Recreational Trails
Minor Recreational Trails are paved paths through parks or connections between two streets.
Paved Surface
Natural Surface
Boulevard Bike Paths
Boulevard Bike Paths are paved and located within the roadway boulevard. These paths are adjacent to sidewalks and intended for people on bikes exclusively.
Bike Lanes
Bike Lanes are traffic lanes that are reserved for people on bikes only. These lanes are marked and signed (bicycle symbol and diamond).
Signed Routes
Signed routes are identified as routes that are preferred for bicycling. These routes are typically signed along quiet residential streets.
Urban Shoulder
Urban Shoulder signed routes are identified as preferred bicycling routes that also have a designated area (painted) that can be used for cycling or short term parking.
Disclaimer
BRAMPTON CYCLING GUIDE
2022 Edition
Published by the Corporation of the City of Brampton
2 Wellington St West, Brampton On L6Y 4R2
Mapping completed by the Location Intelligence & Data Visualization Team
Recreational Trails with a natural surface are not maintained during the winter months
TOWN OF HALTON HILLS
TOWN OF CALEDON
CITY OF MISSISSAUGA
CITY OF VAUGHAN
CITY OF TORONTO
LEGEND
Hospital
Police Station
Fire Station
Recycling Centre
School
Administrative Building
Bike Friendly Business
Bike Shop
Bike Parking
BMX/Skate Park
Community/Recreation Centre
College/University
Shopping Centre (with Supermarket)
GO Transit Station
VIA Rail Station
Brampton Transit Station
Museum
Theatre
Library
N
Scale 1:28,000
0
1
2
3 km



Schedule J

LONG RANGE ROAD NETWORK

- Provincial Freeway
- High Capacity Arterial
- Medium Capacity Arterial
- Low Capacity Arterial
- Collector
- East-West Industrial Collector
- Local
- Trailway
- Proposed Bolton Arterial Route (BAR)

- Transportation Study Area
- Settlement

- Provincial Road
- Regional Road
- Railway

Base Data Source: Town of Caledon

0 0.5 1 2 3 4 5 km

March 2024 Office Consolidation

Schedule K

ROAD RIGHT-OF--WAY WIDTHS

TOWN OF CALEDON

- 50 Metre
- 36 Metre
- 30 Metre
- 26 Metre
- 22 Metre
- 20 Metre

- Settlement Area

- Provincial Road
- Regional Road
- Local Road
- Railway

Base Data Source: Town of Caledon

0 0.5 1 2 3 4 5 km

March 2024 Office Consolidation

Flow
Building our future, faster.

Central Brampton

Appendix B

Data Collection (i.e., Turning Movement Count, Signal Timing Plan Data)

AECOM

Peel Region

Turning Movement Count - Details Report

Location..... HARTFORD TRAIL @ KENNEDY RD

Municipality..... Brampton

Count Date..... Wednesday, April 14, 2021

		HARTFORD TRAIL										KENNEDY RD									
		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT
07:00	07:15	12	107	0	0	119	0	58	19	0	77	20	1	3	0	24	2	7	15	0	24
07:15	07:30	7	132	2	0	141	0	48	13	0	61	14	0	2	0	16	1	5	9	0	15
07:30	07:45	11	157	0	0	168	2	47	26	0	75	20	1	2	0	23	1	7	8	0	16
07:45	08:00	13	114	3	0	130	1	47	14	0	62	30	1	5	0	36	1	8	9	0	18
Hourly Total		43	510	5	0	558	3	200	72	0	275	84	3	12	0	99	5	27	41	0	73
08:00	08:15	5	112	1	0	118	2	38	19	0	59	22	0	5	0	27	1	7	1	0	9
08:15	08:30	5	122	4	0	131	1	46	16	0	63	16	1	4	0	21	0	14	10	0	24
08:30	08:45	8	89	2	0	99	1	35	17	0	53	11	0	2	0	13	0	7	6	0	13
08:45	09:00	7	89	3	0	99	1	42	20	0	63	5	2	3	0	10	2	3	3	0	8
Hourly Total		25	412	10	0	447	5	161	72	0	238	54	3	14	0	71	3	31	20	0	54
11:00	11:15	3	47	5	0	55	5	55	23	0	83	14	2	6	0	22	1	4	6	0	11
11:15	11:30	2	49	3	0	54	3	68	22	0	93	11	2	1	0	14	2	3	6	0	11
11:30	11:45	5	61	3	0	69	1	55	31	0	87	21	4	8	0	33	1	7	2	0	10
11:45	12:00	3	50	3	0	56	5	53	24	0	82	14	3	5	0	22	4	4	3	0	11
Hourly Total		13	207	14	0	234	14	231	100	0	345	60	11	20	0	91	8	18	17	0	43
12:00	12:15	5	53	7	0	65	2	78	19	0	99	23	4	5	0	32	6	9	4	0	19
12:15	12:30	7	69	4	0	80	2	86	19	0	107	19	10	3	0	32	8	6	3	0	17
12:30	12:45	8	67	6	0	81	2	73	25	0	100	25	3	5	0	33	3	4	6	0	13
12:45	13:00	8	83	9	0	100	6	69	32	0	107	16	4	2	0	22	5	3	4	0	12
Hourly Total		28	272	26	0	326	12	306	95	0	413	83	21	15	0	119	22	22	17	0	61
13:00	13:15	8	69	11	0	88	4	59	40	0	103	11	2	13	0	26	1	1	5	0	7
13:15	13:30	7	84	5	0	96	4	64	23	0	91	10	6	2	0	18	4	7	9	0	20
13:30	13:45	5	58	2	0	65	4	72	27	0	103	22	4	6	0	32	2	12	8	0	22
13:45	14:00	9	60	6	0	75	14	71	22	0	107	25	5	12	0	42	2	8	3	0	13
Hourly Total		29	271	24	0	324	26	266	112	0	404	68	17	33	0	118	9	28	25	0	62
15:00	15:15	5	102	2	0	109	8	128	48	0	184	29	11	6	0	46	2	3	11	0	16
15:15	15:30	2	88	7	0	97	14	140	38	0	192	13	7	8	0	28	4	4	3	0	11
15:30	15:45	4	70	6	0	80	16	197	27	0	240	20	9	7	0	36	3	5	3	0	11
15:45	16:00	6	72	8	0	86	18	183	53	0	254	19	7	7	0	33	5	4	3	0	12
Hourly Total		17	332	23	0	372	56	648	166	0	870	81	34	28	0	143	14	16	20	0	50
16:00	16:15	4	53	4	0	61	17	168	35	0	220	34	28	11	0	73	3	4	2	0	9

		HARTFORD TRAIL										KENNEDY RD									
		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT
16:15	16:30	2	77	6	0	85	27	198	45	0	270	23	9	9	0	41	5	3	5	0	13
16:30	16:45	1	65	5	0	71	13	206	43	0	262	15	5	10	0	30	3	6	4	0	13
16:45	17:00	7	70	2	0	79	24	202	38	0	264	20	6	6	0	32	3	5	2	0	10
Hourly Total		14	265	17	0	296	81	774	161	0	1016	92	48	36	0	176	14	18	13	0	45
17:00	17:15	4	55	7	0	66	25	205	34	0	264	19	7	9	0	35	4	2	4	0	10
17:15	17:30	3	66	8	0	77	29	238	32	0	299	17	3	4	0	24	5	3	0	0	8
17:30	17:45	5	62	4	0	71	25	157	34	0	216	20	22	1	0	43	7	3	5	0	15
17:45	18:00	1	68	5	0	74	17	163	42	0	222	8	7	3	0	18	2	1	8	0	11
Hourly Total		13	251	24	0	288	96	763	142	0	1001	64	39	17	0	120	18	9	17	0	44
Grand Total		182	2520	143	0	2845	293	3349	920	0	4562	586	176	175	0	937	93	169	170	0	432
Truck %		20%	11%	3%	0%	11%	0%	7%	26%	0%	11%	23%	2%	18%	0%	18%	0%	4%	2%	0%	2%

Turning Movement Count (477 . STEELES AVE & KENNEDY RD S) CustID: 01510021

Start Time	Southbound KENNEDY RD S						Westbound STEELES AVE E						Northbound KENNEDY RD S						Eastbound STEELES AVE E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
07:00:00	46	107	22	0	9	175	16	148	30	0	12	194	23	46	6	0	8	75	32	359	58	1	6	450	894
07:15:00	45	145	18	0	6	208	20	192	34	1	9	247	17	52	9	0	8	78	27	360	62	0	2	449	982
07:30:00	68	109	32	0	21	209	26	179	32	2	26	239	31	53	19	0	18	103	30	469	77	0	8	576	1127
07:45:00	43	175	35	0	30	253	27	176	37	1	18	241	46	47	19	1	12	113	38	360	104	2	6	504	1111
Hourly	202	536	107	0	66	845	89	695	133	4	65	921	117	198	53	1	46	369	127	1548	301	3	22	1979	4114
08:00:00	62	149	41	0	28	252	23	181	39	2	30	245	64	78	29	0	29	171	47	429	139	0	17	615	1283
08:15:00	53	157	45	0	11	255	25	199	32	1	12	257	63	66	41	0	22	170	38	420	86	2	12	546	1228
08:30:00	61	144	52	0	6	257	23	228	36	2	7	289	22	76	19	1	10	118	34	372	73	0	7	479	1143
08:45:00	61	126	42	0	11	229	32	216	32	0	8	280	23	48	17	0	11	88	39	418	65	0	5	522	1119
Hourly	237	576	180	0	56	993	103	824	139	5	57	1071	172	268	106	1	72	547	158	1639	363	2	41	2162	4773
BREAK																									
11:00:00	67	53	36	0	13	156	23	230	54	1	12	308	24	49	27	3	14	103	33	283	39	0	22	355	922
11:15:00	57	52	30	0	6	139	31	268	60	0	13	359	18	52	22	4	19	96	34	300	27	0	5	361	955
11:30:00	42	47	40	0	16	129	32	257	56	2	13	347	19	56	28	0	17	103	41	331	29	0	11	401	980
11:45:00	64	70	40	0	16	174	33	265	48	4	24	350	32	71	21	0	15	124	47	304	39	0	9	390	1038
Hourly	230	222	146	0	51	598	119	1020	218	7	62	1364	93	228	98	7	65	426	155	1218	134	0	47	1507	3895
12:00:00	58	41	38	0	18	137	28	295	59	1	12	383	27	67	18	1	11	113	30	291	34	0	18	355	988
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12:30:00	52	67	45	0	17	164	42	341	45	2	16	430	24	54	17	0	10	95	44	326	24	0	7	394	1083
12:45:00	54	42	40	0	13	136	31	265	83	1	11	380	20	60	23	1	9	104	40	351	35	2	6	428	1048
Hourly	210	200	164	0	52	574	128	1170	261	4	51	1563	96	260	80	2	39	438	157	1285	116	2	33	1560	4135
13:00:00	57	67	42	0	14	166	31	306	76	1	16	414	30	62	16	0	9	108	45	290	28	3	4	366	1054
13:15:00	53	61	44	0	11	158	32	285	69	2	8	388	25	77	17	1	24	120	31	356	35	2	14	424	1090
13:30:00	36	56	50	1	16	143	39	234	86	3	5	362	30	52	18	1	26	101	46	327	27	3	19	403	1009
13:45:00	56	88	36	0	15	180	32	334	73	2	12	441	24	65	22	1	15	112	46	335	46	1	7	428	1161
Hourly	202	272	172	1	56	647	134	1159	304	8	41	1605	109	256	73	3	74	441	168	1308	136	9	44	1621	4314
BREAK																									
15:00:00	44	80	38	0	24	162	24	284	84	5	14	397	33	132	20	1	18	186	39	337	42	2	14	420	1165
15:15:00	47	81	58	0	16	186	19	320	85	3	10	427	47	158	32	5	19	242	55	320	35	2	15	412	1267
15:30:00	56	62	54	0	19	172	15	358	105	1	12	479	34	177	12	0	11	223	59	308	36	0	5	403	1277
15:45:00	47	63	55	0	13	165	21	304	94	2	13	421	42	162	29	1	15	234	60	327	21	1	7	409	1229
Hourly	194	286	205	0	72	685	79	1266	368	11	49	1724	156	629	93	7	63	885	213	1292	134	5	41	1644	4938
16:00:00	57	64	63	0	17	184	21	286	67	5	21	379	42	155	16	0	16	213	47	277	15	0	12	339	1115
16:15:00	58	66	57	0	21	181	29	252	20	9	5	310	57	192	16	1	17	266	58	303	34	0	9	395	1152
16:30:00	30	75	52	0	24	157	19	290	63	3	25	375	72	175	21	1	11	269	65	272	19	0	9	356	1157
16:45:00	39	72	72	0	21	183	22	407	86	5	8	520	30	193	21	0	11	244	48	308	36	0	11	392	1339
Hourly	184	277	244	0	83	705	91	1235	236	22	59	1584	201	715	74	2	55	992	218	1160	104	0	41	1482	4763
17:00:00	52	58	61	1	21	172	20	372	94	4	9	490	27	187	18	1	19	233	36	326	31	2	13	395	1290
17:15:00	55	74	45	0	24	174	25	370	92	3	18	490	23	175	14	1	23	213	52	324	35	2	14	413	1290
17:30:00	44	67	35	0	19	146	18	396	90	7	17	511	32	204	18	1	7	255	52	305	33	0	11	390	1302
17:45:00	40	57	50	0	18	147	24	334	94	2	3	454	42	167	19	0	18	228	60	325	36	1	16	422	1251
Hourly	191	256	191	1	82	639	87	1472	370	16	47	1945	124	733	69	3	67	929	200	1280	135	5	54	1620	5133
Grand Total	1650	2625	1409	2	518	5686	830	8841	2029	77	431	11777	1068	3287	646	26	481	5027	1396	10730	1423	26	323	13575	**36065**
Approach%	29%	46.2%	24.8%	0%		-	7%	75.1%	17.2%	0.7%		-	21.2%	65.4%	12.9%	0.5%		-	10.3%	79%	10.5%	0.2%		-	**-**
Totals %	4.6%	7.3%	3.9%	0%		15.8%	2.3%	24.5%	5.6%	0.2%		32.7%	3%	9.1%	1.8%	0.1%		13.9%	3.9%	29.8%	3.9%	0.1%		37.6%	**-**

Heavy	97	165	56	0	-	55	344	128	1	-	34	167	73	0	-	44	432	47	0	-	-
Heavy %	5.9%	6.3%	4%	0%	-	6.6%	3.9%	6.3%	1.3%	-	3.2%	5.1%	11.3%	0%	-	3.2%	4%	3.3%	0%	-	-
Bicycles	0	0	0	0	-	0	0	0	0	-	0	3	0	0	-	0	1	0	0	-	-
Bicycle %	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0.1%	0%	0%	-	0%	0%	0%	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Moderate Rain (5.84 °C)

Start Time	Southbound KENNEDY RD S						Westbound STEELES AVE E						Northbound KENNEDY RD S						Eastbound STEELES AVE E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
08:00:00	62	149	41	0	28	252	23	181	39	2	30	245	64	78	29	0	29	171	47	429	139	0	17	615	1283
08:15:00	53	157	45	0	11	255	25	199	32	1	12	257	63	66	41	0	22	170	38	420	86	2	12	546	1228
08:30:00	61	144	52	0	6	257	23	228	36	2	7	289	22	76	19	1	10	118	34	372	73	0	7	479	1143
08:45:00	61	126	42	0	11	229	32	216	32	0	8	280	23	48	17	0	11	88	39	418	65	0	5	522	1119
Grand Total	237	576	180	0	56	993	103	824	139	5	57	1071	172	268	106	1	72	547	158	1639	363	2	41	2162	**4773**
Approach%	23.9%	58%	18.1%	0%		-	9.6%	76.9%	13%	0.5%		-	31.4%	49%	19.4%	0.2%		-	7.3%	75.8%	16.8%	0.1%		-	**-**
Totals %	5%	12.1%	3.8%	0%		20.8%	2.2%	17.3%	2.9%	0.1%		22.4%	3.6%	5.6%	2.2%	0%		11.5%	3.3%	34.3%	7.6%	0%		45.3%	**-**
PHF	0.96	0.92	0.87	0		0.97	0.8	0.9	0.89	0.63		0.93	0.67	0.86	0.65	0.25		0.8	0.84	0.96	0.65	0.25		0.88	**-**
Heavy	21	20	10	0		51	7	51	11	1		70	9	20	8	0		37	9	63	7	0		79	**-**
Heavy %	8.9%	3.5%	5.6%	0%		5.1%	6.8%	6.2%	7.9%	20%		6.5%	5.2%	7.5%	7.5%	0%		6.8%	5.7%	3.8%	1.9%	0%		3.7%	**-**
Lights	216	556	170	0		942	96	773	128	4		1001	163	248	98	1		510	149	1576	356	2		2083	**-**
Lights %	91.1%	96.5%	94.4%	0%		94.9%	93.2%	93.8%	92.1%	80%		93.5%	94.8%	92.5%	92.5%	100%		93.2%	94.3%	96.2%	98.1%	100%		96.3%	**-**
Single-Unit Trucks	12	9	7	0		28	0	18	3	0		21	2	5	2	0		9	2	13	1	0		16	**-**
Single-Unit Trucks %	5.1%	1.6%	3.9%	0%		2.8%	0%	2.2%	2.2%	0%		2%	1.2%	1.9%	1.9%	0%		1.6%	1.3%	0.8%	0.3%	0%		0.7%	**-**
Buses	0	10	3	0		13	1	20	0	1		22	5	13	6	0		24	5	30	3	0		38	**-**
Buses %	0%	1.7%	1.7%	0%		1.3%	1%	2.4%	0%	20%		2.1%	2.9%	4.9%	5.7%	0%		4.4%	3.2%	1.8%	0.8%	0%		1.8%	**-**
Articulated Trucks	9	1	0	0		10	6	13	8	0		27	2	2	0	0		4	2	20	3	0		25	**-**
Articulated Trucks %	3.8%	0.2%	0%	0%		1%	5.8%	1.6%	5.8%	0%		2.5%	1.2%	0.7%	0%	0%		0.7%	1.3%	1.2%	0.8%	0%		1.2%	**-**
Pedestrians	-	-	-	-	55	-	-	-	-	-	57	-	-	-	-	-	72	-	-	-	-	-	40	-	**-**
Pedestrians%	-	-	-	-	24.3%		-	-	-	-	25.2%		-	-	-	-	31.9%		-	-	-	-	17.7%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0.4%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0.4%		**-**

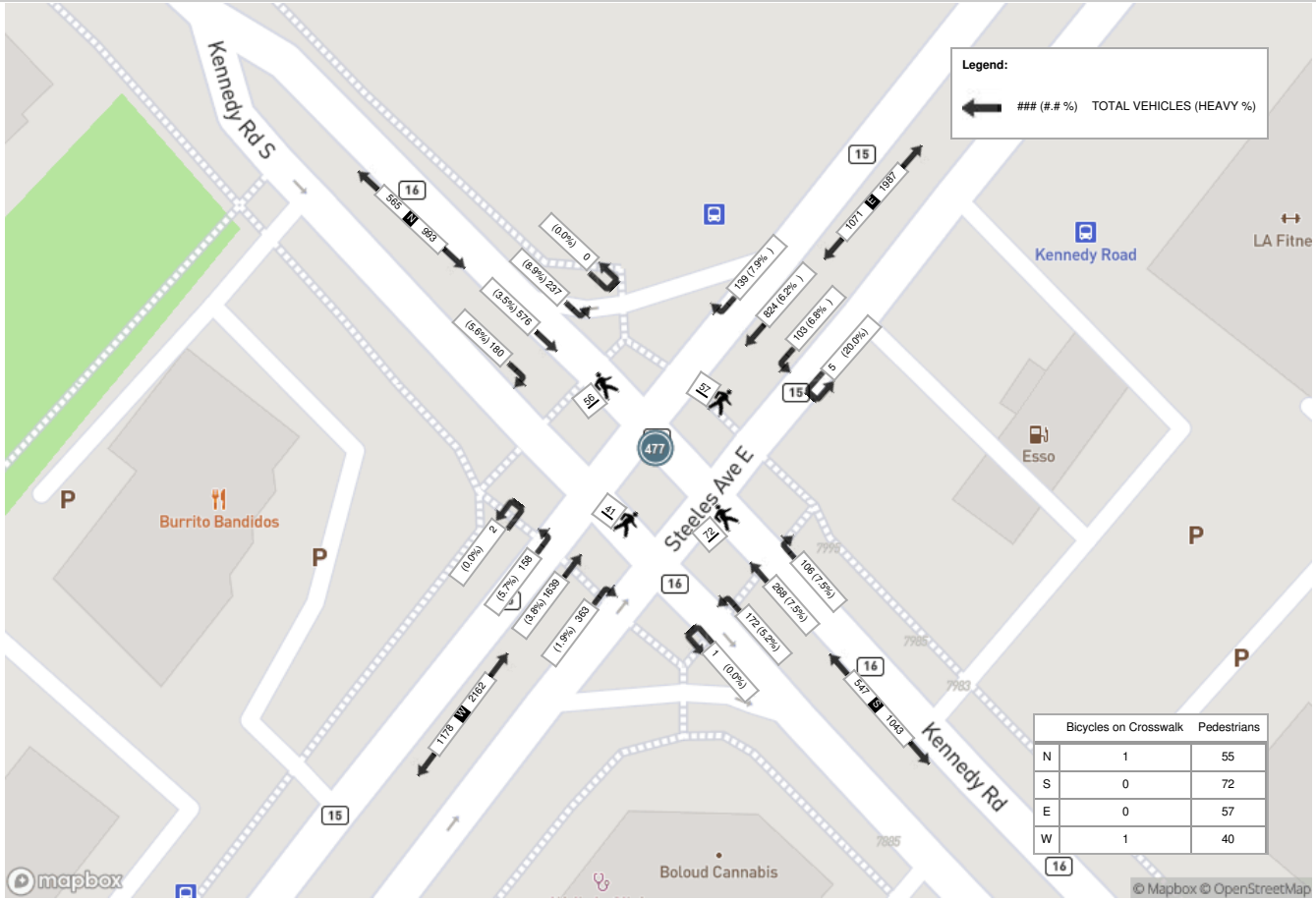
Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (4.57 °C)

Start Time	Southbound KENNEDY RD S						Westbound STEELES AVE E						Northbound KENNEDY RD S						Eastbound STEELES AVE E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
13:00:00	57	67	42	0	14	166	31	306	76	1	16	414	30	62	16	0	9	108	45	290	28	3	4	366	1054
13:15:00	53	61	44	0	11	158	32	285	69	2	8	388	25	77	17	1	24	120	31	356	35	2	14	424	1090
13:30:00	36	56	50	1	16	143	39	234	86	3	5	362	30	52	18	1	26	101	46	327	27	3	19	403	1009
13:45:00	56	88	36	0	15	180	32	334	73	2	12	441	24	65	22	1	15	112	46	335	46	1	7	428	1161
Grand Total	202	272	172	1	56	647	134	1159	304	8	41	1605	109	256	73	3	74	441	168	1308	136	9	44	1621	**4314**
Approach%	31.2%	42%	26.6%	0.2%		-	8.3%	72.2%	18.9%	0.5%		-	24.7%	58%	16.6%	0.7%		-	10.4%	80.7%	8.4%	0.6%		-	**-**
Totals %	4.7%	6.3%	4%	0%		15%	3.1%	26.9%	7%	0.2%		37.2%	2.5%	5.9%	1.7%	0.1%		10.2%	3.9%	30.3%	3.2%	0.2%		37.6%	**-**
PHF	0.89	0.77	0.86	0.25		0.9	0.86	0.87	0.88	0.67		0.91	0.91	0.83	0.83	0.75		0.92	0.91	0.92	0.74	0.75		0.95	**-**
Heavy	16	21	9	0		46	10	45	28	0		83	2	20	7	0		29	5	50	7	0		62	**-**
Heavy %	7.9%	7.7%	5.2%	0%		7.1%	7.5%	3.9%	9.2%	0%		5.2%	1.8%	7.8%	9.6%	0%		6.6%	3%	3.8%	5.1%	0%		3.8%	**-**
Lights	186	251	163	1		601	124	1114	276	8		1522	107	236	66	3		412	163	1258	129	9		1559	**-**
Lights %	92.1%	92.3%	94.8%	100%		92.9%	92.5%	96.1%	90.8%	100%		94.8%	98.2%	92.2%	90.4%	100%		93.4%	97%	96.2%	94.9%	100%		96.2%	**-**
Single-Unit Trucks	7	7	4	0		18	6	17	14	0		37	1	9	1	0		11	2	22	6	0		30	**-**
Single-Unit Trucks %	3.5%	2.6%	2.3%	0%		2.8%	4.5%	1.5%	4.6%	0%		2.3%	0.9%	3.5%	1.4%	0%		2.5%	1.2%	1.7%	4.4%	0%		1.9%	**-**
Buses	1	7	2	0		10	0	15	1	0		16	0	4	1	0		5	0	16	0	0		16	**-**
Buses %	0.5%	2.6%	1.2%	0%		1.5%	0%	1.3%	0.3%	0%		1%	0%	1.6%	1.4%	0%		1.1%	0%	1.2%	0%	0%		1%	**-**
Articulated Trucks	8	7	3	0		18	4	13	13	0		30	1	7	5	0		13	3	12	1	0		16	**-**
Articulated Trucks %	4%	2.6%	1.7%	0%		2.8%	3%	1.1%	4.3%	0%		1.9%	0.9%	2.7%	6.8%	0%		2.9%	1.8%	0.9%	0.7%	0%		1%	**-**
Pedestrians	-	-	-	-	56	-	-	-	-	-	41	-	-	-	-	-	73	-	-	-	-	-	44	-	**-**
Pedestrians%	-	-	-	-	26%		-	-	-	-	19.1%		-	-	-	-	34%		-	-	-	-	20.5%		**-**
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%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0.5%		-	-	-	-	0%		**-**

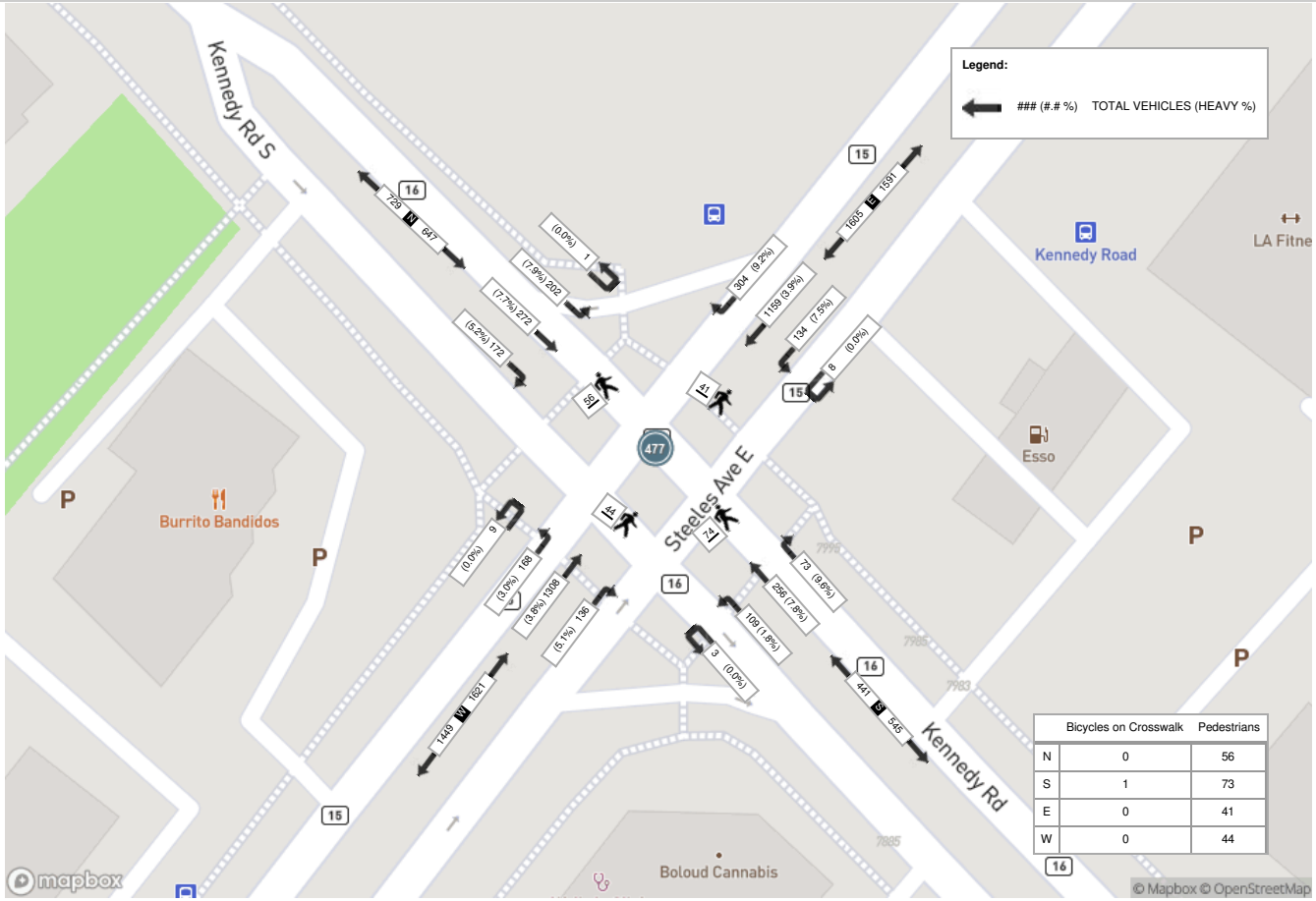
Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (5.56 °C)

Start Time	Southbound KENNEDY RD S						Westbound STEELES AVE E						Northbound KENNEDY RD S						Eastbound STEELES AVE E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
17:00:00	52	58	61	1	21	172	20	372	94	4	9	490	27	187	18	1	19	233	36	326	31	2	13	395	1290
17:15:00	55	74	45	0	24	174	25	370	92	3	18	490	23	175	14	1	23	213	52	324	35	2	14	413	1290
17:30:00	44	67	35	0	19	146	18	396	90	7	17	511	32	204	18	1	7	255	52	305	33	0	11	390	1302
17:45:00	40	57	50	0	18	147	24	334	94	2	3	454	42	167	19	0	18	228	60	325	36	1	16	422	1251
Grand Total	191	256	191	1	82	639	87	1472	370	16	47	1945	124	733	69	3	67	929	200	1280	135	5	54	1620	**5133**
Approach%	29.9%	40.1%	29.9%	0.2%		-	4.5%	75.7%	19%	0.8%		-	13.3%	78.9%	7.4%	0.3%		-	12.3%	79%	8.3%	0.3%		-	**-**
Totals %	3.7%	5%	3.7%	0%		12.4%	1.7%	28.7%	7.2%	0.3%		37.9%	2.4%	14.3%	1.3%	0.1%		18.1%	3.9%	24.9%	2.6%	0.1%		31.6%	**-**
PHF	0.87	0.86	0.78	0.25		0.92	0.87	0.93	0.98	0.57		0.95	0.74	0.9	0.91	0.75		0.91	0.83	0.98	0.94	0.63		0.96	**-**
Heavy	6	18	3	0		27	2	28	9	0		39	0	24	7	0		31	4	47	0	0		51	**-**
Heavy %	3.1%	7%	1.6%	0%		4.2%	2.3%	1.9%	2.4%	0%		2%	0%	3.3%	10.1%	0%		3.3%	2%	3.7%	0%	0%		3.1%	**-**
Lights	185	238	188	1		612	85	1444	361	16		1906	124	709	62	3		898	196	1233	135	5		1569	**-**
Lights %	96.9%	93%	98.4%	100%		95.8%	97.7%	98.1%	97.6%	100%		98%	100%	96.7%	89.9%	100%		96.7%	98%	96.3%	100%	100%		96.9%	**-**
Single-Unit Trucks	2	6	1	0		9	2	1	4	0		7	0	10	1	0		11	1	18	0	0		19	**-**
Single-Unit Trucks %	1%	2.3%	0.5%	0%		1.4%	2.3%	0.1%	1.1%	0%		0.4%	0%	1.4%	1.4%	0%		1.2%	0.5%	1.4%	0%	0%		1.2%	**-**
Buses	0	7	0	0		7	0	22	1	0		23	0	12	4	0		16	0	19	0	0		19	**-**
Buses %	0%	2.7%	0%	0%		1.1%	0%	1.5%	0.3%	0%		1.2%	0%	1.6%	5.8%	0%		1.7%	0%	1.5%	0%	0%		1.2%	**-**
Articulated Trucks	4	5	2	0		11	0	5	4	0		9	0	2	2	0		4	3	10	0	0		13	**-**
Articulated Trucks %	2.1%	2%	1%	0%		1.7%	0%	0.3%	1.1%	0%		0.5%	0%	0.3%	2.9%	0%		0.4%	1.5%	0.8%	0%	0%		0.8%	**-**
Pedestrians	-	-	-	-	82	-	-	-	-	-	47	-	-	-	-	-	67	-	-	-	-	-	53	-	**-**
Pedestrians%	-	-	-	-	32.8%		-	-	-	-	18.8%		-	-	-	-	26.8%		-	-	-	-	21.2%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0.4%		**-**

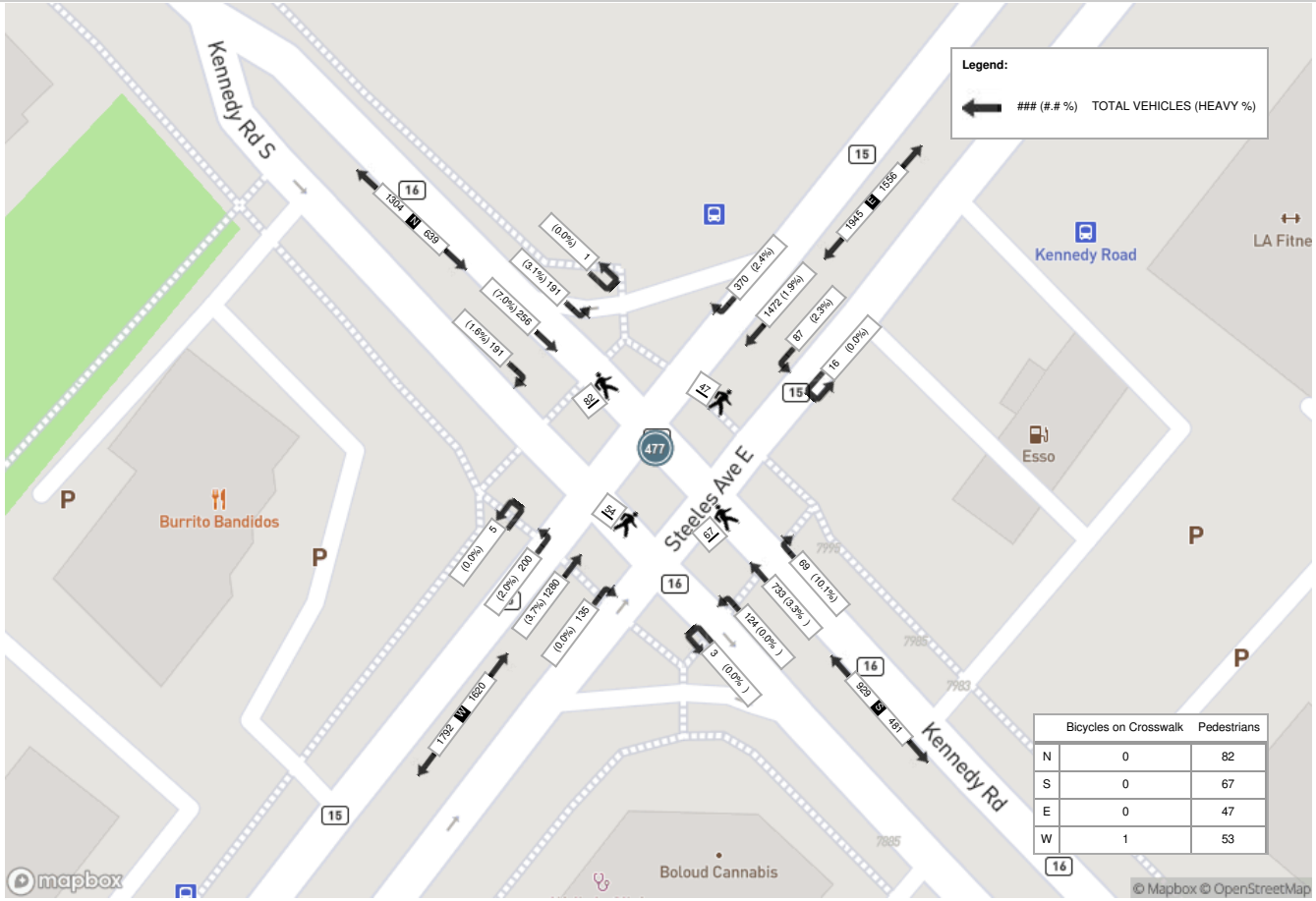
Peak Hour: 08:00 AM - 09:00 AM **Weather: Moderate Rain (5.84 °C)**



Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (4.57 °C)



Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (5.56 °C)**



Turning Movement Count (497 . KENNEDY RD & RAMBLER DR) CustID: 01600545

Start Time	Southbound KENNEDY RD						Westbound ACCESS						Northbound KENNEDY RD						Eastbound RAMBLER DR						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
2024-04-17 07:00:00	1	162	7	0	0	170	3	0	0	0	0	3	5	92	0	0	1	97	9	0	17	0	0	26	296
2024-04-17 07:15:00	0	211	11	0	0	222	1	0	0	0	0	1	14	106	0	0	2	120	11	0	25	0	2	36	379
2024-04-17 07:30:00	1	192	6	1	0	200	5	0	4	0	0	9	11	112	0	0	3	123	18	0	51	0	2	69	401
2024-04-17 07:45:00	0	218	7	0	2	225	7	0	1	0	3	8	9	122	0	0	5	131	25	0	37	0	4	62	426
Hourly	2	783	31	1	2	817	16	0	5	0	3	21	39	432	0	0	11	471	63	0	130	0	8	193	1502
2024-04-17 08:00:00	2	232	8	0	1	242	19	1	5	0	1	25	13	149	1	0	0	163	15	0	36	0	5	51	481
2024-04-17 08:15:00	0	225	16	0	0	241	11	0	2	0	0	13	17	126	0	0	2	143	15	0	42	0	0	57	454
2024-04-17 08:30:00	0	250	24	0	0	274	2	0	1	0	0	3	5	130	0	0	2	135	19	0	30	0	1	49	461
2024-04-17 08:45:00	0	208	12	0	2	220	0	0	0	0	0	0	10	114	1	0	1	125	22	0	33	0	1	55	400
Hourly	2	915	60	0	3	977	32	1	8	0	1	41	45	519	2	0	5	566	71	0	141	0	7	212	1796
BREAK																									
2024-04-17 11:00:00	0	146	9	0	0	155	2	0	0	0	0	2	10	139	3	0	2	152	11	0	21	0	2	32	341
2024-04-17 11:15:00	0	152	15	0	0	167	3	0	2	0	0	5	12	150	1	0	0	163	11	0	19	0	3	30	365
2024-04-17 11:30:00	2	159	10	0	0	171	2	0	0	0	2	2	14	152	1	0	2	167	15	0	13	0	1	28	368
2024-04-17 11:45:00	0	173	12	0	0	185	1	0	0	0	0	1	18	159	2	1	0	180	11	0	38	0	2	49	415
Hourly	2	630	46	0	0	678	8	0	2	0	2	10	54	600	7	1	4	662	48	0	91	0	8	139	1489
2024-04-17 12:00:00	0	138	8	0	0	146	2	0	2	0	0	4	15	161	4	0	1	180	20	0	24	0	1	44	374
2024-04-17 12:15:00	0	154	10	0	1	164	2	0	1	0	1	3	21	206	2	0	0	229	12	0	14	0	1	26	422
2024-04-17 12:30:00	3	168	10	0	0	181	1	0	0	0	2	1	23	139	2	0	1	164	24	1	24	0	0	49	395
2024-04-17 12:45:00	2	156	17	0	2	175	2	0	1	0	3	3	14	177	5	0	0	196	18	1	17	0	0	36	410
Hourly	5	616	45	0	3	666	7	0	4	0	6	11	73	683	13	0	2	769	74	2	79	0	2	155	1601
2024-04-17 13:00:00	2	142	13	0	2	157	1	0	1	0	0	2	24	189	4	0	2	217	11	0	26	0	2	37	413
2024-04-17 13:15:00	1	156	12	0	3	169	2	0	0	0	3	2	7	201	4	0	0	212	14	0	18	0	0	32	415
2024-04-17 13:30:00	4	157	18	1	0	180	0	0	2	0	1	2	21	173	13	0	1	207	15	0	30	0	0	45	434
2024-04-17 13:45:00	1	145	10	0	1	156	1	0	1	0	1	2	20	169	8	0	0	197	13	0	12	0	0	25	380
Hourly	8	600	53	1	6	662	4	0	4	0	5	8	72	732	29	0	3	833	53	0	86	0	2	139	1642
BREAK																									
2024-04-17 15:00:00	0	184	25	0	1	209	8	0	1	0	1	9	19	277	3	0	4	299	16	1	22	0	5	39	556
2024-04-17 15:15:00	0	192	22	0	0	214	1	0	1	0	0	2	37	274	1	0	6	312	30	0	21	0	0	51	579
2024-04-17 15:30:00	1	166	27	0	0	194	0	0	1	0	2	1	32	310	2	0	6	344	34	0	19	0	0	53	592
2024-04-17 15:45:00	0	192	28	0	4	220	1	0	0	0	0	1	21	332	1	0	0	354	27	1	34	0	0	62	637
Hourly	1	734	102	0	5	837	10	0	3	0	3	13	109	1193	7	0	16	1309	107	2	96	0	5	205	2364
2024-04-17 16:00:00	0	180	27	0	1	207	0	0	0	0	4	0	35	284	0	0	3	319	24	0	33	0	0	57	583
2024-04-17 16:15:00	1	158	30	0	1	189	0	0	1	0	4	1	52	316	0	0	3	368	19	0	31	0	0	50	608
2024-04-17 16:30:00	0	158	34	1	0	193	0	0	0	0	2	0	55	317	0	0	1	372	21	0	22	0	2	43	608
2024-04-17 16:45:00	0	173	18	0	0	191	0	0	0	0	6	0	30	292	0	0	4	322	21	1	23	0	0	45	558
Hourly	1	669	109	1	2	780	0	0	1	0	16	1	172	1209	0	0	11	1381	85	1	109	0	2	195	2357
2024-04-17 17:00:00	4	206	37	0	1	247	0	0	0	0	1	0	44	359	0	0	7	403	26	0	28	0	2	54	704
2024-04-17 17:15:00	0	163	35	0	1	198	1	0	0	0	0	1	39	338	0	0	3	377	24	0	28	0	0	52	628
2024-04-17 17:30:00	1	153	30	0	0	184	1	0	0	0	0	1	32	333	4	0	3	369	17	0	24	0	3	41	595
2024-04-17 17:45:00	0	159	17	0	4	176	0	0	0	0	1	0	53	317	0	0	5	370	7	1	31	0	3	39	585
Hourly	5	681	119	0	6	805	2	0	0	0	2	2	168	1347	4	0	18	1519	74	1	111	0	8	186	2512
Grand Total	26	5628	565	3	27	6222	79	1	27	0	38	107	732	6715	62	1	70	7510	575	6	843	0	42	1424	**15263**
Approach%	0.4%	90.5%	9.1%	0%		-	73.8%	0.9%	25.2%	0%		-	9.7%	89.4%	0.8%	0%		-	40.4%	0.4%	59.2%	0%		-	**-**

Totals %	0.2%	36.9%	3.7%	0%	40.8%	0.5%	0%	0.2%	0%	0.7%	4.8%	44%	0.4%	0%	49.2%	3.8%	0%	5.5%	0%	9.3%	-
Heavy	1	201	14	0	-	21	0	9	0	-	11	245	15	0	-	15	3	15	0	-	-
Heavy %	3.8%	3.6%	2.5%	0%	-	26.6%	0%	33.3%	0%	-	1.5%	3.6%	24.2%	0%	-	2.6%	50%	1.8%	0%	-	-
Bicycles	0	0	0	0	-	0	0	0	0	-	0	1	0	0	-	0	0	0	0	-	-
Bicycle %	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Moderate Rain (5.84 °C)

Start Time	Southbound KENNEDY RD						Westbound ACCESS						Northbound KENNEDY RD						Eastbound RAMBLER DR						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
2024-04-17 08:00:00	2	232	8	0	1	242	19	1	5	0	1	25	13	149	1	0	0	163	15	0	36	0	5	51	481
2024-04-17 08:15:00	0	225	16	0	0	241	11	0	2	0	0	13	17	126	0	0	2	143	15	0	42	0	0	57	454
2024-04-17 08:30:00	0	250	24	0	0	274	2	0	1	0	0	3	5	130	0	0	2	135	19	0	30	0	1	49	461
2024-04-17 08:45:00	0	208	12	0	2	220	0	0	0	0	0	0	10	114	1	0	1	125	22	0	33	0	1	55	400
Grand Total	2	915	60	0	3	977	32	1	8	0	1	41	45	519	2	0	5	566	71	0	141	0	7	212	**1796**
Approach%	0.2%	93.7%	6.1%	0%		-	78%	2.4%	19.5%	0%		-	8%	91.7%	0.4%	0%		-	33.5%	0%	66.5%	0%		-	**-**
Totals %	0.1%	50.9%	3.3%	0%		54.4%	1.8%	0.1%	0.4%	0%		2.3%	2.5%	28.9%	0.1%	0%		31.5%	4%	0%	7.9%	0%		11.8%	**-**
PHF	0.25	0.92	0.63	0		0.89	0.42	0.25	0.4	0		0.41	0.66	0.87	0.5	0		0.87	0.81	0	0.84	0		0.93	0.93
Heavy	0	24	3	0		27	9	0	4	0		13	2	31	1	0		34	5	0	2	0		7	81
Heavy %	0%	2.6%	5%	0%		2.8%	28.1%	0%	50%	0%		31.7%	4.4%	6%	50%	0%		6%	7%	0%	1.4%	0%		3.3%	4.5%
Lights	2	891	57	0		950	23	1	4	0		28	43	488	1	0		532	66	0	139	0		205	1715
Lights %	100%	97.4%	95%	0%		97.2%	71.9%	100%	50%	0%		68.3%	95.6%	94%	50%	0%		94%	93%	0%	98.6%	0%		96.7%	95.5%
Single-Unit Trucks	0	8	0	0		8	9	0	4	0		13	0	9	1	0		10	1	0	0	0		1	32
Single-Unit Trucks %	0%	0.9%	0%	0%		0.8%	28.1%	0%	50%	0%		31.7%	0%	1.7%	50%	0%		1.8%	1.4%	0%	0%	0%		0.5%	1.8%
Buses	0	11	3	0		14	0	0	0	0		0	2	17	0	0		19	4	0	2	0		6	39
Buses %	0%	1.2%	5%	0%		1.4%	0%	0%	0%	0%		0%	4.4%	3.3%	0%	0%		3.4%	5.6%	0%	1.4%	0%		2.8%	2.2%
Articulated Trucks	0	5	0	0		5	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	10
Articulated Trucks %	0%	0.5%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	1%	0%	0%		0.9%	0%	0%	0%	0%		0%	0.6%
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	7	-	**-**
Pedestrians%	-	-	-	-	18.8%		-	-	-	-	6.3%		-	-	-	-	31.3%		-	-	-	-	43.8%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0		-	0	0	0	0		-	0	0	0	0		-	0	0	0	0		-	**-**
Bicycles on Road%	0%	0%	0%	0%			0%	0%	0%	0%			0%	0%	0%	0%			0%	0%	0%	0%			**-**

Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (4.57 °C)

Start Time	Southbound KENNEDY RD						Westbound ACCESS						Northbound KENNEDY RD						Eastbound RAMBLER DR						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
2024-04-17 13:00:00	2	142	13	0	2	157	1	0	1	0	0	2	24	189	4	0	2	217	11	0	26	0	2	37	413
2024-04-17 13:15:00	1	156	12	0	3	169	2	0	0	0	3	2	7	201	4	0	0	212	14	0	18	0	0	32	415
2024-04-17 13:30:00	4	157	18	1	0	180	0	0	2	0	1	2	21	173	13	0	1	207	15	0	30	0	0	45	434
2024-04-17 13:45:00	1	145	10	0	1	156	1	0	1	0	1	2	20	169	8	0	0	197	13	0	12	0	0	25	380
Grand Total	8	600	53	1	6	662	4	0	4	0	5	8	72	732	29	0	3	833	53	0	86	0	2	139	**1642**
Approach%	1.2%	90.6%	8%	0.2%		-	50%	0%	50%	0%		-	8.6%	87.9%	3.5%	0%		-	38.1%	0%	61.9%	0%		-	**-**
Totals %	0.5%	36.5%	3.2%	0.1%		40.3%	0.2%	0%	0.2%	0%		0.5%	4.4%	44.6%	1.8%	0%		50.7%	3.2%	0%	5.2%	0%		8.5%	**-**
PHF	0.5	0.96	0.74	0.25		0.92	0.5	0	0.5	0		1	0.75	0.91	0.56	0		0.96	0.88	0	0.72	0		0.77	0.95
Heavy	0	29	1	0		30	2	0	2	0		4	2	33	11	0		46	1	0	2	0		3	83
Heavy %	0%	4.8%	1.9%	0%		4.5%	50%	0%	50%	0%		50%	2.8%	4.5%	37.9%	0%		5.5%	1.9%	0%	2.3%	0%		2.2%	5.1%
Lights	8	571	52	1		632	2	0	2	0		4	70	699	18	0		787	52	0	84	0		136	1559
Lights %	100%	95.2%	98.1%	100%		95.5%	50%	0%	50%	0%		50%	97.2%	95.5%	62.1%	0%		94.5%	98.1%	0%	97.7%	0%		97.8%	94.9%
Single-Unit Trucks	0	10	1	0		11	2	0	1	0		3	2	23	8	0		33	1	0	2	0		3	50
Single-Unit Trucks %	0%	1.7%	1.9%	0%		1.7%	50%	0%	25%	0%		37.5%	2.8%	3.1%	27.6%	0%		4%	1.9%	0%	2.3%	0%		2.2%	3%
Buses	0	6	0	0		6	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	11
Buses %	0%	1%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	0.7%
Articulated Trucks	0	13	0	0		13	0	0	1	0		1	0	5	3	0		8	0	0	0	0		0	22
Articulated Trucks %	0%	2.2%	0%	0%		2%	0%	0%	25%	0%		12.5%	0%	0.7%	10.3%	0%		1%	0%	0%	0%	0%		0%	1.3%
Pedestrians	-	-	-	-	6	-	-	-	-	-	5	-	-	-	-	-	3	-	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	-	37.5%		-	-	-	-	31.3%		-	-	-	-	18.8%		-	-	-	-	12.5%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0		-	0	0	0	0		-	0	0	0	0		-	0	0	0	0		-	**-**
Bicycles on Road%	0%	0%	0%	0%			0%	0%	0%	0%			0%	0%	0%	0%			0%	0%	0%	0%			**-**

Spectrum

Turning Movement Count
Location Name: KENNEDY RD & RAMBLER DR
Date: Wed, Apr 17, 2024 Deployment Lead: David Chu

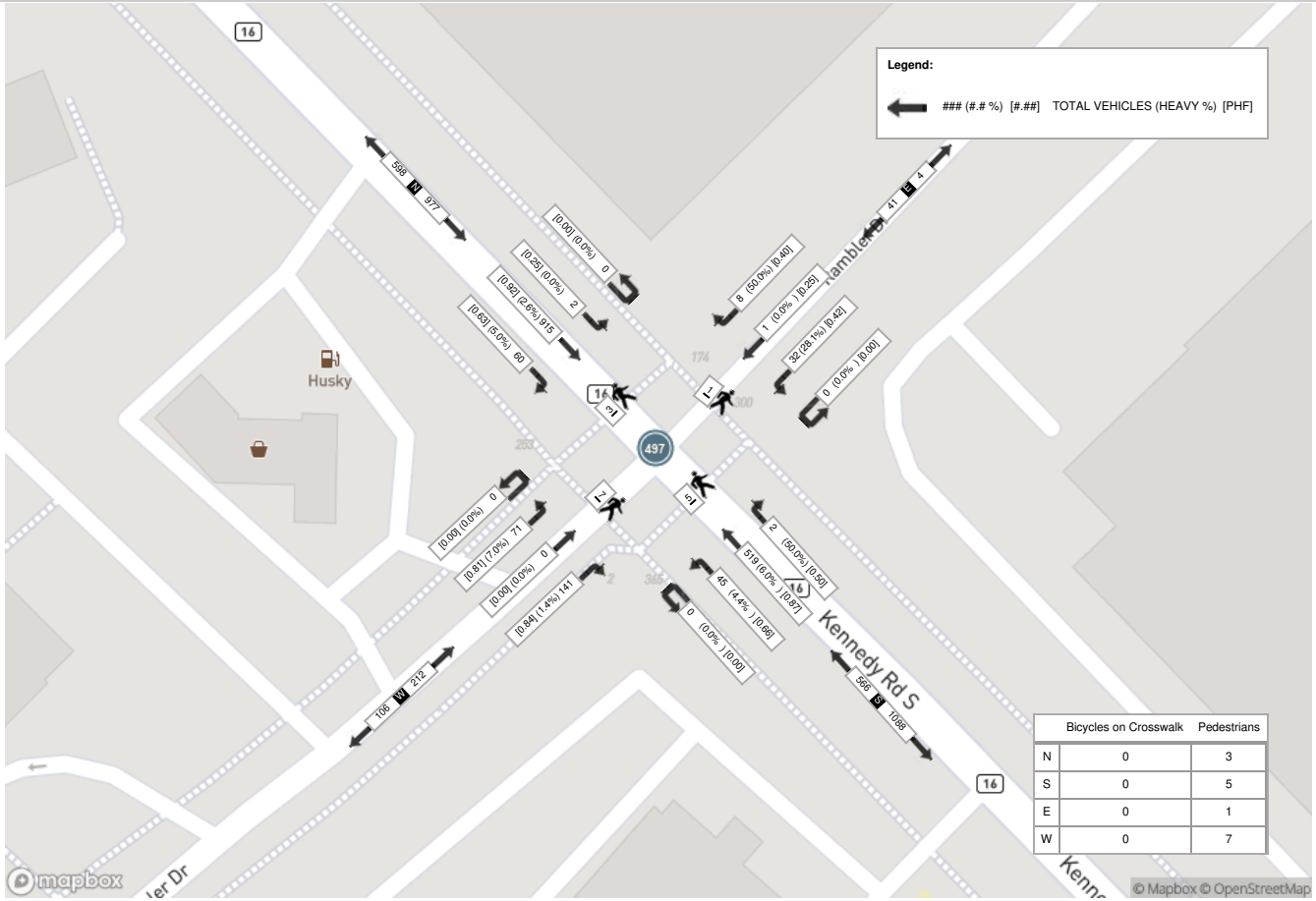
Peel Region
SUITE B 10 PEEL CENTRE DR
BRAMPTON ONTARIO, L6T 4B9
CANADA

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (5.56 °C)

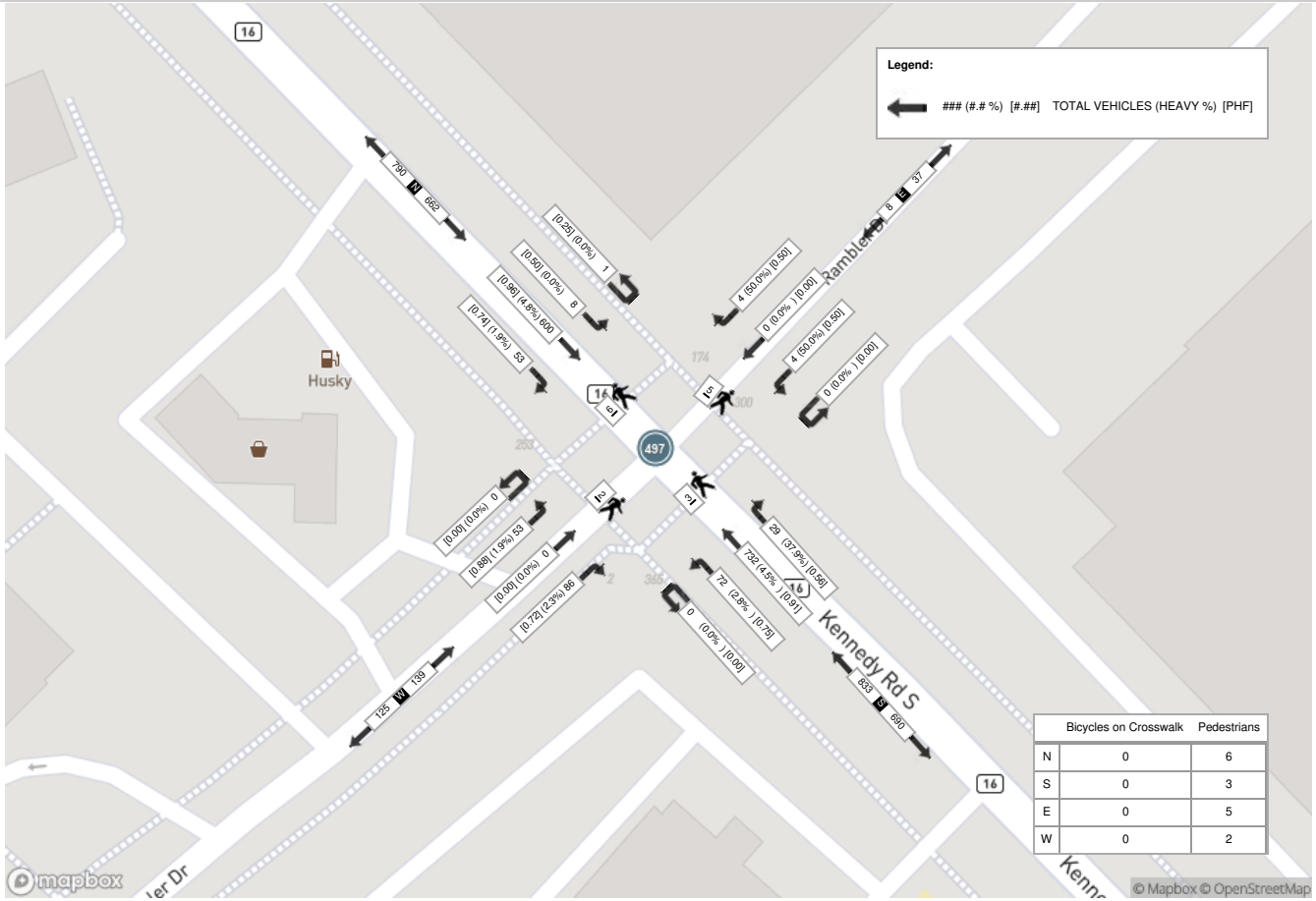
Start Time	Southbound KENNEDY RD						Westbound ACCESS						Northbound KENNEDY RD						Eastbound RAMBLER DR						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
2024-04-17 17:00:00	4	206	37	0	1	247	0	0	0	0	1	0	44	359	0	0	7	403	26	0	28	0	2	54	704
2024-04-17 17:15:00	0	163	35	0	1	198	1	0	0	0	0	1	39	338	0	0	3	377	24	0	28	0	0	52	628
2024-04-17 17:30:00	1	153	30	0	0	184	1	0	0	0	0	1	32	333	4	0	3	369	17	0	24	0	3	41	595
2024-04-17 17:45:00	0	159	17	0	4	176	0	0	0	0	1	0	53	317	0	0	5	370	7	1	31	0	3	39	585
Grand Total	5	681	119	0	6	805	2	0	0	0	2	2	168	1347	4	0	18	1519	74	1	111	0	8	186	**2512**
Approach%	0.6%	84.6%	14.8%	0%		-	100%	0%	0%	0%		-	11.1%	88.7%	0.3%	0%		-	39.8%	0.5%	59.7%	0%		-	**-**
Totals %	0.2%	27.1%	4.7%	0%		32%	0.1%	0%	0%	0%		0.1%	6.7%	53.6%	0.2%	0%		60.5%	2.9%	0%	4.4%	0%		7.4%	**-**
PHF	0.31	0.83	0.8	0		0.81	0.5	0	0	0		0.5	0.79	0.94	0.25	0		0.94	0.71	0.25	0.9	0		0.86	0.89
Heavy	0	16	3	0		19	0	0	0	0		0	0	20	0	0		20	0	1	2	0		3	42
Heavy %	0%	2.3%	2.5%	0%		2.4%	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		1.3%	0%	100%	1.8%	0%		1.6%	1.7%
Lights	5	665	116	0		786	2	0	0	0		2	168	1327	4	0		1499	74	0	109	0		183	2470
Lights %	100%	97.7%	97.5%	0%		97.6%	100%	0%	0%	0%		100%	100%	98.5%	100%	0%		98.7%	100%	0%	98.2%	0%		98.4%	98.3%
Single-Unit Trucks	0	3	3	0		6	0	0	0	0		0	0	4	0	0		4	0	1	2	0		3	13
Single-Unit Trucks %	0%	0.4%	2.5%	0%		0.7%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	100%	1.8%	0%		1.6%	0.5%
Buses	0	8	0	0		8	0	0	0	0		0	0	10	0	0		10	0	0	0	0		0	18
Buses %	0%	1.2%	0%	0%		1%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	0%	0%	0%	0%		0%	0.7%
Articulated Trucks	0	5	0	0		5	0	0	0	0		0	0	6	0	0		6	0	0	0	0		0	11
Articulated Trucks %	0%	0.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0.4%
Pedestrians	-	-	-	-	6	-	-	-	-	-	2	-	-	-	-	-	18	-	-	-	-	-	8	-	**-**
Pedestrians%	-	-	-	-	17.6%		-	-	-	-	5.9%		-	-	-	-	52.9%		-	-	-	-	23.5%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0		-	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	**-**
Bicycles on Road%	0%	0%	0%	0%			0%	0%	0%	0%			0%	100%	0%	0%			0%	0%	0%	0%			**-**

Peel Region
SUITE B 10 PEEL CENTRE DR
BRAMPTON ONTARIO, L6T 4B9
CANADA

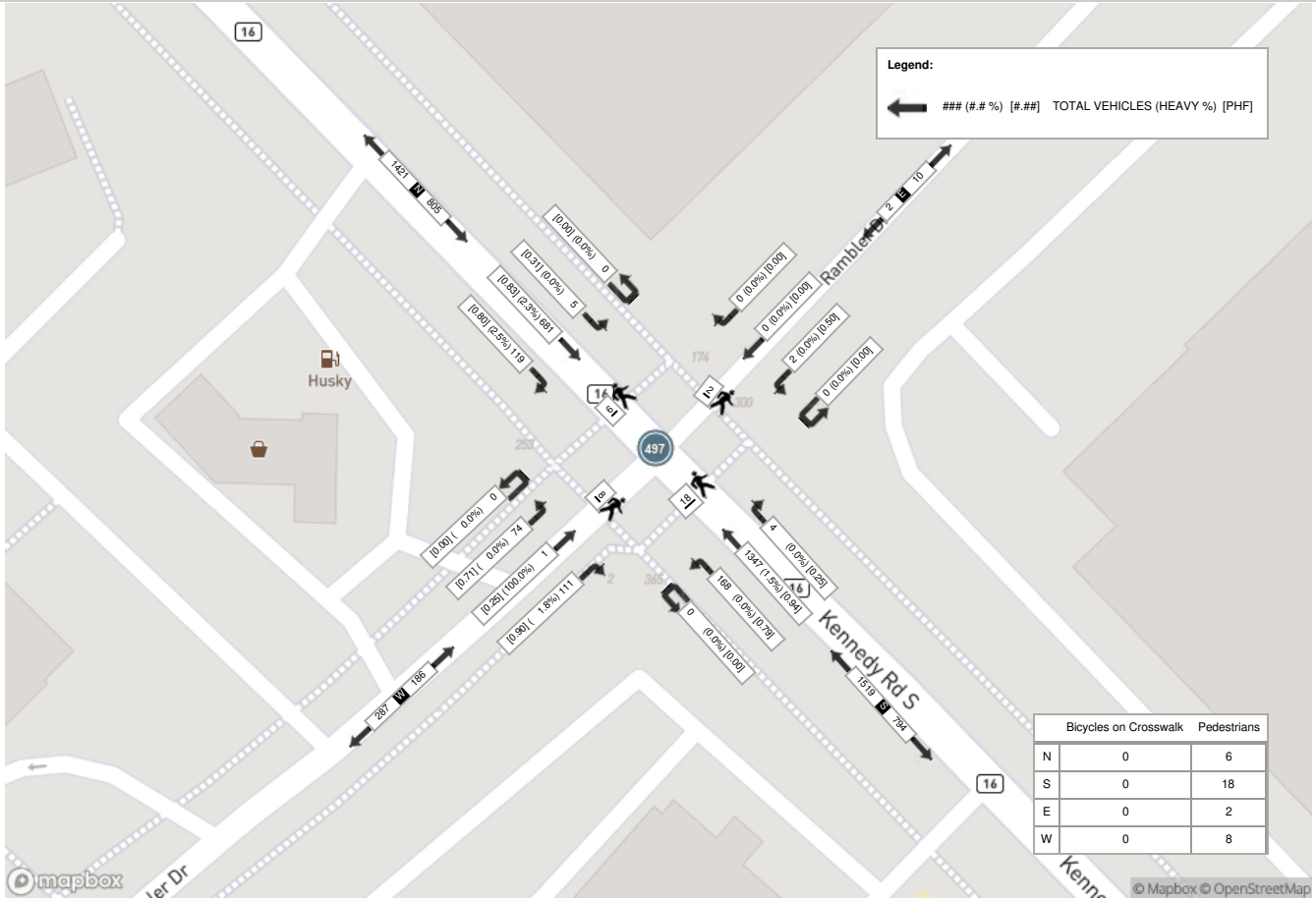
Peak Hour: 08:00 AM - 09:00 AM Weather: Moderate Rain (5.84 °C)



Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (4.57 °C)



Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (5.56 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	6
S	0	18
E	0	2
W	0	8

Turning Movement Count (498 . KENNEDY RD & CHAMNEY CT / GLIDDEN RD) CustID: 01601016

Start Time	Southbound KENNEDY RD						Westbound GLIDDEN RD						Northbound KENNEDY RD						Eastbound CHAMNEY CT						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
07:00:00	28	168	1	0	0	197	8	2	10	0	1	20	2	92	13	0	1	107	1	0	3	0	2	4	328
07:15:00	47	188	0	0	1	235	15	0	10	0	5	25	0	76	18	0	5	94	1	0	1	0	3	2	356
07:30:00	54	170	2	0	0	226	5	0	7	0	1	12	1	111	18	0	3	130	1	2	4	0	4	7	375
07:45:00	54	204	1	0	6	259	11	0	8	0	4	19	3	106	22	0	2	131	0	1	5	0	4	6	415
Hourly	183	730	4	0	7	917	39	2	35	0	11	76	6	385	71	0	11	462	3	3	13	0	13	19	1474
08:00:00	49	224	0	0	1	273	10	0	14	0	3	24	1	144	18	0	6	163	5	1	2	0	5	8	468
08:15:00	43	227	4	0	1	274	10	0	10	0	2	20	4	133	12	0	5	149	2	0	3	0	11	5	448
08:30:00	48	251	6	0	2	305	11	0	9	0	5	20	3	130	10	0	5	143	3	0	5	0	5	8	476
08:45:00	36	191	1	0	0	228	15	0	22	0	2	37	3	108	12	0	7	123	1	2	4	0	7	7	395
Hourly	176	893	11	0	4	1080	46	0	55	0	12	101	11	515	52	0	23	578	11	3	14	0	28	28	1787
BREAK																									
11:00:00	30	142	3	0	2	175	11	0	26	0	2	37	1	143	15	0	4	159	0	0	1	0	4	1	372
11:15:00	28	148	2	0	2	178	12	1	26	0	2	39	3	140	12	0	21	155	2	0	2	0	19	4	376
11:30:00	32	146	3	0	1	181	12	0	32	0	1	44	2	153	12	0	4	167	3	1	6	0	4	10	402
11:45:00	24	169	1	0	0	194	10	1	41	0	2	52	1	155	20	0	3	176	2	2	0	0	4	4	426
Hourly	114	605	9	0	5	728	45	2	125	0	7	172	7	591	59	0	32	657	7	3	9	0	31	19	1576
12:00:00	33	130	1	0	2	164	19	1	35	0	1	55	0	144	20	0	7	164	1	0	0	0	6	1	384
12:15:00	29	143	3	0	1	175	17	0	33	0	1	50	1	185	20	0	4	206	4	1	2	0	5	7	438
12:30:00	33	163	2	0	1	198	14	2	35	0	3	51	5	137	21	0	2	163	2	0	0	0	2	2	414
12:45:00	21	153	1	0	2	175	12	2	36	1	2	51	2	182	26	0	6	210	3	0	0	0	6	3	439
Hourly	116	589	7	0	6	712	62	5	139	1	7	207	8	648	87	0	19	743	10	1	2	0	19	13	1675
13:00:00	39	145	2	0	1	186	15	2	43	0	1	60	1	163	19	0	2	183	3	2	5	0	3	10	439
13:15:00	37	155	5	0	0	197	18	1	36	0	2	55	1	185	19	0	7	205	2	2	3	0	6	7	464
13:30:00	42	153	2	0	3	197	19	1	38	0	7	58	2	170	19	0	2	191	0	1	4	0	3	5	451
13:45:00	36	153	1	0	0	190	16	0	37	1	3	54	5	178	21	0	2	204	2	1	3	0	4	6	454
Hourly	154	606	10	0	4	770	68	4	154	1	13	227	9	696	78	0	13	783	7	6	15	0	16	28	1808
BREAK																									
15:00:00	31	154	2	0	4	187	37	0	52	0	2	89	5	261	62	0	3	328	0	1	1	0	6	2	606
15:15:00	18	173	3	0	1	194	38	1	45	0	9	84	3	301	27	0	4	331	2	1	2	0	5	5	614
15:30:00	14	163	4	0	3	181	34	4	59	0	6	97	4	319	32	0	9	355	0	3	5	0	5	8	641
15:45:00	26	170	4	0	5	200	33	2	50	0	9	85	3	323	31	0	9	357	5	4	3	0	8	12	654
Hourly	89	660	13	0	13	762	142	7	206	0	26	355	15	1204	152	0	25	1371	7	9	11	0	24	27	2515
16:00:00	27	178	4	0	9	209	36	1	50	0	5	87	5	268	38	0	12	311	1	0	4	0	10	5	612
16:15:00	18	148	1	0	6	167	46	1	83	0	8	130	2	289	33	0	7	324	3	3	1	0	6	7	628
16:30:00	22	152	0	0	5	174	38	8	65	0	6	111	2	323	32	0	11	357	4	1	3	0	5	8	650
16:45:00	11	173	3	0	2	187	51	6	60	0	5	117	0	300	25	0	4	325	3	0	3	0	3	6	635
Hourly	78	651	8	0	22	737	171	16	258	0	24	445	9	1180	128	0	34	1317	11	4	11	0	24	26	2525
17:00:00	20	177	2	0	2	199	49	0	75	0	5	124	1	343	20	0	4	364	2	3	1	0	5	6	693
17:15:00	15	174	3	0	0	192	42	2	64	0	6	108	3	344	27	0	4	374	3	1	1	0	3	5	679
17:30:00	15	152	2	0	5	169	39	2	58	0	2	99	0	337	27	0	4	364	2	1	2	0	3	5	637
17:45:00	18	157	6	0	6	181	22	1	56	0	6	79	3	304	24	0	3	331	2	3	6	0	4	11	602
Hourly	68	660	13	0	13	741	152	5	253	0	19	410	7	1328	98	0	15	1433	9	8	10	0	15	27	2611
Grand Total	978	5394	75	0	74	6447	725	41	1225	2	119	1993	72	6547	725	0	172	7344	65	37	85	0	170	187	**15971**
Approach%	15.2%	83.7%	1.2%	0%		-	36.4%	2.1%	61.5%	0.1%		-	1%	89.1%	9.9%	0%		-	34.8%	19.8%	45.5%	0%		-	**-**
Totals %	6.1%	33.8%	0.5%	0%		40.4%	4.5%	0.3%	7.7%	0%		12.5%	0.5%	41%	4.5%	0%		46%	0.4%	0.2%	0.5%	0%		1.2%	**-**

Heavy	39	196	9	0	-	65	1	56	0	-	4	263	57	0	-	4	0	10	0	-	-
Heavy %	4%	3.6%	12%	0%	-	9%	2.4%	4.6%	0%	-	5.6%	4%	7.9%	0%	-	6.2%	0%	11.8%	0%	-	-
Bicycles	2	1	0	0	-	0	1	1	0	-	0	1	0	0	-	0	2	0	0	-	-
Bicycle %	0.2%	0%	0%	0%	-	0%	2.4%	0.1%	0%	-	0%	0%	0%	0%	-	0%	5.4%	0%	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Moderate Rain (5.84 °C)

Start Time	Southbound KENNEDY RD						Westbound GLIDDEN RD						Northbound KENNEDY RD						Eastbound CHAMNEY CT						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
08:00:00	49	224	0	0	1	273	10	0	14	0	3	24	1	144	18	0	6	163	5	1	2	0	5	8	468
08:15:00	43	227	4	0	1	274	10	0	10	0	2	20	4	133	12	0	5	149	2	0	3	0	11	5	448
08:30:00	48	251	6	0	2	305	11	0	9	0	5	20	3	130	10	0	5	143	3	0	5	0	5	8	476
08:45:00	36	191	1	0	0	228	15	0	22	0	2	37	3	108	12	0	7	123	1	2	4	0	7	7	395
Grand Total	176	893	11	0	4	1080	46	0	55	0	12	101	11	515	52	0	23	578	11	3	14	0	28	28	**1787**
Approach%	16.3%	82.7%	1%	0%		-	45.5%	0%	54.5%	0%		-	1.9%	89.1%	9%	0%		-	39.3%	10.7%	50%	0%		-	**-**
Totals %	9.8%	50%	0.6%	0%		60.4%	2.6%	0%	3.1%	0%		5.7%	0.6%	28.8%	2.9%	0%		32.3%	0.6%	0.2%	0.8%	0%		1.6%	**-**
PHF	0.9	0.89	0.46	0		0.89	0.77	0	0.63	0		0.68	0.69	0.89	0.72	0		0.89	0.55	0.38	0.7	0		0.88	**-**
Heavy	3	24	1	0		28	7	0	5	0		12	2	39	2	0		43	1	0	2	0		3	**-**
Heavy %	1.7%	2.7%	9.1%	0%		2.6%	15.2%	0%	9.1%	0%		11.9%	18.2%	7.6%	3.8%	0%		7.4%	9.1%	0%	14.3%	0%		10.7%	**-**
Lights	173	869	10	0		1052	39	0	50	0		89	9	476	50	0		535	10	3	12	0		25	**-**
Lights %	98.3%	97.3%	90.9%	0%		97.4%	84.8%	0%	90.9%	0%		88.1%	81.8%	92.4%	96.2%	0%		92.6%	90.9%	100%	85.7%	0%		89.3%	**-**
Single-Unit Trucks	2	10	0	0		12	3	0	2	0		5	0	15	1	0		16	0	0	0	0		0	**-**
Single-Unit Trucks %	1.1%	1.1%	0%	0%		1.1%	6.5%	0%	3.6%	0%		5%	0%	2.9%	1.9%	0%		2.8%	0%	0%	0%	0%		0%	**-**
Buses	0	13	1	0		14	0	0	0	0		0	2	20	0	0		22	1	0	2	0		3	**-**
Buses %	0%	1.5%	9.1%	0%		1.3%	0%	0%	0%	0%		0%	18.2%	3.9%	0%	0%		3.8%	9.1%	0%	14.3%	0%		10.7%	**-**
Articulated Trucks	1	1	0	0		2	4	0	3	0		7	0	4	1	0		5	0	0	0	0		0	**-**
Articulated Trucks %	0.6%	0.1%	0%	0%		0.2%	8.7%	0%	5.5%	0%		6.9%	0%	0.8%	1.9%	0%		0.9%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	4	-	-	-	-	-	11	-	-	-	-	-	20	-	-	-	-	-	25	-	**-**
Pedestrians%	-	-	-	-	6%		-	-	-	-	16.4%		-	-	-	-	29.9%		-	-	-	-	37.3%		**-**
Bicycles on Road	0	1	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	3	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	1.5%		-	-	-	-	4.5%		-	-	-	-	4.5%		**-**

Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (4.57 °C)

Start Time	Southbound KENNEDY RD						Westbound GLIDDEN RD						Northbound KENNEDY RD						Eastbound CHAMNEY CT						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
13:00:00	39	145	2	0	1	186	15	2	43	0	1	60	1	163	19	0	2	183	3	2	5	0	3	10	439
13:15:00	37	155	5	0	0	197	18	1	36	0	2	55	1	185	19	0	7	205	2	2	3	0	6	7	464
13:30:00	42	153	2	0	3	197	19	1	38	0	7	58	2	170	19	0	2	191	0	1	4	0	3	5	451
13:45:00	36	153	1	0	0	190	16	0	37	1	3	54	5	178	21	0	2	204	2	1	3	0	4	6	454
Grand Total	154	606	10	0	4	770	68	4	154	1	13	227	9	696	78	0	13	783	7	6	15	0	16	28	**1808**
Approach%	20%	78.7%	1.3%	0%		-	30%	1.8%	67.8%	0.4%		-	1.1%	88.9%	10%	0%		-	25%	21.4%	53.6%	0%		-	**-**
Totals %	8.5%	33.5%	0.6%	0%		42.6%	3.8%	0.2%	8.5%	0.1%		12.6%	0.5%	38.5%	4.3%	0%		43.3%	0.4%	0.3%	0.8%	0%		1.5%	**-**
PHF	0.92	0.98	0.5	0		0.98	0.89	0.5	0.9	0.25		0.95	0.45	0.94	0.93	0		0.95	0.58	0.75	0.75	0		0.7	**-**
Heavy	10	31	0	0		41	9	0	6	0		15	0	36	7	0		43	0	0	0	0		0	**-**
Heavy %	6.5%	5.1%	0%	0%		5.3%	13.2%	0%	3.9%	0%		6.6%	0%	5.2%	9%	0%		5.5%	0%	0%	0%	0%		0%	**-**
Lights	144	575	10	0		729	59	4	148	1		212	9	660	71	0		740	7	6	15	0		28	**-**
Lights %	93.5%	94.9%	100%	0%		94.7%	86.8%	100%	96.1%	100%		93.4%	100%	94.8%	91%	0%		94.5%	100%	100%	100%	0%		100%	**-**
Single-Unit Trucks	6	14	0	0		20	3	0	5	0		8	0	22	2	0		24	0	0	0	0		0	**-**
Single-Unit Trucks %	3.9%	2.3%	0%	0%		2.6%	4.4%	0%	3.2%	0%		3.5%	0%	3.2%	2.6%	0%		3.1%	0%	0%	0%	0%		0%	**-**
Buses	2	8	0	0		10	0	0	0	0		0	0	6	0	0		6	0	0	0	0		0	**-**
Buses %	1.3%	1.3%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	2	9	0	0		11	6	0	1	0		7	0	8	5	0		13	0	0	0	0		0	**-**
Articulated Trucks %	1.3%	1.5%	0%	0%		1.4%	8.8%	0%	0.6%	0%		3.1%	0%	1.1%	6.4%	0%		1.7%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	4	-	-	-	-	-	13	-	-	-	-	-	10	-	-	-	-	-	14	-	**-**
Pedestrians%	-	-	-	-	8.7%		-	-	-	-	28.3%		-	-	-	-	21.7%		-	-	-	-	30.4%		**-**
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%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	6.5%		-	-	-	-	4.3%		**-**

Spectrum

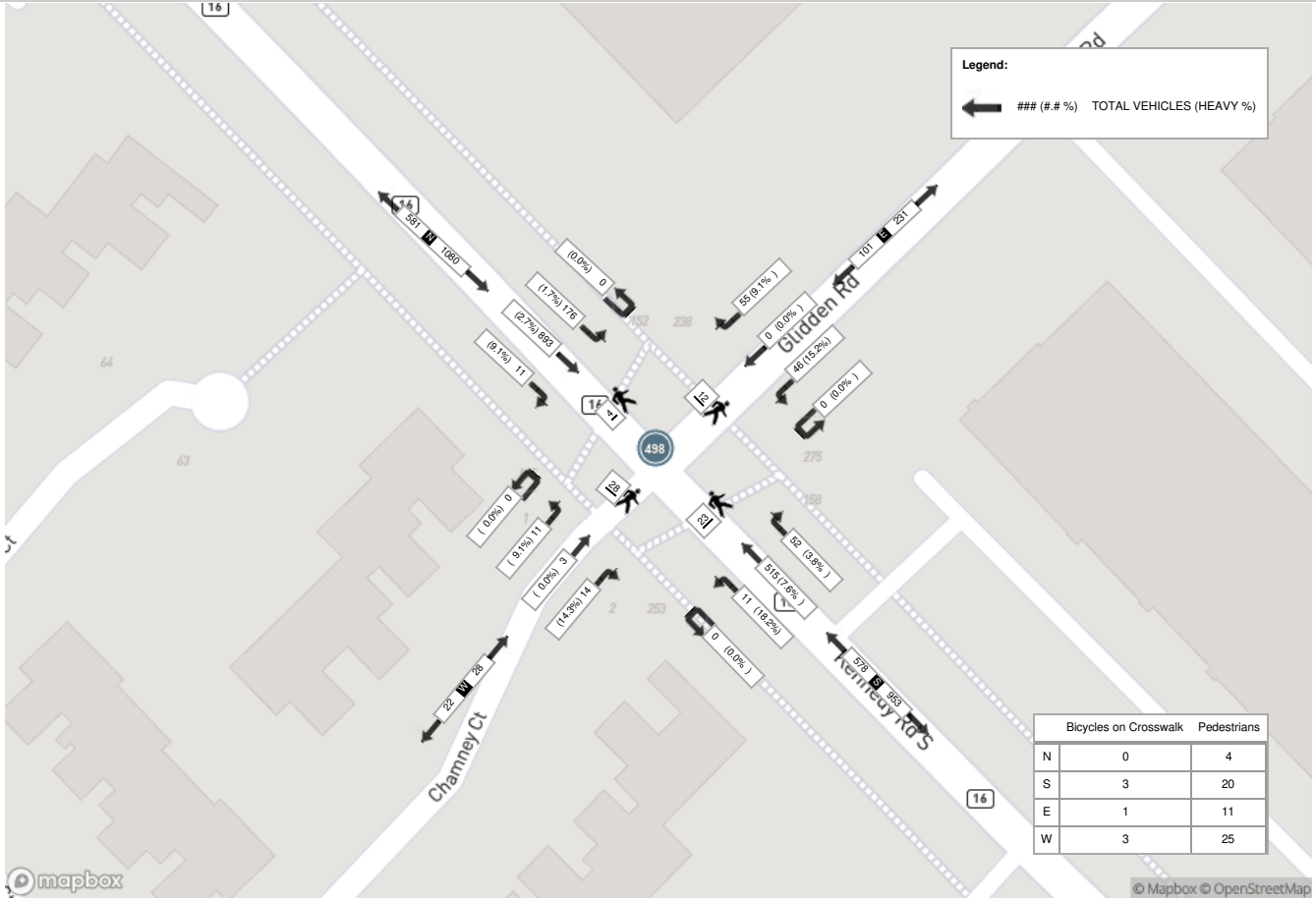
Turning Movement Count
Location Name: KENNEDY RD & CHAMNEY CT / GLIDDEN RD
Date: Wed, Apr 17, 2024 Deployment Lead: David Chu

Peel Region
SUITE B 10 PEEL CENTRE DR
BRAMPTON ONTARIO, L6T 4B9
CANADA

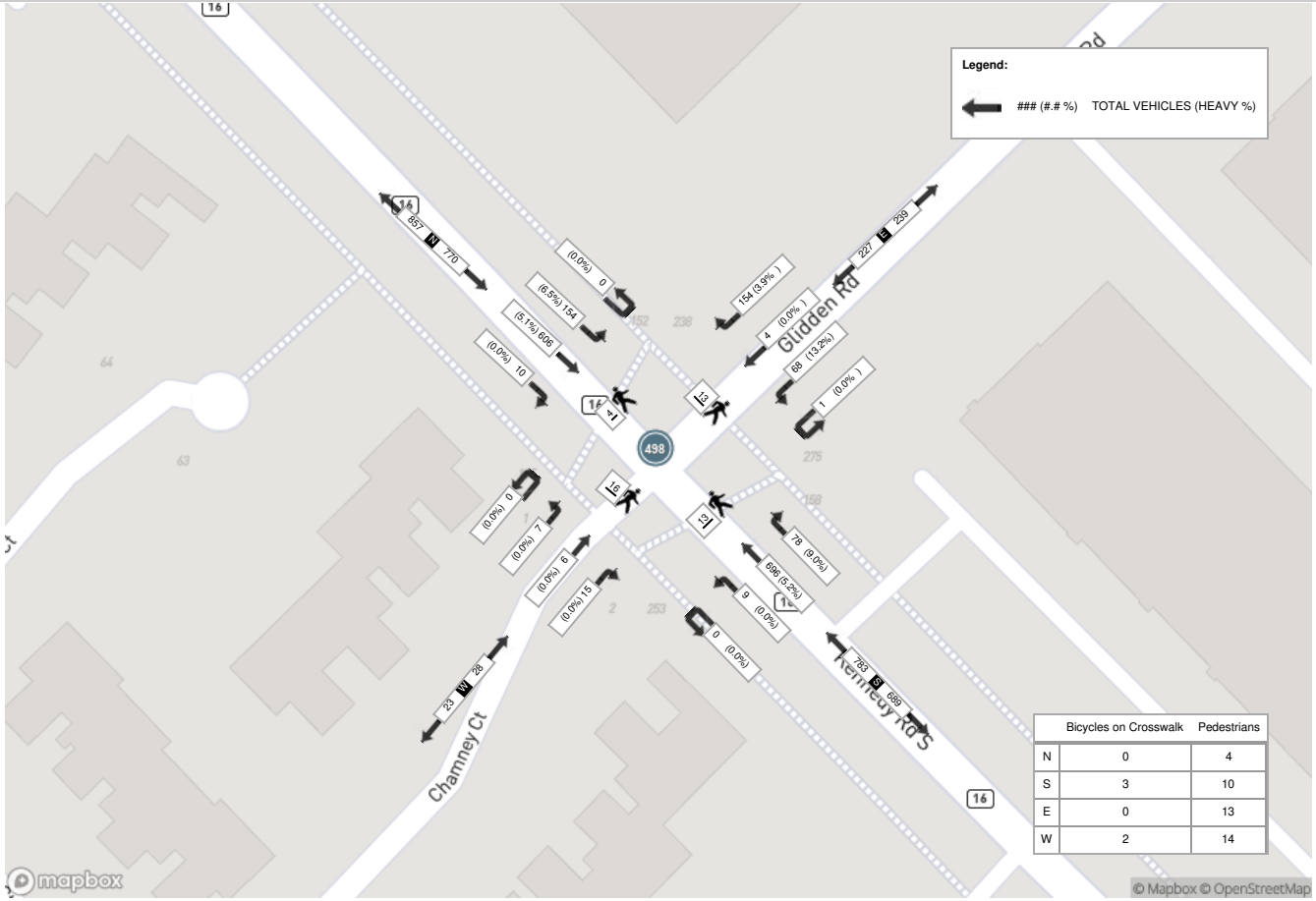
Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (5.56 °C)

Start Time	Southbound KENNEDY RD						Westbound GLIDDEN RD						Northbound KENNEDY RD						Eastbound CHAMNEY CT						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
17:00:00	20	177	2	0	2	199	49	0	75	0	5	124	1	343	20	0	4	364	2	3	1	0	5	6	693
17:15:00	15	174	3	0	0	192	42	2	64	0	6	108	3	344	27	0	4	374	3	1	1	0	3	5	679
17:30:00	15	152	2	0	5	169	39	2	58	0	2	99	0	337	27	0	4	364	2	1	2	0	3	5	637
17:45:00	18	157	6	0	6	181	22	1	56	0	6	79	3	304	24	0	3	331	2	3	6	0	4	11	602
Grand Total	68	660	13	0	13	741	152	5	253	0	19	410	7	1328	98	0	15	1433	9	8	10	0	15	27	**2611**
Approach%	9.2%	89.1%	1.8%	0%		-	37.1%	1.2%	61.7%	0%		-	0.5%	92.7%	6.8%	0%		-	33.3%	29.6%	37%	0%		-	**-**
Totals %	2.6%	25.3%	0.5%	0%		28.4%	5.8%	0.2%	9.7%	0%		15.7%	0.3%	50.9%	3.8%	0%		54.9%	0.3%	0.3%	0.4%	0%		1%	**-**
PHF	0.85	0.93	0.54	0		0.93	0.78	0.63	0.84	0		0.83	0.58	0.97	0.91	0		0.96	0.75	0.67	0.42	0		0.61	**-**
Heavy	6	19	0	0		25	9	0	6	0		15	0	28	6	0		34	0	0	0	0		0	**-**
Heavy %	8.8%	2.9%	0%	0%		3.4%	5.9%	0%	2.4%	0%		3.7%	0%	2.1%	6.1%	0%		2.4%	0%	0%	0%	0%		0%	**-**
Lights	62	641	13	0		716	143	5	247	0		395	7	1300	92	0		1399	9	8	10	0		27	**-**
Lights %	91.2%	97.1%	100%	0%		96.6%	94.1%	100%	97.6%	0%		96.3%	100%	97.9%	93.9%	0%		97.6%	100%	100%	100%	0%		100%	**-**
Single-Unit Trucks	4	10	0	0		14	5	0	1	0		6	0	11	1	0		12	0	0	0	0		0	**-**
Single-Unit Trucks %	5.9%	1.5%	0%	0%		1.9%	3.3%	0%	0.4%	0%		1.5%	0%	0.8%	1%	0%		0.8%	0%	0%	0%	0%		0%	**-**
Buses	1	8	0	0		9	0	0	0	0		0	0	15	0	0		15	0	0	0	0		0	**-**
Buses %	1.5%	1.2%	0%	0%		1.2%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	1	1	0	0		2	4	0	5	0		9	0	2	5	0		7	0	0	0	0		0	**-**
Articulated Trucks %	1.5%	0.2%	0%	0%		0.3%	2.6%	0%	2%	0%		2.2%	0%	0.2%	5.1%	0%		0.5%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	13	-	-	-	-	-	19	-	-	-	-	-	15	-	-	-	-	-	15	-	**-**
Pedestrians%	-	-	-	-	21%		-	-	-	-	30.6%		-	-	-	-	24.2%		-	-	-	-	24.2%		**-**
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	0	-	0	1	0	0	0	-	0	1	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	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: Moderate Rain (5.84 °C)**

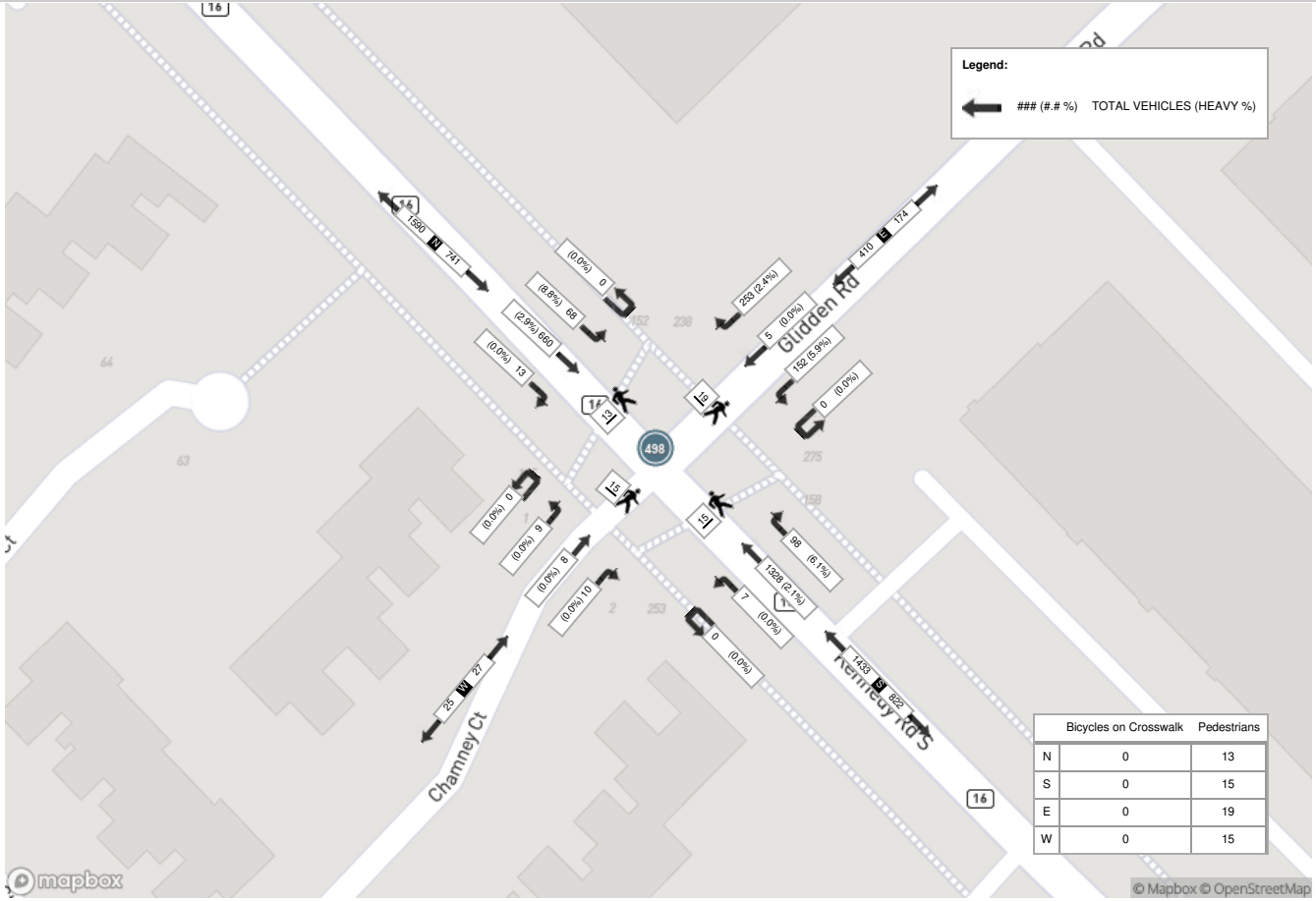


Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (4.57 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	4
S	3	10
E	0	13
W	2	14

Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (5.56 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	13
S	0	15
E	0	19
W	0	15

Turning Movement Count (504 . KENNEDY RD & CLARENCE ST) CustID: 01602183

Start Time	Southbound KENNEDY RD						Westbound CLARENCE ST						Northbound KENNEDY RD						Eastbound CLARENCE ST						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
07:00:00	12	120	21	1	0	154	6	23	4	0	0	33	6	73	6	0	2	85	37	55	36	0	4	128	400
07:15:00	24	155	18	0	2	197	4	23	1	0	3	28	7	83	3	0	5	93	26	45	39	0	3	110	428
07:30:00	22	180	23	0	5	225	6	19	4	0	2	29	15	101	12	0	1	128	44	93	34	0	2	171	553
07:45:00	29	182	50	0	0	261	4	21	6	0	0	31	11	96	5	0	5	112	67	127	36	0	3	230	634
Hourly	87	637	112	1	7	837	20	86	15	0	5	121	39	353	26	0	13	418	174	320	145	0	12	639	2015
08:00:00	30	194	39	0	1	263	6	27	10	0	1	43	25	122	10	0	3	157	48	85	35	0	3	168	631
08:15:00	18	191	44	0	2	253	5	38	9	0	0	52	13	112	3	0	1	128	58	76	41	0	1	175	608
08:30:00	22	250	54	0	4	326	6	32	10	0	0	48	13	122	6	0	5	141	69	91	29	0	4	189	704
08:45:00	26	213	40	0	1	279	10	19	6	0	0	35	21	125	7	0	4	153	51	82	38	0	5	171	638
Hourly	96	848	177	0	8	1121	27	116	35	0	1	178	72	481	26	0	13	579	226	334	143	0	13	703	2581
BREAK																									
11:00:00	30	150	47	0	0	227	16	33	25	0	0	74	28	105	9	0	2	142	45	61	24	0	1	130	573
11:15:00	33	129	37	0	3	199	13	28	26	0	3	67	23	108	14	0	7	145	34	49	21	0	9	104	515
11:30:00	23	163	30	0	8	216	14	34	24	0	8	72	24	147	17	0	7	188	40	53	29	0	3	122	598
11:45:00	28	156	44	0	4	228	20	40	24	0	3	84	26	156	14	0	6	196	44	64	26	0	5	134	642
Hourly	114	598	158	0	15	870	63	135	99	0	14	297	101	516	54	0	22	671	163	227	100	0	18	490	2328
12:00:00	29	142	48	0	0	219	12	52	31	0	2	95	30	138	13	0	1	181	42	47	28	0	4	117	612
12:15:00	37	158	57	0	1	252	15	39	29	0	1	83	29	164	13	0	5	206	45	52	31	0	5	128	669
12:30:00	27	151	43	0	1	221	16	51	24	0	1	91	29	146	16	0	0	191	42	82	33	0	6	157	660
12:45:00	22	159	56	1	0	238	17	46	29	0	1	92	28	167	22	0	3	217	42	60	22	1	5	125	672
Hourly	115	610	204	1	2	930	60	188	113	0	5	361	116	615	64	0	9	795	171	241	114	1	20	527	2613
13:00:00	25	165	37	0	1	227	17	56	28	0	4	101	38	140	20	0	1	198	43	64	21	0	6	128	654
13:15:00	27	136	49	0	1	212	18	61	31	0	2	110	31	181	16	0	4	228	43	58	21	0	1	122	672
13:30:00	28	154	46	0	4	228	15	56	35	0	3	106	28	167	19	0	4	214	53	68	24	1	2	146	694
13:45:00	34	154	60	1	2	249	19	58	24	0	8	101	35	141	15	0	7	191	37	64	17	0	7	118	659
Hourly	114	609	192	1	8	916	69	231	118	0	17	418	132	629	70	0	16	831	176	254	83	1	16	514	2679
BREAK																									
15:00:00	40	155	78	0	4	273	16	84	30	0	6	130	48	240	10	1	8	299	44	60	22	0	9	126	828
15:15:00	30	164	85	0	2	279	20	100	36	0	7	156	31	228	17	0	12	276	52	87	26	0	9	165	876
15:30:00	30	152	72	0	1	254	18	75	33	0	1	126	63	269	16	0	10	348	47	71	28	0	6	146	874
15:45:00	23	151	73	0	3	247	20	102	37	0	3	159	61	252	15	0	6	328	45	81	28	0	8	154	888
Hourly	123	622	308	0	10	1053	74	361	136	0	17	571	203	989	58	1	36	1251	188	299	104	0	32	591	3466
16:00:00	29	170	92	0	6	291	15	101	39	1	7	156	54	237	20	0	12	311	43	63	26	0	11	132	890
16:15:00	18	144	102	0	1	264	23	99	42	0	4	164	53	239	23	0	6	315	48	76	29	0	2	153	896
16:30:00	22	129	97	1	3	249	20	114	40	0	6	174	70	255	12	0	8	337	47	68	29	0	2	144	904
16:45:00	35	178	92	0	4	305	14	106	27	0	3	147	49	280	17	0	5	346	26	66	23	0	10	115	913
Hourly	104	621	383	1	14	1109	72	420	148	1	20	641	226	1011	72	0	31	1309	164	273	107	0	25	544	3603
17:00:00	32	152	102	1	8	287	21	139	39	0	8	199	63	300	13	1	9	377	42	61	30	0	6	133	996
17:15:00	29	143	92	1	12	265	16	141	38	0	12	195	70	245	22	0	7	337	43	91	26	0	6	160	957
17:30:00	31	151	81	0	2	263	17	100	28	0	3	145	84	267	16	0	5	367	33	52	26	0	6	111	886
17:45:00	31	109	81	0	3	221	15	122	36	0	2	173	64	255	13	0	10	332	49	78	28	0	11	155	881
Hourly	123	555	356	2	25	1036	69	502	141	0	25	712	281	1067	64	1	31	1413	167	282	110	0	29	559	3720
Grand Total	876	5100	1890	6	89	7872	454	2039	805	1	104	3299	1170	5661	434	2	171	7267	1429	2230	906	2	165	4567	**23005**
Approach%	11.1%	64.8%	24%	0.1%		-	13.8%	61.8%	24.4%	0%		-	16.1%	77.9%	6%	0%		-	31.3%	48.8%	19.8%	0%		-	**-**
Totals %	3.8%	22.2%	8.2%	0%		34.2%	2%	8.9%	3.5%	0%		14.3%	5.1%	24.6%	1.9%	0%		31.6%	6.2%	9.7%	3.9%	0%		19.9%	**-**

Heavy	27	178	38	0	-	25	15	39	0	-	16	211	42	0	-	44	26	13	0	-	-
Heavy %	3.1%	3.5%	2%	0%	-	5.5%	0.7%	4.8%	0%	-	1.4%	3.7%	9.7%	0%	-	3.1%	1.2%	1.4%	0%	-	-
Bicycles	0	0	0	0	-	1	1	0	0	-	0	2	0	0	-	0	0	0	0	-	-
Bicycle %	0%	0%	0%	0%	-	0.2%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	-

Spectrum

Turning Movement Count
Location Name: KENNEDY RD & CLARENCE ST
Date: Wed, Apr 17, 2024 Deployment Lead: David Chu

Peel Region
SUITE B 10 PEEL CENTRE DR
BRAMPTON ONTARIO, L6T 4B9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Moderate Rain (5.84 °C)

Start Time	Southbound KENNEDY RD						Westbound CLARENCE ST						Northbound KENNEDY RD						Eastbound CLARENCE ST						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
08:00:00	30	194	39	0	1	263	6	27	10	0	1	43	25	122	10	0	3	157	48	85	35	0	3	168	631
08:15:00	18	191	44	0	2	253	5	38	9	0	0	52	13	112	3	0	1	128	58	76	41	0	1	175	608
08:30:00	22	250	54	0	4	326	6	32	10	0	0	48	13	122	6	0	5	141	69	91	29	0	4	189	704
08:45:00	26	213	40	0	1	279	10	19	6	0	0	35	21	125	7	0	4	153	51	82	38	0	5	171	638
Grand Total	96	848	177	0	8	1121	27	116	35	0	1	178	72	481	26	0	13	579	226	334	143	0	13	703	**2581**
Approach%	8.6%	75.6%	15.8%	0%		-	15.2%	65.2%	19.7%	0%		-	12.4%	83.1%	4.5%	0%		-	32.1%	47.5%	20.3%	0%		-	**-**
Totals %	3.7%	32.9%	6.9%	0%		43.4%	1%	4.5%	1.4%	0%		6.9%	2.8%	18.6%	1%	0%		22.4%	8.8%	12.9%	5.5%	0%		27.2%	**-**
PHF	0.8	0.85	0.82	0		0.86	0.68	0.76	0.88	0		0.86	0.72	0.96	0.65	0		0.92	0.82	0.92	0.87	0		0.93	**-**
Heavy	6	31	12	0		49	1	3	4	0		8	2	41	3	0		46	12	0	0	0		12	**-**
Heavy %	6.3%	3.7%	6.8%	0%		4.4%	3.7%	2.6%	11.4%	0%		4.5%	2.8%	8.5%	11.5%	0%		7.9%	5.3%	0%	0%	0%		1.7%	**-**
Lights	90	817	165	0		1072	26	113	31	0		170	70	440	23	0		533	214	334	143	0		691	**-**
Lights %	93.8%	96.3%	93.2%	0%		95.6%	96.3%	97.4%	88.6%	0%		95.5%	97.2%	91.5%	88.5%	0%		92.1%	94.7%	100%	100%	0%		98.3%	**-**
Single-Unit Trucks	2	11	0	0		13	1	0	3	0		4	1	11	2	0		14	2	0	0	0		2	**-**
Single-Unit Trucks %	2.1%	1.3%	0%	0%		1.2%	3.7%	0%	8.6%	0%		2.2%	1.4%	2.3%	7.7%	0%		2.4%	0.9%	0%	0%	0%		0.3%	**-**
Buses	0	19	12	0		31	0	3	1	0		4	1	24	0	0		25	10	0	0	0		10	**-**
Buses %	0%	2.2%	6.8%	0%		2.8%	0%	2.6%	2.9%	0%		2.2%	1.4%	5%	0%	0%		4.3%	4.4%	0%	0%	0%		1.4%	**-**
Articulated Trucks	4	1	0	0		5	0	0	0	0		0	0	6	1	0		7	0	0	0	0		0	**-**
Articulated Trucks %	4.2%	0.1%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	1.2%	3.8%	0%		1.2%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	7	-	-	-	-	-	1	-	-	-	-	-	12	-	-	-	-	-	12	-	**-**
Pedestrians%	-	-	-	-	20%		-	-	-	-	2.9%		-	-	-	-	34.3%		-	-	-	-	34.3%		**-**
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%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	2.9%		-	-	-	-	0%		-	-	-	-	2.9%		-	-	-	-	2.9%		**-**

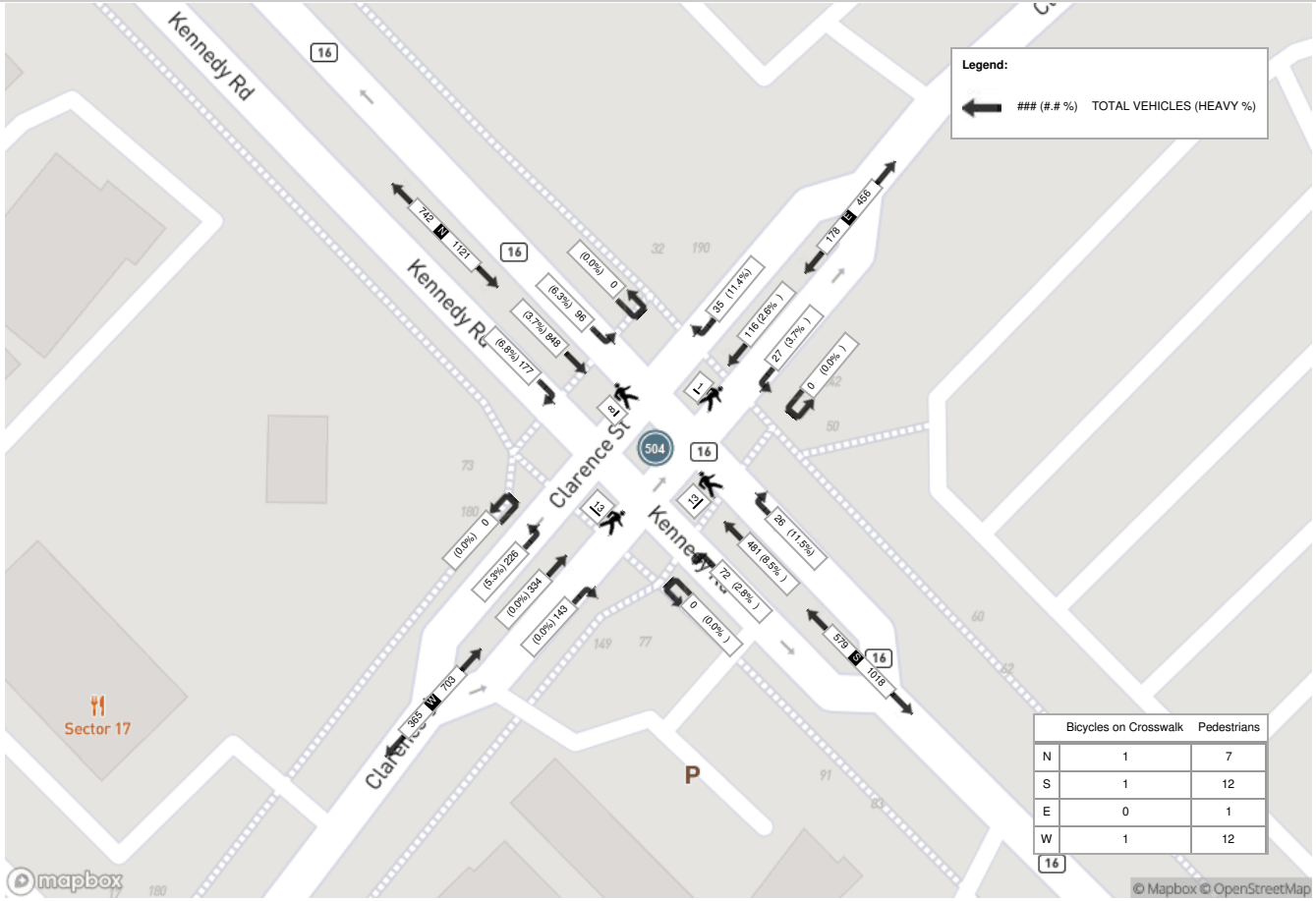
Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (4.57 °C)

Start Time	Southbound KENNEDY RD						Westbound CLARENCE ST						Northbound KENNEDY RD						Eastbound CLARENCE ST						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
13:00:00	25	165	37	0	1	227	17	56	28	0	4	101	38	140	20	0	1	198	43	64	21	0	6	128	654
13:15:00	27	136	49	0	1	212	18	61	31	0	2	110	31	181	16	0	4	228	43	58	21	0	1	122	672
13:30:00	28	154	46	0	4	228	15	56	35	0	3	106	28	167	19	0	4	214	53	68	24	1	2	146	694
13:45:00	34	154	60	1	2	249	19	58	24	0	8	101	35	141	15	0	7	191	37	64	17	0	7	118	659
Grand Total	114	609	192	1	8	916	69	231	118	0	17	418	132	629	70	0	16	831	176	254	83	1	16	514	**2679**
Approach%	12.4%	66.5%	21%	0.1%		-	16.5%	55.3%	28.2%	0%		-	15.9%	75.7%	8.4%	0%		-	34.2%	49.4%	16.1%	0.2%		-	**-**
Totals %	4.3%	22.7%	7.2%	0%		34.2%	2.6%	8.6%	4.4%	0%		15.6%	4.9%	23.5%	2.6%	0%		31%	6.6%	9.5%	3.1%	0%		19.2%	**-**
PHF	0.84	0.92	0.8	0.25		0.92	0.91	0.95	0.84	0		0.95	0.87	0.87	0.88	0		0.91	0.83	0.93	0.86	0.25		0.88	**-**
Heavy	7	18	3	0		28	3	0	7	0		10	2	18	9	0		29	5	3	3	0		11	**-**
Heavy %	6.1%	3%	1.6%	0%		3.1%	4.3%	0%	5.9%	0%		2.4%	1.5%	2.9%	12.9%	0%		3.5%	2.8%	1.2%	3.6%	0%		2.1%	**-**
Lights	107	591	189	1		888	66	231	111	0		408	130	611	61	0		802	171	251	80	1		503	**-**
Lights %	93.9%	97%	98.4%	100%		96.9%	95.7%	100%	94.1%	0%		97.6%	98.5%	97.1%	87.1%	0%		96.5%	97.2%	98.8%	96.4%	100%		97.9%	**-**
Single-Unit Trucks	7	9	0	0		16	3	0	4	0		7	2	8	8	0		18	4	3	3	0		10	**-**
Single-Unit Trucks %	6.1%	1.5%	0%	0%		1.7%	4.3%	0%	3.4%	0%		1.7%	1.5%	1.3%	11.4%	0%		2.2%	2.3%	1.2%	3.6%	0%		1.9%	**-**
Buses	0	7	3	0		10	0	0	0	0		0	0	4	0	0		4	1	0	0	0		1	**-**
Buses %	0%	1.1%	1.6%	0%		1.1%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	0.6%	0%	0%	0%		0.2%	**-**
Articulated Trucks	0	2	0	0		2	0	0	3	0		3	0	6	1	0		7	0	0	0	0		0	**-**
Articulated Trucks %	0%	0.3%	0%	0%		0.2%	0%	0%	2.5%	0%		0.7%	0%	1%	1.4%	0%		0.8%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	8	-	-	-	-	-	16	-	-	-	-	-	16	-	-	-	-	-	15	-	**-**
Pedestrians%	-	-	-	-	14%		-	-	-	-	28.1%		-	-	-	-	28.1%		-	-	-	-	26.3%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	1.8%		-	-	-	-	0%		-	-	-	-	1.8%		**-**

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (5.56 °C)

Start Time	Southbound KENNEDY RD						Westbound CLARENCE ST						Northbound KENNEDY RD						Eastbound CLARENCE ST						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
17:00:00	32	152	102	1	8	287	21	139	39	0	8	199	63	300	13	1	9	377	42	61	30	0	6	133	996
17:15:00	29	143	92	1	12	265	16	141	38	0	12	195	70	245	22	0	7	337	43	91	26	0	6	160	957
17:30:00	31	151	81	0	2	263	17	100	28	0	3	145	84	267	16	0	5	367	33	52	26	0	6	111	886
17:45:00	31	109	81	0	3	221	15	122	36	0	2	173	64	255	13	0	10	332	49	78	28	0	11	155	881
Grand Total	123	555	356	2	25	1036	69	502	141	0	25	712	281	1067	64	1	31	1413	167	282	110	0	29	559	**3720**
Approach%	11.9%	53.6%	34.4%	0.2%		-	9.7%	70.5%	19.8%	0%		-	19.9%	75.5%	4.5%	0.1%		-	29.9%	50.4%	19.7%	0%		-	**-**
Totals %	3.3%	14.9%	9.6%	0.1%		27.8%	1.9%	13.5%	3.8%	0%		19.1%	7.6%	28.7%	1.7%	0%		38%	4.5%	7.6%	3%	0%		15%	**-**
PHF	0.96	0.91	0.87	0.5		0.9	0.82	0.89	0.9	0		0.89	0.84	0.89	0.73	0.25		0.94	0.85	0.77	0.92	0		0.87	**-**
Heavy	1	17	1	0		19	2	2	4	0		8	2	20	5	0		27	1	0	2	0		3	**-**
Heavy %	0.8%	3.1%	0.3%	0%		1.8%	2.9%	0.4%	2.8%	0%		1.1%	0.7%	1.9%	7.8%	0%		1.9%	0.6%	0%	1.8%	0%		0.5%	**-**
Lights	122	538	355	2		1017	67	500	137	0		704	279	1047	59	1		1386	166	282	108	0		556	**-**
Lights %	99.2%	96.9%	99.7%	100%		98.2%	97.1%	99.6%	97.2%	0%		98.9%	99.3%	98.1%	92.2%	100%		98.1%	99.4%	100%	98.2%	0%		99.5%	**-**
Single-Unit Trucks	1	9	1	0		11	1	2	1	0		4	2	3	4	0		9	1	0	2	0		3	**-**
Single-Unit Trucks %	0.8%	1.6%	0.3%	0%		1.1%	1.4%	0.4%	0.7%	0%		0.6%	0.7%	0.3%	6.3%	0%		0.6%	0.6%	0%	1.8%	0%		0.5%	**-**
Buses	0	8	0	0		8	0	0	0	0		0	0	12	0	0		12	0	0	0	0		0	**-**
Buses %	0%	1.4%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		0.8%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	0	0	0		0	1	0	3	0		4	0	5	1	0		6	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	1.4%	0%	2.1%	0%		0.6%	0%	0.5%	1.6%	0%		0.4%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	24	-	-	-	-	-	23	-	-	-	-	-	30	-	-	-	-	-	28	-	**-**
Pedestrians%	-	-	-	-	21.8%		-	-	-	-	20.9%		-	-	-	-	27.3%		-	-	-	-	25.5%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0.9%		-	-	-	-	1.8%		-	-	-	-	0.9%		-	-	-	-	0.9%		**-**

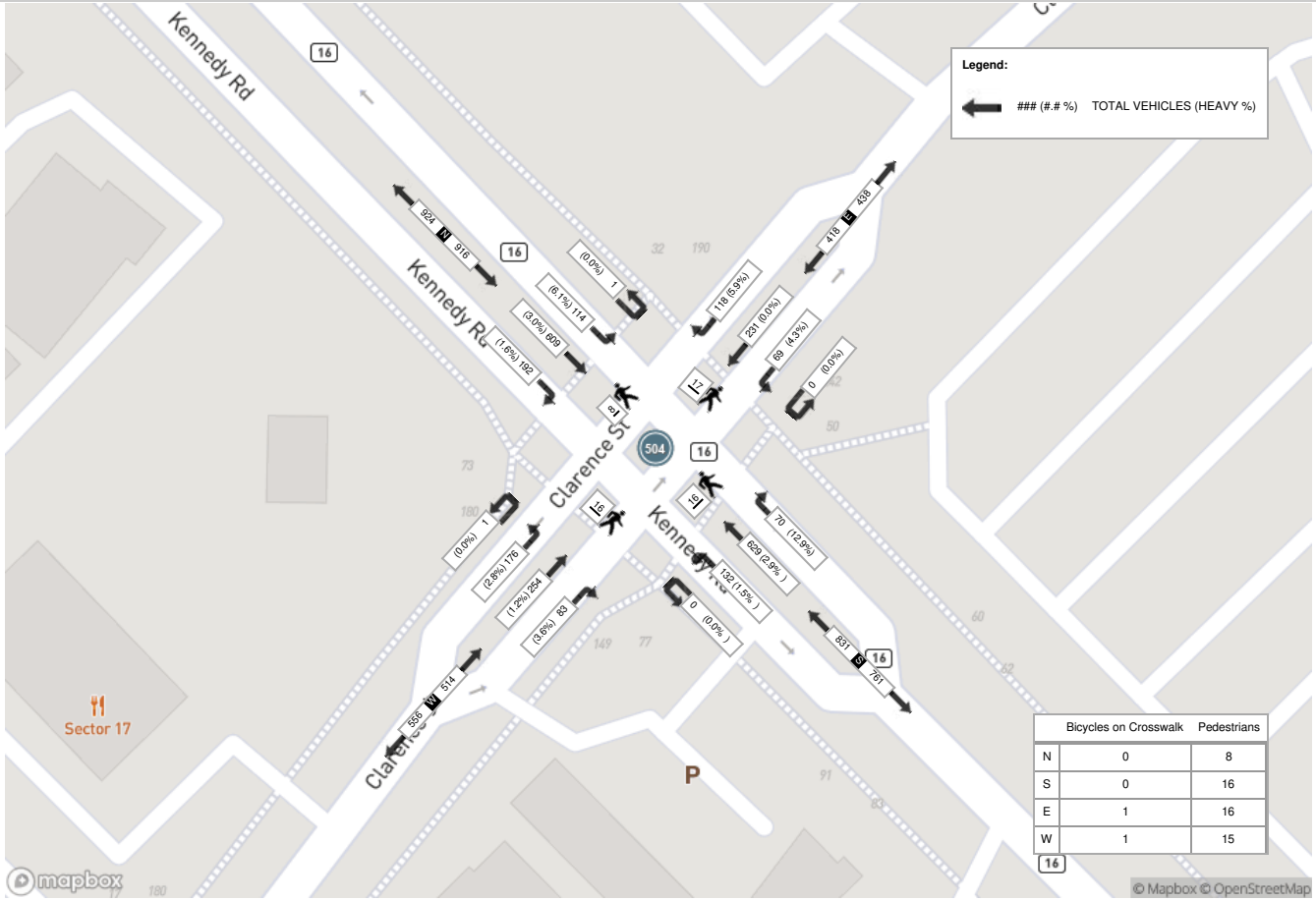
Peak Hour: 08:00 AM - 09:00 AM **Weather: Moderate Rain (5.84 °C)**



	Bicycles on Crosswalk	Pedestrians
N	1	7
S	1	12
E	0	1
W	1	12

Peel Region
SUITE B 10 PEEL CENTRE DR
BRAMPTON ONTARIO, L6T 4B9
CANADA

Peak Hour: 01:00 PM - 02:00 PM **Weather: Light Rain (4.57 °C)**

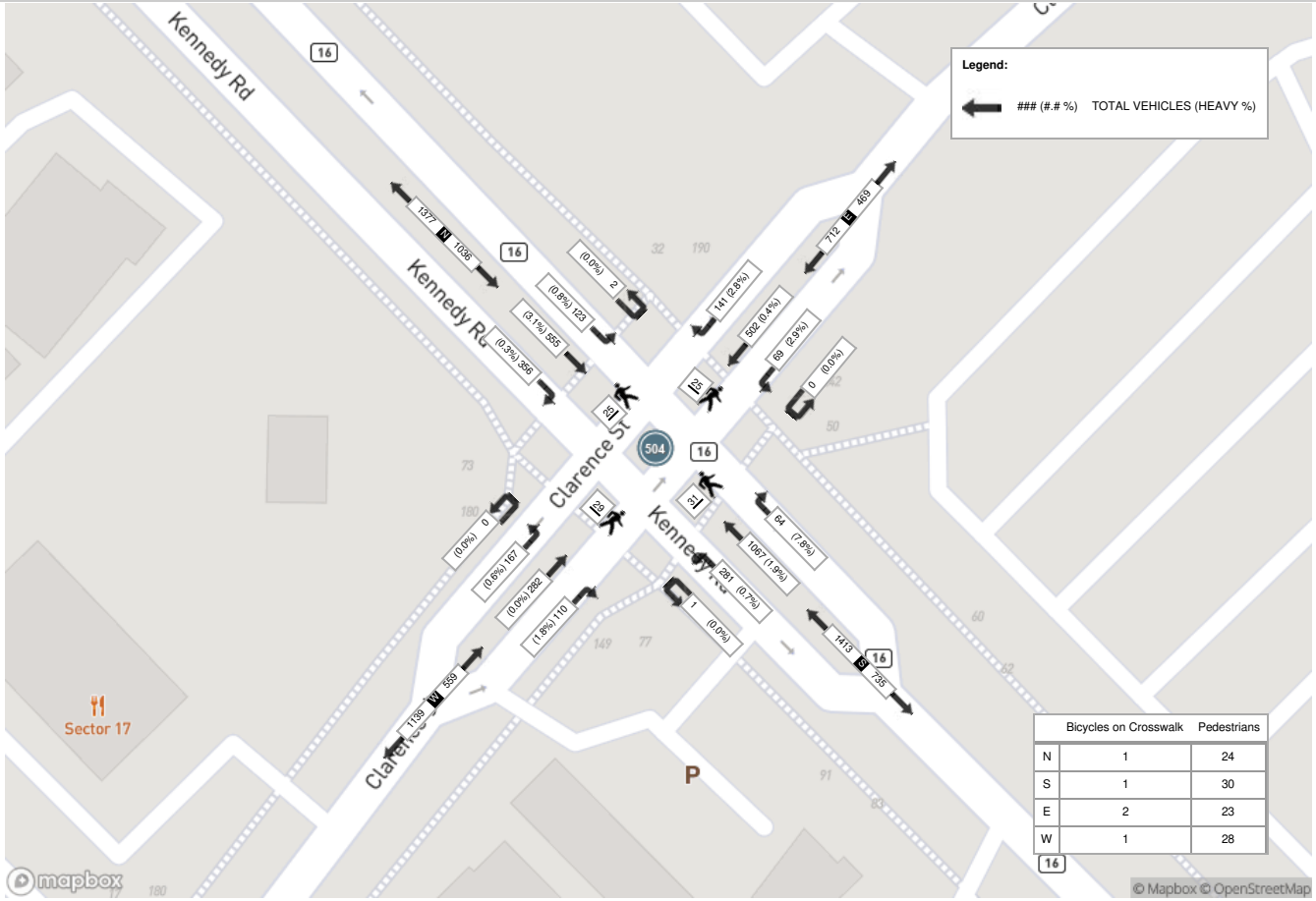


	Bicycles on Crosswalk	Pedestrians
N	0	8
S	0	16
E	1	16
W	1	15

16

Peel Region
SUITE B 10 PEEL CENTRE DR
BRAMPTON ONTARIO, L6T 4B9
CANADA

Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (5.56 °C)**



Spectrum

Turning Movement Count
Location Name: KENNEDY RD & QUEEN ST E
Date: Wed, Apr 17, 2024 Deployment Lead: David Chu

Peel Region
SUITE B 10 PEEL CENTRE DR
BRAMPTON ONTARIO, L6T 4B9
CANADA

Turning Movement Count (508 . KENNEDY RD & QUEEN ST E) CustID: 01603099

Start Time	Southbound KENNEDY RD						Westbound QUEEN ST E						Northbound KENNEDY RD						Eastbound QUEEN ST E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
07:00:00	72	158	4	0	10	234	20	74	16	0	11	110	10	79	33	0	16	122	8	220	33	0	19	261	727
07:15:00	48	181	10	0	3	239	30	113	36	0	2	179	11	54	37	0	16	102	14	297	39	0	11	350	870
07:30:00	81	274	10	0	10	365	27	100	37	0	11	164	15	66	67	0	11	148	6	281	31	0	10	318	995
07:45:00	80	232	16	0	25	328	39	150	62	0	19	251	15	70	54	0	24	139	11	308	53	0	26	372	1090
Hourly	281	845	40	0	48	1166	116	437	151	0	43	704	51	269	191	0	67	511	39	1106	156	0	66	1301	3682
08:00:00	70	265	15	0	12	350	40	180	71	0	20	291	22	124	56	0	23	202	28	263	44	0	16	335	1178
08:15:00	84	250	19	0	7	353	37	181	42	0	15	260	19	106	58	0	18	183	19	288	38	0	21	345	1141
08:30:00	63	223	22	0	5	308	43	192	34	0	6	269	21	89	61	0	25	171	19	297	43	0	16	359	1107
08:45:00	82	266	15	0	2	363	52	189	42	0	5	283	23	97	59	0	15	179	10	227	29	0	20	266	1091
Hourly	299	1004	71	0	26	1374	172	742	189	0	46	1103	85	416	234	0	81	735	76	1075	154	0	73	1305	4517
BREAK																									
11:00:00	56	142	12	0	35	210	56	176	61	0	34	293	28	97	56	0	20	181	16	187	31	0	16	234	918
11:15:00	64	160	18	0	14	242	43	160	62	0	19	265	21	100	58	0	18	179	16	184	29	0	23	229	915
11:30:00	64	138	20	0	18	222	55	137	59	0	22	251	31	113	65	0	26	209	10	204	40	0	16	254	936
11:45:00	55	140	21	0	20	216	60	196	65	0	35	321	27	119	54	0	31	200	31	170	35	0	7	236	973
Hourly	239	580	71	0	87	890	214	669	247	0	110	1130	107	429	233	0	95	769	73	745	135	0	62	953	3742
12:00:00	62	156	18	0	12	236	61	122	72	0	18	255	27	135	75	0	18	237	18	183	28	1	14	230	958
12:15:00	76	111	15	0	17	202	65	190	68	0	15	323	43	109	69	0	23	221	18	184	43	0	17	245	991
12:30:00	77	134	21	0	10	232	57	168	78	0	7	303	29	120	60	0	21	209	23	181	34	2	23	240	984
12:45:00	70	151	21	0	19	242	56	175	74	0	16	305	26	150	72	0	22	248	14	173	44	1	13	232	1027
Hourly	285	552	75	0	58	912	239	655	292	0	56	1186	125	514	276	0	84	915	73	721	149	4	67	947	3960
13:00:00	43	116	21	0	11	180	67	197	59	0	15	323	35	114	59	0	20	208	19	228	33	1	21	281	992
13:15:00	68	135	20	0	18	223	61	172	65	0	17	298	26	158	63	0	25	247	25	172	23	0	25	220	988
13:30:00	64	136	21	0	9	221	51	184	85	0	9	320	31	153	79	0	35	263	20	216	38	0	29	274	1078
13:45:00	55	152	23	0	11	230	59	207	86	0	5	352	35	126	60	0	24	221	26	192	43	0	11	261	1064
Hourly	230	539	85	0	49	854	238	760	295	0	46	1293	127	551	261	0	104	939	90	808	137	1	86	1036	4122
BREAK																									
15:00:00	66	161	11	0	30	238	66	239	103	0	29	408	44	193	68	0	43	305	27	230	41	0	29	298	1249
15:15:00	75	147	19	0	18	241	56	216	128	0	14	400	47	232	60	1	33	340	30	220	35	0	17	285	1266
15:30:00	57	153	14	0	19	224	63	206	81	0	17	350	47	232	68	0	39	347	30	204	25	0	62	259	1180
15:45:00	76	132	13	0	13	221	60	236	106	0	12	402	55	202	55	0	29	312	32	235	31	1	23	299	1234
Hourly	274	593	57	0	80	924	245	897	418	0	72	1560	193	859	251	1	144	1304	119	889	132	1	131	1141	4929
16:00:00	52	147	19	0	5	218	59	227	132	0	6	418	53	235	56	1	30	345	47	202	30	1	24	280	1261
16:15:00	62	149	21	0	14	232	59	225	115	0	16	399	47	245	58	0	32	350	27	198	34	0	30	259	1240
16:30:00	60	109	18	0	15	187	66	234	132	0	17	432	42	199	48	0	39	289	36	206	29	0	24	271	1179
16:45:00	68	156	18	0	14	242	58	218	121	0	14	397	37	252	45	0	25	334	43	205	28	1	32	277	1250
Hourly	242	561	76	0	48	879	242	904	500	0	53	1646	179	931	207	1	126	1318	153	811	121	2	110	1087	4930
17:00:00	67	152	26	0	22	245	56	256	136	0	17	448	47	226	39	0	25	312	37	209	30	0	25	276	1281
17:15:00	44	128	24	0	10	196	57	262	127	1	10	447	34	228	32	0	28	294	53	236	29	0	20	318	1255
17:30:00	62	142	23	0	13	227	58	210	122	0	11	390	38	252	63	0	39	353	53	188	30	0	34	271	1241
17:45:00	72	112	22	0	7	206	58	231	129	0	10	418	47	215	44	0	21	306	34	219	27	0	18	280	1210
Hourly	245	534	95	0	52	874	229	959	514	1	48	1703	166	921	178	0	113	1265	177	852	116	0	97	1145	4987
Grand Total	2095	5208	570	0	448	7873	1695	6023	2606	1	474	10325	1033	4890	1831	2	814	7756	800	7007	1100	8	692	8915	**34869**
Approach%	26.6%	66.2%	7.2%	0%		-	16.4%	58.3%	25.2%	0%		-	13.3%	63%	23.6%	0%		-	9%	78.6%	12.3%	0.1%		-	**-**
Totals %	6%	14.9%	1.6%	0%		22.6%	4.9%	17.3%	7.5%	0%		29.6%	3%	14%	5.3%	0%		22.2%	2.3%	20.1%	3.2%	0%		25.6%	**-**

Heavy	62	168	14	0	-	48	196	58	0	-	15	177	64	0	-	21	203	20	0	-	-
Heavy %	3%	3.2%	2.5%	0%	-	2.8%	3.3%	2.2%	0%	-	1.5%	3.6%	3.5%	0%	-	2.6%	2.9%	1.8%	0%	-	-
Bicycles	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	2	0	0	-	-
Bicycle %	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Moderate Rain (5.84 °C)

Start Time	Southbound KENNEDY RD						Westbound QUEEN ST E						Northbound KENNEDY RD						Eastbound QUEEN ST E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
08:00:00	70	265	15	0	12	350	40	180	71	0	20	291	22	124	56	0	23	202	28	263	44	0	16	335	1178
08:15:00	84	250	19	0	7	353	37	181	42	0	15	260	19	106	58	0	18	183	19	288	38	0	21	345	1141
08:30:00	63	223	22	0	5	308	43	192	34	0	6	269	21	89	61	0	25	171	19	297	43	0	16	359	1107
08:45:00	82	266	15	0	2	363	52	189	42	0	5	283	23	97	59	0	15	179	10	227	29	0	20	266	1091
Grand Total	299	1004	71	0	26	1374	172	742	189	0	46	1103	85	416	234	0	81	735	76	1075	154	0	73	1305	**4517**
Approach%	21.8%	73.1%	5.2%	0%		-	15.6%	67.3%	17.1%	0%		-	11.6%	56.6%	31.8%	0%		-	5.8%	82.4%	11.8%	0%		-	**-**
Totals %	6.6%	22.2%	1.6%	0%		30.4%	3.8%	16.4%	4.2%	0%		24.4%	1.9%	9.2%	5.2%	0%		16.3%	1.7%	23.8%	3.4%	0%		28.9%	**-**
PHF	0.89	0.94	0.81	0		0.95	0.83	0.97	0.67	0		0.95	0.92	0.84	0.96	0		0.91	0.68	0.9	0.88	0		0.91	**-**
Heavy	9	36	2	0		47	12	30	9	0		51	3	40	9	0		52	5	33	2	0		40	**-**
Heavy %	3%	3.6%	2.8%	0%		3.4%	7%	4%	4.8%	0%		4.6%	3.5%	9.6%	3.8%	0%		7.1%	6.6%	3.1%	1.3%	0%		3.1%	**-**
Lights	290	968	69	0		1327	160	712	180	0		1052	82	376	225	0		683	71	1042	152	0		1265	**-**
Lights %	97%	96.4%	97.2%	0%		96.6%	93%	96%	95.2%	0%		95.4%	96.5%	90.4%	96.2%	0%		92.9%	93.4%	96.9%	98.7%	0%		96.9%	**-**
Single-Unit Trucks	4	10	0	0		14	3	12	5	0		20	0	12	2	0		14	1	9	1	0		11	**-**
Single-Unit Trucks %	1.3%	1%	0%	0%		1%	1.7%	1.6%	2.6%	0%		1.8%	0%	2.9%	0.9%	0%		1.9%	1.3%	0.8%	0.6%	0%		0.8%	**-**
Buses	3	22	1	0		26	7	18	4	0		29	2	25	7	0		34	4	24	1	0		29	**-**
Buses %	1%	2.2%	1.4%	0%		1.9%	4.1%	2.4%	2.1%	0%		2.6%	2.4%	6%	3%	0%		4.6%	5.3%	2.2%	0.6%	0%		2.2%	**-**
Articulated Trucks	2	4	1	0		7	2	0	0	0		2	1	3	0	0		4	0	0	0	0		0	**-**
Articulated Trucks %	0.7%	0.4%	1.4%	0%		0.5%	1.2%	0%	0%	0%		0.2%	1.2%	0.7%	0%	0%		0.5%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	26	-	-	-	-	-	45	-	-	-	-	-	80	-	-	-	-	-	73	-	**-**
Pedestrians%	-	-	-	-	11.5%		-	-	-	-	19.9%		-	-	-	-	35.4%		-	-	-	-	32.3%		**-**
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%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0.4%		-	-	-	-	0.4%		-	-	-	-	0%		**-**

Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (4.57 °C)

Start Time	Southbound KENNEDY RD						Westbound QUEEN ST E						Northbound KENNEDY RD						Eastbound QUEEN ST E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
13:00:00	43	116	21	0	11	180	67	197	59	0	15	323	35	114	59	0	20	208	19	228	33	1	21	281	992
13:15:00	68	135	20	0	18	223	61	172	65	0	17	298	26	158	63	0	25	247	25	172	23	0	25	220	988
13:30:00	64	136	21	0	9	221	51	184	85	0	9	320	31	153	79	0	35	263	20	216	38	0	29	274	1078
13:45:00	55	152	23	0	11	230	59	207	86	0	5	352	35	126	60	0	24	221	26	192	43	0	11	261	1064
Grand Total	230	539	85	0	49	854	238	760	295	0	46	1293	127	551	261	0	104	939	90	808	137	1	86	1036	**4122**
Approach%	26.9%	63.1%	10%	0%		-	18.4%	58.8%	22.8%	0%		-	13.5%	58.7%	27.8%	0%		-	8.7%	78%	13.2%	0.1%		-	**-**
Totals %	5.6%	13.1%	2.1%	0%		20.7%	5.8%	18.4%	7.2%	0%		31.4%	3.1%	13.4%	6.3%	0%		22.8%	2.2%	19.6%	3.3%	0%		25.1%	**-**
PHF	0.85	0.89	0.92	0		0.93	0.89	0.92	0.86	0		0.92	0.91	0.87	0.83	0		0.89	0.87	0.89	0.8	0.25		0.92	**-**
Heavy	13	20	2	0		35	6	32	8	0		46	2	12	14	0		28	0	22	3	0		25	**-**
Heavy %	5.7%	3.7%	2.4%	0%		4.1%	2.5%	4.2%	2.7%	0%		3.6%	1.6%	2.2%	5.4%	0%		3%	0%	2.7%	2.2%	0%		2.4%	**-**
Lights	217	519	83	0		819	232	728	287	0		1247	125	539	247	0		911	90	786	134	1		1011	**-**
Lights %	94.3%	96.3%	97.6%	0%		95.9%	97.5%	95.8%	97.3%	0%		96.4%	98.4%	97.8%	94.6%	0%		97%	100%	97.3%	97.8%	100%		97.6%	**-**
Single-Unit Trucks	5	13	0	0		18	4	11	4	0		19	2	7	9	0		18	0	10	3	0		13	**-**
Single-Unit Trucks %	2.2%	2.4%	0%	0%		2.1%	1.7%	1.4%	1.4%	0%		1.5%	1.6%	1.3%	3.4%	0%		1.9%	0%	1.2%	2.2%	0%		1.3%	**-**
Buses	7	7	2	0		16	1	20	4	0		25	0	4	1	0		5	0	12	0	0		12	**-**
Buses %	3%	1.3%	2.4%	0%		1.9%	0.4%	2.6%	1.4%	0%		1.9%	0%	0.7%	0.4%	0%		0.5%	0%	1.5%	0%	0%		1.2%	**-**
Articulated Trucks	1	0	0	0		1	1	1	0	0		2	0	1	4	0		5	0	0	0	0		0	**-**
Articulated Trucks %	0.4%	0%	0%	0%		0.1%	0.4%	0.1%	0%	0%		0.2%	0%	0.2%	1.5%	0%		0.5%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	48	-	-	-	-	-	46	-	-	-	-	-	103	-	-	-	-	-	85	-	**-**
Pedestrians%	-	-	-	-	16.8%		-	-	-	-	16.1%		-	-	-	-	36.1%		-	-	-	-	29.8%		**-**
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%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0.4%		-	-	-	-	0%		-	-	-	-	0.4%		-	-	-	-	0.4%		**-**

Spectrum

Turning Movement Count
Location Name: KENNEDY RD & QUEEN ST E
Date: Wed, Apr 17, 2024 Deployment Lead: David Chu

Peel Region
SUITE B 10 PEEL CENTRE DR
BRAMPTON ONTARIO, L6T 4B9
CANADA

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (5.56 °C)

Start Time	Southbound KENNEDY RD						Westbound QUEEN ST E						Northbound KENNEDY RD						Eastbound QUEEN ST E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
17:00:00	67	152	26	0	22	245	56	256	136	0	17	448	47	226	39	0	25	312	37	209	30	0	25	276	1281
17:15:00	44	128	24	0	10	196	57	262	127	1	10	447	34	228	32	0	28	294	53	236	29	0	20	318	1255
17:30:00	62	142	23	0	13	227	58	210	122	0	11	390	38	252	63	0	39	353	53	188	30	0	34	271	1241
17:45:00	72	112	22	0	7	206	58	231	129	0	10	418	47	215	44	0	21	306	34	219	27	0	18	280	1210
Grand Total	245	534	95	0	52	874	229	959	514	1	48	1703	166	921	178	0	113	1265	177	852	116	0	97	1145	**4987**
Approach%	28%	61.1%	10.9%	0%		-	13.4%	56.3%	30.2%	0.1%		-	13.1%	72.8%	14.1%	0%		-	15.5%	74.4%	10.1%	0%		-	**-**
Totals %	4.9%	10.7%	1.9%	0%		17.5%	4.6%	19.2%	10.3%	0%		34.1%	3.3%	18.5%	3.6%	0%		25.4%	3.5%	17.1%	2.3%	0%		23%	**-**
PHF	0.85	0.88	0.91	0		0.89	0.99	0.92	0.94	0.25		0.95	0.88	0.91	0.71	0		0.9	0.83	0.9	0.97	0		0.9	**-**
Heavy	5	17	0	0		22	2	17	3	0		22	0	15	3	0		18	1	16	1	0		18	**-**
Heavy %	2%	3.2%	0%	0%		2.5%	0.9%	1.8%	0.6%	0%		1.3%	0%	1.6%	1.7%	0%		1.4%	0.6%	1.9%	0.9%	0%		1.6%	**-**
Lights	240	517	95	0		852	227	942	511	1		1681	166	906	175	0		1247	176	836	115	0		1127	**-**
Lights %	98%	96.8%	100%	0%		97.5%	99.1%	98.2%	99.4%	100%		98.7%	100%	98.4%	98.3%	0%		98.6%	99.4%	98.1%	99.1%	0%		98.4%	**-**
Single-Unit Trucks	3	9	0	0		12	1	3	3	0		7	0	2	1	0		3	0	3	1	0		4	**-**
Single-Unit Trucks %	1.2%	1.7%	0%	0%		1.4%	0.4%	0.3%	0.6%	0%		0.4%	0%	0.2%	0.6%	0%		0.2%	0%	0.4%	0.9%	0%		0.3%	**-**
Buses	1	8	0	0		9	0	14	0	0		14	0	13	1	0		14	1	13	0	0		14	**-**
Buses %	0.4%	1.5%	0%	0%		1%	0%	1.5%	0%	0%		0.8%	0%	1.4%	0.6%	0%		1.1%	0.6%	1.5%	0%	0%		1.2%	**-**
Articulated Trucks	1	0	0	0		1	1	0	0	0		1	0	0	1	0		1	0	0	0	0		0	**-**
Articulated Trucks %	0.4%	0%	0%	0%		0.1%	0.4%	0%	0%	0%		0.1%	0%	0%	0.6%	0%		0.1%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	52	-	-	-	-	-	48	-	-	-	-	-	110	-	-	-	-	-	95	-	**-**
Pedestrians%	-	-	-	-	16.8%		-	-	-	-	15.5%		-	-	-	-	35.5%		-	-	-	-	30.6%		**-**
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%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	1%		-	-	-	-	0.6%		**-**

Peak Hour: 08:00 AM - 09:00 AM **Weather: Moderate Rain (5.84 °C)**



Peak Hour: 01:00 PM - 02:00 PM **Weather: Light Rain (4.57 °C)**



Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (5.56 °C)**



Turning Movement Count (516 . KENNEDY RD & VODDEN ST) CustID: 01604178

Start Time	Southbound KENNEDY RD						Westbound VODDEN ST E						Northbound KENNEDY RD						Eastbound VODDEN ST E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
2024-04-25 07:00:00	27	170	9	0	1	206	9	17	11	0	0	37	9	60	11	0	1	80	5	35	26	0	1	66	389
2024-04-25 07:15:00	33	171	5	0	1	209	12	28	14	0	4	54	15	79	13	0	2	107	5	78	49	0	1	132	502
2024-04-25 07:30:00	40	265	3	0	5	308	14	19	11	0	4	44	19	76	9	0	4	104	9	57	55	0	9	121	577
2024-04-25 07:45:00	53	263	6	0	14	322	23	51	11	0	5	85	17	84	17	0	7	118	9	85	53	0	8	147	672
Hourly	153	869	23	0	21	1045	58	115	47	0	13	220	60	299	50	0	14	409	28	255	183	0	19	466	2140
2024-04-25 08:00:00	48	320	8	1	11	377	35	39	22	0	12	96	21	173	37	0	10	231	6	73	37	1	8	117	821
2024-04-25 08:15:00	41	250	13	0	7	304	32	61	16	0	2	109	17	130	21	0	5	168	8	74	46	0	5	128	709
2024-04-25 08:30:00	43	276	10	0	8	329	23	54	14	0	2	91	25	99	18	0	5	142	8	79	33	0	7	120	682
2024-04-25 08:45:00	58	285	22	0	3	365	29	55	18	0	6	102	22	105	15	0	3	142	10	65	46	0	5	121	730
Hourly	190	1131	53	1	29	1375	119	209	70	0	22	398	85	507	91	0	23	683	32	291	162	1	25	486	2942
BREAK																									
2024-04-25 11:00:00	24	184	15	0	7	223	21	64	20	0	10	105	28	128	18	2	5	176	15	46	25	0	3	86	590
2024-04-25 11:15:00	24	131	12	0	7	167	18	38	9	0	7	65	32	124	11	0	8	167	24	55	39	0	3	118	517
2024-04-25 11:30:00	32	155	8	0	7	195	11	53	13	0	10	77	26	124	17	0	6	167	12	53	30	0	7	95	534
2024-04-25 11:45:00	19	158	16	0	10	193	24	40	19	0	6	83	38	138	24	0	8	200	15	60	39	0	8	114	590
Hourly	99	628	51	0	31	778	74	195	61	0	33	330	124	514	70	2	27	710	66	214	133	0	21	413	2231
2024-04-25 12:00:00	31	190	15	1	12	237	21	53	19	0	11	93	33	167	18	1	4	219	18	55	39	0	8	112	661
2024-04-25 12:15:00	16	162	19	0	9	197	33	54	16	0	8	103	29	162	22	0	13	213	11	45	34	0	11	90	603
2024-04-25 12:30:00	28	173	15	0	7	216	28	56	10	0	16	94	44	153	30	0	5	227	23	51	44	0	6	118	655
2024-04-25 12:45:00	15	152	17	1	11	185	16	51	9	0	12	76	35	176	16	0	6	227	18	46	29	0	6	93	581
Hourly	90	677	66	2	39	835	98	214	54	0	47	366	141	658	86	1	28	886	70	197	146	0	31	413	2500
2024-04-25 13:00:00	25	176	10	0	10	211	14	40	23	0	15	77	36	141	23	0	12	200	7	56	42	0	10	105	593
2024-04-25 13:15:00	18	158	12	1	5	189	14	56	18	0	4	88	39	168	24	0	9	231	10	55	30	0	13	95	603
2024-04-25 13:30:00	26	179	15	0	4	220	16	48	21	0	7	85	43	154	16	1	7	214	14	65	38	0	8	117	636
2024-04-25 13:45:00	20	134	16	0	8	170	22	70	22	0	8	114	37	143	22	0	14	202	17	70	41	0	10	128	614
Hourly	89	647	53	1	27	790	66	214	84	0	34	364	155	606	85	1	42	847	48	246	151	0	41	445	2446
BREAK																									
2024-04-25 15:00:00	20	145	15	0	13	180	31	82	32	0	15	145	54	292	22	2	11	370	10	74	32	0	16	116	811
2024-04-25 15:15:00	43	189	18	1	8	251	23	70	31	0	6	124	38	291	23	1	9	353	15	71	35	0	12	121	849
2024-04-25 15:30:00	25	161	11	0	21	197	28	84	41	0	6	153	49	279	26	0	2	354	24	67	44	0	12	135	839
2024-04-25 15:45:00	25	172	15	0	13	212	21	95	34	0	8	150	61	295	37	0	11	393	11	77	28	0	14	116	871
Hourly	113	667	59	1	55	840	103	331	138	0	35	572	202	1157	108	3	33	1470	60	289	139	0	54	488	3370
2024-04-25 16:00:00	30	179	8	1	12	218	26	96	20	0	6	142	58	286	42	0	4	386	16	57	30	0	5	103	849
2024-04-25 16:15:00	26	172	10	0	9	208	27	90	40	0	15	157	55	319	28	0	9	402	19	78	27	0	3	124	891
2024-04-25 16:30:00	24	171	12	0	7	207	23	101	32	0	12	156	42	323	35	0	14	400	11	78	38	0	16	127	890
2024-04-25 16:45:00	21	186	17	0	11	224	33	113	29	0	12	175	43	316	24	0	13	383	18	71	30	0	10	119	901
Hourly	101	708	47	1	39	857	109	400	121	0	45	630	198	1244	129	0	40	1571	64	284	125	0	34	473	3531
2024-04-25 17:00:00	30	162	8	0	10	200	17	90	35	0	7	142	65	316	40	0	6	421	21	91	27	0	15	139	902
2024-04-25 17:15:00	31	166	17	0	9	214	24	113	26	0	8	163	56	279	35	2	14	372	20	92	37	0	8	149	898
2024-04-25 17:30:00	26	169	23	0	14	218	20	98	37	0	18	155	47	339	34	0	13	420	25	89	25	0	9	139	932
2024-04-25 17:45:00	25	165	19	1	14	210	23	111	33	0	8	167	47	313	30	1	3	391	22	83	40	0	5	145	913
Hourly	112	662	67	1	47	842	84	412	131	0	41	627	215	1247	139	3	36	1604	88	355	129	0	37	572	3645
Grand Total	947	5989	419	7	288	7362	711	2090	706	0	270	3507	1180	6232	758	10	243	8180	456	2131	1168	1	262	3756	**22805**
Approach%	12.9%	81.4%	5.7%	0.1%		-	20.3%	59.6%	20.1%	0%		-	14.4%	76.2%	9.3%	0.1%		-	12.1%	56.7%	31.1%	0%		-	-

Totals %	4.2%	26.3%	1.8%	0%	32.3%	3.1%	9.2%	3.1%	0%	15.4%	5.2%	27.3%	3.3%	0%	35.9%	2%	9.3%	5.1%	0%	16.5%	-
Heavy	19	192	10	0	-	19	35	11	0	-	30	184	21	0	-	11	48	21	0	-	-
Heavy %	2%	3.2%	2.4%	0%	-	2.7%	1.7%	1.6%	0%	-	2.5%	3%	2.8%	0%	-	2.4%	2.3%	1.8%	0%	-	-
Bicycles	0	2	1	0	-	2	9	0	0	-	0	0	1	0	-	0	7	2	0	-	-
Bicycle %	0%	0%	0.2%	0%	-	0.3%	0.4%	0%	0%	-	0%	0%	0.1%	0%	-	0%	0.3%	0.2%	0%	-	-

Spectrum

Turning Movement Count
Location Name: KENNEDY RD & VODDEN ST
Date: Thu, Apr 25, 2024 Deployment Lead: David Chu

Peel Region
SUITE B 10 PEEL CENTRE DR
BRAMPTON ONTARIO, L6T 4B9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (-0.91 °C)

Start Time	Southbound KENNEDY RD						Westbound VODDEN ST E						Northbound KENNEDY RD						Eastbound VODDEN ST E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
2024-04-25 08:00:00	48	320	8	1	11	377	35	39	22	0	12	96	21	173	37	0	10	231	6	73	37	1	8	117	821
2024-04-25 08:15:00	41	250	13	0	7	304	32	61	16	0	2	109	17	130	21	0	5	168	8	74	46	0	5	128	709
2024-04-25 08:30:00	43	276	10	0	8	329	23	54	14	0	2	91	25	99	18	0	5	142	8	79	33	0	7	120	682
2024-04-25 08:45:00	58	285	22	0	3	365	29	55	18	0	6	102	22	105	15	0	3	142	10	65	46	0	5	121	730
Grand Total	190	1131	53	1	29	1375	119	209	70	0	22	398	85	507	91	0	23	683	32	291	162	1	25	486	**2942**
Approach%	13.8%	82.3%	3.9%	0.1%		-	29.9%	52.5%	17.6%	0%		-	12.4%	74.2%	13.3%	0%		-	6.6%	59.9%	33.3%	0.2%		-	**-**
Totals %	6.5%	38.4%	1.8%	0%		46.7%	4%	7.1%	2.4%	0%		13.5%	2.9%	17.2%	3.1%	0%		23.2%	1.1%	9.9%	5.5%	0%		16.5%	**-**
PHF	0.82	0.88	0.6	0.25		0.91	0.85	0.86	0.8	0		0.91	0.85	0.73	0.61	0		0.74	0.8	0.92	0.88	0.25		0.95	0.9
Heavy	7	33	1	0		41	6	6	3	0		15	5	28	8	0		41	2	7	3	0		12	109
Heavy %	3.7%	2.9%	1.9%	0%		3%	5%	2.9%	4.3%	0%		3.8%	5.9%	5.5%	8.8%	0%		6%	6.3%	2.4%	1.9%	0%		2.5%	3.7%
Lights	183	1098	52	1		1334	113	203	67	0		383	80	479	83	0		642	30	284	159	1		474	2833
Lights %	96.3%	97.1%	98.1%	100%		97%	95%	97.1%	95.7%	0%		96.2%	94.1%	94.5%	91.2%	0%		94%	93.8%	97.6%	98.1%	100%		97.5%	96.3%
Single-Unit Trucks	1	14	0	0		15	0	0	1	0		1	1	5	0	0		6	0	2	0	0		2	24
Single-Unit Trucks %	0.5%	1.2%	0%	0%		1.1%	0%	0%	1.4%	0%		0.3%	1.2%	1%	0%	0%		0.9%	0%	0.7%	0%	0%		0.4%	0.8%
Buses	5	16	0	0		21	6	6	2	0		14	4	22	8	0		34	2	5	3	0		10	79
Buses %	2.6%	1.4%	0%	0%		1.5%	5%	2.9%	2.9%	0%		3.5%	4.7%	4.3%	8.8%	0%		5%	6.3%	1.7%	1.9%	0%		2.1%	2.7%
Articulated Trucks	1	3	1	0		5	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	6
Articulated Trucks %	0.5%	0.3%	1.9%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	0%	0%	0%	0%		0%	0.2%
Pedestrians	-	-	-	-	27	-	-	-	-	-	15	-	-	-	-	-	19	-	-	-	-	-	23	-	**-**
Pedestrians%	-	-	-	-	27.3%		-	-	-	-	15.2%		-	-	-	-	19.2%		-	-	-	-	23.2%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	7	-	-	-	-	-	4	-	-	-	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	-	2%		-	-	-	-	7.1%		-	-	-	-	4%		-	-	-	-	2%		**-**
Bicycles on Road	0	0	1	0		-	0	1	0	0		-	0	0	0	0		-	0	0	0	0		-	**-**
Bicycles on Road%	0%	0%	100%	0%			0%	100%	0%	0%			0%	0%	0%	0%			0%	0%	0%	0%			**-**

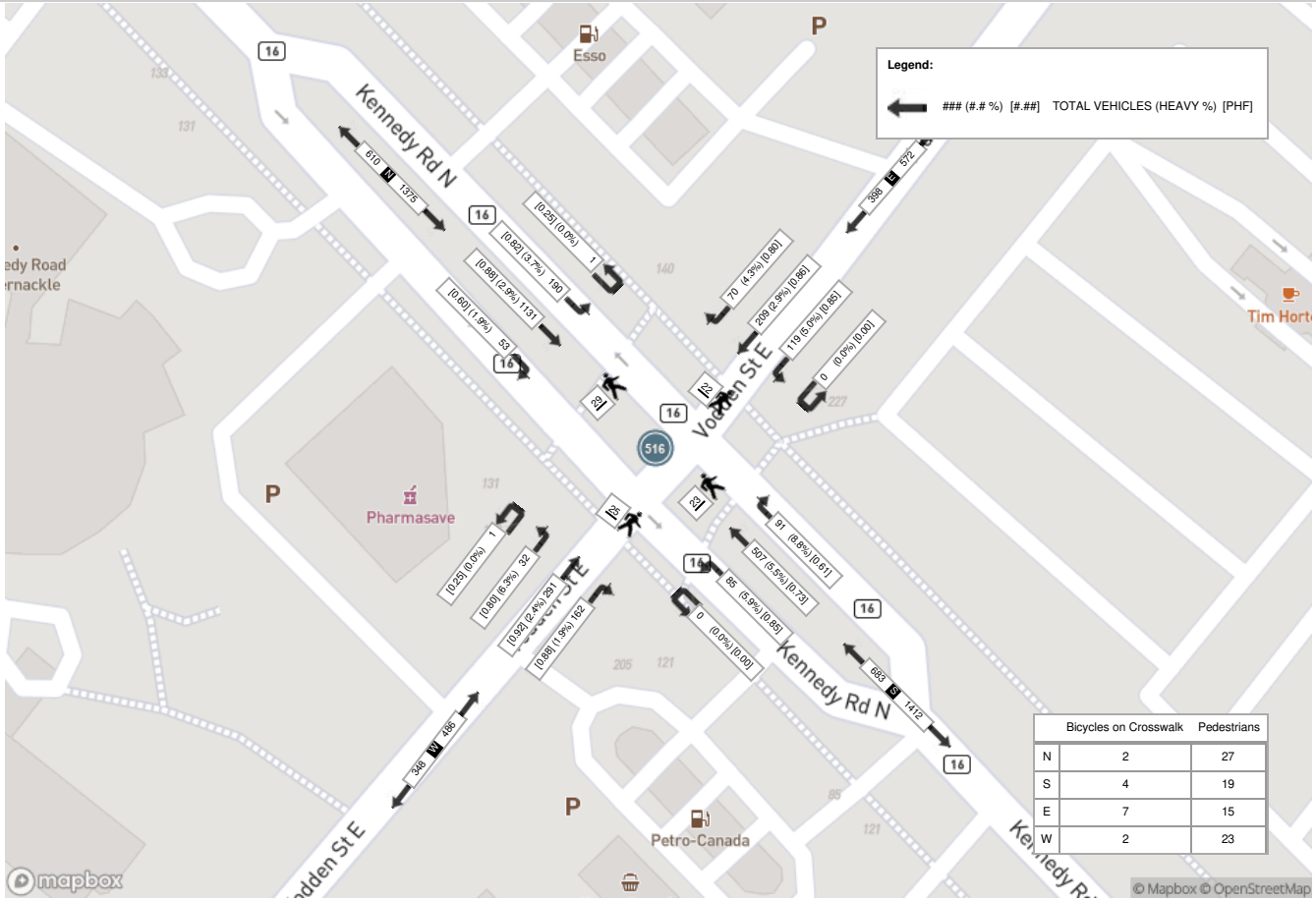
Peak Hour: 12:00 PM - 01:00 PM Weather: Few Clouds (4.69 °C)

Start Time	Southbound KENNEDY RD						Westbound VODDEN ST E						Northbound KENNEDY RD						Eastbound VODDEN ST E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
2024-04-25 12:00:00	31	190	15	1	12	237	21	53	19	0	11	93	33	167	18	1	4	219	18	55	39	0	8	112	661
2024-04-25 12:15:00	16	162	19	0	9	197	33	54	16	0	8	103	29	162	22	0	13	213	11	45	34	0	11	90	603
2024-04-25 12:30:00	28	173	15	0	7	216	28	56	10	0	16	94	44	153	30	0	5	227	23	51	44	0	6	118	655
2024-04-25 12:45:00	15	152	17	1	11	185	16	51	9	0	12	76	35	176	16	0	6	227	18	46	29	0	6	93	581
Grand Total	90	677	66	2	39	835	98	214	54	0	47	366	141	658	86	1	28	886	70	197	146	0	31	413	**2500**
Approach%	10.8%	81.1%	7.9%	0.2%		-	26.8%	58.5%	14.8%	0%		-	15.9%	74.3%	9.7%	0.1%		-	16.9%	47.7%	35.4%	0%		-	**-**
Totals %	3.6%	27.1%	2.6%	0.1%		33.4%	3.9%	8.6%	2.2%	0%		14.6%	5.6%	26.3%	3.4%	0%		35.4%	2.8%	7.9%	5.8%	0%		16.5%	**-**
PHF	0.73	0.89	0.87	0.5		0.88	0.74	0.96	0.71	0		0.89	0.8	0.93	0.72	0.25		0.98	0.76	0.9	0.83	0		0.88	0.95
Heavy	3	19	1	0		23	1	3	1	0		5	2	14	2	0		18	1	5	5	0		11	57
Heavy %	3.3%	2.8%	1.5%	0%		2.8%	1%	1.4%	1.9%	0%		1.4%	1.4%	2.1%	2.3%	0%		2%	1.4%	2.5%	3.4%	0%		2.7%	2.3%
Lights	87	658	65	2		812	97	211	53	0		361	139	644	84	1		868	69	192	141	0		402	2443
Lights %	96.7%	97.2%	98.5%	100%		97.2%	99%	98.6%	98.1%	0%		98.6%	98.6%	97.9%	97.7%	100%		98%	98.6%	97.5%	96.6%	0%		97.3%	97.7%
Single-Unit Trucks	2	12	1	0		15	1	0	1	0		2	1	9	2	0		12	1	1	5	0		7	36
Single-Unit Trucks %	2.2%	1.8%	1.5%	0%		1.8%	1%	0%	1.9%	0%		0.5%	0.7%	1.4%	2.3%	0%		1.4%	1.4%	0.5%	3.4%	0%		1.7%	1.4%
Buses	0	5	0	0		5	0	3	0	0		3	1	4	0	0		5	0	3	0	0		3	16
Buses %	0%	0.7%	0%	0%		0.6%	0%	1.4%	0%	0%		0.8%	0.7%	0.6%	0%	0%		0.6%	0%	1.5%	0%	0%		0.7%	0.6%
Articulated Trucks	1	2	0	0		3	0	0	0	0		0	0	1	0	0		1	0	1	0	0		1	5
Articulated Trucks %	1.1%	0.3%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	0%	0.5%	0%	0%		0.2%	0.2%
Pedestrians	-	-	-	-	38	-	-	-	-	-	44	-	-	-	-	-	27	-	-	-	-	-	31	-	**-**
Pedestrians%	-	-	-	-	26.2%		-	-	-	-	30.3%		-	-	-	-	18.6%		-	-	-	-	21.4%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0.7%		-	-	-	-	2.1%		-	-	-	-	0.7%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0		-	0	2	0	0		-	0	0	0	0		-	0	0	0	0		-	**-**
Bicycles on Road%	0%	0%	0%	0%			0%	100%	0%	0%			0%	0%	0%	0%			0%	0%	0%	0%			**-**

Peak Hour: 05:00 PM - 06:00 PM **Weather: Clear Sky (7.68 °C)**

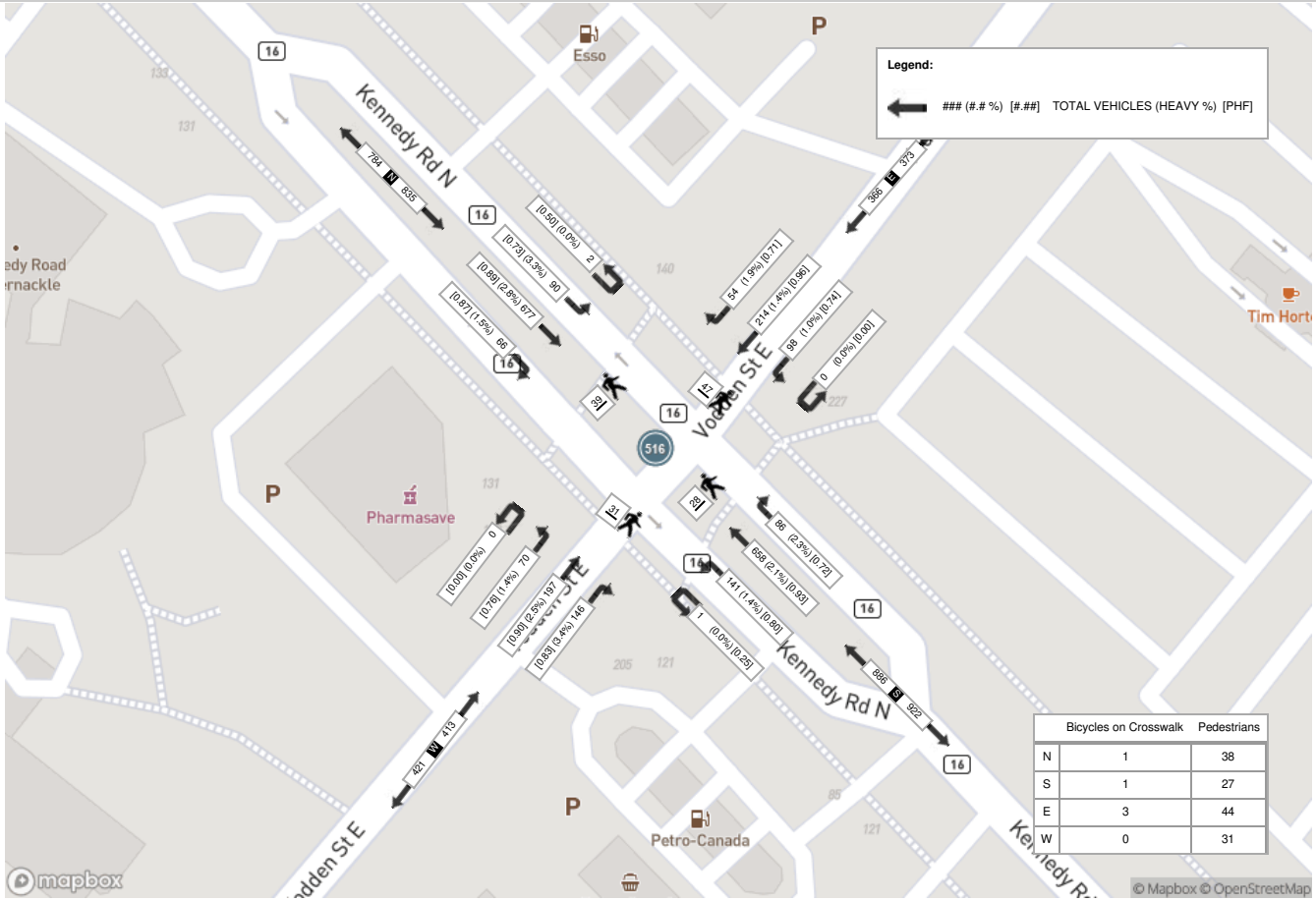
Start Time	Southbound KENNEDY RD						Westbound VODDEN ST E						Northbound KENNEDY RD						Eastbound VODDEN ST E						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
2024-04-25 17:00:00	30	162	8	0	10	200	17	90	35	0	7	142	65	316	40	0	6	421	21	91	27	0	15	139	902
2024-04-25 17:15:00	31	166	17	0	9	214	24	113	26	0	8	163	56	279	35	2	14	372	20	92	37	0	8	149	898
2024-04-25 17:30:00	26	169	23	0	14	218	20	98	37	0	18	155	47	339	34	0	13	420	25	89	25	0	9	139	932
2024-04-25 17:45:00	25	165	19	1	14	210	23	111	33	0	8	167	47	313	30	1	3	391	22	83	40	0	5	145	913
Grand Total	112	662	67	1	47	842	84	412	131	0	41	627	215	1247	139	3	36	1604	88	355	129	0	37	572	**3645**
Approach%	13.3%	78.6%	8%	0.1%		-	13.4%	65.7%	20.9%	0%		-	13.4%	77.7%	8.7%	0.2%		-	15.4%	62.1%	22.6%	0%		-	**-**
Totals %	3.1%	18.2%	1.8%	0%		23.1%	2.3%	11.3%	3.6%	0%		17.2%	5.9%	34.2%	3.8%	0.1%		44%	2.4%	9.7%	3.5%	0%		15.7%	**-**
PHF	0.9	0.98	0.73	0.25		0.97	0.88	0.91	0.89	0		0.94	0.83	0.92	0.87	0.38		0.95	0.88	0.96	0.81	0		0.96	0.98
Heavy	0	19	0	0		19	1	5	0	0		6	1	15	2	0		18	0	3	3	0		6	49
Heavy %	0%	2.9%	0%	0%		2.3%	1.2%	1.2%	0%	0%		1%	0.5%	1.2%	1.4%	0%		1.1%	0%	0.8%	2.3%	0%		1%	1.3%
Lights	112	643	67	1		823	83	407	131	0		621	214	1232	137	3		1586	88	352	126	0		566	3596
Lights %	100%	97.1%	100%	100%		97.7%	98.8%	98.8%	100%	0%		99%	99.5%	98.8%	98.6%	100%		98.9%	100%	99.2%	97.7%	0%		99%	98.7%
Single-Unit Trucks	0	11	0	0		11	1	3	0	0		4	1	5	1	0		7	0	2	2	0		4	26
Single-Unit Trucks %	0%	1.7%	0%	0%		1.3%	1.2%	0.7%	0%	0%		0.6%	0.5%	0.4%	0.7%	0%		0.4%	0%	0.6%	1.6%	0%		0.7%	0.7%
Buses	0	7	0	0		7	0	2	0	0		2	0	8	1	0		9	0	1	0	0		1	19
Buses %	0%	1.1%	0%	0%		0.8%	0%	0.5%	0%	0%		0.3%	0%	0.6%	0.7%	0%		0.6%	0%	0.3%	0%	0%		0.2%	0.5%
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	2	0	0		2	0	0	1	0		1	4
Articulated Trucks %	0%	0.2%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	0%	0%	0.8%	0%		0.2%	0.1%
Pedestrians	-	-	-	-	45	-	-	-	-	-	35	-	-	-	-	-	34	-	-	-	-	-	36	-	**-**
Pedestrians%	-	-	-	-	28%		-	-	-	-	21.7%		-	-	-	-	21.1%		-	-	-	-	22.4%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	6	-	-	-	-	-	2	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	1.2%		-	-	-	-	3.7%		-	-	-	-	1.2%		-	-	-	-	0.6%		**-**
Bicycles on Road	0	0	0	0		-	1	1	0	0		-	0	0	0	0		-	0	1	0	0		-	**-**
Bicycles on Road%	0%	0%	0%	0%			100%	100%	0%	0%			0%	0%	0%	0%			0%	100%	0%	0%			**-**

Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (-0.91 °C)



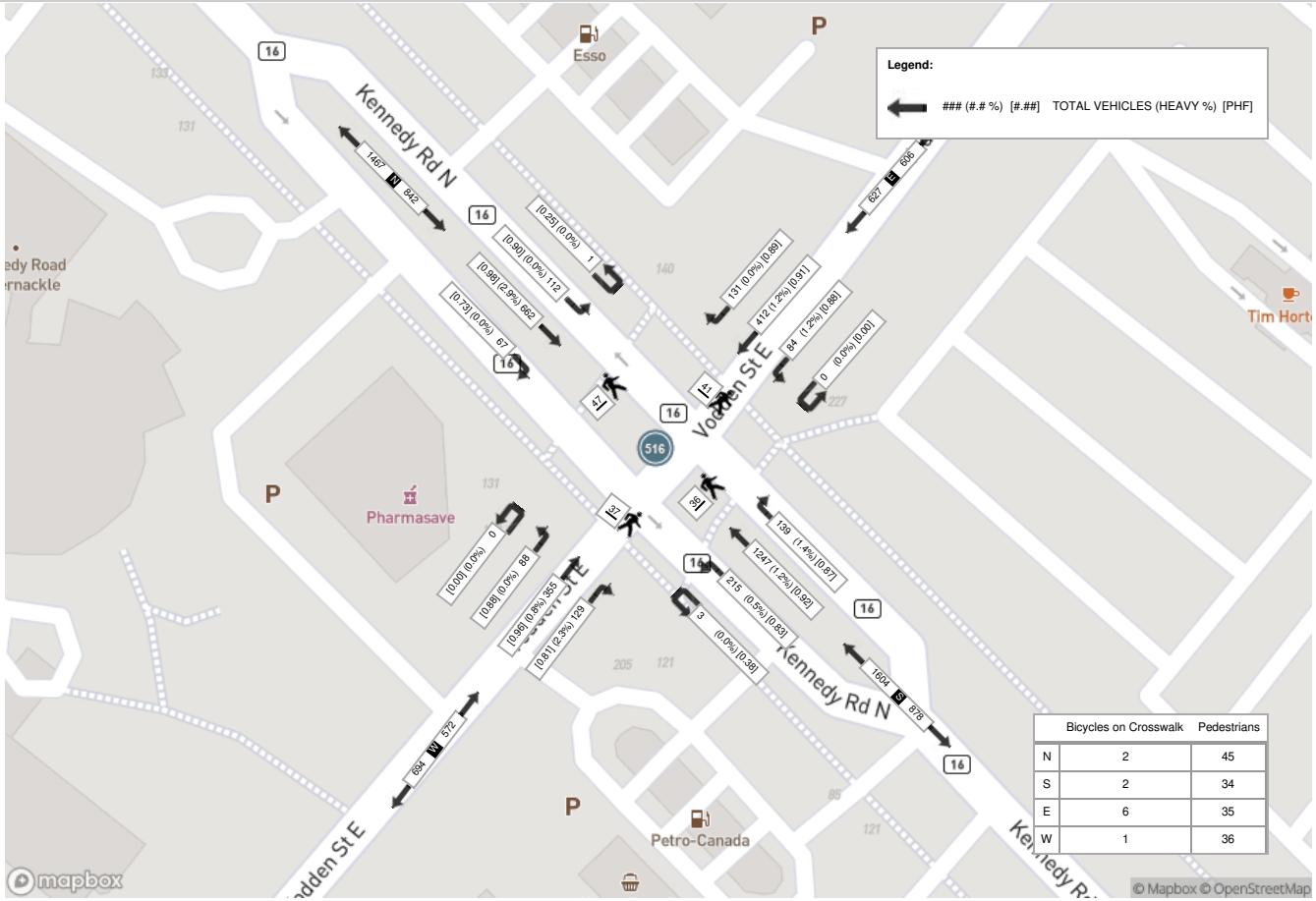
	Bicycles on Crosswalk	Pedestrians
N	2	27
S	4	19
E	7	15
W	2	23

Peak Hour: 12:00 PM - 01:00 PM **Weather: Few Clouds (4.69 °C)**



	Bicycles on Crosswalk	Pedestrians
N	1	38
S	1	27
E	3	44
W	0	31

Peak Hour: 05:00 PM - 06:00 PM **Weather: Clear Sky (7.68 °C)**



	Bicycles on Crosswalk	Pedestrians
N	2	45
S	2	34
E	6	35
W	1	36

Turning Movement Count - Details Report

Location..... CENTRE ST N @ VODDEN ST E

Municipality..... Brampton

Count Date..... Thursday, February 29, 2024

		CENTRE ST N										VODDEN ST E									
		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT
07:00	07:15	8	12	14	0	34	3	6	5	0	14	4	33	3	0	40	4	68	21	0	93
07:15	07:30	6	21	10	0	37	5	6	7	0	18	8	41	2	0	51	3	63	21	0	87
07:30	07:45	11	33	13	0	57	10	15	5	0	30	6	39	2	0	47	8	111	30	0	149
07:45	08:00	8	49	18	0	75	12	21	10	0	43	8	54	4	0	66	13	93	43	0	149
Hourly Total		33	115	55	0	203	30	48	27	0	105	26	167	11	0	204	28	335	115	0	478
08:00	08:15	12	40	29	0	81	8	13	10	0	31	13	68	9	0	90	19	107	20	0	146
08:15	08:30	10	44	21	0	75	10	23	9	0	42	9	79	11	0	99	19	88	31	0	138
08:30	08:45	6	28	24	0	58	16	26	8	0	50	10	79	7	0	96	13	97	22	0	132
08:45	09:00	21	39	33	0	93	17	21	8	0	46	6	64	14	0	84	25	104	44	0	173
Hourly Total		49	151	107	0	307	51	83	35	0	169	38	290	41	0	369	76	396	117	0	589
11:00	11:15	4	22	14	0	40	13	18	8	0	39	3	83	10	0	96	12	88	17	0	117
11:15	11:30	7	22	14	0	43	18	23	4	0	45	10	67	4	0	81	10	70	26	0	106
11:30	11:45	4	18	17	0	39	12	24	10	0	46	6	52	5	0	63	16	77	15	0	108
11:45	12:00	7	22	10	0	39	12	16	8	0	36	8	74	5	0	87	18	94	20	0	132
Hourly Total		22	84	55	0	161	55	81	30	0	166	27	276	24	0	327	56	329	78	0	463
12:00	12:15	9	13	21	0	43	16	23	4	0	43	5	59	5	0	69	12	68	14	0	94
12:15	12:30	6	20	17	0	43	20	16	6	0	42	6	65	12	0	83	17	87	17	0	121
12:30	12:45	3	16	15	0	34	19	22	7	0	48	0	97	12	0	109	18	75	18	0	111
12:45	13:00	5	15	23	0	43	7	25	12	0	44	8	88	15	0	111	12	92	26	0	130
Hourly Total		23	64	76	0	163	62	86	29	0	177	19	309	44	0	372	59	322	75	0	456
13:00	13:15	5	16	10	0	31	9	26	4	0	39	10	83	14	0	107	16	94	11	0	121
13:15	13:30	4	23	19	0	46	22	23	7	0	52	4	86	10	0	100	19	79	16	0	114
13:30	13:45	9	26	15	0	50	16	19	7	0	42	5	79	4	0	88	16	80	12	0	108
13:45	14:00	5	28	18	0	51	15	22	11	0	48	8	93	10	0	111	12	83	18	0	113
Hourly Total		23	93	62	0	178	62	90	29	0	181	27	341	38	0	406	63	336	57	0	456
15:00	15:15	13	28	21	0	62	20	40	10	0	70	9	108	16	0	133	19	83	19	0	121
15:15	15:30	13	18	28	0	59	24	31	7	0	62	7	109	12	0	128	38	65	50	0	153
15:30	15:45	11	31	27	0	69	17	34	8	0	59	12	115	8	0	135	17	105	21	0	143
15:45	16:00	7	17	20	0	44	27	46	17	0	90	11	119	15	0	145	17	90	26	0	133
Hourly Total		44	94	96	0	234	88	151	42	0	281	39	451	51	0	541	91	343	116	0	550
16:00	16:15	4	22	30	0	56	31	31	10	0	72	7	118	22	0	147	30	115	14	0	159

		CENTRE ST N										VODDEN ST E									
		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT
16:15	16:30	7	28	22	0	57	25	31	13	0	69	8	128	14	0	150	34	119	18	0	171
16:30	16:45	5	23	21	0	49	22	39	14	0	75	17	120	9	0	146	18	102	22	0	142
16:45	17:00	9	20	29	0	58	26	43	5	0	74	10	122	12	0	144	32	94	19	0	145
Hourly Total		25	93	102	0	220	104	144	42	0	290	42	488	57	0	587	114	430	73	0	617
17:00	17:15	3	30	17	0	50	18	46	12	0	76	8	143	15	0	166	27	128	18	0	173
17:15	17:30	13	30	18	0	61	15	51	4	0	70	10	149	12	0	171	24	137	19	0	180
17:30	17:45	4	15	33	0	52	21	52	15	0	88	12	123	21	0	156	31	134	22	0	187
17:45	18:00	5	26	30	0	61	25	54	14	0	93	5	116	23	0	144	15	111	17	0	143
Hourly Total		25	101	98	0	224	79	203	45	0	327	35	531	71	0	637	97	510	76	0	683
Grand Total		244	795	651	0	1690	531	886	279	0	1696	253	2853	337	0	3443	584	3001	707	0	4292
Truck %		3%	3%	3%	0%	3%	2%	2%	4%	0%	2%	2%	2%	3%	0%	2%	2%	2%	1%	0%	2%

Turning Movement Count - Details Report

Location..... VODDEN ST E @ KEN WHILLANS DR

Municipality..... Brampton

Count Date..... Thursday, February 29, 2024

		KEN WHILLANS DR										VODDEN ST E									
		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT
07:00	07:15	1	0	2	0	3	2	0	2	0	4	5	40	6	0	51	2	88	12	0	102
07:15	07:30	2	0	4	0	6	4	1	3	0	8	5	48	4	0	57	7	80	14	0	101
07:30	07:45	3	0	2	0	5	6	1	3	0	10	3	56	3	0	62	2	143	23	0	168
07:45	08:00	2	1	4	0	7	3	1	3	0	7	11	69	3	0	83	11	143	17	0	171
Hourly Total		8	1	12	0	21	15	3	11	0	29	24	213	16	0	253	22	454	66	0	542
08:00	08:15	3	2	5	0	10	7	1	8	0	16	11	81	15	0	107	13	135	26	0	174
08:15	08:30	7	1	4	0	12	6	3	4	0	13	4	93	10	0	107	14	126	16	0	156
08:30	08:45	8	2	9	0	19	5	3	1	0	9	5	99	16	0	120	10	123	35	0	168
08:45	09:00	4	0	9	0	13	6	2	7	0	15	6	96	13	0	115	19	161	18	0	198
Hourly Total		22	5	27	0	54	24	9	20	0	53	26	369	54	0	449	56	545	95	0	696
11:00	11:15	9	0	20	0	29	11	2	8	0	21	6	101	3	0	110	14	100	8	0	122
11:15	11:30	5	4	19	0	28	5	3	8	0	16	3	85	11	0	99	14	94	8	0	116
11:30	11:45	7	1	12	0	20	4	2	6	0	12	0	73	9	0	82	13	98	7	0	118
11:45	12:00	13	0	15	0	28	5	2	5	0	12	2	83	9	0	94	18	113	21	0	152
Hourly Total		34	5	66	0	105	25	9	27	0	61	11	342	32	0	385	59	405	44	0	508
12:00	12:15	5	5	13	0	23	10	4	6	0	20	2	86	11	0	99	18	82	11	0	111
12:15	12:30	9	3	19	0	31	9	4	4	0	17	3	92	5	0	100	16	107	19	0	142
12:30	12:45	6	2	15	0	23	9	1	6	0	16	4	120	8	0	132	10	102	15	0	127
12:45	13:00	6	4	22	0	32	11	1	5	0	17	6	103	8	0	117	17	115	12	0	144
Hourly Total		26	14	69	0	109	39	10	21	0	70	15	401	32	0	448	61	406	57	0	524
13:00	13:15	12	1	26	0	39	5	5	4	0	14	4	94	5	0	103	13	105	22	0	140
13:15	13:30	6	1	18	0	25	12	0	3	0	15	4	113	13	0	130	14	108	14	0	136
13:30	13:45	8	1	13	0	22	10	0	1	0	11	2	101	8	0	111	14	96	12	0	122
13:45	14:00	4	1	15	0	20	11	5	1	0	17	7	109	8	0	124	18	107	15	0	140
Hourly Total		30	4	72	0	106	38	10	9	0	57	17	417	34	0	468	59	416	63	0	538
15:00	15:15	8	3	17	0	28	7	7	5	0	19	6	131	12	0	149	8	111	21	0	140
15:15	15:30	10	3	15	0	28	11	3	7	0	21	5	145	12	0	162	14	132	15	0	161
15:30	15:45	11	4	10	0	25	8	3	8	0	19	2	151	10	0	163	11	121	20	0	152
15:45	16:00	5	0	13	0	18	10	0	9	0	19	4	154	8	0	166	13	117	15	0	145
Hourly Total		34	10	55	0	99	36	13	29	0	78	17	581	42	0	640	46	481	71	0	598
16:00	16:15	13	3	13	0	29	11	0	7	0	18	7	166	9	0	182	10	140	18	0	168

		KEN WHILLANS DR										VODDEN ST E									
		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT	LT	TH	RT	U-Turn	TOT
16:15	16:30	6	1	14	0	21	12	0	13	0	25	4	165	5	0	174	11	153	20	0	184
16:30	16:45	5	1	18	0	24	20	2	8	0	30	5	154	6	0	165	10	130	18	0	158
16:45	17:00	8	1	12	0	21	17	2	16	0	35	3	172	3	0	178	11	123	14	0	148
Hourly Total		32	6	57	0	95	60	4	44	0	108	19	657	23	0	699	42	546	70	0	658
17:00	17:15	11	1	22	0	34	13	0	16	0	29	5	168	7	0	180	6	146	14	0	166
17:15	17:30	9	1	13	0	23	8	2	9	0	19	10	164	8	0	182	9	162	12	0	183
17:30	17:45	4	2	10	0	16	17	0	12	0	29	5	168	4	0	177	4	168	17	0	189
17:45	18:00	4	1	9	0	14	9	1	12	0	22	10	156	6	0	172	4	126	17	0	147
Hourly Total		28	5	54	0	87	47	3	49	0	99	30	656	25	0	711	23	602	60	0	685
Grand Total		214	50	412	0	676	284	61	210	0	555	159	3636	258	0	4053	368	3855	526	0	4749
Truck %		0%	2%	0%	0%	0%	1%	0%	2%	0%	1%	3%	2%	0%	0%	2%	1%	2%	1%	0%	1%

Ontario
Ministry of Transportation

TES - Traffic Engineering System

Turning Movement 15 Minute Report

Description: HWY 10 @ OLD SCHOOL RD

Region CENTRAL **Hwy #:** HWY 10

LHRS_Offset: 16455_0214 **Count Period.** 6/27/2024 7:00:00 AM

Count Start Date: 6/27/2024 12:00:00 AM 6/27/2024 6:00:00 PM

Int. Type: Cross

HWY 10 OLD SCHOOL RD

Start Time	North										South										East										West										Total
	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	
	LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		
07:00	2	374	6	0	10	1	0	19	3	0	18	192	11	0	9	1	0	34	0	0	16	21	3	0	1	0	0	0	0	0	11	45	26	0	1	0	0	0	1	0	805
07:15	7	352	3	0	10	1	0	22	0	0	15	225	14	0	9	0	1	39	0	0	12	27	5	1	2	0	0	1	1	0	9	39	33	0	0	0	3	0	0	0	831
07:30	5	377	7	0	4	0	0	28	0	0	22	243	14	0	11	0	0	42	0	0	11	28	8	1	1	0	0	1	0	0	20	47	36	1	0	0	1	0	0	0	908
07:45	11	380	11	0	13	0	0	19	0	0	24	212	17	0	14	1	0	54	1	0	14	29	6	1	0	0	0	1	0	0	11	51	35	0	0	0	0	2	0	0	907
08:00	9	325	13	1	3	0	0	19	0	0	21	180	16	1	14	0	1	39	2	1	21	37	6	2	1	0	1	2	0	1	21	47	37	1	0	0	0	0	1	0	821
08:15	9	302	15	0	7	0	0	24	3	0	15	205	19	1	13	0	1	33	0	0	9	35	11	0	0	0	0	1	0	0	14	51	23	0	0	3	0	2	0	0	796
08:30	6	243	9	1	4	0	0	28	2	0	9	204	11	3	16	1	0	31	1	0	13	43	13	0	0	1	0	1	0	0	12	48	34	0	2	0	2	1	0	0	739
08:45	7	308	13	0	6	0	0	16	0	0	20	182	17	2	14	0	1	25	3	0	15	16	5	0	0	0	0	0	0	0	13	36	19	0	1	0	4	1	1	0	725
11:00	2	237	7	0	8	2	1	26	5	0	27	230	10	2	12	0	0	37	1	0	11	19	3	1	1	0	1	0	0	0	11	11	20	0	0	1	2	0	0	0	688
11:15	1	218	5	1	6	0	0	35	0	0	19	194	6	2	10	0	1	40	0	0	15	14	9	0	0	0	0	0	0	0	10	19	18	0	0	1	3	0	1	0	628
11:30	6	237	10	0	15	0	0	25	0	0	21	236	12	0	9	0	1	40	1	0	13	11	5	0	0	0	0	0	0	0	9	22	13	0	0	1	1	0	0	0	688
11:45	10	236	0	1	6	1	0	29	0	0	20	214	15	0	9	0	0	40	0	0	8	11	2	0	0	0	0	0	0	0	8	15	22	0	1	1	0	0	1	0	650
12:00	6	221	9	1	6	0	0	30	2	0	26	255	10	0	7	1	0	35	0	0	18	9	6	1	1	0	0	0	0	0	8	16	22	0	0	1	0	0	1	0	692
12:15	4	207	7	0	1	0	0	23	2	0	29	244	10	1	12	2	0	43	0	0	9	15	5	0	0	0	0	0	0	0	11	18	26	0	0	0	2	0	1	0	672
12:30	6	218	4	0	8	0	1	27	1	0	31	277	21	0	13	2	0	21	0	0	12	16	7	1	0	1	0	0	0	0	14	14	22	0	0	0	0	1	0	0	718
12:45	5	232	3	0	15	0	0	30	0	0	39	259	14	0	6	0	1	37	0	0	6	16	4	0	0	0	0	0	1	0	11	17	15	0	0	2	2	0	0	0	715
13:00	8	230	7	1	5	0	0	27	0	0	32	263	23	0	7	1	0	29	0	0	13	20	8	0	0	1	2	1	0	0	10	16	23	0	0	2	0	0	1	0	730
13:15	3	228	7	0	11	0	0	20	2	0	22	271	16	1	10	0	0	33	0	0	13	21	7	1	1	0	0	0	0	0	18	18	17	0	0	0	0	0	0	0	720
13:30	4	219	3	0	5	0	0	25	1	0	28	304	23	0	10	0	1	33	0	0	15	10	8	0	1	0	0	0	0	0	10	17	23	2	1	0	2	0	1	0	746
13:45	1	226	7	1	8	0	0	24	0	0	40	295	16	1	7	0	0	35	0	0	13	29	1	0	0	0	0	0	0	0	11	25	28	2	0	0	2	1	0	0	773
15:00	10	259	5	0	9	2	0	23	0	0	35	311	19	0	8	0	1	25	0	0	15	40	9	0	0	0	0	0	1	0	13	56	22	0	1	0	0	0	4	0	868

HWY 10 OLD SCHOOL RD

Start Time	North										South										East										West										Total
	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	
	LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		
15:15	5	272	8	1	8	0	0	25	0	0	52	381	25	2	7	0	1	17	0	0	11	43	8	0	0	0	0	1	0	0	13	42	23	1	0	0	1	0	1	0	948
15:30	9	246	6	0	11	0	0	20	1	0	52	352	45	0	6	0	0	12	0	0	18	54	9	0	0	0	0	1	0	0	23	33	33	0	1	0	0	1	2	0	935
15:45	16	269	12	0	8	0	0	20	1	0	54	328	19	0	6	0	1	17	0	0	11	57	8	0	1	0	0	0	1	0	25	34	37	0	1	0	1	3	0	0	930
16:00	6	274	8	0	6	0	0	21	1	0	59	393	22	0	8	0	0	14	0	0	12	41	16	0	2	0	0	0	0	0	21	39	30	0	1	0	0	1	0	0	975
16:15	13	269	10	0	4	1	1	24	0	0	38	352	27	0	5	1	1	15	0	0	20	62	10	0	0	0	0	0	0	0	25	40	36	0	0	0	1	3	1	0	959
16:30	8	270	12	0	9	0	0	13	0	0	49	310	23	0	6	0	0	16	1	0	17	65	14	0	0	0	0	0	0	0	17	46	36	0	2	0	0	0	0	0	914
16:45	12	264	14	0	13	0	0	20	0	0	55	365	31	0	1	0	1	17	0	0	18	74	14	1	0	0	0	0	0	0	14	33	34	0	3	2	0	0	1	0	987
17:00	14	296	12	0	15	0	0	25	0	0	48	352	24	1	11	0	0	14	0	0	16	60	4	0	1	0	0	0	0	0	12	45	42	0	2	0	1	0	0	0	995
17:15	12	271	16	1	12	0	1	20	0	0	45	391	22	1	1	1	0	10	0	0	17	75	17	0	0	0	0	0	0	0	13	54	35	0	0	0	0	0	0	0	1015
17:30	9	308	9	0	17	0	0	11	0	0	57	370	28	0	5	0	0	11	0	0	25	67	16	1	0	0	0	0	0	0	20	49	41	0	2	0	0	0	0	0	1046
17:45	9	278	10	0	4	0	0	13	0	0	42	296	21	0	6	0	0	4	0	0	31	51	18	0	1	1	0	2	0	0	9	52	51	0	0	0	0	0	0	0	899

BRAMPTON Flower City
brampton.ca

Public Works & Engineering
Road Maintenance Operations & Fleet

December 2, 2025

AECOM
1315 Pickering Parkway, Pickering ON L1V 7G5, Canada
Attention: **Sheri Harmsworth**
Email: **sheri.harmsworth@aecom.com**
Subject: **Request for Signal Timings**
Our File: **T04 SIG (25)**

As per your request, the signal timings for the requested intersection(s) as follows: (All timing values are in seconds)

Kennedy Road at First Gulf Boulevard_Hartford Trail

				PHASE DIRECTION									
DAY Plan	**Hour**	**Minute**	**Pattern**	**1 NA**	**2 Kennedy Road NB**	**3 NA**	**4 First Gulf Boulevard WB**	**5 NA**	**6 Kennedy Road SB**	**7 NA**	**8 Hartford Trail EB**	**Cycle Length**	**Off Set**
1- Sunday	0	0	4 - Free Max1	-	-	-	-	-	-	-	-	-	-
2- Weekday	0	0	4 - Free Max1	-	-	-	-	-	-	-	-	-	-
2- Weekday	6	0	5 - AM2	-	110	-	50	-	110	-	50	160	78
2- Weekday	7	55	1 - AM1	-	50	-	50	-	50	-	50	100	80
2- Weekday	8	30	5 - AM2	-	110	-	50	-	110	-	50	160	78
2- Weekday	9	30	4 - Free Max1	-	-	-	-	-	-	-	-	-	-
2- Weekday	14	0	6 - Free Max2	-	-	-	-	-	-	-	-	-	-
2- Weekday	15	30	3 - PM	-	110		50		110		50	160	7
2- Weekday	19	0	4 - Free Max1	-	-	-	-	-	-	-	-	-	-
3-Saturday	0	0	4 - Free Max1	-	-	-	-	-	-	-	-	-	-

Free Mode	**PHASE**							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Min Green		12		8		12		8
Max Green -1		37		29		37		29
Max Green -2		21		45		21		45
Walk		12		12		12		12
Clearance		15		29		15		29
Yellow Change	3	4	3	4	3	4	3	4
Red Clearance		2		2		2		2
Max Veh. Recall		X				X		
Ped. Recall		X				X		

Note 1: This intersection is Semi-Actuated
Note 2: Left turn arrow signal is only activated if a vehicle is present on a “set-back” detector loop, where applicable.

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**January 23, 2025**		**Prepared Date**	**November 11, 2025**
Database Rev	**MaxView**		**Completed By**	**NM**
Timing Card / Field rev	**43**		**Checked By**	**JL**

Location — **Kennedy Road and Steeles Avenue**

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s) (Green+Amber+All Red)		
			WALK	FDWALK			AM SPLITS	OFF SPLITS	PM SPLITS
1	Steeles Avenue - WBLT Prot Perm	7.0	0.0	0.0	3.0	0.0	16.0	22.0	13.0
2	Steeles Avenue - EB	10.0	12.0	24.0	4.6	2.2	68.0	61.0	73.0
3	Kennedy Road - SBLT Prot	7.0	0.0	0.0	3.0	2.0	22.0	22.0	22.0
4	Kennedy Road - NB	10.0	12.0	31.0	4.0	3.2	54.0	55.0	52.0
5	Steeles Avenue EBLT Prot	7.0	0.0	0.0	3.0	2.0	30.0	22.0	28.0
6	Steeles Avenue - WB	10.0	12.0	31.0	4.6	2.2	54.0	61.0	58.0
7	Kennedy Road - NBLT Prot Perm	7.0	0.0	0.0	3.0	2.0	22.0	22.0	22.0
8	Kennedy Road - SB	10.0	12.0	31.0	4.0	3.2	54.0	55.0	52.0

System Control
Yes

Semi-Actuated Mode
Yes

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
06:00 - 09:30	AM	160	146
09:30 - 14:40 19:00 - 22:00	OFF	160	13
14:40 - 19:00	PM	160	99

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**January 30, 2025**		**Prepared Date**	**November 24, 2025**
Database Rev	**Maxview**		**Completed By**	**AA**
Timing Card / Field rev	**4**		**Checked By**	**JL**

Location — **Kennedy Rd at Rambler Dr**

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s)		
			WALK	FDWALK			AM SPLITS	OFF SPLITS	PM SPLITS
1	Not in use	-	-	-	-	-	-	-	-
2	Kennedy Rd - N/S	12.0	12.0	14.0	4.0	2.0	110.0	80.0	110.0
3	Not in use	-	-	-	-	-	-	-	-
4	Rambler Dr - E/W	8.0	12.0	21.0	4.0	2.3	50.0	40.0	50.0
5	Not in use	-	-	-	-	-	-	-	-
6	Not in use	-	-	-	-	-	-	-	-
7	Not in use	-	-	-	-	-	-	-	-
8	Not in use	-	-	-	-	-	-	-	-

System Control
Yes

Semi-Actuated Mode
Yes

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
06:00 - 09:00	AM	160	132
09:00 - 15:00	OFF	120	68
15:00 - 22:00	PM	160	25

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**February 19, 2025**		**Prepared Date**	**November 24, 2025**
Database Rev	**MaxView**		**Completed By**	**AA**
Timing Card / Field rev	**4**		**Checked By**	**JL**
Location	**Kennedy Rd at Glidden Road/Chamney Court**			

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s)		
			WALK	FDWALK			AM SPLITS	OFF SPLITS	PM SPLITS
1	Not in use	-	-	-	-	-	-	-	-
2	Kennedy Rd - N/S	12.0	12.0	19.0	4.0	2.0	110.0	80.0	110.0
3	Not in use	-	-	-	-	-	-	-	-
4	Glidden Rd - E/W	8.0	12.0	16.0	4.0	2.3	50.0	40.0	50.0
5	Glidden Rd - E/W	0.0	0.0	0.0	4.0	2.0	0.0	0.0	0.0
6	Not in use	-	-	-	-	-	-	-	-
7	Not in use	-	-	-	-	-	-	-	-
8	Not in use	-	-	-	-	-	-	-	-

System Control
Yes

Semi-Actuated Mode
Yes

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
06:00 - 09:00	AM	160	119
09:00 - 15:00	OFF	120	80
15:00 - 22:00	PM	160	78

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**February 19, 2021**		**Prepared Date**	**November 24, 2025**
Database Rev	**MaxView**		**Completed By**	**AA**
Timing Card / Field rev	**4**		**Checked By**	**JL**
Location	**Kennedy Rd at Clarence St**			

Phase #	Kennedy Rd at Clarence St	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s)		
			WALK	FDWALK			AM SPLITS	OFF SPLITS	PM SPLITS
1	Kennedy Rd - NBLT Prot. Perm.	5.0	0.0	0.0	3.0	0.0	15.0	10.0	15.0
2	kennedy Rd - S	12.0	12.0	22.0	4.0	2.2	85.0	57.0	85.0
3	Clarence St - EBLT Prot. Perm.	5.0	0.0	0.0	3.0	0.0	15.0	10.0	15.0
4	Clarence St - W	8.0	12.0	23.0	4.0	2.6	45.0	43.0	45.0
5	Kennedy Rd - SBLT Prot. Perm.	5.0	0.0	0.0	3.0	0.0	15.0	10.0	15.0
6	Kennedy Rd - N	12.0	12.0	22.0	4.0	2.2	85.0	57.0	85.0
7	Not in use	-	-	-	-	-	-	-	-
8	Clarence St - E	8.0	12.0	23.0	4.0	2.6	60.0	53.0	60.0

System Control
Yes

Semi-Actuated Mode
Yes

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
06:00 - 09:00	AM	160	54
09:00 - 15:00	OFF	120	16
15:00 - 22:00	PM	160	27

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**December 11, 2023**		**Prepared Date**	**November 24, 2025**
Database Rev	**Maxview**		**Completed By**	**AA**
Timing Card / Field rev	**19**		**Checked By**	**JL**

Location — **Queen St and Kennedy Rd**

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s)		
			WALK	FDWALK			AM SPLITS	OFF SPLITS	PM SPLITS
1	Queen Street - WBLT Prot.Perm.	5.0	0.0	0.0	3.0	0.0	13.0	20.0	20.0
2	Queen Street -EB	8.0	8.0	32.0	4.0	3.9	70.0	65.0	60.0
3	Kennedy Road - SBLT Prot.	8.0	0.0	0.0	3.0	2.0	18.0	21.0	21.0
4	Kennedy Road - NB	8.0	8.0	29.0	4.0	3.7	59.0	54.0	59.0
5	Queen Street - EBLT Prot. Perm	5.0	0.0	0.0	3.0	0.0	13.0	20.0	20.0
6	Queen Street - WB	8.0	8.0	32.0	4.0	3.9	70.0	65.0	60.0
7	Kennedy Road - NBLT Prot.	8.0	0.0	0.0	3.0	2.0	18.0	21.0	21.0
8	Kennedy Road - NBLT Prot.B18	8.0	8.0	29.0	4.0	3.7	59.0	54.0	59.0

System Control
Yes

Semi-Actuated Mode
No

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
05:30 - 09:00	AM	160	86
09:00 - 15:00 19:00 - 00:00	OFF	160	126
15:00 - 19:00	PM	160	88

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**February 10, 2021**		**Prepared Date**	**November 25, 2025**
Database Rev	**Maxview**		**Completed By**	**AA**
Timing Card / Field rev	**19**		**Checked By**	**JL**

Location — **Kennedy Road at Vodden Street**

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s)		
			WALK	FDWALK			AM SPLITS	OFF SPLITS	PM SPLITS
1	Kennedy Rd - NBLT Prot. Perm.	5.0	0.0	0.0	3.0	0.0	10.0	10.0	10.0
2	Kennedy Rd - SB	12.0	12.0	25.0	4.0	2.7	75.0	55.0	75.0
3	Not in use	-	-	-	-	-	-	-	-
4	Vodden St - WB	8.0	12.0	26.0	4.0	2.8	55.0	55.0	55.0
5	Kennedy Rd - SBLT Prot. Perm.	5.0	0.0	0.0	3.0	0.0	10.0	10.0	10.0
6	Kennedy Rd - NB	12.0	12.0	25.0	4.0	2.7	75.0	55.0	75.0
7	Vodden Street - WBLT Prot. Perm.	5.0	0.0	0.0	3.0	0.0	10.0	10.0	10.0
8	Vodden St - EB	8.0	12.0	26.0	4.0	2.8	45.0	45.0	45.0

System Control
Yes

Semi-Actuated Mode
Yes

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
06:00 - 09:00	AM	140	133
09:00 - 15:00	OFF	120	20
15:00 - 19:00	PM	140	42

Vodden Street at Centre Street

				PHASE DIRECTION									
DAY Plan	Hour	Minute	Pattern	1 NA	2 Vodden Street EB	3 NA	4 Centre Street NB	5 NA	6 Vodden Street WB	7 NA	8 Centre Street SB	Cycle Length	Off Set
1- Sunday	0	0	Free	-	-	-	-	-	-	-	-	-	-
1- Sunday	11	0	Peak-1	0	60	0	30	0	60	0	30	90	73
1- Sunday	19	0	Free	-	-	-	-	-	-	-	-	-	-
2- Weekday	0	0	Free	-	-	-	-	-	-	-	-	-	-
2- Weekday	7	0	Peak-1	0	60	0	30	0	60	0	30	90	73
2- Weekday	8	30	Peak-2	0	45	0	45	0	45	0	45	90	73
2- Weekday	9	15	Peak-1	0	60	0	30	0	60	0	30	90	73
2- Weekday	21	0	Free	-	-	-	-	-	-	-	-	-	-
3-Saturday	0	0	Free	-	-	-	-	-	-	-	-	-	-
3-Saturday	8	0	Peak-1	0	60	0	30	0	60	0	30	90	73
3-Saturday	20	0	Free	-	-	-	-	-	-	-	-	-	-

Free Mode	PHASE							
	1	2	3	4	5	6	7	8
Min Green		8		8		8		8
Max Green -1		19		28		19		28
Max Green -2		19		28		19		28
Walk		8		8		8		8
Clearance		14		15		14		15
Yellow Change	3	4	3	4	3	4	3	4
Red Clearance		2		2		2		2
Max Veh. Recall		X				X		
Ped. Recall		X				X		

Note 1: This intersection is Semi-Actuated

Note 2: Left turn arrow signal is only activated if a vehicle is present on a “set-back” detector loop, where applicable.

Vodden Street at Ken Whillans Drive

				PHASE DIRECTION									
DAY Plan	Hour	Minute	Pattern	1 NA	2 Vodden Street EB	3 NA	4 Ken Whillans Drive NB	5 NA	6 Vodden Street WB	7 NA	8 Privvate Drive SB	Cycle Length	Off Set
1- Sunday	0	0	Free	-	-	-	-	-	-	-	-	-	-
1- Sunday	11	0	Peak-1	0	60	0	30	0	60	0	30	90	46
1- Sunday	19	0	Free	-	-	-	-	-	-	-	-	-	-
2- Weekday	0	0	Free	-	-	-	-	-	-	-	-	-	-
2- Weekday	7	0	Peak-1	0	60	0	30	0	60	0	30	90	46
2- Weekday	21	0	Free	-	-	-	-	-	-	-	-	-	-
3-Saturday	0	0	Free	-	-	-	-	-	-	-	-	-	-
3-Saturday	8	0	Peak-1	0	60	0	30	0	60	0	30	90	46
3-Saturday	20	0	Free	-	-	-	-	-	-	-	-	-	-

Free Mode	PHASE							
	1	2	3	4	5	6	7	8
Min Green		8		8		8		8
Max Green -1		23		15		23		15
Max Green -2		23		15		23		15
Walk		8		8		8		8
Clearance		14		15		14		15
Yellow Change	3	4	3	4	3	4	3	4
Red Clearance		2		2		2		2
Max Veh. Recall		X				X		
Ped. Recall		X				X		

Note 1: This intersection is Semi-Actuated

Note 2: Left turn arrow signal is only activated if a vehicle is present on a “set-back” detector loop, where applicable.

If you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

Shafqat Khosa

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REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date			**Prepared Date**	**November 25, 2025**
Database Rev			**Completed By**	**AA**
Timing Card / Field rev	**1**		**Checked By**	**JL**

Location — **Kennedy Road at Old School Road**

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s)		
			WALK	FDWALK			AM SPLITS	OFF SPLITS	PM SPLITS
1	Not in use	-	-	-	-	-	-	-	-
2	Old School Rd - E	8.0	8.0	7.0	4.0	2.2	30.0	30.0	45.0
3	Not in use	-	-	-	-	-	-	-	-
4	Kennedy Rd - S	8.0	8.0	7.0	4.0	2.3	40.0	30.0	35.0
5	Not in use	-	-	-	-	-	-	-	-
6	Old School Rd - W	8.0	8.0	7.0	4.0	2.2	30.0	30.0	45.0
7	Not in use	-	-	-	-	-	-	-	-
8	Kennedy Rd - N	8.0	8.0	7.0	4.0	2.3	40.0	30.0	35.0

System Control
No

Semi-Actuated Mode
Yes

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
06:00-09:00	AM	70	0
09-15:00	OFF	60	0
15:00-20:00	PM	80	0

Flow
Building our future, faster.

Central Brampton

Appendix C

Summary of Demand Model Scenario Inputs

AECOM

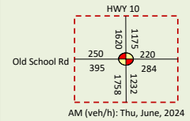
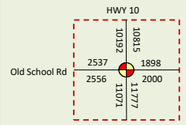
Peel Region

This file outlines a proposed construction staging plan, detailing 3 segments representing 3 separate contracts. It assesses traffic, transit, and active transportation impacts based on the shaft compound delineation provided December, 2025. The Book 7 layouts are used as reference to determine the length and locations of work zones, tapers, and barriers. The mitigation measures are derived from professional expertise and feedback from the City and Region. It also identifies the assumptions needed for modeling in EMME and Synchro. This plan is based on a "worst-case" assumption that all segments will be under construction simultaneously. Only Preferred Shaft Locations are considered.

Route	Segment No.	Shaft ID	Location	Shaft Type	Posted Speed Km/h	Tapers/Barriers	Estimated Traffic Impact	Estimated Active Transportation Impact	Estimated Public Transit Impact	Assumption	Comments from City/Region/PM	Suggested Mitigation	Schedule of other projects	Closures in Proximity to Kennedy Rd STS	EMME Model Scenario	Synchro Operational Assessments
S2-Kennedy Rd	1	Etobicoke-SHFT	At Etobicoke Creek, about 40 m south of the Etobicoke Creek Trail.	Connection	Kennedy Rd = 60	42.5 m North and 125 m South of the work zone (see Fig. US-17, Book 7)	NB one-lane closure (out of two) on Kennedy Rd at the work zone and its associated tapers.	Sidewalk closure on one side (shaft side) of Kennedy Rd along the work zone of each shaft, using barricades installed at both ends of each (see Fig. US-30, Book 7). Pedestrians can be redirected to the opposite side of Kennedy Rd. No existing bicycle lanes.	1- Relocating Route 7 bus stop at Kennedy Rd adjacent to the Rice Development entrance.	NB side is preferred for construction, as the short distance from 1st Gulf Blvd intersection to the work zone is insufficient for the required taper length if SB side were used.	1- South of Steeles Ave is within the designated LCV route network	1- Implement sidewalk closures along the shaft-side of Kennedy Rd, with barricades installed at both ends of each work zone (see Fig. US-30, Book 7). Install SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs at the nearest upstream controlled pedestrian crossing at each direction to redirect pedestrians to the opposite side of Kennedy Rd.	1) Valve Replacements: 2025-2027 2) Hansen/Orenda/Rutherford SSU: 2026-2027 3) FS Highway 410: 2027-2027 4) Clark WM: 2026-2027 5) Ray Lawson SS: 2026-2027 6) Denison WWW: 2026-2027 7) Salisbury WM: 2026-2027 8) Creditview WM: 2026-2027 9) Downtown Brampton: 2026-2028 10) Queen Street: 2025-2027 11) Peel Center Dr SS: 2026-2027 12) East Brampton FM: 2025-2030 13) Downtown Brampton Ph 1: 2026-2027 14) Centre St: 2026-2027 15) Downtown Brampton Ph 4: 2026-2027 16) Queen Street Bridge: 2026-2028	The following numbered items related to the "Schedule of Project" numbers, so item 2a through e are related to the Hansen/Orenda/Rutherford SSU project. The following assumptions are high-level and subject to further revision. 2a) Rutherford Road from Clark Boulevard to Glidden Road: Two lanes closed - two + TWLTL remain open 2b) Clark Boulevard from Rutherford Road to Private Road entrance ~280m east of Rutherford Road: Two lanes closed - two + TWLTL remain open 2c) Hansen Road from Queen Street to Orenda Road: One lane closed - one lane open 2d) Orenda Road from Hansen Road to Rutherford Road: Two lanes closed - two remain open 2e) Clarence Street from Kennedy Road to Rutherford Road South: Expected two lanes closed - two + TWLTL remain open 9a)Church St from Kennedy Rd to Mill St N: One-way or full closure 9b)Nelson St from Elizabeth St N to McMurchy Ave N: One-way or full closure 9c)Mill St N from Church St to Queen St W: One-way or full closure 10a) Queen St E from Centre St past Kennedy Rd: Removal of TWLTL 10b) Queen St from Hansen Rd to ~85 m west of Hansen Road (Q1-SHFT1A compound + taper): one WB lane closed - two remain open. 13a) Various roadways: Minimal disruption if any 14a) Church St E from Center St N to Main St: One-way or full closure 16a) Queen Street from James St to Centre St: One-lane per direction	1. Incorporate known lane closures on adjacent networks for concurrent projects. 2. Closure of one NB lane (out of two) on Kennedy Rd south on 1st Gulf Blvd to accommodate Etobicoke Shaft work zone and tapers (see Fig. US-17, Book 7).	
S2-Kennedy Rd	1	K1-SHFT 1 TBM-SHFT 1	At the northeast quadrant of the 1st Gulf Blvd intersection, within the Turner Fenton Secondary School landscaped area	Access	Kennedy Rd = 60 1st Gulf Blvd = 50	90 m East of the work zone (see Fig. UI-20, Book 7)	1- WB one-lane closure (out of two) on 1st Gulf Blvd at the work zone and its associated tapers. 2- Moderate delays at 1st Gulf Blvd intersection.	Sidewalk closure on one side of Kennedy Rd and one side of 1st Gulf Blvd (shaft sides) along the work zone of the shaft at the northeast corner of the Kennedy/1st Gulf intersection, using barricades installed at both ends of each (see Fig. US-30, Book 7). Pedestrians can be redirected to the opposite sides using SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs. No existing bicycle lanes in this segment.	1- Relocating Routes 7, 10, and 200 bus stop at Kennedy Rd North of 1st Gulf Blvd on the shaft side.	The northeast quadrant of the Kennedy Road / 1st Gulf Blvd intersection has been confirmed for construction due to the availability of landscaped open space within the Turner Fenton Secondary School property.	1- There is a secondary school at the northeast quadrant of the 1st Gulf intersection near K1-SHAFT 1	1- Implement sidewalk closures on one side of Kennedy Rd and one side of 1st Gulf Blvd (shaft sides) along the work zone of the shaft at the northeast corner of the Kennedy/1st Gulf intersection, using barricades installed at both ends of the work zone (see Fig. US-30, Book 7). Provide SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs at the nearest upstream controlled pedestrian crossings in both directions to redirect pedestrians and maintain safe pedestrian movements around the work zone. 2 - Adjusting traffic signal timing at Kennedy/1st Gulf intersection. 3- Continue to follow LCV permit restrictions to restrict LCV operation during peak periods	Same as above	Same as above	1. Closure of one WB lane on 1st Gulf Blvd (out of two) east of Kennedy Rd to accommodate K1-SHAFT 1 work zone and tapers (see Fig. US-17, Book 7).	Operational analysis of Kennedy Rd/1st Gulf Blvd intersection.
S2-Kennedy Rd	1	K1-SHFT 2	About 70 m South of Rambler Dr intersection, occupying a portion of the Sir Wilfrid Laurier Public School soccer field.	Access	Kennedy Rd = 60	60 m North and 30 m South of the work zone (see Fig. US-17, Book 7). Relocating the taper and buffer areas upstream of the intervening obstruction may be required where minimum taper lengths cannot be met. Alternatively, advanced signage is required for taper lengths that are below the required minimum.	1- SB one-lane closure (out of two) on Kennedy Rd at the work zone and its associated tapers. 2- Moderate delays at Rambler Dr.	Sidewalk closure on one side (shaft side) of Kennedy Rd along the work zone of each shaft, using barricades installed at both ends of each (see Fig. US-30, Book 7). Pedestrians can be redirected to the opposite side of Kennedy Rd using SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs. No existing bicycle lanes.	1- Relocating Route 7 bus stop at Kennedy Rd south of Rambler Dr on the shaft side.	SB side has been confirmed for construction due to the use of the Sir Wilfrid Laurier Public School soccer field for tunneling site setup.	1- K1-SHAFT 2 located in front of Electra corporate office and works yard; identified as a sensitive receptor	1- Implement sidewalk closures along the shaft-side of Kennedy Rd, with barricades installed at both ends of each work zone (see Fig. US-30, Book 7). Install SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs at the nearest upstream controlled pedestrian crossing at each direction to redirect pedestrians to the opposite side of Kennedy Rd. 2- Adjusting traffic signal timing at Kennedy/Rambler intersection.	Same as above	Same as above	1. Closure of one SB lane on Kennedy Rd (out of two) south of Rambler Dr to accommodate K1-SHAFT 2 work zone and tapers (see Fig. US-17, Book 7). 2- Speed limit reduction from 60 to 50 km/h on Kennedy Rd in both directions between Rambler Dr and 300 Kennedy Rd.	Operational analysis of Kennedy Rd/Rambler Dr intersection.
S2-Kennedy Rd	1	TBM-SHFT 2	At the northeast quadrant of the Glidden Rd intersection, occupying an open space area within the Brenntag Canada Inc. property	Access (connection for TBM option)	Kennedy Rd = 60 Glidden Rd = 50	30 m north of the work zone at Kennedy Rd (see Fig. UI-17, Book 7); and 90 m east of the work zone at Glidden Rd (see Fig. UI-20, Book 7). Relocating the taper and buffer areas upstream of the intervening obstruction may be required where minimum taper lengths cannot be met. Alternatively, advanced signage is required for taper lengths that are below the required minimum.	1- NB one-lane closure (out of two) on Kennedy Rd, plus WB one-lane closure (out of two) on Glidden Rd along the work zone and tapers. 2- Moderate to higher delays at Glidden Rd intersection.	Sidewalk closure on one side of Kennedy Rd and one side of Glidden Rd (shaft sides) along the work zone of the shaft at the northeast corner of the Kennedy/Glidden intersection, using barricades installed at both ends of each (see Fig. US-30, Book 7). Pedestrians can be redirected to the opposite sides using SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs. No existing bicycle lanes in this segment.	1- No bus stop relocation needs.	The northeast quadrant of the Kennedy Rd / Glidden Rd intersection has been confirmed for construction due to the availability of ample open space within the Brenntag Canada Inc. property to accommodate the shaft compound.		1- Implement sidewalk closures on one side of Kennedy Rd and one side of Glidden Rd (shaft sides) along the shaft work zone at the northeast corner of the Kennedy/Glidden intersection, using barricades installed at both ends of the work zone (see Figure US-30, Book 7). Provide SIDEWALK CLOSED and PEDESTRIAN DIRECTION signage at the nearest upstream controlled pedestrian crossings in both directions to redirect pedestrians and maintain safe pedestrian movements around the work zone. 2- Adjusting traffic signal timing at Kennedy/Glidden intersection.	Same as above	Same as above	1. Closure of one NB lane on Kennedy Rd (out of two) north of Glidden St, and one WB lane on Glidden Rd (out of two) east of Kennedy Rd to accommodate TBM-SHFT 2 work zone and tapers (see Fig. UI-17 and UI-20, Book 7). 2- Speed limit reduction from 60 to 50 km/h on the NB direction of Kennedy Rd, extending approximately 130 m north of Glidden Rd.	Operational analysis of Kennedy Rd/Glidden Rd intersection.
S2-Kennedy Rd	1	K1-SHFT 3	At the northeast quadrant of the Clarence St intersection, within adjacent green space and parking areas associated with nearby furniture retail outlets.	Access	Kennedy Rd = 60 Clarence St = 50	90 m East of the work zone at Clarence St (see Fig. UI20, Book 7).	1- WB one-lane closure (out of two) on Clarence St at the work zone and its associated tapers. 2- Moderate delays at Clarence St intersections	Sidewalk closure on one side (shaft side) of Clarence St along the work zone of each shaft, using barricades installed at both ends of each (see Fig. US-30, Book 7). Pedestrians can be redirected to the opposite side of Clarence St using SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs; No Sidewalk closure on Kennedy Rd. No existing bicycle lanes.	1- No bus stop relocation needs.	The northeast quadrant of the Kennedy Rd / Clarence St intersection has been confirmed for construction, as it occupies existing green space and parking areas associated with adjacent furniture retail outlets, minimizing impacts to travel lanes.		1- Implement sidewalk closures along the shaft-side of Clarence St, with barricades installed at both ends of each work zone (see Fig. US-30, Book 7). Install SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs at the nearest upstream controlled pedestrian crossing at each direction to redirect pedestrians to the opposite side of Clarence St 2 - Adjusting traffic signal timing at Kennedy/Clarence intersection.	Same as above	Same as above	1. Closure of one WB lane on Clarence St (out of two) east of Kennedy Rd to accommodate K1-SHFT 3 work zone and tapers (see Fig. UI-17 and UI-20, Book 7).	Operational analysis of Kennedy Rd/Clarence St intersection.
S2-Kennedy Rd	1	K1-SHFT 4	At the southwest quadrant of the Queen St intersection, occupying existing parking areas associated with the adjacent commercial plaza.	Access	Kennedy Rd = 50 Queen St = 50	30 m south of the work zone at Kennedy Rd (see Fig. UI-17, Book 7); 90 m west of the work zone at Queen St (see Fig. UI-20, Book 7).	1- SB one-lane closure (out of two) on Kennedy Rd, plus EB one-lane closure (out of four) on Queen St along the work zone and tapers. 2- Moderate to higher delays at Queen St intersection, key traffic points	Sidewalk closures on one side of Kennedy Rd and one side of Queen St (shaft sides) along the work zone of The shaft at the southwest corner of Kennedy/Queen intersection, using barricades installed at both ends of the work zone (see Fig. US-30, Book 7). Pedestrians can be redirected to the opposite sides using SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs. No existing bicycle lanes in this segment.	1- K1-SHAFT 4: Relocating Route 7 bus stop at Kennedy Rd south of Queen St on the shaft side. 2- Transit delays at Kennedy/Queen intersection.	The SB side of Kennedy Rd and the EB side of Queen St have been confirmed for construction due to the availability of commercial plaza parking areas at the southwest corner of the Kennedy/Queen Street intersection.	2- K1-SHAFT 4 would be designed to serve both the Kennedy Road STS and the future Queen Street STS. If used for both tunnels, it requires a diameter up to 12 m (vs. 5-6m range), with a larger compound area. 3- A commercial plaza is located at the southeast corner of the Queen intersection, providing a potential opportunity to place K1-SHAFT 4 on one side of Kennedy Rd, near the intersection.	1- Implement sidewalk closures on one side of Kennedy Rd and one side of Queen St (shaft sides) along the shaft work zone at the southwest corner of the Kennedy/Queen intersection, using barricades installed at both ends of the work zone (see Figure US-30, Book 7). Provide SIDEWALK CLOSED and PEDESTRIAN DIRECTION signage at the nearest upstream controlled pedestrian crossings in both directions to redirect pedestrians and maintain safe pedestrian movements around the work zone. 2- Adjusting traffic signal timing at Kennedy/Queen intersection.	Same as above	Same as above	1. Closure of one SB lane on Kennedy Rd and one EB lane on Queen St to accommodate K1-SHAFT 4 work zone and tapers (see Fig. UI-17 and UI-20, Book 7).	Operational analysis of Kennedy Rd/Queen St intersection.
S2-Kennedy Rd	1	K1-SHFT 5 TBM-SHFT 3	At the southeast quadrant of the Vodden St intersection, utilizing adjacent green space and parking areas associated with Centennial Mall.	Access	Kennedy Rd = 50 Vodden St =50	No tapers are required as no travel lanes are closed.	1- No travel lane closure on Kennedy Rd or Vodden St.	Sidewalk closures on one side of Kennedy Rd and one side of Vodden St (shaft sides) along the work zone at the southeast corner of the Kennedy/Vodden intersection, using barricades installed at both ends of the work zone (see Fig. US-30, Book 7). Pedestrians can be redirected to the opposite sides using SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs to ensure safe pedestrian movement. Bicycle lane on Vodden St will remain open. The existing buffered space between the bicycle lane and the travel lane will be used to maintain safe bicycle operations along the work zone.	1- No bus stop relocation required.	The southeast quadrant of the Kennedy Road / Vodden Street intersection has been confirmed for construction, as the shaft compound will utilize adjacent green space and parking areas associated with Centennial Mall.	3- Shaft and compound for K1-SHAFT 5 should preferably be placed on one side of the Kennedy St near Vodden intersection. Temporary easements may be pursued at Centennial Mall (southeast corner of intersection) to accommodate K1-SHAFT 5 staging needs.	1- Implement sidewalk closures on one side of Kennedy Rd and one side of Vodden St (shaft sides) along the work zone of the K1-SHAFT 5 at the southeast corner of the Kennedy/Vodden intersection, using barricades installed at both ends of the work zone (see Fig. US-30, Book 7). Provide SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs at the nearest upstream controlled pedestrian crossings in both directions to redirect pedestrians and ensure safe crossing around the construction zone. 2- Adjusting Traffic signal timing at Kennedy/Vodden intersection.	Same as above	Same as above	1- No lane closure	Operational analysis of Kennedy Rd/Vodden St intersection.

Route	Segment No.	Shaft ID	Location	Shaft Type	Posted Speed Km/h	Tapers/Barriers	Estimated Traffic Impact	Estimated Active Transportation Impact	Estimated Public Transit Impact	Assumption	Comments form City/Region	Suggested Mitigation	Schedule of other projects	Closures in Proximity to Kennedy Rd STS	EMME Model Scenarios	
S2- Vodden St	2	V1-SHFT 1	V1-SHAFT 1: On Vodden St at Etobicoke Creek, between Centre St and Ken Whillans Dr.	Connection	50	No tapers are required as no travel lanes are closed.	1 - No travel lane closures are required on Vodden Street; however, the width of the two EB and WB traffic lanes may potentially be reduced from 3.25 m to 3.0 m to allow for an increased width for cycling facilities.	Sidewalk closure on one side of Vodden St (shaft side) along the work zone of the shaft (see Fig. US-30, Book 7). Pedestrians can be redirected to the opposite side of Vodden St using SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs EB Bicycle lane closure on Vodden St along the work zone and tapers. Two active transportation accommodation options are identified: Option 1: The existing buffered space between the bicycle lane and the travel lanes would be widened from 1.5 m to 2.0 m, with a corresponding reduction in adjacent travel lane widths, and used to temporarily accommodate EB bicycle movements through the work zone and taper area (see Fig. US-32, Book 7). Option 2: The existing EB bicycle lane would be temporarily closed, and cyclists would be redirected to the north side of Vodden Street, where a temporary bi-directional cycling facility would be provided to maintain continuous and safe bicycle access through the work zone. A 1.5 m WB buffered space would be maintained.	1- No bus stop relocation needs.	The EB side of Vodden Street has been confirmed for construction, as the shaft compound occupies adjacent green space within Duggan Park, including mature trees and a portion of the baseball diamond and trail area.	1- V1-SHFT 1 will connect to the trunk sewer, requiring a big connection structure. 2- The parkland adjacent to Vodden St can serve as a temporary compound location for V1-SHFT 1	1- Implement sidewalk closure on the shaft side of Vodden St along the work zone of V1-SHAFT 1, with barricades installed at both ends (see Fig. US-30, Book 7). Install SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs at the nearest upstream pedestrian crossings in each direction to redirect pedestrians to the opposite side of Vodden St. 2- Cyclist accommodation will be maintained through the Vodden Street work zone using one of the following temporary active transportation options, to be confirmed during detailed design: Option 1: Cyclists using the EB bicycle lane on Vodden Street would be redirected into the adjacent buffer lane through the work zone of V1-SHFT 1 to maintain through access during construction. As part of this arrangement, the existing bicycle buffer width would be increased from 1.5 m to 2.0 m, with a corresponding minor reduction in adjacent traffic lane widths (see Fig. US-32, Book 7). Option 2: The existing EB bicycle lane would be temporarily closed, and cyclists would be redirected to the north side of Vodden Street, where a temporary bi-directional cycling facility would be implemented to maintain continuous and safe bicycle access through the work zone. Under this option, the existing WB buffer space (1.5 m) would be maintained, and a widened operating width (potentially 0.5 m additional width) would be provided for the temporary two-way cycling facility.	Same as above	Same as above	1. EB traffic lane widths on Vodden St are reduced from 3.25 m to 3.0 m to accommodate the V1-SHAFT 1 work zone and tapers (see Fig. US-32, Book 7)	Operational analysis of Vodden St/Ken Whillans Dr and Vodden St/Centre St Dr intersection.
S2-Vodden St	2	OBR1-SHFT 1	OBR1-SHAFT 1: Located on OBR, just south of Vodden Street, and occupied by green areas associated with a portion of Nancy McCredie Park.	Access	50	No tapers are required as no travel lanes are closed.	1- No travel lane closure on Vodden St.	Sidewalk closure on one side of Vodden St (shaft side) along the work zone of the shaft (see Fig. US-30, Book 7). Pedestrians can be redirected to the opposite side of Vodden St using SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs.	1: No bus stop relocation needs.	1- OBR1-SHAFT 1: Positioned within the OBR ROW south of Vodden Street, due to the presence of green areas associated with a portion of Nancy McCredie Park.	1- OBR1-SHFT 1 should be positioned in the south side of the Vodden St, making it less impactful than most other locations. Effectively utilizing the available OBR corridor emphasized.	1 - Implement a sidewalk closure on the shaft side of Vodden Street along the OBR1-SHAFT 1 work zone (see Fig. US-30, Book 7). Install SIDEWALK CLOSED and PEDESTRIAN DIRECTION signs at the nearest upstream pedestrian crossings in each direction to redirect pedestrians through a safe detour.	Same as above	Same as above	No lane closure is required.	No operational analysis needs.
S2- OBR Corridor	2	OBR1-SHFT 2	OBR1-SHAFT 2: On OBR just north of Williams Parkway, adjacent to the intersection, and occupied by green areas within the boulevard.	Access	60	Shoulder taper lengths of 70 m east and 30 m west of the work zone on Williams Pkwy (see Fig. US-5, Book 7).	1- No travel lane closure on Vodden St.	No active transportation impact, as it will be placed outside the ROW.	No bus stop relocation needs.	1- Will be positioned within the OBR ROW north of Williams Parkway, as the location comprises green boulevard areas.	4- OBR1-SHFT 2 are located outside the roadway, avoiding any impact on the travel lanes.		Same as above	Same as above	No lane closure is required.	No operational analysis needs.
S2- OBR Corridor	2	OBR1-SHFT 3	OBR1-SHFT 3: on OBR, just south of Bovaird Drive. The shaft is occupied by open space areas within the Bovaird Drive right-of-way.	Access	60	Shoulder taper lengths of 70 m west and 30 m east of the work zone on Bovaird Dr (see Fig. US-5, Book 7). Safety barriers will be installed along OBR sides to restrict unauthorized entry.	1- No traffic impact is expected.	No active transportation impact, as it will be placed outside the ROW.	No bus stop relocation needs.	1- Will be positioned within the OBR ROW, as the area comprises open space within the Bovaird Drive ROW.		1- Install advance warning signs on Bovaird Dr to alert drivers of nearby construction. 2- Secure shafts and compounds with safety barriers to prevent unauthorized access.	Same as above	Same as above	No lane closure is required.	No Synchro operational assessment required.
S2-Bovaird Dr	2	B3-SHFT 1	B3-SHAFT 1: At Fletcher's Creek, west of McLaughlin Road, just south of Bovaird Drive, and occupied by green areas including mature trees and the Etobicoke Creek Trail.	Connection	Bovaird Dr = 60	Shoulder taper lengths of 70 m west and 30 m east of the work zone on Bovaird Dr (see Fig. US-5, Book 7). Safety barriers will be installed on the other sides of the compound area to restrict unauthorized entry.	1- No traffic impact is expected.	B1-SHFT 1: Closure of the McLaughlin Valley Trail Access on Bovaird Drive	B1-SHFT 1: No bus stop relocation needs.	1-Will be positioned within green areas south of Bovaird Drive, as the location includes mature trees and the Etobicoke Creek Trail.	1- The B3-S1 shaft will involve a large structure because it needs to accommodate gates for controlling flow to the new pipe on Bovaird and the existing trunk sewer along Fletcher's Creek. Given the nearby floodplains, the exact location is still under consideration. The current assumption is that the structure can be positioned on one side, outside the roadway, to minimize impacts on traffic. 2- Because the location is outside the functional area of the Bovaird Dr/McLaughlin Rd signalized intersection, modeling is not expected to provide any significant insights.	1- Install advance warning signs on Bovaird Dr to alert drivers of nearby construction. 2- Secure shafts and compounds with safety barriers to prevent unauthorized access.	Same as above	Same as above	No lane closure is required.	No Synchro operational assessment required.

Route	Segment No.	Shaft ID	Location	Shaft Type	Posted Speed Km/h	Tapers/Barriers	Estimated Traffic Impact	Estimated Active Transportation Impact	Estimated Public Transit Impact	Assumption	Comments form City/Region	Suggested Mitigation	Schedule of other projects	Closures in Proximity to Kennedy Rd STS	EMME Model Scenarios	
N1-OBR Corridor	3	OBR2-SHFT 1	OBR2-SHFT 1: Approximately 500 m north of Bovaird Dr, in front of North Bay Distribution.	Access	Van Kirk Dr = 50	No taper required, as there is no pedestrian or vehicle access; safety barriers will be installed to restrict unauthorized entry. A portion of the compound area extends into the adjacent parking lot on the west side of OBR and requires special care.	1- No traffic impact is expected. 2- Construction vehicle access to these shaft compound areas will be provided via Bovaird Dr, Van Kirk Dr, and Sandalwood Pkwy. This access arrangement may increase truck traffic in the area, potentially causing congestion along the two-lane Van Kirk Dr due to frequent construction vehicle movements and limited roadway capacity rather than lane closures.	No impact, as the OBR corridor lacks side walks and bike lanes.	1- No impact, as there are no transit stops within the OBR corridor.	1- located entirely within the OBR corridor.	1- The OBR2-S1 shaft will not impact traffic. However, accessing the site during construction poses challenges. Entry via Van Kirk Dr requires crossing private property. The area is industrial, minimizing the impact on residential properties.	1- Secure shafts and compounds with safety barriers to prevent unauthorized access. 2- As two-lane Van Kirk Dr will be used to access the shaft sites, construction trucks have the potential to cause localized congestion. It is therefore suggested that traffic conditions be monitored during the construction timeframe, and restrictions on non-construction truck access be implemented during peak periods (7:00–9:00 AM and 4:00–6:00 PM) if necessary.	Same as above	Same as above	No lane closure is required.	No Synchro operational assessment required.
N1-OBR Corridor	3	OBR2-SHFT 2	OBR2-SHFT 2: About 450 m south of Sandalwood Pkwy, in front of ITWAL Limited.	Access	Van Kirk Dr = 50	No taper required, as there is no pedestrian or vehicle access; safety barriers will be installed to restrict unauthorized entry.	1- No traffic impact is expected. 2- Construction vehicle access to these shaft compound areas will be provided via Bovaird Dr, Van Kirk Dr, Sandalwood Pkwy. This access arrangement may increase truck traffic in the area, potentially causing congestion along the two-lane Van and Kirk Dr due to frequent construction vehicle movements and limited roadway capacity rather than lane closures.	No impact, as the OBR corridor lacks side walks and bike lanes.	1- No impact, as there are no transit stops within the OBR corridor.	1- located entirely within the OBR corridor.	1- The OBR2-S2 shaft will not impact traffic. However, accessing the site during construction poses challenges. Entry via Van Kirk Dr requires crossing private property. The area is industrial, minimizing the impact on residential properties.	1- Secure shafts and compounds with safety barriers to prevent unauthorized access. 2- As two-lane Van Kirk Dr will be used to access the shaft sites, construction trucks have the potential to cause localized congestion. It is therefore suggested that traffic conditions be monitored during the construction timeframe, and restrictions on non-construction truck access be implemented during peak periods (7:00–9:00 AM and 4:00–6:00 PM) if necessary.	Same as above	Same as above	No lane closure is required.	No Synchro operational assessment required.
N1-OBR Corridor	3	OBR2-SHFT 3	OBR2-SHFT 3: About 425 m north of Sandalwood Pkwy, in front of Brampton Transit Maintenance Facility.	Access	Van Kirk Dr = 50	No taper required, as there is no pedestrian or vehicle access; safety barriers will be installed to restrict unauthorized entry. The compound area is adjacent to a residential zone on the west side of OBR and requires special attention during construction activities.	1- No traffic impact is expected. 2- Construction vehicle access to these shaft compound areas will be provided via Van Kirk Dr, Sandalwood Pkwy, and Wanless Dr. This access arrangement may increase truck traffic in the area, potentially causing congestion along the two-lane Van Kirk Dr due to frequent construction vehicle movements and limited roadway capacity rather than lane closures.	No impact, as the OBR corridor lacks side walks and bike lanes.	1- No impact, as there are no transit stops within the OBR corridor.	1- located entirely within the OBR corridor.	1- The OBR2-S3 shaft will not impact traffic. However, accessing the site during construction poses challenges. Entry via Van Kirk Dr requires crossing private property. The area is industrial, minimizing the impact on residential properties.	1- Secure shafts and compounds with safety barriers to prevent unauthorized access. 2- As two-lane Van Kirk Dr will be used to access the shaft sites, construction trucks have the potential to cause localized congestion. It is therefore suggested that traffic conditions be monitored during the construction timeframe, and restrictions on non-construction truck access be implemented during peak periods (7:00–9:00 AM and 4:00–6:00 PM) if necessary.	Same as above	Same as above	No lane closure is required.	No Synchro operational assessment required.
N1-OBR Corridor	3	OBR2-SHFT 4	OBR2-SHFT 4: Just south side of Wanless Dr; the shaft compound encroaches slightly into Burnt Elm Park.	Access	Wanless Dr = 60	Shoulder taper lengths of 70 m west and 30 m east of the work zone on Wanless Dr (see Fig. US-5, Book 7). Safety barriers will be installed along OBR sides to restrict unauthorized entry.	1- No traffic impact is expected. 2- Access to these shaft compound areas will be provided via Sandalwood Pkwy, Van Kirk Dr, and Wanless Dr. This access arrangement may increase truck traffic in the area, potentially causing congestion along two-lane Mayfield Rd and Van Kirk Dr during construction.	No impact to active transportation facilities.	1- No impact, as there are no transit stops within the corridor or on intersecting roads in the area of influence.	1- located within the OBR corridor, partially occupying Burnt Elm Park.	2- At the OBR/Wanless Dr intersection, the surrounding area includes Burnt Elm Park on the southwest corner and a stormwater management pond on the northwest corner. These open spaces provide adequate space to locate the OBR2-S4 shaft and compound entirely outside of the roadway and sidewalks, ensuring there will be no impacts on traffic operations or pedestrian access.	1- Install advance warning signs on Wanless Dr to alert drivers of nearby construction. 2- Secure shafts and compounds with safety barriers to prevent unauthorized access. 3- As the two-lane Van Kirk Dr will be used to access the shaft sites, construction trucks may increase the potential for localized congestion. It is therefore suggested that traffic conditions be closely monitored during the construction timeframe, and restrictions on non-construction truck access be implemented during peak periods (7:00–9:00 AM and 4:00–6:00 PM if necessary.	Same as above	Same as above	No lane closure is required.	No Synchro operational assessment required.
N1-OBR Corridor	3	OBR2-SHFT 5	OBR2-SHFT 5: Approximately 500 m south of Mayfield Rd.	Access	Wanless Dr = 60 Mayfield Rd = 70	No taper required, as there is no pedestrian or vehicle access; safety barriers will be installed to restrict unauthorized entry. The compound area is adjacent to a residential zone on the east and west sides of OBR and requires special attention during construction activities.	1- No traffic impact is expected. 2- Access to these shaft compound areas will be provided via Mayfield Rd, Van Kirk Dr, and Wanless Dr. This access arrangement may increase truck traffic in the area, potentially causing congestion along two-lane Mayfield Rd and Van Kirk Dr during construction.	No impact; no pedestrian or cyclist facilities.	1- No impact, as there are no transit stops within the corridor or on intersecting roads in the area of influence.	1- located entirely within the OBR corridor.		1- Secure shafts and compounds with safety barriers to prevent unauthorized access. 2- As the two-lane Mayfield Rd and Van Kirk Dr will be used to access the shaft sites, construction trucks may increase the potential for localized congestion. It is therefore suggested that traffic conditions be closely monitored during the construction timeframe, and restrictions on non-construction truck access be implemented during peak periods (7:00–9:00 AM and 4:00–6:00 PM) if necessary.	Same as above	Same as above	No lane closure is required.	No Synchro operational assessment required.
N1-OBR Corridor	3	OBR2-SHFT 6	OBR2-SHFT 6: just south of Mayfield Road and includes a small portion of the Chinguacousy Lions Club Water Tower Park.	Access	Mayfield Rd = 70	Shoulder taper lengths of 105 m west and 55 m east of the work zone on Mayfield Rd (see Fig. US-5, Book 7). Safety barriers will be installed along OBR sides to restrict unauthorized entry.	1- No traffic impact is expected.	No impact; no pedestrian or cyclist facilities.	1- No impact, as there are no transit stops within the corridor or on intersecting roads in the area of influence.	1- Located within the OBR corridor, partially occupying the Chinguacousy Lions Club Water Tower Park.	1- Currently, the north side of the OBR is being used as a compound for Mayfield Rd improvements. The wide south-side ROW will be utilized to minimize the impact on ongoing reconstruction work along Mayfield Rd. The compound for OBR2-S6 will be located on the south side of Mayfield Rd, entirely outside the travel way and walkways, facilitating uninterrupted traffic and pedestrian access.	1- Install advance warning signs on Mayfield Rd. to alert drivers of nearby construction. 2- As the two-lane Mayfield Rd will be used to access the shaft sites, construction trucks may increase the potential for localized congestion. It is therefore suggested that traffic conditions be closely monitored during the construction timeframe, and restrictions on non-construction truck access be implemented during peak periods (7:00–9:00 AM and 4:00–6:00 PM) if necessary.	Same as above	Same as above	No lane closure is required.	No Synchro operational assessment required.
N1-Old School Rd	3	OBR2-SHFT 10	OBR2-SHAFT 10: within the OBR corridor, south of the eastbound lanes of Old School Road, within active agricultural lands.	Access	Old School Rd = 70 *(high volume road with truck prohibited)*	60 m west and 30 m east of the work zone on Old School Rd (see Fig. TS-16, Book 7). Relocating the taper and buffer areas upstream of the intervening obstruction may be required where minimum taper lengths cannot be met. Alternatively, advanced signage is required for taper lengths that are below the required minimum.	1- EB closure (one lane) on Old School Rd at the work zone and its associated tapers.	1-There is an on-road signed cycle route on Old School Road. There will be a closure of the EB paved shoulder. Potentially the shaft compound area could be organized to include a separated cycling facility to maintain the EB active transportation route on Old School Rd.	1- No bus stop relocation needs.	1- EB side on Old School Rd has been confirmed for construction. The site subject to an active development application with potential for land dedication		1- Install advance warning signs on Old School Rd in both directions to alert drivers of nearby construction. Operate one-lane two-way traffic using PTTS (***Portable Temporary Traffic Signal***), in accordance with Book 7 requirements for roads with traffic volumes above 3000 veh/day (see OTM Book 7, TS-16, pg. 274).	Same as above	Same as above	1. Closure of the single EB lane on Old School Rd for the OBR2-SHAFT 10 work zone and tapers (see Fig. TS-16, Book 7). 2- Speed limit reduction from 70 to 50 km/h on Old School Rd in both directions between Mclaughlin Rd and Hurontario St.	No Synchro operational assessment required.
N1-Old School Rd	3	OS1-SHFT 1	OS1-SHAFT 1: Approximately 580 m east of the OBR along Old School Road, within active agricultural lands.	Access	Old School Rd = 70 *(high volume road with truck prohibited)*	60 m west and 30 m east of the work zone on Old School Rd (see Fig. TS-16, Book 7). Relocating the taper and buffer areas upstream of the intervening obstruction may be required where minimum taper lengths cannot be met. Alternatively, advanced signage is required for taper lengths that are below the required minimum.	1- EB closure (one lane) on Old School Rd at the work zone and its associated tapers.	1-There is an on-road signed cycle route on Old School Road. There will be a closure of the EB paved shoulder. Potentially the shaft compound area could be organized to include a separated cycling facility to maintain the EB active transportation route on Old School Rd.	1- No bus stop relocation needs.	1- EB side on Old School Rd has been confirmed for construction. The site presents an opportunity for future land dedication		1- Install advance warning signs on Old School Rd in both directions to alert drivers of nearby construction. Operate one-lane two-way traffic using PTTS, in accordance with Book 7 requirements for roads with traffic volumes above 3000 veh/day (see OTM Book 7, TS-16, pg. 274).	Same as above	Same as above	2. Closure of the single EB lane on Old School Rd for the OS1-SHFT 1 work zone and tapers (see Fig. TS-16, Book 7). 2- Speed limit reduction from 70 to 50 km/h on Old School Rd in both directions between Mclaughlin Rd and Hurontario St.	No Synchro operational assessment required.

N1-Old School Rd	3	OS1-SHFT 2A	OS1-SHAFT 2A: Approximately 220 m east of Hurontario St along Old School Road.	Connection	Old School Rd = 70 *(high volume road with truck prohibited)*	The shaft compound area will be completely surrounded by barriers (see Fig. TI-14, Book 7).	1- The EB direction (the only lane) on the east side of the Old School Rd/Hurontario St intersection will be fully closed, prohibiting all turning and through movements to the east.	1-There is an on-road signed cycle route on Old School Road. There is a paved shoulder on both north and south sides of the roadway. OS1-SHFT2A will force a closure/relocation of the EB paved shoulder, resulting in active transportation facilities being detoured with regular traffic. Potentially the shaft compound area could be organized to include a separated cycling facility to maintain the EB active transportation route on Old School Road.	1- No bus stop relocation needs.	1- EB side on Old School Rd has been confirmed for construction. Detour required.	This section is under the Town of Caledon, and a meeting with them is to be arranged.  AM (veh/h): Thu, June, 2024  Full Day (veh/d): Thu, June, 2024	1- Install advance warning signs on all approaches to the Old School Rd/Hurontario St intersection to alert drivers of nearby construction and the closure of the EB direction on the east side of Old School Rd. Implement detour control following Book 7 (Intersection: Far-Side Lane Closed, Fig. TI-14, Book 7), including appropriate "No Left Turn, "No Right Turn", "No Through Traffic," and detour-direction signage on all approaches. 2- Provide an alternate route for EB traffic toward the downstream Old School Rd / Kennedy Rd intersection.	Same as above	Same as above	1. Closure of the only EB lane on Old School Rd between Highway 10 and Kennedy Rd (see Fig. TI-14, Book 7).	Operational analysis of Old School Rd/Kennedy Rd and Old School Rd/Hurontario St intersections.
N1-Old School Rd	3	OS1-SHFT 2D *(Alternative to OS1-SHFT2A)*	OS1-SHAFT 2D: At the southwest quadrant of the Hurontario St intersection.	Connection	Old School Rd = 70 *(high volume road with truck prohibited)*	90 m west of the work zone at Old School Rd (see Fig. UI-20, Book 7). Relocating the taper and buffer areas upstream of the intervening obstruction may be required where minimum taper lengths cannot be met. Alternatively, advanced signage is required for taper lengths that are below the required minimum.	1- EB one-lane closure (close existing through/right turn lane and convert existing left-turn lane to a shared left/through/right lane) on Old School Rd along the work zone and tapers. 2- Moderate to higher delays at Hurontario St intersection, key traffic points	1-There is an on-road signed cycle route on Old School Road. There is a paved shoulder on both north and south sides of the roadway. OS1-SHFT2A will force a closure/relocation of the eastbound paved shoulder, resulting in active transportation facilities being detoured with regular traffic. Potentially the shaft compound area could be organized to include a separated cycling facility to maintain the eastbound active transportation route on Old School Road.	1- No bus stop relocation needs.	1- EB side of Queen St have been confirmed for construction	This section is under the Town of Caledon, and a meeting with them is to be arranged.	1- Adjusting traffic signal timing at Old School Rd / Hurontario St intersection.	Same as above	Same as above	1. Closure of one EB lane (close existing through/right turn lane and convert existing left-turn lane to a shared left/through/right lane) on Old School Rd to accommodate OS1-SHFT 2D work zone and tapers (see Fig. UI-20, Book 7).	Operational analysis of Old School Rd/Hurontario St intersection.

Flow
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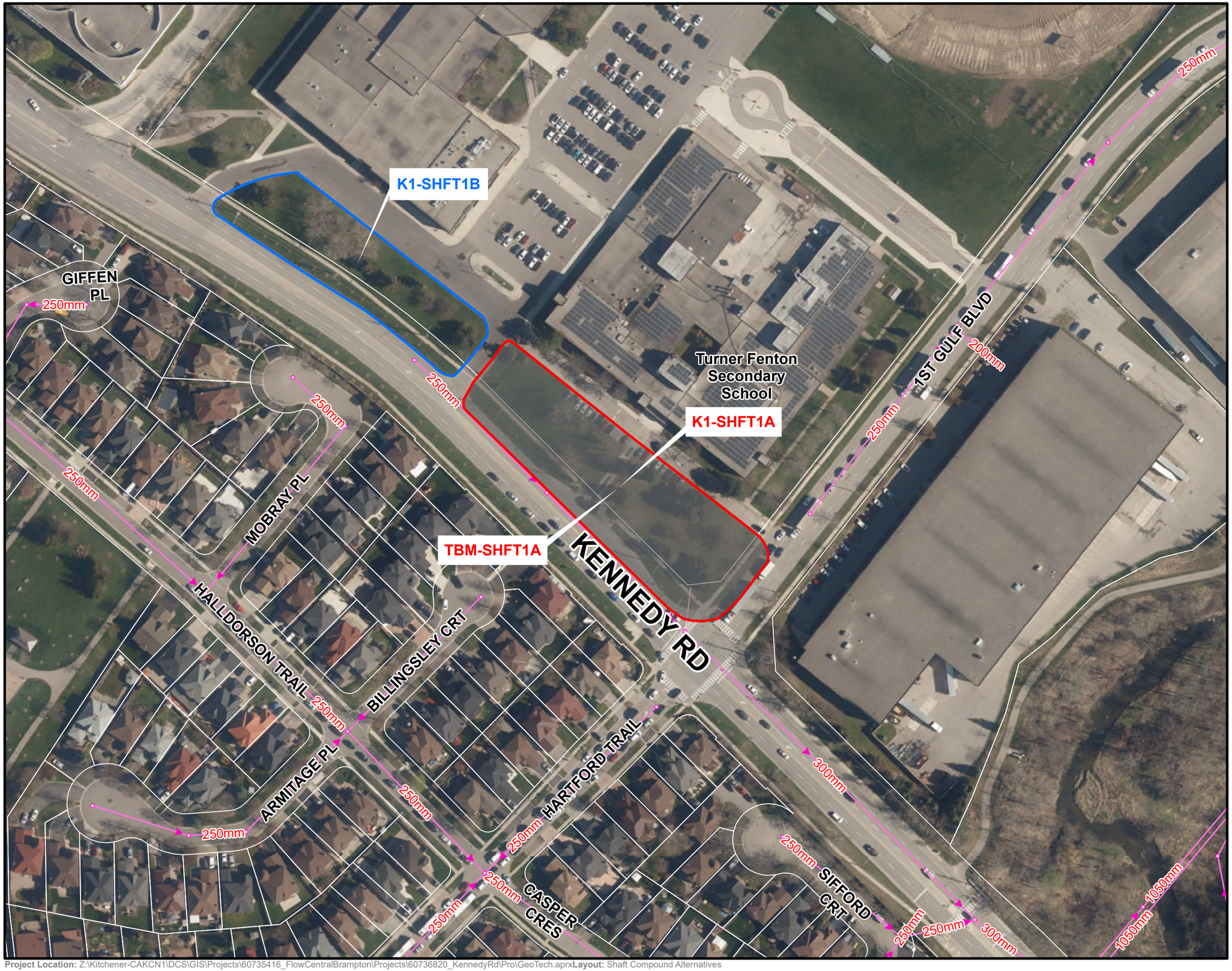
Central Brampton

Appendix D

Shaft Compound Drawings

AECOM

Peel Region





MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50

Meters
Scale: 1:1,500

N

PN: 60736820	Figure 1-1
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 100

Meters
Scale: 1:2,400

N

PN: 60736820	Figure 1-2
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

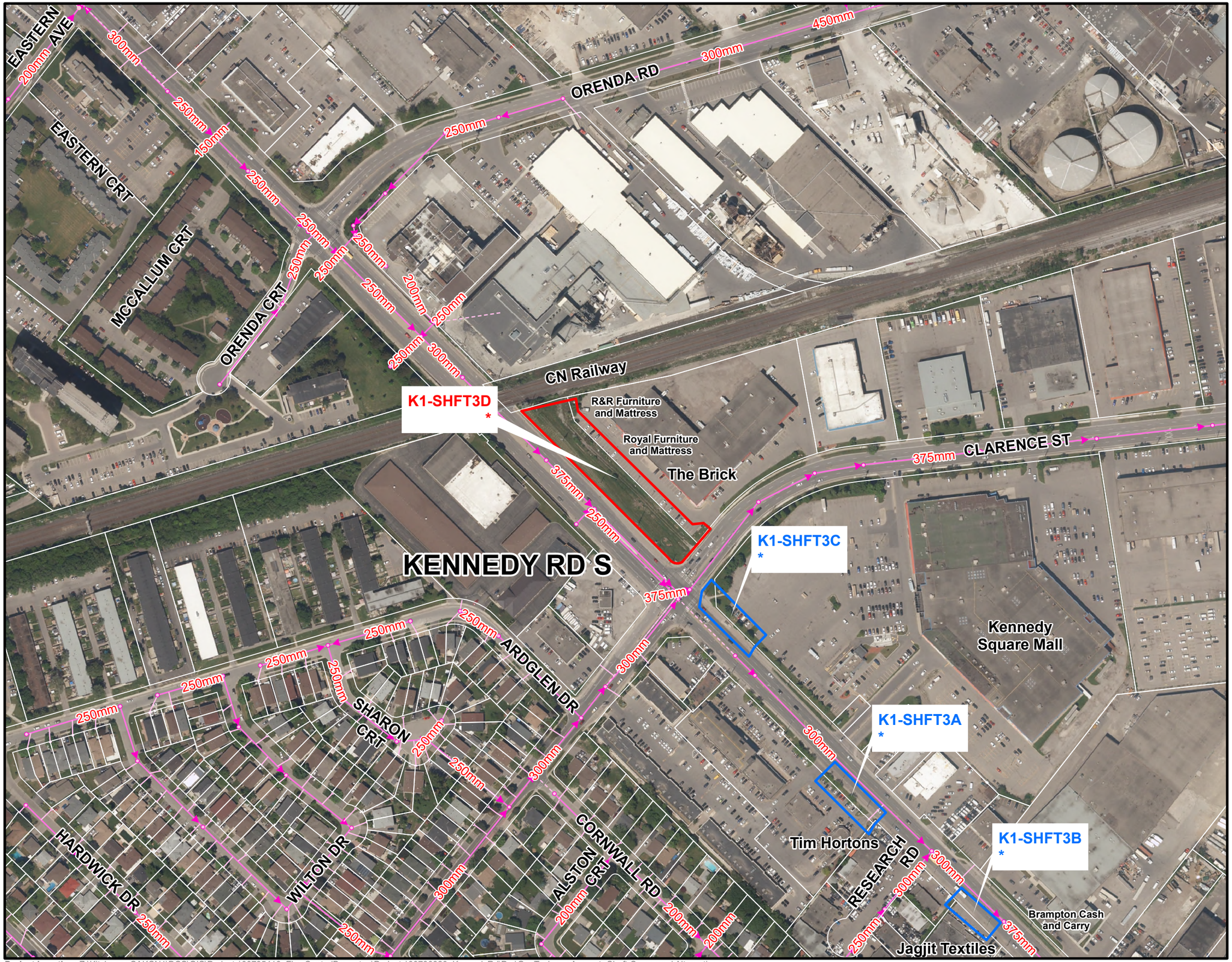
MTBM Alternative Shaft Compounds

0 — 50 Meters
Scale: 1:1,000

N

PN: 60736820	Figure 1-3
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL





MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 100

Meters
Scale: 1:2,800

N

PN: 60736820 | Figure 1-4

January 19, 2026 | AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 N

Meters
Scale: 1:1,000

PN: 60736820	Figure 1-5
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 Meters
Scale: 1:1,000

N

PN: 60736820	Figure 1-6
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50

Meters
Scale: 1:1,000

N

PN: 60736820	Figure 1-7
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 — 50 Meters
Scale: 1:1,000
N

PN: 60736820	Figure 1-8
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL





MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 N

Meters
Scale: 1:1,000

PN: 60736820	Figure 1-9
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 — 50

Meters
Scale: 1:1,000

N

PN: 60736820	Figure 1-10
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
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- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 Meters
Scale: 1:1,000
N

PN: 60736820	Figure 1-11
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 100

Meters
Scale: 1:2,800

N

PN: 60736820	Figure 1-12
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL





MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

Wastewater Node

Wastewater Manhole

Wastewater Service Line

Wastewater Main - Abandoned

Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 N

Meters
Scale: 1:1,000

PN: 60736820	Figure 1-13
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL





MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

Wastewater Node

Wastewater Manhole

Wastewater Service Line

Wastewater Main - Abandoned

Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 100

Meters
Scale: 1:2,000

N

PN: 60736820	Figure 1-14
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL





MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

Wastewater Node

Wastewater Manhole

Wastewater Service Line

Wastewater Main - Abandoned

Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

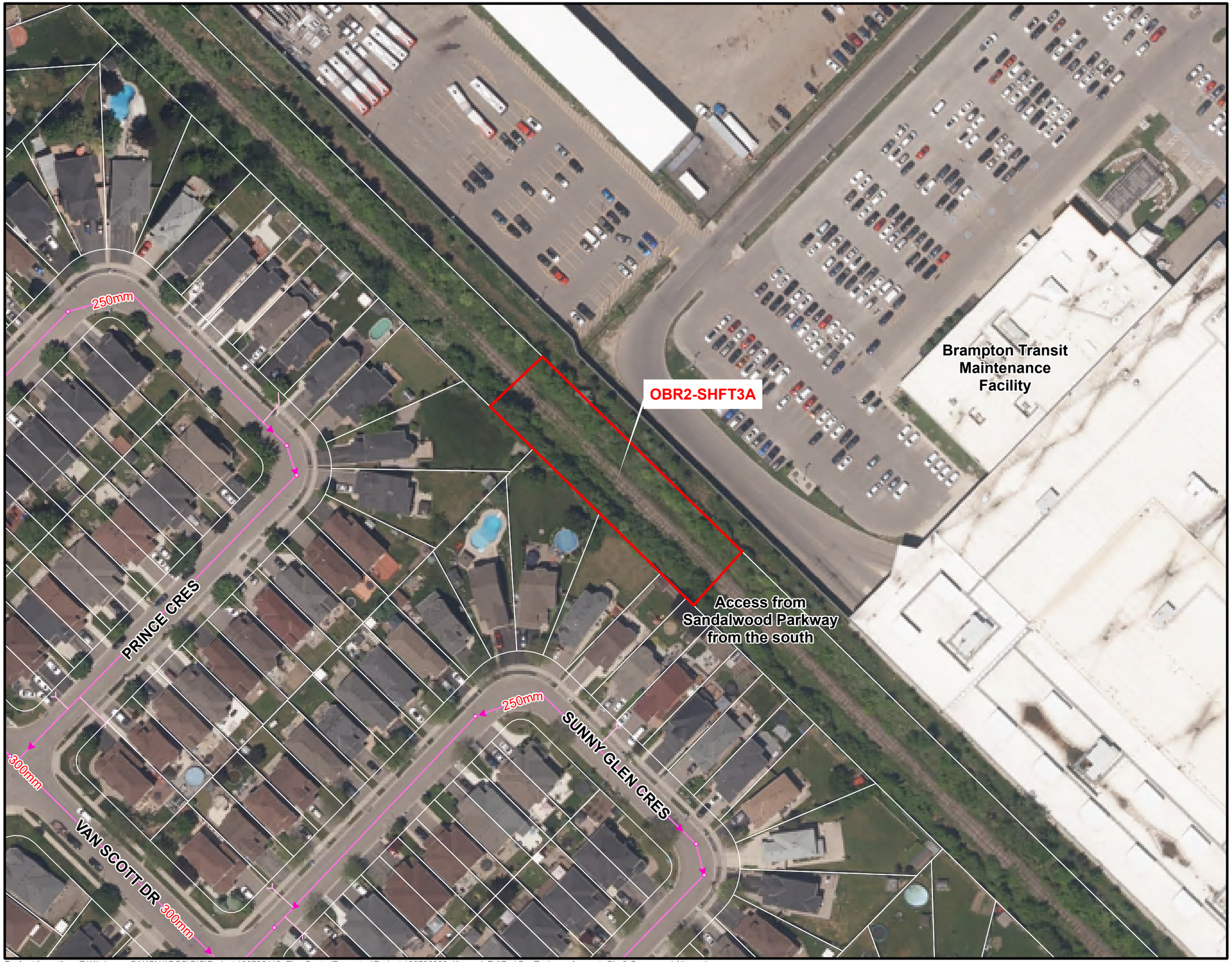
0 50 N

Meters
Scale: 1:1,000

PN: 60736820	Figure 1-15
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
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MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 N

Meters
Scale: 1:1,000

PN: 60736820	Figure 1-16
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL





MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

Wastewater Node

Wastewater Manhole

Wastewater Service Line

Wastewater Main - Abandoned

Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 N

Meters
Scale: 1:1,000

PN: 60736820	Figure 1-17
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
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MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

Wastewater Node

Wastewater Manhole

Wastewater Service Line

Wastewater Main - Abandoned

Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 N

Meters
Scale: 1:1,000

PN: 60736820	Figure 1-18
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50

Meters
Scale: 1:1,500

N

PN: 60736820	Figure 1-19
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50

Meters
Scale: 1:1,000

N

PN: 60736820	Figure 1-20
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
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MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

Wastewater Node

Wastewater Manhole

Wastewater Service Line

Wastewater Main - Abandoned

Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50

Meters
Scale: 1:1,000

N

PN: 60736820	Figure 1-21
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
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- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 N

Meters
Scale: 1:1,000

PN: 60736820	Figure 1-22
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





- MTBM Shaft Compound Preferred
- TBM Shafts
- MTBM Shaft Compound Alternatives
- Parcels
- Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

- Wastewater Node
- Wastewater Manhole
- Wastewater Service Line
- Wastewater Main - Abandoned
- Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

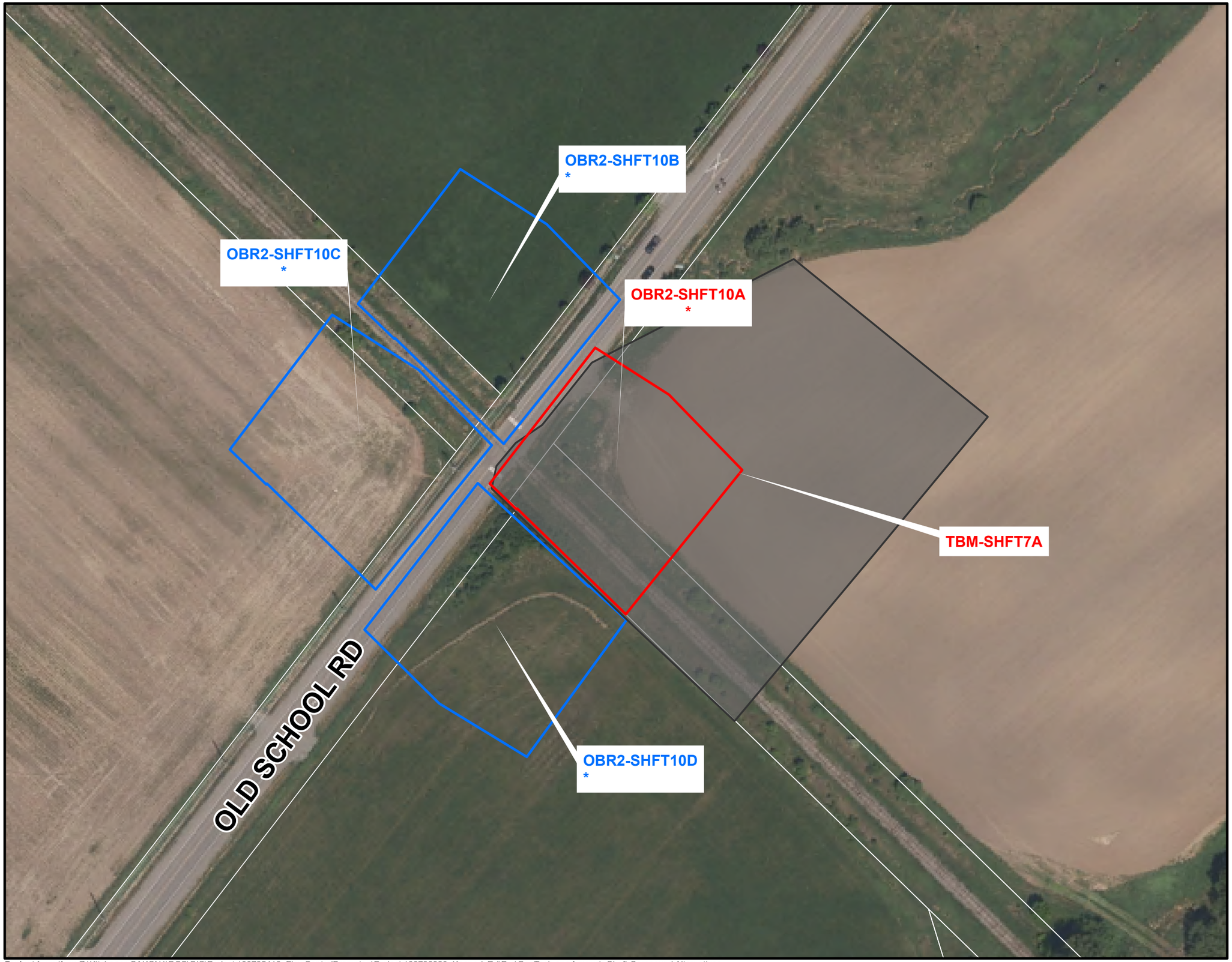
0 50 N

Meters
Scale: 1:1,000

PN: 60736820	Figure 1-23
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





MTBM Shaft Compound Preferred
TBM Shafts
MTBM Shaft Compound Alternatives
Parcels
Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

Wastewater Node
Wastewater Manhole
Wastewater Service Line
Wastewater Main - Abandoned
Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 N

Meters
Scale: 1:1,000

PN: 60736820	Figure 1-24
January 19, 2026	AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

Wastewater Node

Wastewater Manhole

Wastewater Service Line

Wastewater Main - Abandoned

Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50

Meters

Scale: 1:1,000

N

PN: 60736820 | Figure 1-25

January 19, 2026 | AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12





MTBM Shaft Compound Preferred

TBM Shafts

MTBM Shaft Compound Alternatives

Parcels

Future SAN

*: Carried forward to shortlist evaluation

Existing Sanitary Sewer Infrastructure

Wastewater Node

Wastewater Manhole

Wastewater Service Line

Wastewater Main - Abandoned

Wastewater Main

Flow | Central Brampton

MTBM Alternative Shaft Compounds

0 50 100

Meters

Scale: 1:2,400

N

PN: 60736820 | Figure 1-26

January 19, 2026 | AECOM

Data Sources:
Government of Ontario, Region of PEEL

Project Location: Z:\Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\GeoTech.aprx**Layout:** Shaft Compound Alternatives
Date Saved: January 19, 2026 **User:** WangS12

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Central Brampton

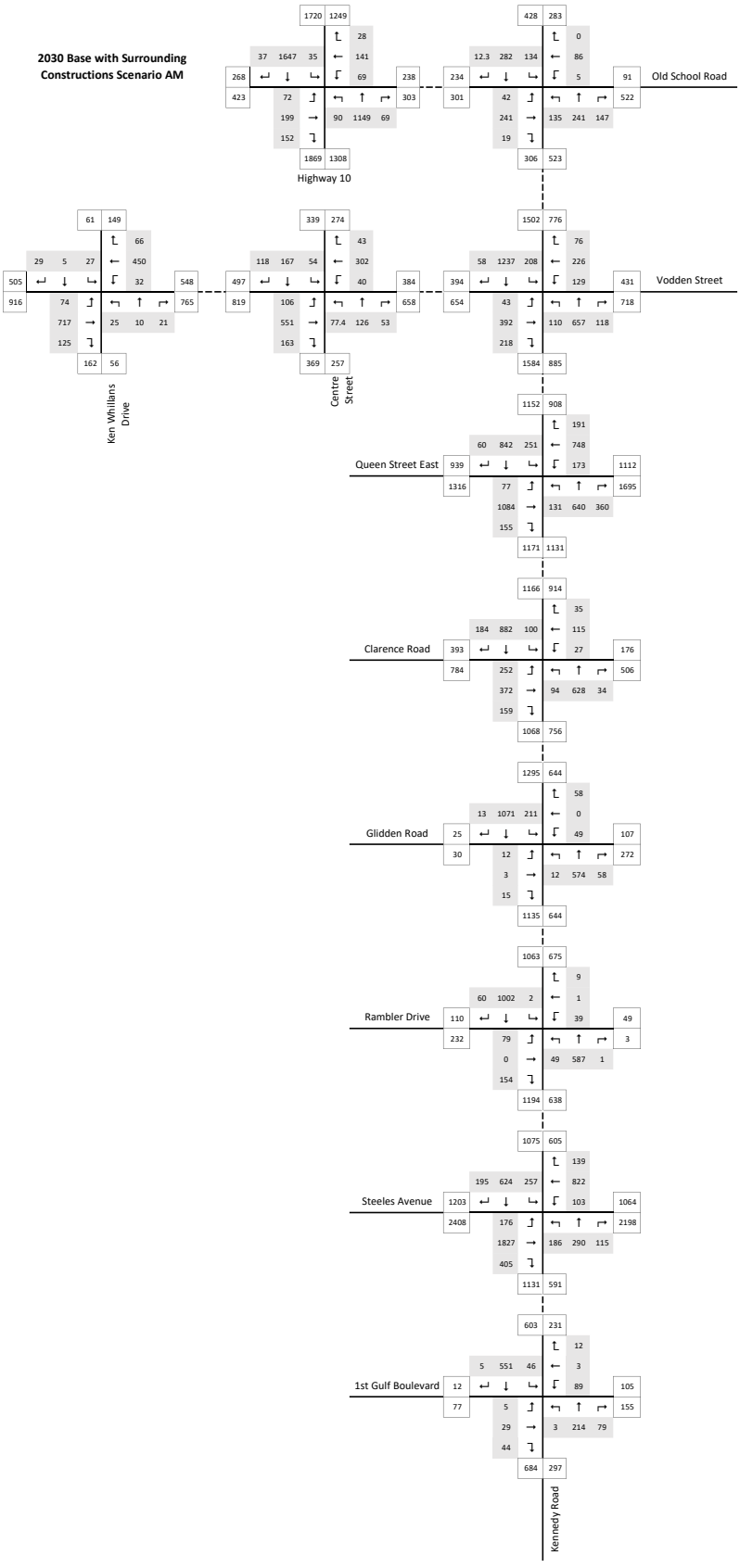
Appendix E

Turning Movement Volume Diagrams

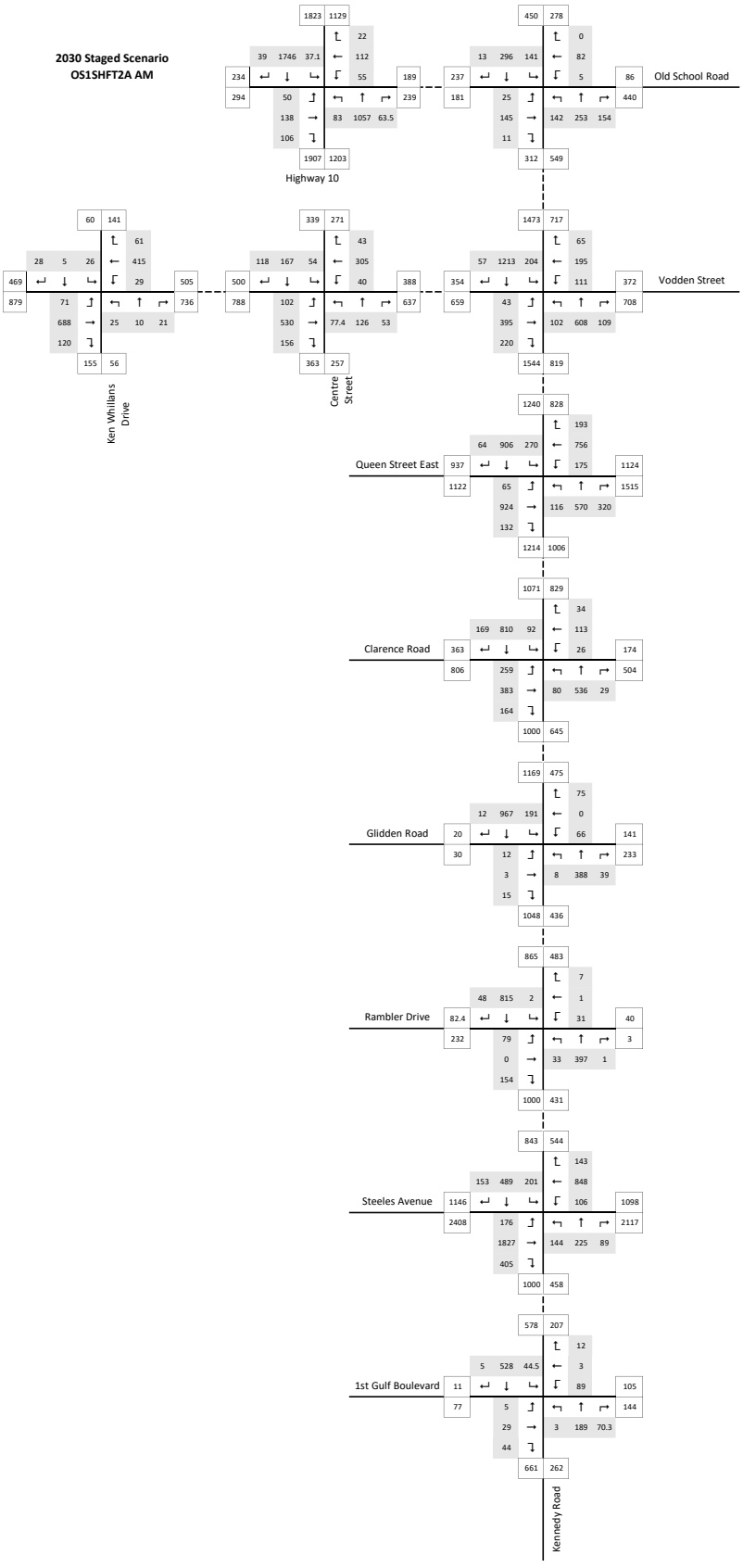
AECOM

Peel Region

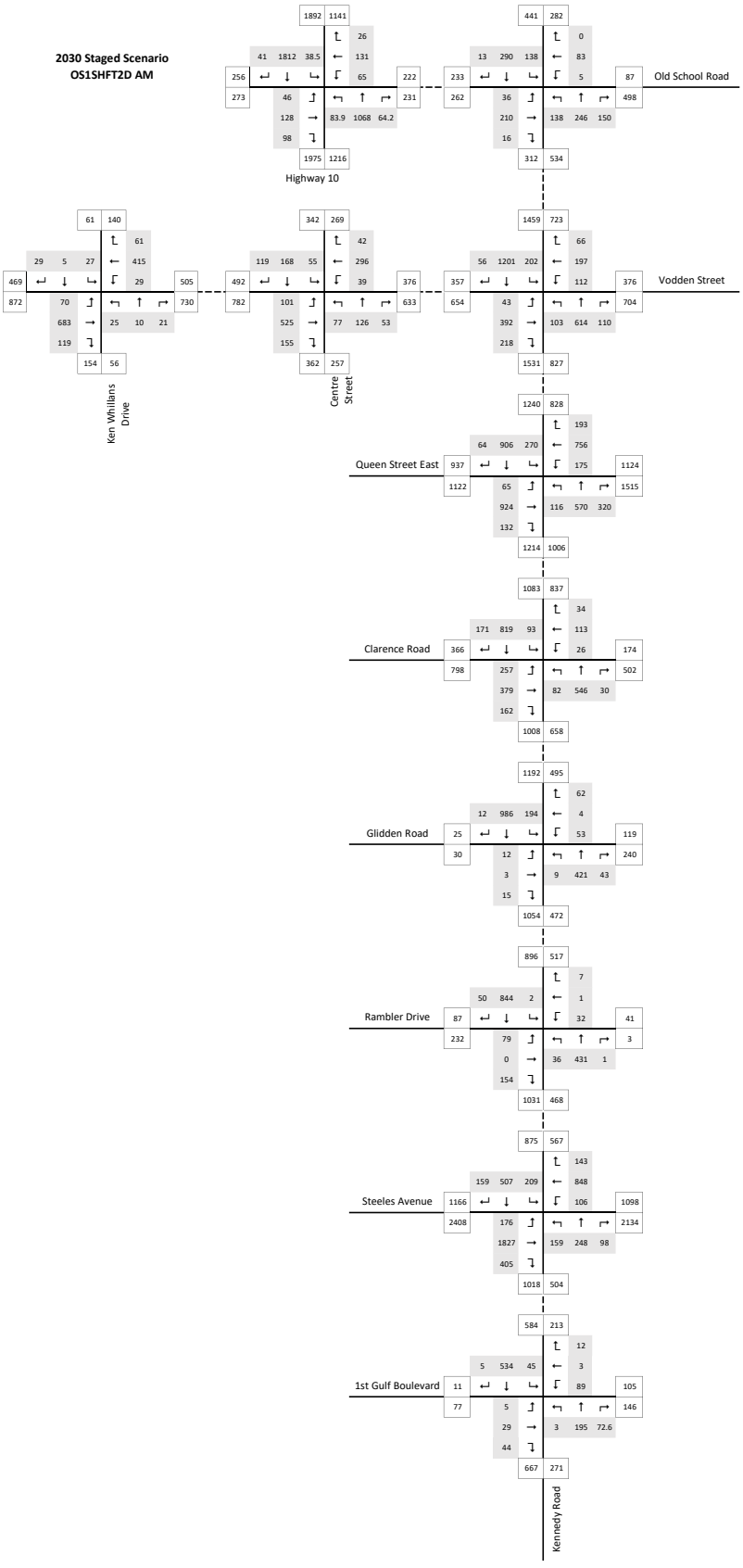
2030 Base with Surrounding Constructions Scenario AM



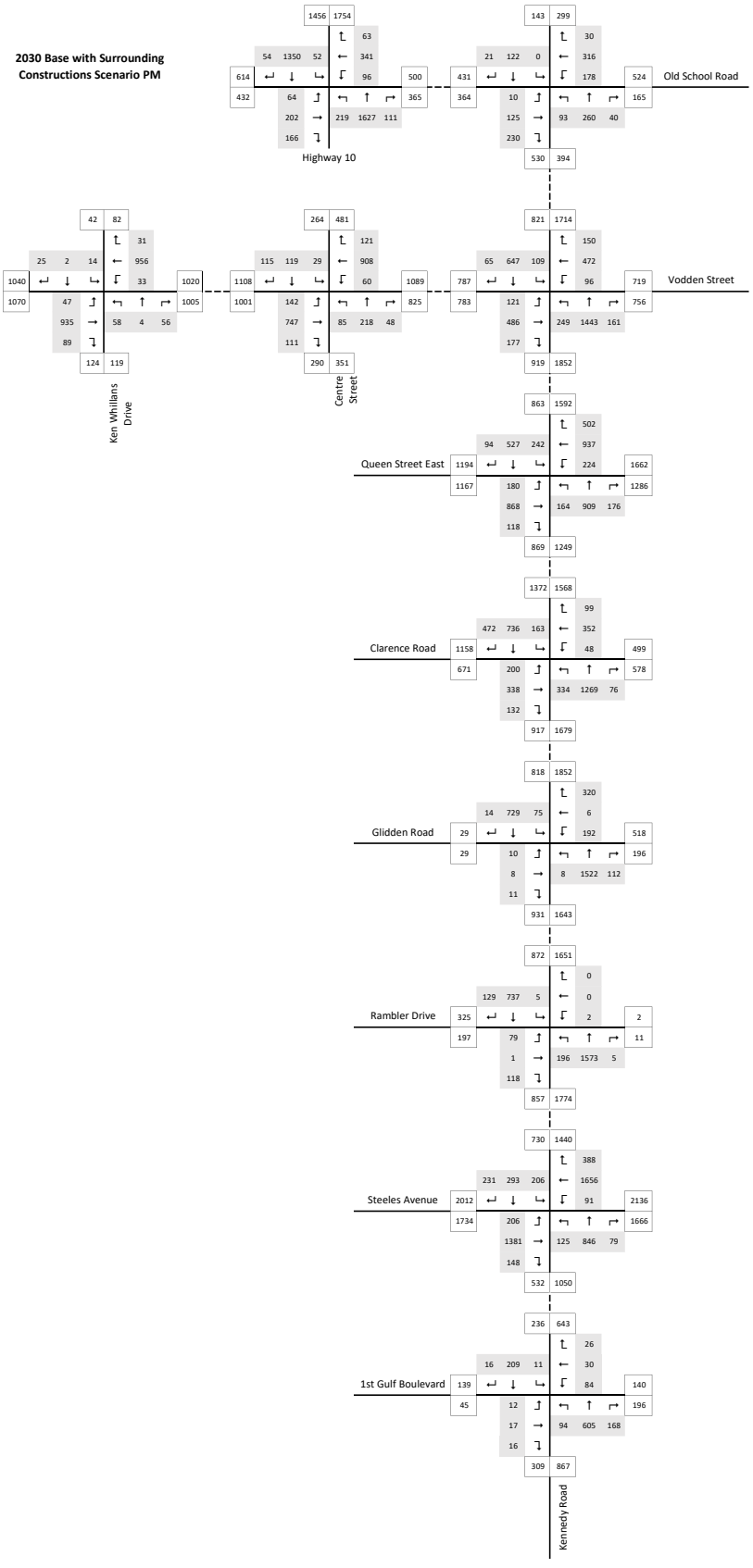
2030 Staged Scenario
OS1SHFT2A AM



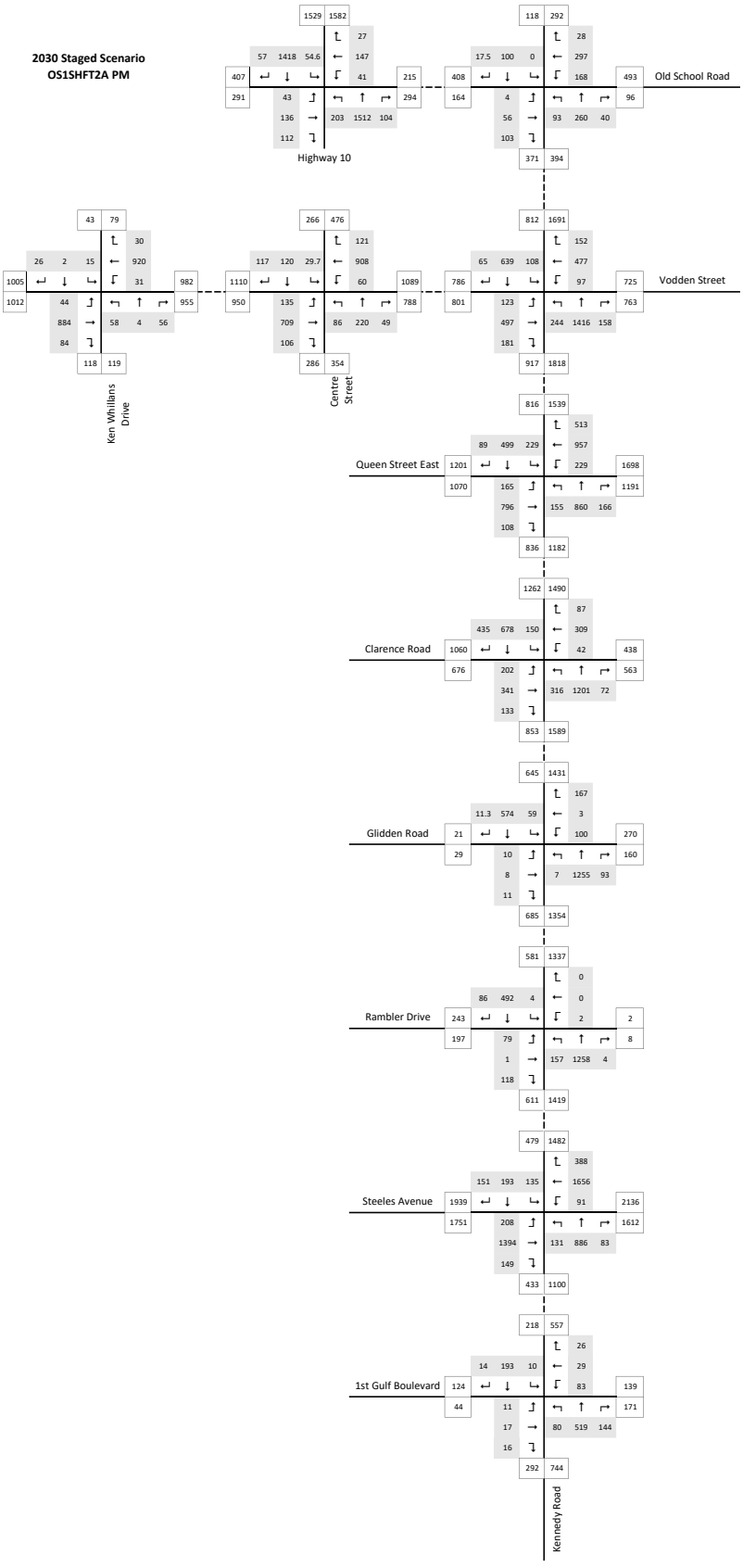
2030 Staged Scenario
OS1SHFT2D AM



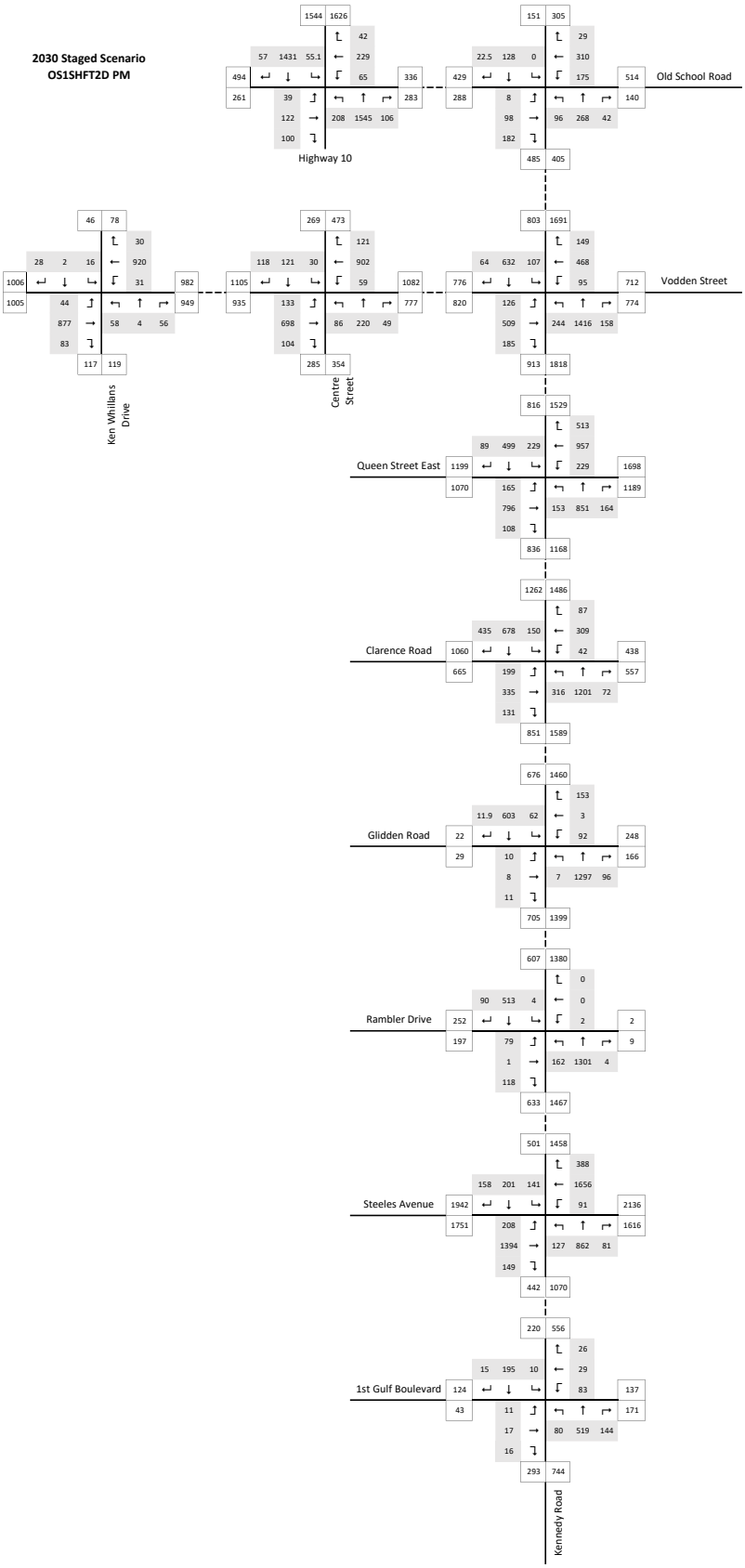
2030 Base with Surrounding Constructions Scenario PM



2030 Staged Scenario
OS1SHFT2A PM



2030 Staged Scenario
OS1SHFT2D PM



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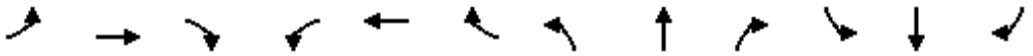
Central Brampton

Appendix F

Synchro Files

AECOM

Peel Region



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	27	41	84	3	12	3	200	72	43	510	5
Future Volume (vph)	5	27	41	84	3	12	3	200	72	43	510	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	105.0		0.0	75.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.909			0.878			0.960			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1707	0	1410	1244	0	1805	2934	0	1687	3338	0
Flt Permitted	0.747			0.708			0.434			0.565		
Satd. Flow (perm)	1419	1707	0	1051	1244	0	825	2934	0	1003	3338	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			13			65			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		125.6			197.5			152.1			177.1	
Travel Time (s)		9.0			14.2			9.1			10.6	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	3%	0%	28%	0%	42%	0%	16%	24%	7%	8%	0%
Adj. Flow (vph)	6	30	46	94	3	13	3	225	81	48	573	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	76	0	94	16	0	3	306	0	48	579	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	47.0	47.0		47.0	47.0		33.0	33.0		33.0	33.0	
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0		110.0	110.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%		68.8%	68.8%	
Maximum Green (s)	44.0	44.0		44.0	44.0		104.0	104.0		104.0	104.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	29.0	29.0		29.0	29.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	17.1	17.1		17.1	17.1		104.2	104.2		104.2	104.2	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.78	0.78		0.78	0.78	
v/c Ratio	0.03	0.29		0.70	0.09		0.00	0.13		0.06	0.22	
Control Delay	49.4	26.6		81.6	26.2		4.3	3.3		4.5	4.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	49.4	26.6		81.6	26.2		4.3	3.3		4.5	4.5	
LOS	D	C		F	C		A	A		A	A	
Approach Delay		28.3			73.5			3.3			4.5	
Approach LOS		C			E			A			A	
Queue Length 50th (m)	1.5	7.5		25.2	0.7		0.2	7.1		2.6	18.8	
Queue Length 95th (m)	5.7	22.1		44.5	7.8		1.1	14.0		7.2	32.2	
Internal Link Dist (m)		101.6			173.5			128.1			153.1	
Turn Bay Length (m)	60.0						105.0			75.0		
Base Capacity (vph)	469	595		347	419		644	2307		783	2608	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.13		0.27	0.04		0.00	0.13		0.06	0.22	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 133.3			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 12.6		Intersection LOS: B	
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Kennedy Road & 1st Gulf Blvd

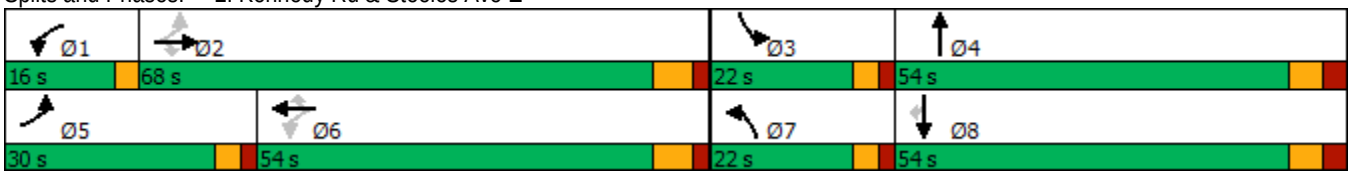


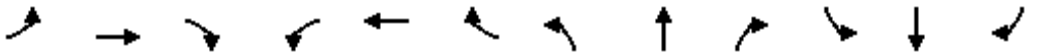
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	1639	363	103	824	139	172	268	106	237	576	180
Future Volume (vph)	158	1639	363	103	824	139	172	268	106	237	576	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	200.0		95.0	160.0		180.0	95.0		0.0	95.0		35.0
Storage Lanes	1		1	1		1	2		0	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Ped Bike Factor	0.99		0.89	1.00		0.93	0.98	0.98		0.96		0.94
Frt			0.850			0.850		0.957				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	4988	1583	1687	4893	1495	3335	3131	0	3213	3471	1524
Flt Permitted	0.211			0.077			0.950			0.950		
Satd. Flow (perm)	373	4988	1415	136	4893	1386	3270	3131	0	3096	3471	1437
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			284			149		37				115
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		316.5			310.3			194.2			254.1	
Travel Time (s)		22.8			22.3			14.0			18.3	
Confl. Peds. (#/hr)	56		72	72		56	41		57	57		41
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	4%	2%	7%	6%	8%	5%	8%	8%	9%	4%	6%
Adj. Flow (vph)	170	1762	390	111	886	149	185	288	114	255	619	194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	1762	390	111	886	149	185	402	0	255	619	194
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6						8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	12.0	42.8	42.8	10.0	49.8	49.8	12.0	50.2		12.0	50.2	50.2
Total Split (s)	30.0	68.0	68.0	16.0	54.0	54.0	22.0	54.0		22.0	54.0	54.0
Total Split (%)	18.8%	42.5%	42.5%	10.0%	33.8%	33.8%	13.8%	33.8%		13.8%	33.8%	33.8%
Maximum Green (s)	25.0	61.2	61.2	13.0	47.2	47.2	17.0	46.8		17.0	46.8	46.8
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.2	2.2	0.0	2.2	2.2	2.0	3.2		2.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.8	6.8	3.0	6.8	6.8	5.0	7.2		5.0	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	Min		None	Min	Min
Walk Time (s)		12.0	12.0		12.0	12.0		12.0			12.0	12.0
Flash Dont Walk (s)		24.0	24.0		31.0	31.0		31.0			31.0	31.0
Pedestrian Calls (#/hr)		72	72		56	56		57			41	41
Act Effct Green (s)	72.7	57.6	57.6	66.5	52.1	52.1	13.4	37.3		15.6	39.5	39.5
Actuated g/C Ratio	0.51	0.40	0.40	0.46	0.36	0.36	0.09	0.26		0.11	0.28	0.28
v/c Ratio	0.54	0.88	0.53	0.63	0.50	0.25	0.59	0.48		0.73	0.65	0.41

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	27.2	47.1	12.2	44.2	38.0	6.1	73.3	42.9		77.6	50.0	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	27.2	47.1	12.2	44.2	38.0	6.1	73.3	42.9		77.6	50.0	21.0
LOS	C	D	B	D	D	A	E	D		E	D	C
Approach Delay		39.8			34.4			52.5			51.3	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	29.9	192.4	23.0	18.3	81.0	0.0	30.1	51.1		41.5	89.5	18.9
Queue Length 95th (m)	45.5	219.3	57.0	40.2	100.0	16.3	43.6	69.5		58.6	116.7	44.9
Internal Link Dist (m)		292.5			286.3			170.2			230.1	
Turn Bay Length (m)	200.0		95.0	160.0		180.0	95.0			95.0		35.0
Base Capacity (vph)	427	2186	779	210	1862	619	406	1074		391	1163	558
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	0.40	0.81	0.50	0.53	0.48	0.24	0.46	0.37		0.65	0.53	0.35

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 143.6			
Natural Cycle: 125			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 42.4		Intersection LOS: D	
Intersection Capacity Utilization 100.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Kennedy Rd & Steeles Ave E





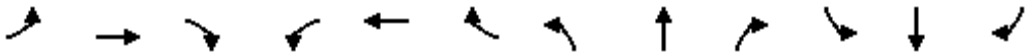
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	0	145	39	1	9	44	527	1	2	925	55
Future Volume (vph)	74	0	145	39	1	9	44	527	1	2	925	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	0.0		0.0	85.0		0.0	105.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	0.98			0.99		1.00	1.00		1.00	1.00	
Frt		0.850			0.976						0.992	
Flt Protected	0.950				0.961		0.950			0.950		
Satd. Flow (prot)	1687	1568	0	0	1353	0	1736	3403	0	1719	3474	0
Flt Permitted	0.775				0.473		0.262			0.444		
Satd. Flow (perm)	1371	1568	0	0	663	0	477	3403	0	802	3474	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		147			7						8	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		71.8			92.7			202.1			205.5	
Travel Time (s)		5.2			6.7			12.1			12.3	
Confl. Peds. (#/hr)	3		5	5		3	7		1	1		7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	0%	1%	28%	0%	50%	4%	6%	50%	5%	3%	0%
Adj. Flow (vph)	78	0	153	41	1	9	46	555	1	2	974	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	153	0	0	51	0	46	556	0	2	1032	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	39.3	39.3		39.3	39.3		32.0	32.0		32.0	32.0	
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0		110.0	110.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%		68.8%	68.8%	
Maximum Green (s)	43.7	43.7		43.7	43.7		104.0	104.0		104.0	104.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.3	2.3		2.3	2.3		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3			6.3		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5		3	3		1	1		7	7	
Act Effct Green (s)	15.5	15.5			15.5		104.5	104.5		104.5	104.5	
Actuated g/C Ratio	0.12	0.12			0.12		0.79	0.79		0.79	0.79	
v/c Ratio	0.49	0.49			0.61		0.12	0.21		0.00	0.38	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	63.9	13.9			77.5		5.7	4.5		5.0	5.4	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	63.9	13.9			77.5		5.7	4.5		5.0	5.4	
LOS	E	B			E		A	A		A	A	
Approach Delay		30.8			77.5			4.6			5.4	
Approach LOS		C			E			A			A	
Queue Length 50th (m)	20.3	1.5			11.6		2.2	14.9		0.1	32.6	
Queue Length 95th (m)	36.4	21.0			26.1		9.8	38.4		1.1	79.6	
Internal Link Dist (m)		47.8			68.7			178.1			181.5	
Turn Bay Length (m)	35.0						85.0			105.0		
Base Capacity (vph)	454	618			224		376	2687		633	2744	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.17	0.25			0.23		0.12	0.21		0.00	0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 132.3			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 73.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Kennedy Road & Rambler Dr



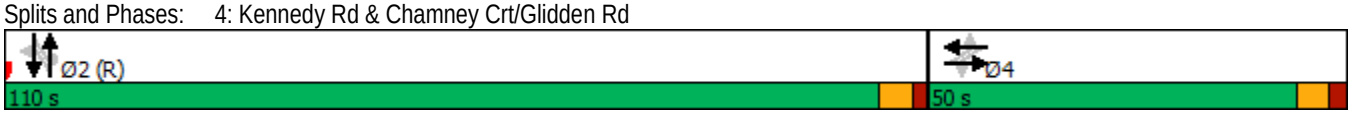


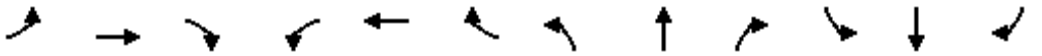
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	3	14	46	0	55	11	515	52	176	893	11
Future Volume (vph)	11	3	14	46	0	55	11	515	52	176	893	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	80.0		0.0	45.0		0.0	70.0		0.0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.97		0.96	0.98		0.99	1.00		0.99	1.00	
Frt		0.932			0.850			0.986			0.998	
Flt Protected		0.980		0.950			0.950			0.950		
Satd. Flow (prot)	0	1529	0	1570	1454	0	1530	3292	0	1770	3491	0
Flt Permitted		0.883		0.738			0.282			0.421		
Satd. Flow (perm)	0	1374	0	1173	1454	0	448	3292	0	775	3491	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			350			13			2	
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		117.1			249.4			186.9			210.9	
Travel Time (s)		8.4			15.0			11.2			12.7	
Confl. Peds. (#/hr)	4		23	23		4	28		12	12		28
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	9%	0%	14%	15%	0%	9%	18%	8%	4%	2%	3%	9%
Adj. Flow (vph)	12	3	15	49	0	59	12	548	55	187	950	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	49	59	0	12	603	0	187	962	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	34.3	34.3		34.3	34.3		37.0	37.0		37.0	37.0	
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0		110.0	110.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%		68.8%	68.8%	
Maximum Green (s)	43.7	43.7		43.7	43.7		104.0	104.0		104.0	104.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.3	2.3		2.3	2.3		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.3		6.3	6.3		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	23	23		23	23		28	28		28	28	
Act Effct Green (s)		20.4		20.4	20.4		127.3	127.3		127.3	127.3	
Actuated g/C Ratio		0.13		0.13	0.13		0.80	0.80		0.80	0.80	
v/c Ratio		0.16		0.33	0.12		0.03	0.23		0.30	0.35	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		35.9		66.1	0.5		5.4	4.9		7.0	5.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		35.9		66.1	0.5		5.4	4.9		7.0	5.7	
LOS		D		E	A		A	A		A	A	
Approach Delay		35.9			30.3			4.9			5.9	
Approach LOS		D			C			A			A	
Queue Length 50th (m)		4.2		14.3	0.0		0.9	28.8		18.8	53.1	
Queue Length 95th (m)		14.8		28.6	0.0		2.9	35.9		30.7	63.0	
Internal Link Dist (m)		93.1			225.4			162.9			186.9	
Turn Bay Length (m)				80.0			45.0			70.0		
Base Capacity (vph)		386		320	651		356	2622		616	2779	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.08		0.15	0.09		0.03	0.23		0.30	0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 119 (74%), Referenced to phase 2:NBSB and 6:, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 7.5		Intersection LOS: A	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Kennedy Rd & Chamney Crt/Glidden Rd





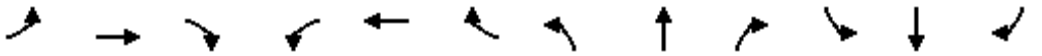
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	334	143	27	116	35	72	481	26	96	848	177
Future Volume (vph)	226	334	143	27	116	35	72	481	26	96	848	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	30.0		0.0	105.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99	0.99		0.99	0.99		1.00	1.00		1.00		0.97
Frt		0.955			0.965			0.992				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3417	0	1736	3305	0	1752	3307	0	1703	3471	1509
Flt Permitted	0.546			0.461			0.259			0.416		
Satd. Flow (perm)	980	3417	0	835	3305	0	476	3307	0	745	3471	1464
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			23			5				192
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		127.3			91.1			176.9			218.4	
Travel Time (s)		9.2			6.6			10.6			13.1	
Confl. Peds. (#/hr)	8		13	13		8	13		1	1		13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	0%	0%	4%	3%	11%	3%	8%	12%	6%	4%	7%
Adj. Flow (vph)	246	363	155	29	126	38	78	523	28	104	922	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	518	0	29	164	0	78	551	0	104	922	192
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	41.6		41.6	41.6		8.0	40.2		8.0	40.2	40.2
Total Split (s)	15.0	60.0		45.0	45.0		15.0	85.0		15.0	85.0	85.0
Total Split (%)	9.4%	37.5%		28.1%	28.1%		9.4%	53.1%		9.4%	53.1%	53.1%
Maximum Green (s)	12.0	53.4		38.4	38.4		12.0	78.8		12.0	78.8	78.8
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.6		2.6	2.6		0.0	2.2		0.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.6		6.6	6.6		3.0	6.2		3.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
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
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		12.0		12.0	12.0			12.0			12.0	12.0
Flash Dont Walk (s)		23.0		23.0	23.0			22.0			22.0	22.0
Pedestrian Calls (#/hr)		13		8	8			1			13	13
Act Effct Green (s)	34.7	31.1		16.0	16.0		90.1	79.4		91.9	80.3	80.3
Actuated g/C Ratio	0.26	0.23		0.12	0.12		0.67	0.59		0.68	0.60	0.60
v/c Ratio	0.77	0.63		0.30	0.40		0.20	0.28		0.18	0.45	0.20

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	60.8	45.7		60.5	48.9		9.4	15.5		8.9	17.3	2.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	60.8	45.7		60.5	48.9		9.4	15.5		8.9	17.3	2.8
LOS	E	D		E	D		A	B		A	B	A
Approach Delay		50.6			50.6			14.7			14.3	
Approach LOS		D			D			B			B	
Queue Length 50th (m)	59.3	62.6		7.5	19.2		5.4	33.3		7.3	62.9	0.0
Queue Length 95th (m)	89.1	83.8		17.8	31.3		17.1	68.9		21.9	122.6	13.0
Internal Link Dist (m)		103.3			67.1			152.9			194.4	
Turn Bay Length (m)	70.0			30.0			105.0			60.0		
Base Capacity (vph)	318	1389		239	964		444	1949		604	2066	949
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	0.77	0.37		0.12	0.17		0.18	0.28		0.17	0.45	0.20

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 134.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 26.8		Intersection LOS: C	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Kennedy Road & Clarence St





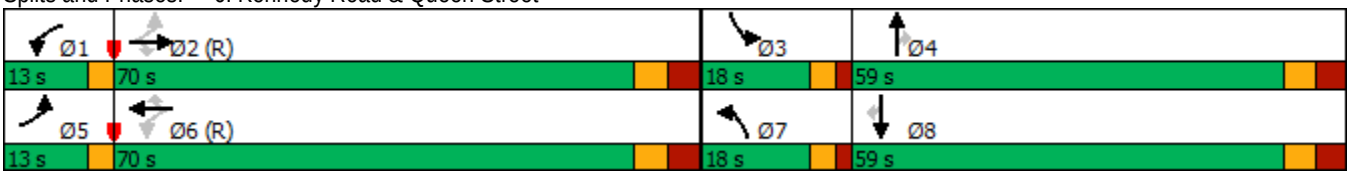
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	1075	154	172	742	189	85	416	234	299	1004	71
Future Volume (vph)	76	1075	154	172	742	189	85	416	234	299	1004	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		80.0	75.0		0.0	115.0		85.0	85.0		70.0
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99		0.89	0.99		0.96	0.96		0.93	0.95		0.90
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	3505	1599	1687	3471	1538	3367	3282	1553	3400	3471	1568
Flt Permitted	0.239			0.093			0.950			0.950		
Satd. Flow (perm)	421	3505	1428	163	3471	1473	3243	3282	1443	3214	3471	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			110			196			138			88
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		145.1			201.5			179.9			152.2	
Travel Time (s)		10.4			14.5			13.0			11.0	
Confl. Peds. (#/hr)	26		81	81		26	73		46	46		73
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	3%	1%	7%	4%	5%	4%	10%	4%	3%	4%	3%
Adj. Flow (vph)	79	1120	160	179	773	197	89	433	244	311	1046	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	1120	160	179	773	197	89	433	244	311	1046	74
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6			4			8
Minimum Split (s)	8.0	47.9	47.9	8.0	47.9	47.9	13.0	44.7	44.7	13.0	44.7	44.7
Total Split (s)	13.0	70.0	70.0	13.0	70.0	70.0	18.0	59.0	59.0	18.0	59.0	59.0
Total Split (%)	8.1%	43.8%	43.8%	8.1%	43.8%	43.8%	11.3%	36.9%	36.9%	11.3%	36.9%	36.9%
Maximum Green (s)	10.0	62.1	62.1	10.0	62.1	62.1	13.0	51.3	51.3	13.0	51.3	51.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.9	3.9	0.0	3.9	3.9	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	-0.6	0.0	0.0	0.0	0.0	0.0	-1.8	0.0	0.0
Total Lost Time (s)	3.0	7.9	7.9	2.4	7.9	7.9	5.0	7.7	7.7	3.2	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Walk Time (s)		8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		29.0	29.0		29.0	29.0
Pedestrian Calls (#/hr)		81	81		26	26		46	46		73	73
Act Effct Green (s)	77.0	62.1	62.1	78.2	62.1	62.1	13.0	51.3	51.3	14.8	51.3	51.3
Actuated g/C Ratio	0.48	0.39	0.39	0.49	0.39	0.39	0.08	0.32	0.32	0.09	0.32	0.32
v/c Ratio	0.28	0.82	0.26	0.99	0.57	0.29	0.33	0.41	0.44	0.99	0.94	0.15
Control Delay	23.7	50.2	12.2	96.6	40.6	5.0	72.9	44.0	20.6	119.3	68.7	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.7	50.2	12.2	96.6	40.6	5.0	72.9	44.0	20.6	119.3	68.7	5.2
LOS	C	D	B	F	D	A	E	D	C	F	E	A
Approach Delay		44.2			43.2			39.9			76.4	

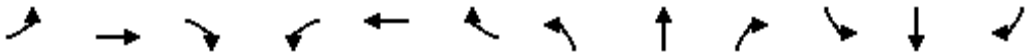
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			D			E	
Queue Length 50th (m)	13.6	176.8	10.6	36.4	106.8	0.2	14.7	59.9	26.9	54.5	179.8	0.0
Queue Length 95th (m)	23.8	207.1	28.3	#90.4	128.9	17.3	24.8	76.9	54.2	#88.2	#223.2	9.2
Internal Link Dist (m)		121.1			177.5			155.9			128.2	
Turn Bay Length (m)	95.0		80.0	75.0			115.0		85.0	85.0		70.0
Base Capacity (vph)	281	1360	621	180	1347	691	273	1052	556	314	1112	509
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	0.28	0.82	0.26	0.99	0.57	0.29	0.33	0.41	0.44	0.99	0.94	0.15

Intersection Summary

Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 115
Control Type: Pretimed
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 53.1 Intersection LOS: D
Intersection Capacity Utilization 101.9% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Kennedy Road & Queen Street





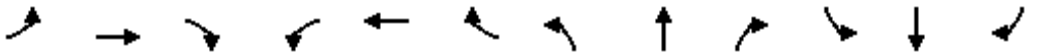
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	291	162	119	209	70	85	507	91	190	1131	53
Future Volume (vph)	32	291	162	119	209	70	85	507	91	190	1131	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	150.0		70.0	125.0		90.0	60.0		0.0	100.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98		0.96	0.99		0.96		0.99		0.99	1.00	
Frt			0.850			0.850		0.977			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	1863	1583	1719	1845	1553	1703	3282	0	1736	3471	0
Flt Permitted	0.614			0.255			0.107			0.348		
Satd. Flow (perm)	1075	1863	1525	456	1845	1485	192	3282	0	627	3471	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			78		20			5	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.8			216.2			152.7			210.0	
Travel Time (s)		17.5			15.6			11.0			15.1	
Confl. Peds. (#/hr)	29		23	23		29	25		22	22		25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	2%	2%	5%	3%	4%	6%	6%	9%	4%	3%	2%
Adj. Flow (vph)	36	323	180	132	232	78	94	563	101	211	1257	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	323	180	132	232	78	94	664	0	211	1316	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Detector Phase	8	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	8.0	5.0	12.0		5.0	12.0	
Minimum Split (s)	44.8	44.8	44.8	8.0	44.8	44.8	8.0	43.7		8.0	43.7	
Total Split (s)	45.0	45.0	45.0	10.0	55.0	55.0	10.0	75.0		10.0	75.0	
Total Split (%)	32.1%	32.1%	32.1%	7.1%	39.3%	39.3%	7.1%	53.6%		7.1%	53.6%	
Maximum Green (s)	38.2	38.2	38.2	7.0	48.2	48.2	7.0	68.3		7.0	68.3	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.8	2.8	2.8	0.0	2.8	2.8	0.0	2.7		0.0	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8	6.8	3.0	6.8	6.8	3.0	6.7		3.0	6.7	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	
Walk Time (s)	12.0	12.0	12.0		12.0	12.0		12.0			12.0	
Flash Dont Walk (s)	26.0	26.0	26.0		26.0	26.0		25.0			25.0	
Pedestrian Calls (#/hr)	23	23	23		29	29		22			25	
Act Effct Green (s)	30.8	30.8	30.8	44.6	40.8	40.8	79.1	68.6		79.5	68.8	
Actuated g/C Ratio	0.23	0.23	0.23	0.34	0.31	0.31	0.59	0.52		0.60	0.52	
v/c Ratio	0.15	0.75	0.39	0.60	0.41	0.15	0.49	0.39		0.49	0.73	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	40.7	58.5	12.9	44.2	38.3	7.2	20.6	20.7		17.4	29.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.7	58.5	12.9	44.2	38.3	7.2	20.6	20.7		17.4	29.2	
LOS	D	E	B	D	D	A	C	C		B	C	
Approach Delay		42.1			34.6			20.7			27.6	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	7.9	83.2	8.1	26.1	50.6	0.0	11.5	61.6		27.7	161.7	
Queue Length 95th (m)	17.7	117.5	28.6	42.4	74.7	11.7	20.1	77.8		41.8	192.2	
Internal Link Dist (m)		218.8			192.2			128.7			186.0	
Turn Bay Length (m)	150.0		70.0	125.0		90.0	60.0			100.0		
Base Capacity (vph)	309	537	541	219	671	590	194	1702		433	1796	
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	0.12	0.60	0.33	0.60	0.35	0.13	0.48	0.39		0.49	0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 133			
Natural Cycle: 105			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 29.3		Intersection LOS: C	
Intersection Capacity Utilization 92.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 7: Kennedy Road & Vodden St



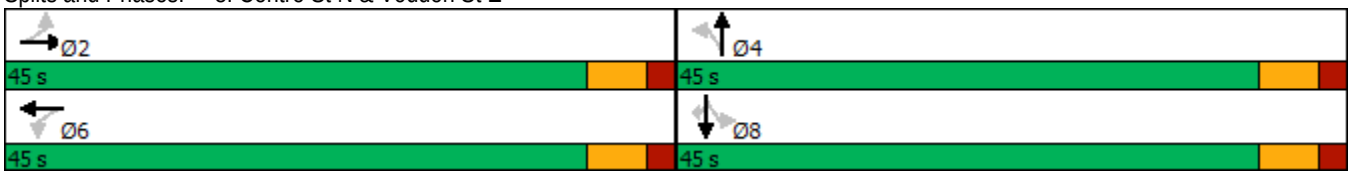


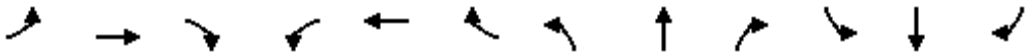
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	396	117	38	290	41	51	83	35	49	151	107
Future Volume (vph)	76	396	117	38	290	41	51	83	35	49	151	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	125.0		0.0	0.0		0.0	0.0		60.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.981			0.972				0.850
Flt Protected	0.950			0.950				0.985			0.988	
Satd. Flow (prot)	1703	1808	0	1752	1780	0	0	1749	0	0	1810	1553
Flt Permitted	0.536			0.385				0.753			0.863	
Satd. Flow (perm)	961	1808	0	710	1780	0	0	1337	0	0	1581	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			10			18				118
Link Speed (k/h)		50			40			40			50	
Link Distance (m)		199.7			193.7			114.4			156.1	
Travel Time (s)		14.4			17.4			10.3			11.2	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	2%	0%	3%	4%	10%	6%	2%	6%	6%	3%	4%
Adj. Flow (vph)	84	435	129	42	319	45	56	91	38	54	166	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	564	0	42	364	0	0	185	0	0	220	118
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	28.0	28.0		28.0	28.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Maximum Green (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	39.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	39.1	39.1		39.1	39.1			13.9			13.9	13.9
Actuated g/C Ratio	0.60	0.60		0.60	0.60			0.21			0.21	0.21
v/c Ratio	0.15	0.52		0.10	0.34			0.62			0.65	0.28
Control Delay	7.5	10.0		7.4	8.1			30.2			32.9	6.4
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	7.5	10.0		7.4	8.1			30.2			32.9	6.4
LOS	A	B		A	A			C			C	A
Approach Delay		9.7			8.0			30.2			23.7	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	4.0	34.3		2.0	19.5			19.1			25.6	0.0
Queue Length 95th (m)	12.0	72.0		7.1	41.9			37.9			45.8	11.1
Internal Link Dist (m)		175.7			169.7			90.4			132.1	
Turn Bay Length (m)	85.0			125.0								60.0
Base Capacity (vph)	577	1095		427	1074			811			950	981
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.15	0.52		0.10	0.34			0.23			0.23	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 65			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Centre St N & Vodden St E





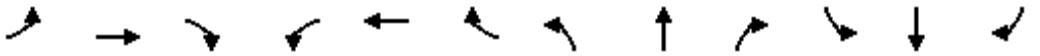
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	545	95	26	369	54	24	9	20	25	5	27
Future Volume (vph)	56	545	95	26	369	54	24	9	20	25	5	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.984			0.897			0.936	
Flt Protected		0.995			0.997		0.950				0.978	
Satd. Flow (prot)	0	1857	1615	0	1803	0	1719	1595	0	0	1739	0
Flt Permitted		0.921			0.950		0.769				0.842	
Satd. Flow (perm)	0	1719	1615	0	1718	0	1392	1595	0	0	1497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103		14			22			29	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		105.0			158.6			90.3			92.1	
Travel Time (s)		7.6			11.4			6.5			6.6	
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
Heavy Vehicles (%)	0%	2%	0%	2%	4%	0%	5%	0%	10%	0%	0%	0%
Adj. Flow (vph)	61	592	103	28	401	59	26	10	22	27	5	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	653	103	0	488	0	26	32	0	0	61	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0		29.0	29.0		29.0	29.0	
Total Split (s)	60.0	60.0	60.0	60.0	60.0		30.0	30.0		30.0	30.0	
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	54.0	54.0	54.0	54.0	54.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		63.8	63.8		63.8		8.4	8.4			8.4	
Actuated g/C Ratio		0.84	0.84		0.84		0.11	0.11			0.11	
v/c Ratio		0.45	0.08		0.34		0.17	0.16			0.32	
Control Delay		4.7	0.9		3.7		33.1	18.9			24.0	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		4.7	0.9		3.7		33.1	18.9			24.0	
LOS		A	A		A		C	B			C	
Approach Delay		4.2			3.7			25.3			24.0	
Approach LOS		A			A			C			C	
Queue Length 50th (m)		32.9	0.0		20.4		3.9	1.5			4.8	
Queue Length 95th (m)		59.7	3.5		37.5		10.7	8.9			15.1	
Internal Link Dist (m)		81.0			134.6			66.3			68.1	
Turn Bay Length (m)							50.0					
Base Capacity (vph)		1440	1370		1442		439	518			492	
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		0.45	0.08		0.34		0.06	0.06			0.12	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 76.1			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 5.8		Intersection LOS: A	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 9: Ken Whillans Dr & Vodden St E





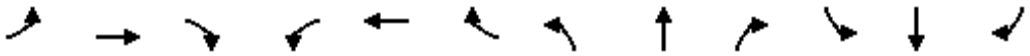
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	186	142	64	130	26	85	1082	65	33	1552	35
Future Volume (vph)	67	186	142	64	130	26	85	1082	65	33	1552	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	110.0		0.0	75.0		0.0	70.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		1.00				1.00		1.00		
Frt		0.935			0.975			0.992			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	1749	0	1656	1739	0	1736	2977	0	1752	3336	0
Flt Permitted	0.622			0.273			0.076			0.169		
Satd. Flow (perm)	1084	1749	0	476	1739	0	139	2977	0	312	3336	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			9			7			3	
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		287.9			252.1			382.5			379.1	
Travel Time (s)		14.8			13.0			17.2			17.1	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	1%	1%	9%	7%	4%	4%	21%	6%	3%	8%	3%
Adj. Flow (vph)	71	196	149	67	137	27	89	1139	68	35	1634	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	345	0	67	164	0	89	1207	0	35	1671	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	38.3	38.3		38.3	38.3		9.5	38.5		9.5	38.5	
Total Split (s)	40.0	40.0		40.0	40.0		15.0	55.0		15.0	55.0	
Total Split (%)	36.4%	36.4%		36.4%	36.4%		13.6%	50.0%		13.6%	50.0%	
Maximum Green (s)	33.7	33.7		33.7	33.7		11.0	48.5		11.0	48.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.6		3.0	4.6	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	1.9		1.0	1.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		4.0	6.5		4.0	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			22.0			22.0	
Pedestrian Calls (#/hr)	1	1		0	0			1			0	
Act Effct Green (s)	21.9	21.9		21.9	21.9		60.3	52.9		56.8	49.3	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.64	0.56		0.61	0.53	
v/c Ratio	0.28	0.79		0.60	0.40		0.40	0.72		0.12	0.95	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	32.8	44.1		56.3	31.7		14.6	20.8		8.5	37.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.8	44.1		56.3	31.7		14.6	20.8		8.5	37.1	
LOS	C	D		E	C		B	C		A	D	
Approach Delay		42.2			38.8			20.3			36.5	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	11.3	56.6		11.6	25.3		5.5	92.1		2.1	158.4	
Queue Length 95th (m)	24.2	91.4		27.9	45.2		17.7	153.8		7.1	#273.7	
Internal Link Dist (m)		263.9			228.1			358.5			355.1	
Turn Bay Length (m)	100.0			110.0			75.0			70.0		
Base Capacity (vph)	396	662		173	640		281	1681		372	1755	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.52		0.39	0.26		0.32	0.72		0.09	0.95	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 93.8			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 31.6		Intersection LOS: C	
Intersection Capacity Utilization 95.1%		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: Hurontario Street & Old School Rd



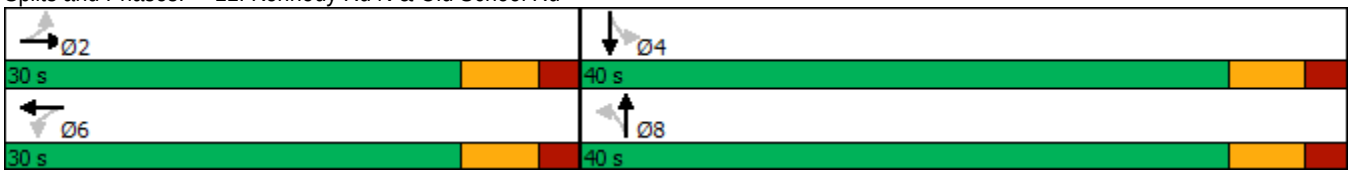


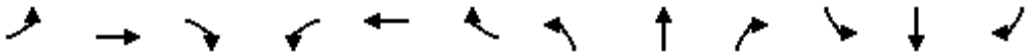
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	271	21	5	42	0	66	241	147	134	282	6
Future Volume (vph)	47	271	21	5	42	0	66	241	147	134	282	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992						0.956			0.998	
Flt Protected		0.993			0.995			0.993			0.984	
Satd. Flow (prot)	0	1835	0	0	1853	0	0	1768	0	0	1829	0
Flt Permitted		0.952			0.961			0.879			0.672	
Satd. Flow (perm)	0	1759	0	0	1790	0	0	1565	0	0	1249	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						48			2	
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		102.1			126.9			194.8			181.3	
Travel Time (s)		5.3			6.5			11.7			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	295	23	5	46	0	72	262	160	146	307	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	51	0	0	494	0	0	460	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.2	21.2		21.2	21.2		21.3	21.3		21.3	21.3	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		40.0	40.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%		57.1%	57.1%		57.1%	57.1%	
Maximum Green (s)	23.8	23.8		23.8	23.8		33.7	33.7		33.7	33.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.2			6.2			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		24.1			24.1			26.3			26.3	
Actuated g/C Ratio		0.38			0.38			0.42			0.42	
v/c Ratio		0.55			0.07			0.73			0.88	
Control Delay		20.6			15.3			20.3			36.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.6			15.3			20.3			36.6	
LOS		C			B			C			D	
Approach Delay		20.6			15.3			20.3			36.6	
Approach LOS		C			B			C			D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)		35.1			4.0			43.1			48.9	
Queue Length 95th (m)		68.2			11.7			74.2			#100.3	
Internal Link Dist (m)		78.1			102.9			170.8			157.3	
Turn Bay Length (m)												
Base Capacity (vph)		675			683			868			676	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.55			0.07			0.57			0.68	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 63.1			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 25.6		Intersection LOS: C	
Intersection Capacity Utilization 78.1%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 11: Kennedy Rd N & Old School Rd





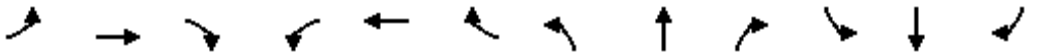
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	16	15	77	27	34	89	811	160	14	267	20
Future Volume (vph)	15	16	15	77	27	34	89	811	160	14	267	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	105.0		0.0	75.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.927			0.917			0.975			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1684	0	1556	1644	0	1805	3286	0	1656	3263	0
Flt Permitted	0.715			0.736			0.566			0.263		
Satd. Flow (perm)	1358	1684	0	1206	1644	0	1075	3286	0	458	3263	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			36			29			10	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		125.6			197.5			152.1			177.1	
Travel Time (s)		9.0			14.2			9.1			10.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	2%	16%	1%	10%	0%	4%	23%	9%	10%	3%
Adj. Flow (vph)	16	17	16	82	29	36	95	863	170	15	284	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	33	0	82	65	0	95	1033	0	15	305	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	47.0	47.0		47.0	47.0		33.0	33.0		33.0	33.0	
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0		110.0	110.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%		68.8%	68.8%	
Maximum Green (s)	44.0	44.0		44.0	44.0		104.0	104.0		104.0	104.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	29.0	29.0		29.0	29.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	14.1	14.1		14.1	14.1		104.1	104.1		104.1	104.1	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.80	0.80		0.80	0.80	
v/c Ratio	0.11	0.17		0.63	0.31		0.11	0.39		0.04	0.12	
Control Delay	52.9	33.9		76.6	31.2		3.7	4.5		3.8	3.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	52.9	33.9		76.6	31.2		3.7	4.5		3.8	3.2	
LOS	D	C		E	C		A	A		A	A	
Approach Delay		40.1			56.5			4.4			3.2	
Approach LOS		D			E			A			A	
Queue Length 50th (m)	4.0	4.2		21.5	7.2		4.7	34.2		0.7	7.6	
Queue Length 95th (m)	11.4	14.7		39.4	21.6		11.1	55.1		2.8	14.1	
Internal Link Dist (m)		101.6			173.5			128.1			153.1	
Turn Bay Length (m)	60.0						105.0			75.0		
Base Capacity (vph)	459	580		407	579		859	2632		366	2610	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.06		0.20	0.11		0.11	0.39		0.04	0.12	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 130.2			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 63.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: Kennedy Road & 1st Gulf Blvd





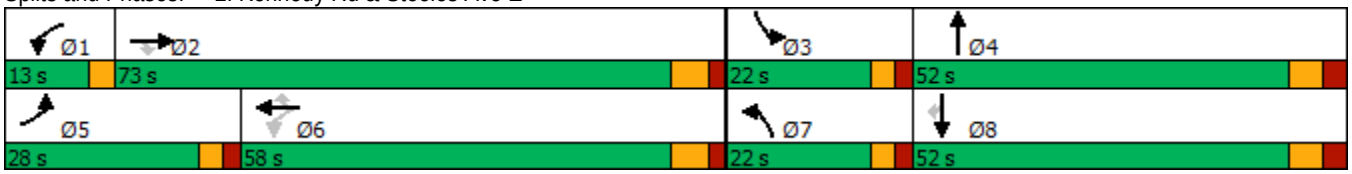
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	1263	135	85	1545	362	112	759	71	190	271	213
Future Volume (vph)	188	1263	135	85	1545	362	112	759	71	190	271	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	200.0		95.0	160.0		180.0	95.0		0.0	95.0		35.0
Storage Lanes	1		1	1		1	2		0	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Ped Bike Factor	0.99		0.91	0.99		0.90	0.96	0.99		0.98		0.93
Frt			0.850			0.850		0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4988	1615	1770	5085	1583	3502	3479	0	3502	3505	1468
Flt Permitted	0.950			0.158			0.950			0.950		
Satd. Flow (perm)	1751	4988	1469	291	5085	1417	3372	3479	0	3442	3505	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			280		6				220
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		316.5			310.3			194.2			254.1	
Travel Time (s)		16.3			16.0			11.7			15.2	
Confl. Peds. (#/hr)	85		60	60		85	49		50	50		49
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	4%	0%	2%	2%	2%	0%	2%	0%	0%	3%	10%
Adj. Flow (vph)	194	1302	139	88	1593	373	115	782	73	196	279	220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	1302	139	88	1593	373	115	855	0	196	279	220
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2	6		6						8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	12.0	42.8	42.8	10.0	49.8	49.8	12.0	50.2		12.0	50.2	50.2
Total Split (s)	28.0	73.0	73.0	13.0	58.0	58.0	22.0	52.0		22.0	52.0	52.0
Total Split (%)	17.5%	45.6%	45.6%	8.1%	36.3%	36.3%	13.8%	32.5%		13.8%	32.5%	32.5%
Maximum Green (s)	23.0	66.2	66.2	10.0	51.2	51.2	17.0	44.8		17.0	44.8	44.8
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.2	2.2	0.0	2.2	2.2	2.0	3.2		2.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.8	6.8	3.0	6.8	6.8	5.0	7.2		5.0	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	Min		None	Min	Min
Walk Time (s)		12.0	12.0		12.0	12.0		12.0			12.0	12.0
Flash Dont Walk (s)		24.0	24.0		31.0	31.0		31.0			31.0	31.0
Pedestrian Calls (#/hr)		60	60		85	85		50			49	49
Act Effct Green (s)	20.3	64.0	64.0	63.3	50.6	50.6	10.4	41.4		13.6	44.7	44.7
Actuated g/C Ratio	0.14	0.43	0.43	0.42	0.34	0.34	0.07	0.28		0.09	0.30	0.30
v/c Ratio	0.81	0.61	0.20	0.42	0.93	0.56	0.48	0.89		0.62	0.27	0.39

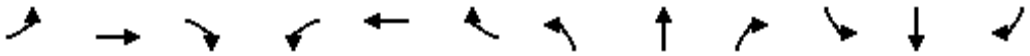
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	89.4	35.6	4.8	26.4	59.2	14.5	75.7	64.1		75.9	41.5	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	89.4	35.6	4.8	26.4	59.2	14.5	75.7	64.1		75.9	41.5	6.9
LOS	F	D	A	C	E	B	E	E		E	D	A
Approach Delay		39.4			49.7			65.5			40.2	
Approach LOS		D			D			E			D	
Queue Length 50th (m)	61.8	120.2	0.0	14.0	187.6	22.8	19.0	139.8		32.4	36.3	0.0
Queue Length 95th (m)	#101.1	142.7	14.1	24.9	#228.7	60.2	30.3	171.8		46.8	50.8	20.9
Internal Link Dist (m)		292.5			286.3			170.2			230.1	
Turn Bay Length (m)	200.0		95.0	160.0		180.0	95.0			95.0		35.0
Base Capacity (vph)	273	2222	731	224	1749	671	400	1051		400	1107	584
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	0.71	0.59	0.19	0.39	0.91	0.56	0.29	0.81		0.49	0.25	0.38

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.1			
Natural Cycle: 125			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 48.2		Intersection LOS: D	
Intersection Capacity Utilization 105.2%		ICU Level of Service G	
Analysis Period (min) 15			

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

Splits and Phases: 2: Kennedy Rd & Steeles Ave E





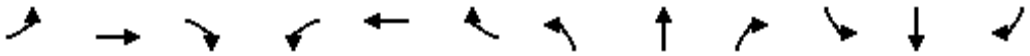
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	1	111	2	0	0	168	1347	4	5	681	119
Future Volume (vph)	74	1	111	2	0	0	168	1347	4	5	681	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	0.0		0.0	85.0		0.0	105.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99	0.96			0.98		0.99	1.00			0.99	
Frt		0.851									0.978	
Flt Protected	0.950				0.950		0.950			0.950		
Satd. Flow (prot)	1805	1514	0	0	1805	0	1805	3539	0	1805	3439	0
Flt Permitted	0.757				0.586		0.302			0.140		
Satd. Flow (perm)	1426	1514	0	0	1090	0	571	3539	0	266	3439	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		125									25	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		71.8			92.7			202.1			205.5	
Travel Time (s)		5.2			6.7			12.1			12.3	
Confl. Peds. (#/hr)	6		18	18		6	8		2	2		8
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	100%	2%	0%	0%	0%	0%	2%	0%	0%	2%	2%
Adj. Flow (vph)	83	1	125	2	0	0	189	1513	4	6	765	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	126	0	0	2	0	189	1517	0	6	899	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	39.3	39.3		39.3	39.3		32.0	32.0		32.0	32.0	
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0		110.0	110.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%		68.8%	68.8%	
Maximum Green (s)	43.7	43.7		43.7	43.7		104.0	104.0		104.0	104.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.3	2.3		2.3	2.3		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3			6.3		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	18	18		6	6		2	2		8	8	
Act Effct Green (s)	18.7	18.7			18.7		104.7	104.7		104.7	104.7	
Actuated g/C Ratio	0.14	0.14			0.14		0.77	0.77		0.77	0.77	
v/c Ratio	0.42	0.40			0.01		0.43	0.56		0.03	0.34	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	58.5	11.6			46.5		11.1	8.6		6.8	6.2	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	58.5	11.6			46.5		11.1	8.6		6.8	6.2	
LOS	E	B			D		B	A		A	A	
Approach Delay		30.2			46.5			8.9			6.2	
Approach LOS		C			D			A			A	
Queue Length 50th (m)	21.6	0.3			0.5		12.0	59.3		0.3	26.2	
Queue Length 95th (m)	38.1	17.5			3.0		43.8	138.8		2.2	64.3	
Internal Link Dist (m)		47.8			68.7			178.1			181.5	
Turn Bay Length (m)	35.0						85.0			105.0		
Base Capacity (vph)	461	574			353		439	2728		205	2656	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.18	0.22			0.01		0.43	0.56		0.03	0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 135.8			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 79.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Kennedy Road & Rambler Dr



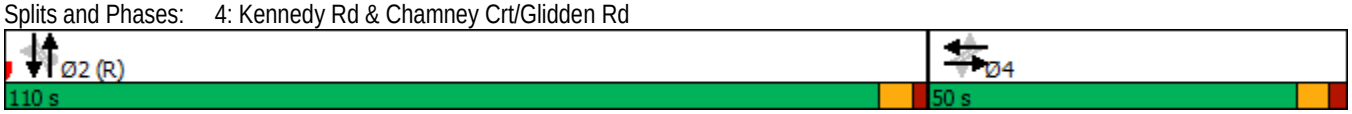


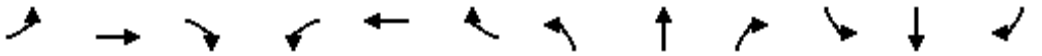
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	8	10	152	5	253	7	1328	98	68	660	13
Future Volume (vph)	9	8	10	152	5	253	7	1328	98	68	660	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	80.0		0.0	45.0		0.0	70.0		0.0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.98		0.98	0.96		0.99	1.00			1.00	
Frt		0.950			0.853			0.990			0.997	
Flt Protected		0.984		0.950			0.950			0.950		
Satd. Flow (prot)	0	1752	0	1703	1529	0	1805	3478	0	1656	3492	0
Flt Permitted		0.703		0.738			0.363			0.131		
Satd. Flow (perm)	0	1246	0	1290	1529	0	681	3478	0	228	3492	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			55			10			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		117.1			249.4			186.9			210.9	
Travel Time (s)		8.4			18.0			13.5			15.2	
Confl. Peds. (#/hr)	16		15	15		16	15		19	19		15
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	6%	0%	2%	0%	2%	6%	9%	3%	0%
Adj. Flow (vph)	10	9	11	162	5	269	7	1413	104	72	702	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	162	274	0	7	1517	0	72	716	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	34.3	34.3		34.3	34.3		37.0	37.0		37.0	37.0	
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0		110.0	110.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%		68.8%	68.8%	
Maximum Green (s)	43.7	43.7		43.7	43.7		104.0	104.0		104.0	104.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.3	2.3		2.3	2.3		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.3		6.3	6.3		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	15	15		15	15		19	19		19	19	
Act Effct Green (s)		29.2		29.2	29.2		118.5	118.5		118.5	118.5	
Actuated g/C Ratio		0.18		0.18	0.18		0.74	0.74		0.74	0.74	
v/c Ratio		0.13		0.69	0.85		0.01	0.59		0.43	0.28	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		36.6		75.1	72.3		7.7	11.6		19.7	7.8	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		36.6		75.1	72.3		7.7	11.6		19.7	7.8	
LOS		D		E	E		A	B		B	A	
Approach Delay		36.6			73.4			11.6			8.9	
Approach LOS		D			E			B			A	
Queue Length 50th (m)		5.4		51.4	73.2		0.6	110.6		8.3	37.2	
Queue Length 95th (m)		14.5		72.5	101.0		2.7	168.5		28.3	59.7	
Internal Link Dist (m)		93.1			225.4			162.9			186.9	
Turn Bay Length (m)				80.0			45.0			70.0		
Base Capacity (vph)		348		352	457		504	2579		168	2586	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.09		0.46	0.60		0.01	0.59		0.43	0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 29.7 (19%), Referenced to phase 2:NBSB and 6:, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 20.8		Intersection LOS: C	
Intersection Capacity Utilization 85.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Kennedy Rd & Chamney Crt/Glidden Rd





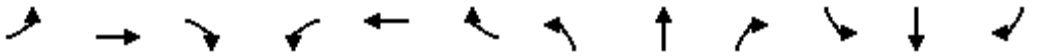
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	282	110	69	502	141	281	1067	64	123	555	356
Future Volume (vph)	167	282	110	69	502	141	281	1067	64	123	555	356
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	30.0		0.0	105.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99	0.98		0.98	0.99		0.99	1.00				0.95
Frt		0.958			0.967			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3387	0	1752	3433	0	1787	3486	0	1787	3505	1615
Flt Permitted	0.109			0.506			0.362			0.133		
Satd. Flow (perm)	203	3387	0	911	3433	0	671	3486	0	250	3505	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			21			5				282
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		127.3			91.1			176.9			218.4	
Travel Time (s)		9.2			6.6			10.6			13.1	
Confl. Peds. (#/hr)	25		31	31		25	29		25	25		29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	0%	2%	3%	0%	3%	1%	2%	8%	1%	3%	0%
Adj. Flow (vph)	180	303	118	74	540	152	302	1147	69	132	597	383
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	421	0	74	692	0	302	1216	0	132	597	383
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	41.6		41.6	41.6		8.0	40.2		8.0	40.2	40.2
Total Split (s)	15.0	60.0		45.0	45.0		15.0	85.0		15.0	85.0	85.0
Total Split (%)	9.4%	37.5%		28.1%	28.1%		9.4%	53.1%		9.4%	53.1%	53.1%
Maximum Green (s)	12.0	53.4		38.4	38.4		12.0	78.8		12.0	78.8	78.8
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.6		2.6	2.6		0.0	2.2		0.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.6		6.6	6.6		3.0	6.2		3.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
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
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		12.0		12.0	12.0			12.0			12.0	12.0
Flash Dont Walk (s)		23.0		23.0	23.0			22.0			22.0	22.0
Pedestrian Calls (#/hr)		31		25	25			25			29	29
Act Effct Green (s)	53.5	49.9		34.8	34.8		95.6	80.8		92.1	78.8	78.8
Actuated g/C Ratio	0.34	0.32		0.22	0.22		0.61	0.52		0.59	0.50	0.50
v/c Ratio	0.94	0.38		0.37	0.89		0.61	0.67		0.54	0.34	0.42

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	91.8	38.3		56.9	71.3		20.8	31.1		21.2	24.3	7.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	91.8	38.3		56.9	71.3		20.8	31.1		21.2	24.3	7.8
LOS	F	D		E	E		C	C		C	C	A
Approach Delay		54.3			69.9			29.1			18.3	
Approach LOS		D			E			C			B	
Queue Length 50th (m)	43.2	51.1		20.7	113.4		45.0	157.0		17.6	62.1	17.8
Queue Length 95th (m)	#92.3	67.1		37.9	138.7		64.1	190.5		28.5	78.1	43.3
Internal Link Dist (m)		103.3			67.1			152.9			194.4	
Turn Bay Length (m)	70.0			30.0			105.0			60.0		
Base Capacity (vph)	191	1181		223	858		495	1802		268	1765	911
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.94	0.36		0.33	0.81		0.61	0.67		0.49	0.34	0.42

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 156.5			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 37.7		Intersection LOS: D	
Intersection Capacity Utilization 95.2%		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: 5: Kennedy Road & Clarence St





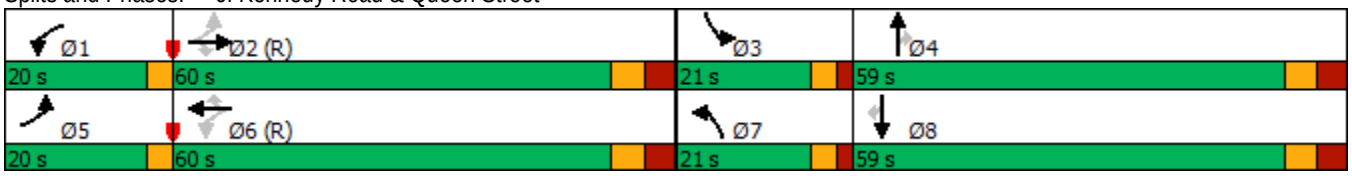
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	852	116	229	959	514	166	921	178	245	534	95
Future Volume (vph)	177	852	116	229	959	514	166	921	178	245	534	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		80.0	75.0		0.0	115.0		85.0	85.0		70.0
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99		0.86	0.97		0.93	0.90		0.93	0.97		0.86
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3539	1599	1787	3539	1599	3502	3539	1583	3433	3505	1615
Flt Permitted	0.090			0.141			0.950			0.950		
Satd. Flow (perm)	168	3539	1367	259	3539	1482	3160	3539	1468	3338	3505	1396
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95			254			142			98
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		145.1			201.5			179.9			152.2	
Travel Time (s)		10.4			14.5			13.0			11.0	
Confl. Peds. (#/hr)	52		113	113		52	97		48	48		97
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%	0%	2%	2%	2%	3%	0%
Adj. Flow (vph)	182	878	120	236	989	530	171	949	184	253	551	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	878	120	236	989	530	171	949	184	253	551	98
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6			4			8
Minimum Split (s)	8.0	47.9	47.9	8.0	47.9	47.9	13.0	44.7	44.7	13.0	44.7	44.7
Total Split (s)	20.0	60.0	60.0	20.0	60.0	60.0	21.0	59.0	59.0	21.0	59.0	59.0
Total Split (%)	12.5%	37.5%	37.5%	12.5%	37.5%	37.5%	13.1%	36.9%	36.9%	13.1%	36.9%	36.9%
Maximum Green (s)	17.0	52.1	52.1	17.0	52.1	52.1	16.0	51.3	51.3	16.0	51.3	51.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.9	3.9	0.0	3.9	3.9	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.9	7.9	3.0	7.9	7.9	5.0	7.7	7.7	5.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Walk Time (s)		8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0
Flash Dont Walk (s)		32.0	32.0		32.0	32.0		29.0	29.0		29.0	29.0
Pedestrian Calls (#/hr)		113	113		52	52		48	48		97	97
Act Effct Green (s)	74.0	52.1	52.1	74.0	52.1	52.1	16.0	51.3	51.3	16.0	51.3	51.3
Actuated g/C Ratio	0.46	0.33	0.33	0.46	0.33	0.33	0.10	0.32	0.32	0.10	0.32	0.32
v/c Ratio	0.73	0.76	0.24	0.84	0.86	0.81	0.49	0.84	0.32	0.74	0.49	0.19
Control Delay	51.1	53.6	11.9	53.7	59.2	36.0	73.3	58.3	12.3	83.5	45.6	7.5
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	51.1	53.6	11.9	53.7	59.2	36.0	73.3	58.3	12.3	83.5	45.6	7.5
LOS	D	D	B	D	E	D	E	E	B	F	D	A
Approach Delay		49.0			51.5			53.8			52.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			D			D	
Queue Length 50th (m)	38.0	139.3	5.8	46.6	163.6	92.0	28.4	155.7	9.9	43.1	78.5	0.0
Queue Length 95th (m)	#71.2	165.6	22.2	#91.6	193.0	147.4	41.8	184.2	30.7	59.4	97.8	14.3
Internal Link Dist (m)		121.1			177.5			155.9			128.2	
Turn Bay Length (m)	95.0		80.0	75.0			115.0		85.0	85.0		70.0
Base Capacity (vph)	249	1152	509	282	1152	653	350	1134	567	343	1123	514
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	0.73	0.76	0.24	0.84	0.86	0.81	0.49	0.84	0.32	0.74	0.49	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 45 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 115			
Control Type: Pretimed			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 51.6		Intersection LOS: D	
Intersection Capacity Utilization 104.3%		ICU Level of Service G	
Analysis Period (min) 15			

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

Splits and Phases: 6: Kennedy Road & Queen Street



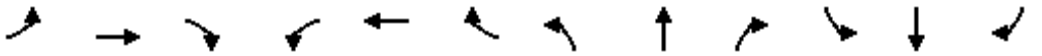
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	355	129	84	412	131	215	1247	139	112	662	67
Future Volume (vph)	88	355	129	84	412	131	215	1247	139	112	662	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	150.0		70.0	125.0		90.0	60.0		0.0	100.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98		0.95	0.98		0.94	0.98	0.99			0.99	
Frt			0.850			0.850		0.985			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1881	1583	1787	1881	1615	1805	3487	0	1805	3437	0
Flt Permitted	0.337			0.206			0.307			0.080		
Satd. Flow (perm)	624	1881	1503	381	1881	1513	571	3487	0	152	3437	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126			124		12			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.8			216.2			152.7			210.0	
Travel Time (s)		17.5			15.6			11.0			15.1	
Confl. Peds. (#/hr)	47		36	36		47	37		41	41		37
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	2%	1%	1%	0%	0%	1%	1%	0%	3%	0%
Adj. Flow (vph)	90	362	132	86	420	134	219	1272	142	114	676	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	362	132	86	420	134	219	1414	0	114	744	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Detector Phase	8	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	8.0	5.0	12.0		5.0	12.0	
Minimum Split (s)	44.8	44.8	44.8	8.0	44.8	44.8	8.0	43.7		8.0	43.7	
Total Split (s)	45.0	45.0	45.0	10.0	55.0	55.0	10.0	75.0		10.0	75.0	
Total Split (%)	32.1%	32.1%	32.1%	7.1%	39.3%	39.3%	7.1%	53.6%		7.1%	53.6%	
Maximum Green (s)	38.2	38.2	38.2	7.0	48.2	48.2	7.0	68.3		7.0	68.3	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.8	2.8	2.8	0.0	2.8	2.8	0.0	2.7		0.0	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8	6.8	3.0	6.8	6.8	3.0	6.7		3.0	6.7	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	
Walk Time (s)	12.0	12.0	12.0		12.0	12.0		12.0			12.0	
Flash Dont Walk (s)	26.0	26.0	26.0		26.0	26.0		25.0			25.0	
Pedestrian Calls (#/hr)	36	36	36		47	47		41			37	
Act Effct Green (s)	32.2	32.2	32.2	46.0	42.2	42.2	79.2	68.5		79.2	68.5	
Actuated g/C Ratio	0.24	0.24	0.24	0.34	0.31	0.31	0.59	0.51		0.59	0.51	
v/c Ratio	0.60	0.80	0.29	0.42	0.71	0.24	0.55	0.79		0.65	0.42	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	62.7	62.0	9.0	36.3	47.7	7.5	19.3	32.0		32.9	22.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	62.7	62.0	9.0	36.3	47.7	7.5	19.3	32.0		32.9	22.0	
LOS	E	E	A	D	D	A	B	C		C	C	
Approach Delay		50.1			37.8			30.3			23.4	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	22.4	95.4	1.3	16.5	103.1	1.9	28.8	180.5		14.0	71.6	
Queue Length 95th (m)	42.8	133.1	17.8	29.2	141.6	17.0	43.0	213.8		#35.5	89.0	
Internal Link Dist (m)		218.8			192.2			128.7			186.0	
Turn Bay Length (m)	150.0		70.0	125.0		90.0	60.0			100.0		
Base Capacity (vph)	178	536	518	204	676	623	401	1784		175	1758	
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	0.51	0.68	0.25	0.42	0.62	0.22	0.55	0.79		0.65	0.42	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 134.3			
Natural Cycle: 105			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 33.1		Intersection LOS: C	
Intersection Capacity Utilization 101.9%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 7: Kennedy Road & Vodden St





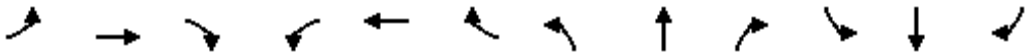
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	510	76	35	531	71	79	203	45	25	101	98
Future Volume (vph)	97	510	76	35	531	71	79	203	45	25	101	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	125.0		0.0	0.0		0.0	0.0		60.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.982			0.982				0.850
Flt Protected	0.950			0.950				0.988			0.990	
Satd. Flow (prot)	1787	1843	0	1770	1845	0	0	1802	0	0	1830	1568
Flt Permitted	0.338			0.349				0.878			0.853	
Satd. Flow (perm)	636	1843	0	650	1845	0	0	1602	0	0	1577	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			13			9				101
Link Speed (k/h)		50			40			40			50	
Link Distance (m)		199.7			193.7			114.4			156.1	
Travel Time (s)		14.4			17.4			10.3			11.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	2%	2%	1%	2%	2%	2%	4%	2%	3%	3%
Adj. Flow (vph)	100	526	78	36	547	73	81	209	46	26	104	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	604	0	36	620	0	0	336	0	0	130	101
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	28.0	28.0		28.0	28.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	60.0	60.0		60.0	60.0		30.0	30.0		30.0	30.0	30.0
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	33.3%
Maximum Green (s)	54.0	54.0		54.0	54.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	54.1	54.1		54.1	54.1			21.3			21.3	21.3
Actuated g/C Ratio	0.62	0.62		0.62	0.62			0.24			0.24	0.24
v/c Ratio	0.25	0.53		0.09	0.54			0.85			0.34	0.22
Control Delay	10.4	11.8		8.3	12.0			51.2			29.7	6.9
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.4	11.8		8.3	12.0			51.2			29.7	6.9
LOS	B	B		A	B			D			C	A
Approach Delay		11.6			11.8			51.2			19.7	
Approach LOS		B			B			D			B	
Queue Length 50th (m)	7.9	58.2		2.6	60.8			55.0			18.9	0.0
Queue Length 95th (m)	17.3	87.0		6.8	90.6			#97.4			34.8	11.9
Internal Link Dist (m)		175.7			169.7			90.4			132.1	
Turn Bay Length (m)	85.0			125.0								60.0
Base Capacity (vph)	393	1146		402	1147			447			433	504
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.25	0.53		0.09	0.54			0.75			0.30	0.20

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 87.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 19.5		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 8: Centre St N & Vodden St E





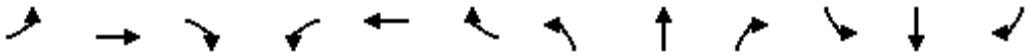
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	599	57	23	672	22	55	4	53	32	5	57
Future Volume (vph)	30	599	57	23	672	22	55	4	53	32	5	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996			0.860			0.918	
Flt Protected		0.998			0.998		0.950				0.983	
Satd. Flow (prot)	0	1861	1599	0	1868	0	1805	1604	0	0	1704	0
Flt Permitted		0.951			0.974		0.795				0.863	
Satd. Flow (perm)	0	1773	1599	0	1823	0	1510	1604	0	0	1496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			58		3			54			58	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		105.0			158.6			90.3			92.1	
Travel Time (s)		7.6			11.4			6.5			6.6	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	1%	5%	1%	0%	0%	0%	2%	0%	0%	1%
Adj. Flow (vph)	31	611	58	23	686	22	56	4	54	33	5	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	642	58	0	731	0	56	58	0	0	96	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0		29.0	29.0		29.0	29.0	
Total Split (s)	60.0	60.0	60.0	60.0	60.0		30.0	30.0		30.0	30.0	
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	54.0	54.0	54.0	54.0	54.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		59.3	59.3		59.3		9.1	9.1			9.1	
Actuated g/C Ratio		0.78	0.78		0.78		0.12	0.12			0.12	
v/c Ratio		0.47	0.05		0.52		0.31	0.24			0.42	
Control Delay		5.7	1.2		6.2		35.2	12.9			20.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		5.7	1.2		6.2		35.2	12.9			20.7	
LOS		A	A		A		D	B			C	
Approach Delay		5.3			6.2			23.8			20.7	
Approach LOS		A			A			C			C	
Queue Length 50th (m)		32.0	0.0		38.8		7.8	0.6			5.2	
Queue Length 95th (m)		61.7	2.9		74.2		18.4	10.5			18.5	
Internal Link Dist (m)		81.0			134.6			66.3			68.1	
Turn Bay Length (m)							50.0					
Base Capacity (vph)		1377	1254		1416		475	541			510	
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		0.47	0.05		0.52		0.12	0.11			0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 76.3			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 77.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 9: Ken Whillans Dr & Vodden St E





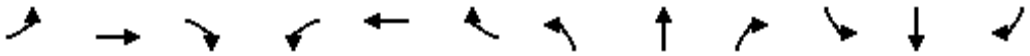
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	188	155	78	277	51	208	1548	106	49	1272	51
Future Volume (vph)	60	188	155	78	277	51	208	1548	106	49	1272	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	110.0		0.0	75.0		0.0	70.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.932			0.977			0.990			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1718	0	1752	1856	0	1787	3412	0	1736	3274	0
Flt Permitted	0.300			0.274			0.080			0.087		
Satd. Flow (perm)	559	1718	0	505	1856	0	150	3412	0	159	3274	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			9			8			5	
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		287.9			252.1			382.5			379.1	
Travel Time (s)		14.8			13.0			17.2			17.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	4%	2%	3%	0%	0%	1%	5%	1%	4%	10%	0%
Adj. Flow (vph)	62	194	160	80	286	53	214	1596	109	51	1311	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	354	0	80	339	0	214	1705	0	51	1364	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	38.3	38.3		38.3	38.3		9.0	38.5		9.0	38.5	
Total Split (s)	40.0	40.0		40.0	40.0		15.0	55.0		15.0	55.0	
Total Split (%)	36.4%	36.4%		36.4%	36.4%		13.6%	50.0%		13.6%	50.0%	
Maximum Green (s)	33.7	33.7		33.7	33.7		11.0	48.5		11.0	48.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.6		3.0	4.6	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	1.9		1.0	1.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		4.0	6.5		4.0	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			22.0			22.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	23.3	23.3		23.3	23.3		62.1	51.4		54.1	44.9	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.65	0.53		0.56	0.47	
v/c Ratio	0.46	0.79		0.66	0.74		0.76	0.93		0.26	0.89	
Control Delay	43.6	44.3		59.6	43.6		39.9	33.6		11.3	32.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	43.6	44.3		59.6	43.6		39.9	33.6		11.3	32.9	
LOS	D	D		E	D		D	C		B	C	
Approach Delay		44.2			46.6			34.3			32.1	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	10.9	61.4		14.9	62.9		24.0	162.3		3.3	123.7	
Queue Length 95th (m)	24.4	94.4		32.7	93.8		#72.6	#270.5		9.5	#202.9	
Internal Link Dist (m)		263.9			228.1			358.5			355.1	
Turn Bay Length (m)	100.0			110.0			75.0			70.0		
Base Capacity (vph)	199	638		180	668		287	1829		280	1684	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.31	0.55		0.44	0.51		0.75	0.93		0.18	0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 96.1			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 35.8		Intersection LOS: D	
Intersection Capacity Utilization 97.3%		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.			

Splits and Phases: 10: Hurontario Street & Old School Rd



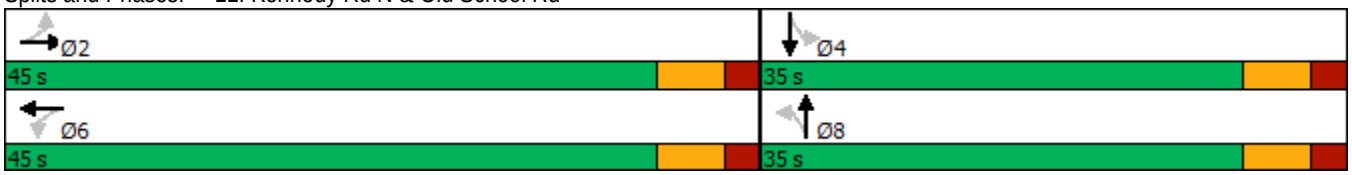


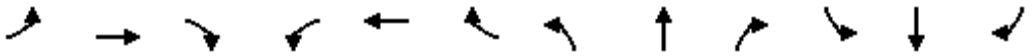
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	39	72	168	207	28	61	245	38	0	115	14
Future Volume (vph)	3	39	72	168	207	28	61	245	38	0	115	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.914			0.991			0.985			0.986	
Flt Protected		0.999			0.980			0.991				
Satd. Flow (prot)	0	1701	0	0	1809	0	0	1818	0	0	1837	0
Flt Permitted		0.992			0.808			0.909				
Satd. Flow (perm)	0	1689	0	0	1492	0	0	1668	0	0	1837	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		78			6			9			8	
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		102.1			126.9			194.8			181.3	
Travel Time (s)		5.3			6.5			11.7			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	42	78	183	225	30	66	266	41	0	125	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	123	0	0	438	0	0	373	0	0	140	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.2	21.2		21.2	21.2		21.3	21.3		21.3	21.3	
Total Split (s)	45.0	45.0		45.0	45.0		35.0	35.0		35.0	35.0	
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	38.8	38.8		38.8	38.8		28.7	28.7		28.7	28.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.2			6.2			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		39.0			39.0			20.3			20.3	
Actuated g/C Ratio		0.54			0.54			0.28			0.28	
v/c Ratio		0.13			0.54			0.78			0.27	
Control Delay		4.9			14.9			35.1			19.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.9			14.9			35.1			19.5	
LOS		A			B			D			B	
Approach Delay		4.9			14.9			35.1			19.5	
Approach LOS		A			B			D			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)		2.8			36.4			47.1			14.3	
Queue Length 95th (m)		12.3			78.1			76.0			27.3	
Internal Link Dist (m)		78.1			102.9			170.8			157.3	
Turn Bay Length (m)												
Base Capacity (vph)		952			812			675			742	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.13			0.54			0.55			0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 71.9			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 21.4		Intersection LOS: C	
Intersection Capacity Utilization 69.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 11: Kennedy Rd N & Old School Rd





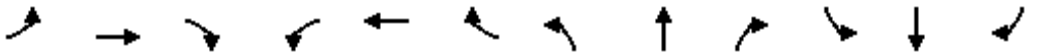
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	29	44	89	3	12	3	195	73	45	534	5
Future Volume (vph)	5	29	44	89	3	12	3	195	73	45	534	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	105.0		0.0	75.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.910			0.984			0.959			0.999	
Flt Protected	0.950				0.959		0.950			0.950		
Satd. Flow (prot)	1805	1709	0	0	1392	0	1805	2929	0	1687	3342	0
Flt Permitted	0.744				0.706		0.451			0.587		
Satd. Flow (perm)	1414	1709	0	0	1025	0	857	2929	0	1042	3342	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			4			69			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		125.6			197.5			152.1			177.1	
Travel Time (s)		9.0			14.2			9.1			10.6	
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
Heavy Vehicles (%)	0%	3%	0%	28%	0%	42%	0%	16%	24%	7%	8%	0%
Adj. Flow (vph)	5	29	44	89	3	12	3	195	73	45	534	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	73	0	0	104	0	3	268	0	45	539	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	47.0	47.0		47.0	47.0		33.0	33.0		33.0	33.0	
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0		110.0	110.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%		68.8%	68.8%	
Maximum Green (s)	44.0	44.0		44.0	44.0		104.0	104.0		104.0	104.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	29.0	29.0		29.0	29.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	18.3	18.3			18.3		104.2	104.2		104.2	104.2	
Actuated g/C Ratio	0.14	0.14			0.14		0.77	0.77		0.77	0.77	
v/c Ratio	0.03	0.27			0.73		0.00	0.12		0.06	0.21	
Control Delay	48.6	26.0			81.0		5.0	3.4		4.8	4.8	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	48.6	26.0			81.0		5.0	3.4		4.8	4.8	
LOS	D	C			F		A	A		A	A	
Approach Delay		27.5			81.0			3.4			4.8	
Approach LOS		C			F			A			A	
Queue Length 50th (m)	1.2	7.2			27.1		0.2	6.0		2.5	18.2	
Queue Length 95th (m)	5.2	21.9			48.2		1.1	12.8		7.4	32.3	
Internal Link Dist (m)		101.6			173.5			128.1			153.1	
Turn Bay Length (m)	60.0						105.0			75.0		
Base Capacity (vph)	463	589			338		663	2283		806	2588	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.01	0.12			0.31		0.00	0.12		0.06	0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 134.6			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 52.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Kennedy Road & 1st Gulf Blvd



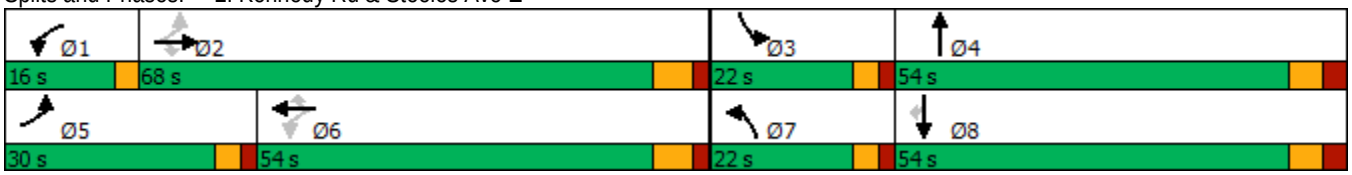


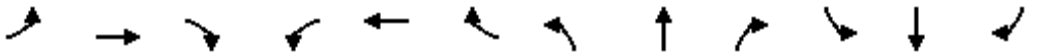
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	1827	405	105	840	142	159	248	98	209	507	159
Future Volume (vph)	176	1827	405	105	840	142	159	248	98	209	507	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	200.0		95.0	160.0		180.0	95.0		0.0	95.0		35.0
Storage Lanes	1		1	1		1	2		0	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Ped Bike Factor	0.99		0.89			0.93	0.98	0.98		0.96		0.94
Frt			0.850			0.850		0.958				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	4988	1583	1687	4893	1495	3335	3135	0	3213	3471	1524
Flt Permitted	0.230			0.077			0.950			0.950		
Satd. Flow (perm)	406	4988	1415	137	4893	1386	3259	3135	0	3086	3471	1437
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			284			142		37				115
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		316.5			310.3			194.2			254.1	
Travel Time (s)		22.8			22.3			14.0			18.3	
Confl. Peds. (#/hr)	56		72	72		56	41		57	57		41
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
Heavy Vehicles (%)	6%	4%	2%	7%	6%	8%	5%	8%	8%	9%	4%	6%
Adj. Flow (vph)	176	1827	405	105	840	142	159	248	98	209	507	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	1827	405	105	840	142	159	346	0	209	507	159
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6						8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	12.0	42.8	42.8	10.0	49.8	49.8	12.0	50.2		12.0	50.2	50.2
Total Split (s)	30.0	68.0	68.0	16.0	54.0	54.0	22.0	54.0		22.0	54.0	54.0
Total Split (%)	18.8%	42.5%	42.5%	10.0%	33.8%	33.8%	13.8%	33.8%		13.8%	33.8%	33.8%
Maximum Green (s)	25.0	61.2	61.2	13.0	47.2	47.2	17.0	46.8		17.0	46.8	46.8
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.2	2.2	0.0	2.2	2.2	2.0	3.2		2.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.8	6.8	3.0	6.8	6.8	5.0	7.2		5.0	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	Min		None	Min	Min
Walk Time (s)		12.0	12.0		12.0	12.0		12.0			12.0	12.0
Flash Dont Walk (s)		24.0	24.0		31.0	31.0		31.0			31.0	31.0
Pedestrian Calls (#/hr)		72	72		56	56		57			41	41
Act Effct Green (s)	73.2	58.2	58.2	66.4	52.3	52.3	12.4	36.7		14.4	38.6	38.6
Actuated g/C Ratio	0.51	0.41	0.41	0.47	0.37	0.37	0.09	0.26		0.10	0.27	0.27
v/c Ratio	0.52	0.89	0.54	0.60	0.47	0.24	0.55	0.41		0.64	0.54	0.34

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	26.1	47.2	13.0	41.2	37.0	6.2	72.4	40.6		73.7	46.6	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	26.1	47.2	13.0	41.2	37.0	6.2	72.4	40.6		73.7	46.6	15.6
LOS	C	D	B	D	D	A	E	D		E	D	B
Approach Delay		39.9			33.4			50.6			47.5	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	30.2	198.1	26.5	16.8	74.5	0.0	25.4	41.4		33.4	69.5	10.1
Queue Length 95th (m)	47.0	231.8	63.3	37.3	94.7	15.9	38.4	59.1		48.8	93.4	31.6
Internal Link Dist (m)		292.5			286.3			170.2			230.1	
Turn Bay Length (m)	200.0		95.0	160.0		180.0	95.0			95.0		35.0
Base Capacity (vph)	444	2212	785	213	1867	617	410	1088		395	1177	563
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	0.40	0.83	0.52	0.49	0.45	0.23	0.39	0.32		0.53	0.43	0.28

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 142.2			
Natural Cycle: 125			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 40.9		Intersection LOS: D	
Intersection Capacity Utilization 100.7%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Kennedy Rd & Steeles Ave E





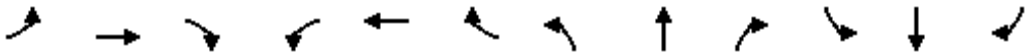
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	0	154	32	1	7	36	431	1	2	844	50
Future Volume (vph)	79	0	154	32	1	7	36	431	1	2	844	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	0.0		0.0	85.0		0.0	105.0		0.0
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00	0.97			0.99			1.00		1.00		0.96
Frt		0.850			0.976							0.850
Flt Protected	0.950				0.962		0.950			0.950		
Satd. Flow (prot)	1687	1548	0	0	1356	0	1736	3402	0	1719	1845	1615
Flt Permitted	0.731				0.471		0.287			0.501		
Satd. Flow (perm)	1293	1548	0	0	659	0	524	3402	0	905	1845	1549
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		193			7							42
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		71.8			92.7			202.1			205.5	
Travel Time (s)		5.2			6.7			12.1			12.3	
Confl. Peds. (#/hr)	3		5	5		3	7		1	1		7
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
Heavy Vehicles (%)	7%	0%	1%	28%	0%	50%	4%	6%	50%	5%	3%	0%
Adj. Flow (vph)	79	0	154	32	1	7	36	431	1	2	844	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	154	0	0	40	0	36	432	0	2	844	50
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0		12.0	12.0	12.0
Minimum Split (s)	39.3	39.3		39.3	39.3		32.0	32.0		32.0	32.0	32.0
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0		110.0	110.0	110.0
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%		68.8%	68.8%	68.8%
Maximum Green (s)	43.7	43.7		43.7	43.7		104.0	104.0		104.0	104.0	104.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.3	2.3		2.3	2.3		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3			6.3		6.0	6.0		6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	5	5		3	3		1	1		7	7	7
Act Effct Green (s)	15.6	15.6			15.6		104.4	104.4		104.4	104.4	104.4
Actuated g/C Ratio	0.12	0.12			0.12		0.79	0.79		0.79	0.79	0.79
v/c Ratio	0.52	0.44			0.48		0.09	0.16		0.00	0.58	0.04

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	65.9	6.3			64.3		5.4	4.3		5.0	8.7	2.0
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	65.9	6.3			64.3		5.4	4.3		5.0	8.7	2.0
LOS	E	A			E		A	A		A	A	A
Approach Delay		26.5			64.3			4.4			8.4	
Approach LOS		C			E			A			A	
Queue Length 50th (m)	20.6	0.0			8.5		1.7	11.3		0.1	67.6	0.4
Queue Length 95th (m)	37.3	9.1			20.9		7.8	29.5		1.1	179.2	4.9
Internal Link Dist (m)		47.8			68.7			178.1			181.5	
Turn Bay Length (m)	35.0						85.0			105.0		
Base Capacity (vph)	428	642			223		413	2682		713	1454	1230
Starvation Cap Reductn	0	0			0		0	0		0	0	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.18	0.24			0.18		0.09	0.16		0.00	0.58	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 132.4			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 81.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Kennedy Road & Rambler Dr



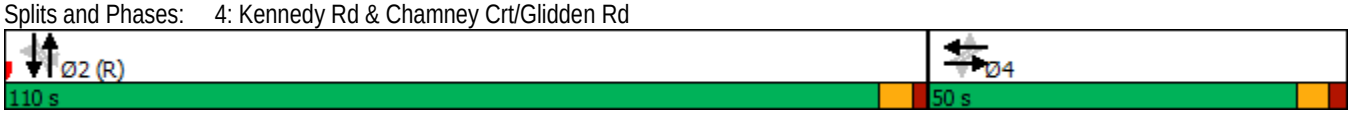


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	3	15	53	0	62	9	421	43	194	986	12
Future Volume (vph)	12	3	15	53	0	62	9	421	43	194	986	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	80.0		0.0	45.0		0.0	70.0		0.0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.97			0.97		0.99		0.95	0.99	1.00	
Frt		0.932			0.927				0.850		0.998	
Flt Protected		0.980			0.977		0.950			0.950		
Satd. Flow (prot)	0	1529	0	0	1514	0	1530	1759	1553	1770	3492	0
Flt Permitted		0.874			0.838		0.270			0.500		
Satd. Flow (perm)	0	1359	0	0	1276	0	429	1759	1475	918	3492	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			36				43		2	
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		117.1			249.4			186.9			210.9	
Travel Time (s)		8.4			15.0			11.2			12.7	
Confl. Peds. (#/hr)	4		23	23		4	28		12	12		28
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
Heavy Vehicles (%)	9%	0%	14%	15%	0%	9%	18%	8%	4%	2%	3%	9%
Adj. Flow (vph)	12	3	15	53	0	62	9	421	43	194	986	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	115	0	9	421	43	194	998	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	2	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	34.3	34.3		34.3	34.3		37.0	37.0	37.0	37.0	37.0	
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0	110.0	110.0	110.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%	68.8%	68.8%	68.8%	
Maximum Green (s)	43.7	43.7		43.7	43.7		104.0	104.0	104.0	104.0	104.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.3	2.3		2.3	2.3		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.3			6.3		6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		19.0	19.0	19.0	19.0	19.0	
Pedestrian Calls (#/hr)	23	23		23	23		28	28	28	28	28	
Act Effct Green (s)		20.8			20.8		126.9	126.9	126.9	126.9	126.9	
Actuated g/C Ratio		0.13			0.13		0.79	0.79	0.79	0.79	0.79	
v/c Ratio		0.16			0.58		0.03	0.30	0.04	0.27	0.36	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		35.9			54.6		5.3	6.0	1.4	6.4	5.9	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		35.9			54.6		5.3	6.0	1.4	6.4	5.9	
LOS		D			D		A	A	A	A	A	
Approach Delay		35.9			54.6			5.6			6.0	
Approach LOS		D			D			A			A	
Queue Length 50th (m)		4.2			23.8		0.7	42.2	0.0	18.7	55.8	
Queue Length 95th (m)		14.9			46.0		2.4	56.8	3.3	29.6	66.2	
Internal Link Dist (m)		93.1			225.4			162.9			186.9	
Turn Bay Length (m)							45.0			70.0		
Base Capacity (vph)		382			374		339	1394	1178	727	2769	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.08			0.31		0.03	0.30	0.04	0.27	0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 119 (74%), Referenced to phase 2:NBSB and 6:, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 9.5		Intersection LOS: A	
Intersection Capacity Utilization 68.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Kennedy Rd & Chamney Crt/Glidden Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	261	386	165	26	113	34	82	546	30	93	819	171
Future Volume (vph)	261	386	165	26	113	34	82	546	30	93	819	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	30.0		0.0	105.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99	0.99		0.99	0.99		1.00	1.00		1.00		0.97
Frt		0.955			0.965			0.992				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3417	0	1736	1739	0	1752	3307	0	1703	3471	1509
Flt Permitted	0.449			0.446			0.294			0.403		
Satd. Flow (perm)	806	3417	0	808	1739	0	540	3307	0	722	3471	1464
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			9			5				171
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		127.3			91.1			176.9			218.4	
Travel Time (s)		9.2			6.6			10.6			13.1	
Confl. Peds. (#/hr)	8		13	13		8	13		1	1		13
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
Heavy Vehicles (%)	5%	0%	0%	4%	3%	11%	3%	8%	12%	6%	4%	7%
Adj. Flow (vph)	261	386	165	26	113	34	82	546	30	93	819	171
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	551	0	26	147	0	82	576	0	93	819	171
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	41.6		41.6	41.6		8.0	40.2		8.0	40.2	40.2
Total Split (s)	15.0	60.0		45.0	45.0		15.0	85.0		15.0	85.0	85.0
Total Split (%)	9.4%	37.5%		28.1%	28.1%		9.4%	53.1%		9.4%	53.1%	53.1%
Maximum Green (s)	12.0	53.4		38.4	38.4		12.0	78.8		12.0	78.8	78.8
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.6		2.6	2.6		0.0	2.2		0.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.6		6.6	6.6		3.0	6.2		3.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
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
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		12.0		12.0	12.0			12.0			12.0	12.0
Flash Dont Walk (s)		23.0		23.0	23.0			22.0			22.0	22.0
Pedestrian Calls (#/hr)		13		8	8			1			13	13
Act Effct Green (s)	37.1	33.5		18.4	18.4		90.2	79.2		91.1	79.7	79.7
Actuated g/C Ratio	0.27	0.24		0.13	0.13		0.66	0.58		0.67	0.58	0.58
v/c Ratio	0.88	0.63		0.24	0.61		0.19	0.30		0.17	0.41	0.19

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	73.1	45.4		57.3	62.7		9.7	16.3		9.3	17.6	2.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	73.1	45.4		57.3	62.7		9.7	16.3		9.3	17.6	2.9
LOS	E	D		E	E		A	B		A	B	A
Approach Delay		54.3			61.9			15.5			14.5	
Approach LOS		D			E			B			B	
Queue Length 50th (m)	63.6	67.7		6.7	37.2		6.6	39.3		7.6	60.5	0.0
Queue Length 95th (m)	#95.4	89.1		16.3	61.3		18.0	71.8		19.9	106.1	12.5
Internal Link Dist (m)		103.3			67.1			152.9			194.4	
Turn Bay Length (m)	70.0			30.0			105.0			60.0		
Base Capacity (vph)	298	1368		228	497		475	1917		579	2022	924
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	0.88	0.40		0.11	0.30		0.17	0.30		0.16	0.41	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 136.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 29.6		Intersection LOS: C	
Intersection Capacity Utilization 80.5%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 5: Kennedy Road & Clarence St



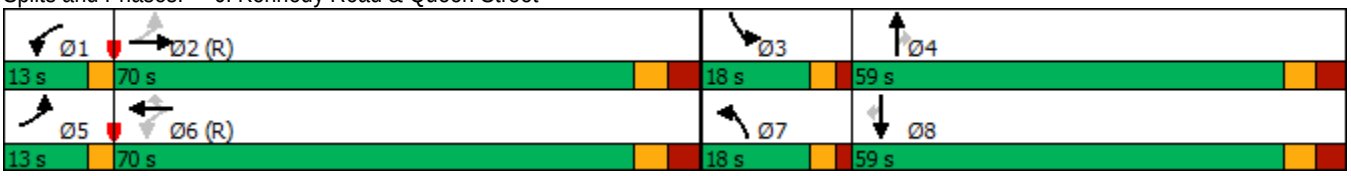
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	856	123	175	756	193	120	587	330	279	938	66
Future Volume (vph)	61	856	123	175	756	193	120	587	330	279	938	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		80.0	75.0		0.0	115.0		85.0	85.0		70.0
Storage Lanes	1		0	1		1	2		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99	0.99		0.98		0.96	0.96		0.93	0.96		0.90
Frt		0.981				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	3400	0	1687	3471	1538	3367	3282	1553	3400	3471	1568
Flt Permitted	0.248			0.146			0.950			0.950		
Satd. Flow (perm)	437	3400	0	255	3471	1473	3223	3282	1443	3250	3471	1404
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				193			154			88
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		145.1			201.5			179.9			152.2	
Travel Time (s)		10.4			14.5			13.0			11.0	
Confl. Peds. (#/hr)	26		81	81		26	73		46	46		73
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
Heavy Vehicles (%)	7%	3%	1%	7%	4%	5%	4%	10%	4%	3%	4%	3%
Adj. Flow (vph)	61	856	123	175	756	193	120	587	330	279	938	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	979	0	175	756	193	120	587	330	279	938	66
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Minimum Split (s)	8.0	47.9		8.0	47.9	47.9	13.0	44.7	44.7	13.0	44.7	44.7
Total Split (s)	13.0	70.0		13.0	70.0	70.0	18.0	59.0	59.0	18.0	59.0	59.0
Total Split (%)	8.1%	43.8%		8.1%	43.8%	43.8%	11.3%	36.9%	36.9%	11.3%	36.9%	36.9%
Maximum Green (s)	10.0	62.1		10.0	62.1	62.1	13.0	51.3	51.3	13.0	51.3	51.3
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.9		0.0	3.9	3.9	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0		-0.6	0.0	0.0	0.0	0.0	0.0	-1.8	0.0	0.0
Total Lost Time (s)	3.0	7.9		2.4	7.9	7.9	5.0	7.7	7.7	3.2	7.7	7.7
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Walk Time (s)		8.0			8.0	8.0		8.0	8.0		8.0	8.0
Flash Dont Walk (s)		32.0			32.0	32.0		29.0	29.0		29.0	29.0
Pedestrian Calls (#/hr)		81			26	26		46	46		73	73
Act Effct Green (s)	77.0	62.1		78.2	62.1	62.1	13.0	51.3	51.3	14.8	51.3	51.3
Actuated g/C Ratio	0.48	0.39		0.49	0.39	0.39	0.08	0.32	0.32	0.09	0.32	0.32
v/c Ratio	0.21	0.74		0.80	0.56	0.28	0.44	0.56	0.58	0.89	0.84	0.13
Control Delay	22.7	45.5		49.9	40.3	4.9	75.5	47.4	27.9	100.0	58.9	3.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	45.5		49.9	40.3	4.9	75.5	47.4	27.9	100.0	58.9	3.6
LOS	C	D		D	D	A	E	D	C	F	E	A
Approach Delay		44.2			35.7			44.5			65.0	

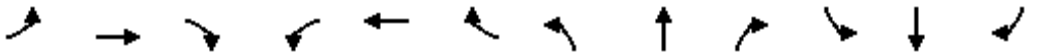
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			D			E	
Queue Length 50th (m)	10.4	145.9		31.8	103.8	0.0	20.1	85.8	49.4	48.4	154.4	0.0
Queue Length 95th (m)	19.4	173.0		#58.7	125.5	16.8	31.6	106.5	84.8	#75.3	183.1	6.5
Internal Link Dist (m)		121.1			177.5			155.9			128.2	
Turn Bay Length (m)	95.0			75.0			115.0		85.0	85.0		70.0
Base Capacity (vph)	288	1326		219	1347	689	273	1052	567	314	1112	509
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	0.21	0.74		0.80	0.56	0.28	0.44	0.56	0.58	0.89	0.84	0.13

Intersection Summary

Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 115
Control Type: Pretimed
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 48.1 Intersection LOS: D
Intersection Capacity Utilization 101.5% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Kennedy Road & Queen Street





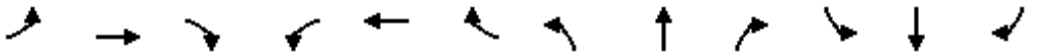
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	395	220	111	195	65	103	614	110	204	1213	57
Future Volume (vph)	43	395	220	111	195	65	103	614	110	204	1213	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	150.0		70.0	125.0		90.0	60.0		0.0	100.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98		0.96	0.99		0.96	1.00	0.99		0.99	1.00	
Frt			0.850			0.850		0.977			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	1863	1583	1719	1845	1553	1703	3282	0	1736	3471	0
Flt Permitted	0.635			0.165			0.115			0.314		
Satd. Flow (perm)	1110	1863	1525	296	1845	1485	205	3282	0	566	3471	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144			65		20			5	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.8			216.2			152.7			210.0	
Travel Time (s)		17.5			15.6			11.0			15.1	
Confl. Peds. (#/hr)	29		23	23		29	25		22	22		25
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
Heavy Vehicles (%)	6%	2%	2%	5%	3%	4%	6%	6%	9%	4%	3%	2%
Adj. Flow (vph)	43	395	220	111	195	65	103	614	110	204	1213	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	395	220	111	195	65	103	724	0	204	1270	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Detector Phase	8	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	8.0	5.0	12.0		5.0	12.0	
Minimum Split (s)	44.8	44.8	44.8	8.0	44.8	44.8	8.0	43.7		8.0	43.7	
Total Split (s)	45.0	45.0	45.0	10.0	55.0	55.0	10.0	75.0		10.0	75.0	
Total Split (%)	32.1%	32.1%	32.1%	7.1%	39.3%	39.3%	7.1%	53.6%		7.1%	53.6%	
Maximum Green (s)	38.2	38.2	38.2	7.0	48.2	48.2	7.0	68.3		7.0	68.3	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.8	2.8	2.8	0.0	2.8	2.8	0.0	2.7		0.0	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8	6.8	3.0	6.8	6.8	3.0	6.7		3.0	6.7	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	
Walk Time (s)	12.0	12.0	12.0		12.0	12.0		12.0			12.0	
Flash Dont Walk (s)	26.0	26.0	26.0		26.0	26.0		25.0			25.0	
Pedestrian Calls (#/hr)	23	23	23		29	29		22			25	
Act Effct Green (s)	33.2	33.2	33.2	47.0	43.2	43.2	79.1	68.5		79.3	68.6	
Actuated g/C Ratio	0.25	0.25	0.25	0.35	0.32	0.32	0.59	0.51		0.59	0.51	
v/c Ratio	0.16	0.86	0.46	0.63	0.33	0.13	0.53	0.43		0.52	0.72	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	40.8	68.1	18.0	47.6	36.4	7.6	22.1	22.1		18.8	29.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.8	68.1	18.0	47.6	36.4	7.6	22.1	22.1		18.8	29.5	
LOS	D	E	B	D	D	A	C	C		B	C	
Approach Delay		49.6			34.7			22.1			28.0	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	9.5	106.7	17.0	21.6	41.6	0.0	12.6	69.0		26.6	152.6	
Queue Length 95th (m)	20.4	147.5	42.0	36.4	62.9	10.7	21.7	86.2		40.5	181.8	
Internal Link Dist (m)		218.8			192.2			128.7			186.0	
Turn Bay Length (m)	150.0		70.0	125.0		90.0	60.0			100.0		
Base Capacity (vph)	314	527	535	176	659	572	197	1671		392	1763	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.75	0.41	0.63	0.30	0.11	0.52	0.43		0.52	0.72	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 135.2			
Natural Cycle: 105			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 31.6		Intersection LOS: C	
Intersection Capacity Utilization 92.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 7: Kennedy Road & Vodden St



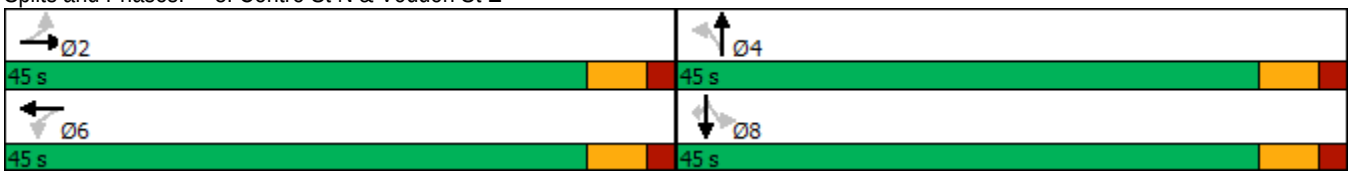


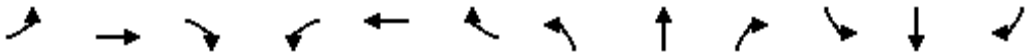
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	530	156	40	305	43	78	127	54	54	167	118
Future Volume (vph)	102	530	156	40	305	43	78	127	54	54	167	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	125.0		0.0	0.0		0.0	0.0		60.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.981			0.972				0.850
Flt Protected	0.950			0.950				0.985			0.988	
Satd. Flow (prot)	1703	1807	0	1752	1780	0	0	1748	0	0	1810	1553
Flt Permitted	0.542			0.288				0.759			0.827	
Satd. Flow (perm)	972	1807	0	531	1780	0	0	1347	0	0	1515	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			10			19				118
Link Speed (k/h)		50			40			40			50	
Link Distance (m)		199.7			193.7			114.4			156.1	
Travel Time (s)		14.4			17.4			10.3			11.2	
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
Heavy Vehicles (%)	6%	2%	0%	3%	4%	10%	6%	2%	6%	6%	3%	4%
Adj. Flow (vph)	102	530	156	40	305	43	78	127	54	54	167	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	686	0	40	348	0	0	259	0	0	221	118
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	28.0	28.0		28.0	28.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Maximum Green (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	39.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	39.2	39.2		39.2	39.2			16.0			16.0	16.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.24			0.24	0.24
v/c Ratio	0.18	0.65		0.13	0.33			0.78			0.62	0.26
Control Delay	9.0	13.8		9.3	9.1			38.3			30.4	5.9
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	9.0	13.8		9.3	9.1			38.3			30.4	5.9
LOS	A	B		A	A			D			C	A
Approach Delay		13.1			9.1			38.3			21.9	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	5.6	51.8		2.1	20.3			29.4			25.9	0.0
Queue Length 95th (m)	16.0	110.6		8.2	45.0			53.7			45.9	10.7
Internal Link Dist (m)		175.7			169.7			90.4			132.1	
Turn Bay Length (m)	85.0			125.0								60.0
Base Capacity (vph)	566	1062		309	1042			793			883	954
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.18	0.65		0.13	0.33			0.33			0.25	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 67.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 90.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Centre St N & Vodden St E





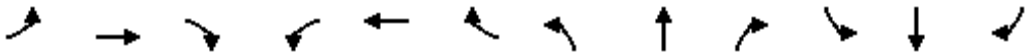
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	683	119	30	419	61	25	10	21	26	5	28
Future Volume (vph)	70	683	119	30	419	61	25	10	21	26	5	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.984			0.898			0.936	
Flt Protected		0.995			0.997		0.950				0.978	
Satd. Flow (prot)	0	1857	1615	0	1803	0	1719	1598	0	0	1739	0
Flt Permitted		0.915			0.940		0.784				0.843	
Satd. Flow (perm)	0	1708	1615	0	1700	0	1419	1598	0	0	1499	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119		14			21			28	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		105.0			158.6			90.3			92.1	
Travel Time (s)		7.6			11.4			6.5			6.6	
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
Heavy Vehicles (%)	0%	2%	0%	2%	4%	0%	5%	0%	10%	0%	0%	0%
Adj. Flow (vph)	70	683	119	30	419	61	25	10	21	26	5	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	753	119	0	510	0	25	31	0	0	59	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0		29.0	29.0		29.0	29.0	
Total Split (s)	60.0	60.0	60.0	60.0	60.0		30.0	30.0		30.0	30.0	
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	54.0	54.0	54.0	54.0	54.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		63.9	63.9		63.9		8.4	8.4			8.4	
Actuated g/C Ratio		0.84	0.84		0.84		0.11	0.11			0.11	
v/c Ratio		0.53	0.09		0.36		0.16	0.16			0.31	
Control Delay		5.5	0.8		3.8		33.0	19.0			23.9	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		5.5	0.8		3.8		33.0	19.0			23.9	
LOS		A	A		A		C	B			C	
Approach Delay		4.9			3.8			25.3			23.9	
Approach LOS		A			A			C			C	
Queue Length 50th (m)		41.9	0.0		21.8		3.8	1.5			4.7	
Queue Length 95th (m)		77.0	3.8		39.7		10.4	8.9			14.8	
Internal Link Dist (m)		81.0			134.6			66.3			68.1	
Turn Bay Length (m)							50.0					
Base Capacity (vph)		1432	1374		1428		447	518			491	
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		0.53	0.09		0.36		0.06	0.06			0.12	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 76.2			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 9: Ken Whillans Dr & Vodden St E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	0	119	58	119	24	83	1057	0	0	1582	36
Future Volume (vph)	56	0	119	58	119	24	83	1057	0	0	1582	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	110.0		0.0	75.0		0.0	70.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor			0.99	1.00								
Frt			0.850		0.975						0.997	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1656	0	1599	1656	1739	0	1736	2983	0	0	3336	0
Flt Permitted	0.660			0.950			0.073					
Satd. Flow (perm)	1150	0	1578	1654	1739	0	133	2983	0	0	3336	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119		10						3	
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		287.9			252.1			382.5			379.1	
Travel Time (s)		14.8			13.0			17.2			17.1	
Confl. Peds. (#/hr)			1	1					1	1		
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
Heavy Vehicles (%)	9%	1%	1%	9%	7%	4%	4%	21%	6%	3%	8%	3%
Adj. Flow (vph)	56	0	119	58	119	24	83	1057	0	0	1582	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	0	119	58	143	0	83	1057	0	0	1618	0
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA			NA	
Protected Phases					8		5	2			6	
Permitted Phases	4		4	8			2					
Detector Phase	4		4	8	8		5	2			6	
Switch Phase												
Minimum Initial (s)	10.0		10.0	10.0	10.0		5.0	10.0			10.0	
Minimum Split (s)	38.3		38.3	38.3	38.3		9.5	38.5			38.5	
Total Split (s)	40.0		40.0	40.0	40.0		15.0	55.0			55.0	
Total Split (%)	36.4%		36.4%	36.4%	36.4%		13.6%	50.0%			50.0%	
Maximum Green (s)	33.7		33.7	33.7	33.7		11.0	48.5			48.5	
Yellow Time (s)	4.2		4.2	4.2	4.2		3.0	4.6			4.6	
All-Red Time (s)	2.1		2.1	2.1	2.1		1.0	1.9			1.9	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.3		6.3	6.3	6.3		4.0	6.5			6.5	
Lead/Lag							Lead	Lag			Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0			3.0	
Recall Mode	None		None	None	None		None	Min			Min	
Walk Time (s)	10.0		10.0	10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	22.0		22.0	22.0	22.0			22.0			22.0	
Pedestrian Calls (#/hr)	1		1	0	0			1			0	
Act Effct Green (s)	14.8		14.8	14.8	14.8		63.3	60.7			50.5	
Actuated g/C Ratio	0.17		0.17	0.17	0.17		0.72	0.69			0.57	
v/c Ratio	0.29		0.33	0.21	0.48		0.34	0.52			0.85	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	9.5
Total Split (s)	15.0
Total Split (%)	14%
Maximum Green (s)	11.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	35.9		8.4	33.1	36.1		10.6	9.0			24.1	
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	35.9		8.4	33.1	36.1		10.6	9.0			24.1	
LOS	D		A	C	D		B	A			C	
Approach Delay		17.2			35.3			9.1			24.1	
Approach LOS		B			D			A			C	
Queue Length 50th (m)	8.9		0.0	9.1	21.7		3.1	35.5			113.6	
Queue Length 95th (m)	19.8		13.3	19.7	39.5		16.0	94.9			#257.7	
Internal Link Dist (m)		263.9			228.1			358.5			355.1	
Turn Bay Length (m)	100.0			110.0			75.0					
Base Capacity (vph)	443		681	637	676		296	2046			1905	
Starvation Cap Reductn	0		0	0	0		0	0			0	
Spillback Cap Reductn	0		0	0	0		0	0			0	
Storage Cap Reductn	0		0	0	0		0	0			0	
Reduced v/c Ratio	0.13		0.17	0.09	0.21		0.28	0.52			0.85	

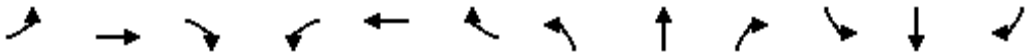
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 88.5			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 19.0		Intersection LOS: B	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 10: Hurontario Street & Old School Rd



Lane Group	Ø1
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



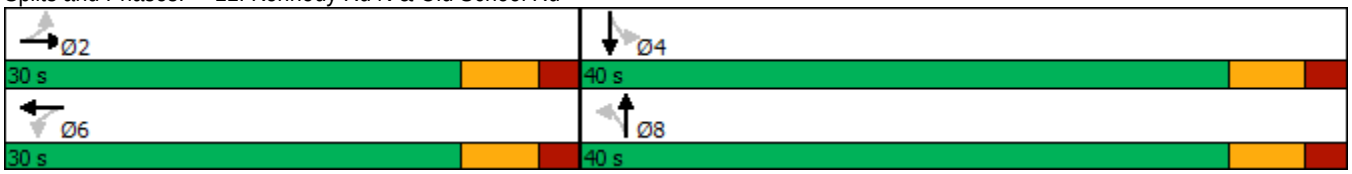
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	5	82	0	155	277	169	169	355	15
Future Volume (vph)	0	0	0	5	82	0	155	277	169	169	355	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.962			0.996	
Flt Protected					0.997			0.987			0.985	
Satd. Flow (prot)	0	1863	0	0	1857	0	0	1769	0	0	1827	0
Flt Permitted					0.991			0.730			0.656	
Satd. Flow (perm)	0	1863	0	0	1846	0	0	1308	0	0	1217	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								39			3	
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		102.1			126.9			194.8			181.3	
Travel Time (s)		5.3			6.5			11.7			10.9	
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
Adj. Flow (vph)	0	0	0	5	82	0	155	277	169	169	355	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	87	0	0	601	0	0	539	0
Turn Type				Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.2	21.2		21.2	21.2		21.3	21.3		21.3	21.3	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		40.0	40.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%		57.1%	57.1%		57.1%	57.1%	
Maximum Green (s)	23.8	23.8		23.8	23.8		33.7	33.7		33.7	33.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.2			6.2			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)					23.8			32.0			32.0	
Actuated g/C Ratio					0.35			0.47			0.47	
v/c Ratio					0.14			0.95			0.94	
Control Delay					16.8			44.3			46.1	
Queue Delay					0.0			0.0			0.0	
Total Delay					16.8			44.3			46.1	
LOS					B			D			D	
Approach Delay					16.8			44.3			46.1	
Approach LOS					B			D			D	

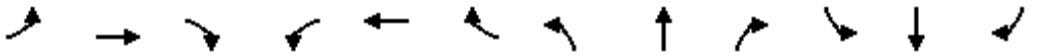
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)					8.2			69.2			64.7	
Queue Length 95th (m)					17.5			#137.9			#129.7	
Internal Link Dist (m)		78.1			102.9			170.8			157.3	
Turn Bay Length (m)												
Base Capacity (vph)					643			665			602	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.14			0.90			0.90	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 68.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 43.1		Intersection LOS: D	
Intersection Capacity Utilization 58.6%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 11: Kennedy Rd N & Old School Rd





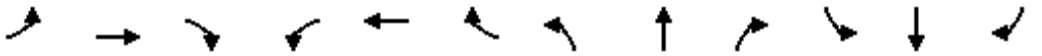
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	17	16	83	29	26	81	525	146	10	197	15
Future Volume (vph)	11	17	16	83	29	26	81	525	146	10	197	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	105.0		0.0	75.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.927			0.975			0.967			0.989	
Flt Protected	0.950				0.971		0.950			0.950		
Satd. Flow (prot)	1805	1684	0	0	1610	0	1805	3228	0	1656	3260	0
Flt Permitted	0.642				0.797		0.619			0.391		
Satd. Flow (perm)	1220	1684	0	0	1322	0	1176	3228	0	682	3260	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			7			45			10	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		125.6			197.5			152.1			177.1	
Travel Time (s)		9.0			14.2			9.1			10.6	
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
Heavy Vehicles (%)	0%	7%	2%	16%	1%	10%	0%	4%	23%	9%	10%	3%
Adj. Flow (vph)	11	17	16	83	29	26	81	525	146	10	197	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	33	0	0	138	0	81	671	0	10	212	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	47.0	47.0		47.0	47.0		33.0	33.0		33.0	33.0	
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0		110.0	110.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%		68.8%	68.8%	
Maximum Green (s)	44.0	44.0		44.0	44.0		104.0	104.0		104.0	104.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	29.0	29.0		29.0	29.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	18.6	18.6			18.6		104.2	104.2		104.2	104.2	
Actuated g/C Ratio	0.14	0.14			0.14		0.77	0.77		0.77	0.77	
v/c Ratio	0.07	0.13			0.73		0.09	0.27		0.02	0.08	
Control Delay	49.9	31.6			75.1		4.8	4.8		4.8	4.1	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	49.9	31.6			75.1		4.8	4.8		4.8	4.1	
LOS	D	C			E		A	A		A	A	
Approach Delay		36.2			75.1			4.8			4.1	
Approach LOS		D			E			A			A	
Queue Length 50th (m)	2.7	4.2			35.7		4.8	22.3		0.6	6.2	
Queue Length 95th (m)	8.6	14.2			59.6		11.6	38.1		2.5	12.2	
Internal Link Dist (m)		101.6			173.5			128.1			153.1	
Turn Bay Length (m)	60.0						105.0			75.0		
Base Capacity (vph)	398	561			436		908	2505		527	2522	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.03	0.06			0.32		0.09	0.27		0.02	0.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 134.8			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 58.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: Kennedy Road & 1st Gulf Blvd



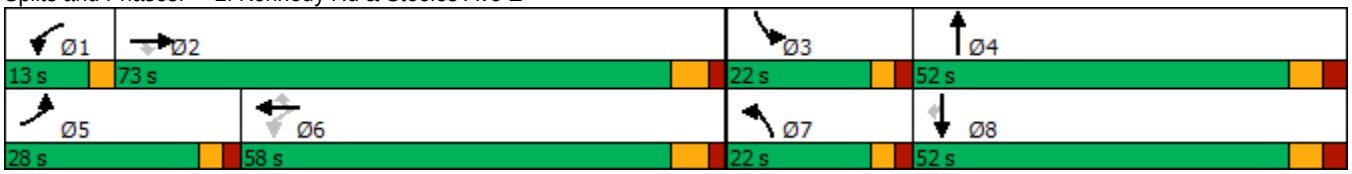


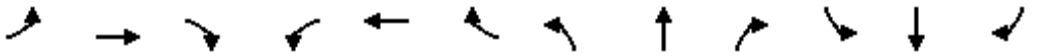
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	1381	148	91	1656	388	127	862	81	141	201	158
Future Volume (vph)	206	1381	148	91	1656	388	127	862	81	141	201	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	200.0		95.0	160.0		180.0	95.0		0.0	95.0		35.0
Storage Lanes	1		1	1		1	2		0	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Ped Bike Factor	0.99		0.91	0.99		0.90	0.96	0.99		0.98		0.93
Frt			0.850			0.850		0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4988	1615	1770	5085	1583	3502	3479	0	3502	3505	1468
Flt Permitted	0.950			0.138			0.950			0.950		
Satd. Flow (perm)	1753	4988	1469	255	5085	1417	3357	3479	0	3449	3505	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			272		6				158
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		316.5			310.3			194.2			254.1	
Travel Time (s)		16.3			16.0			11.7			15.2	
Confl. Peds. (#/hr)	85		60	60		85	49		50	50		49
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
Heavy Vehicles (%)	2%	4%	0%	2%	2%	2%	0%	2%	0%	0%	3%	10%
Adj. Flow (vph)	206	1381	148	91	1656	388	127	862	81	141	201	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	206	1381	148	91	1656	388	127	943	0	141	201	158
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2	6		6						8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	12.0	42.8	42.8	10.0	49.8	49.8	12.0	50.2		12.0	50.2	50.2
Total Split (s)	28.0	73.0	73.0	13.0	58.0	58.0	22.0	52.0		22.0	52.0	52.0
Total Split (%)	17.5%	45.6%	45.6%	8.1%	36.3%	36.3%	13.8%	32.5%		13.8%	32.5%	32.5%
Maximum Green (s)	23.0	66.2	66.2	10.0	51.2	51.2	17.0	44.8		17.0	44.8	44.8
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.2	2.2	0.0	2.2	2.2	2.0	3.2		2.0	3.2	3.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.8	6.8	3.0	6.8	6.8	5.0	7.2		5.0	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	Min		None	Min	Min
Walk Time (s)		12.0	12.0		12.0	12.0		12.0			12.0	12.0
Flash Dont Walk (s)		24.0	24.0		31.0	31.0		31.0			31.0	31.0
Pedestrian Calls (#/hr)		60	60		85	85		50			49	49
Act Effct Green (s)	21.0	65.4	65.4	64.0	51.3	51.3	10.9	43.7		11.5	44.3	44.3
Actuated g/C Ratio	0.14	0.43	0.43	0.42	0.34	0.34	0.07	0.29		0.08	0.29	0.29
v/c Ratio	0.84	0.64	0.21	0.46	0.96	0.59	0.51	0.94		0.53	0.20	0.31

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	92.3	36.0	4.9	27.7	63.6	16.4	75.6	68.9		75.6	41.4	7.4
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	92.3	36.0	4.9	27.7	63.6	16.4	75.6	68.9		75.6	41.4	7.4
LOS	F	D	A	C	E	B	E	E		E	D	A
Approach Delay		40.0			53.5			69.7			40.3	
Approach LOS		D			D			E			D	
Queue Length 50th (m)	65.1	126.9	0.5	14.0	194.7	29.5	20.7	156.0		23.0	25.7	0.0
Queue Length 95th (m)	#108.2	150.4	15.1	24.9	#239.0	68.7	32.4	#204.9		35.2	38.0	18.2
Internal Link Dist (m)		292.5			286.3			170.2			230.1	
Turn Bay Length (m)	200.0		95.0	160.0		180.0	95.0			95.0		35.0
Base Capacity (vph)	269	2189	726	209	1722	660	394	1035		394	1050	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.77	0.63	0.20	0.44	0.96	0.59	0.32	0.91		0.36	0.19	0.30

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 151.5			
Natural Cycle: 125			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 51.2		Intersection LOS: D	
Intersection Capacity Utilization 107.0%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Kennedy Rd & Steeles Ave E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1	118	2	0	0	159	1273	4	4	520	91
Future Volume (vph)	79	1	118	2	0	0	159	1273	4	4	520	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	0.0		0.0	85.0		0.0	105.0		0.0
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99	0.94			0.96		0.99	1.00				0.96
Frt		0.851										0.850
Flt Protected	0.950				0.950		0.950			0.950		
Satd. Flow (prot)	1805	1475	0	0	1805	0	1805	3539	0	1805	1863	1583
Flt Permitted	0.757				0.608		0.442			0.191		
Satd. Flow (perm)	1426	1475	0	0	1114	0	833	3539	0	363	1863	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		118										91
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		71.8			92.7			202.1			205.5	
Travel Time (s)		5.2			6.7			12.1			12.3	
Confl. Peds. (#/hr)	6		18	18		6	8		2	2		8
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
Heavy Vehicles (%)	0%	100%	2%	0%	0%	0%	0%	2%	0%	0%	2%	2%
Adj. Flow (vph)	79	1	118	2	0	0	159	1273	4	4	520	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	119	0	0	2	0	159	1277	0	4	520	91
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0		12.0	12.0	12.0
Minimum Split (s)	39.3	39.3		39.3	39.3		32.0	32.0		32.0	32.0	32.0
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0		110.0	110.0	110.0
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%		68.8%	68.8%	68.8%
Maximum Green (s)	43.7	43.7		43.7	43.7		104.0	104.0		104.0	104.0	104.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.3	2.3		2.3	2.3		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3			6.3		6.0	6.0		6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	18	18		6	6		2	2		8	8	8
Act Effct Green (s)	18.6	18.6			18.6		104.7	104.7		104.7	104.7	104.7
Actuated g/C Ratio	0.14	0.14			0.14		0.77	0.77		0.77	0.77	0.77
v/c Ratio	0.41	0.39			0.01		0.25	0.47		0.01	0.36	0.08

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	58.0	11.9			46.5		7.2	7.5		6.8	7.1	1.5
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	58.0	11.9			46.5		7.2	7.5		6.8	7.1	1.5
LOS	E	B			D		A	A		A	A	A
Approach Delay		30.3			46.5			7.5			6.3	
Approach LOS		C			D			A			A	
Queue Length 50th (m)	20.5	0.3			0.5		8.2	43.8		0.2	30.0	0.0
Queue Length 95th (m)	36.9	17.5			3.0		28.7	107.5		1.7	83.9	5.5
Internal Link Dist (m)		47.8			68.7			178.1			181.5	
Turn Bay Length (m)	35.0						85.0			105.0		
Base Capacity (vph)	462	558			361		642	2731		279	1437	1188
Starvation Cap Reductn	0	0			0		0	0		0	0	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.17	0.21			0.01		0.25	0.47		0.01	0.36	0.08

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 135.7			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 9.2		Intersection LOS: A	
Intersection Capacity Utilization 78.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Kennedy Road & Rambler Dr



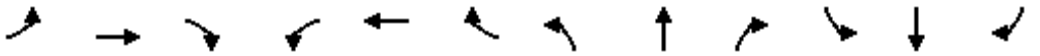
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	8	11	102	3	169	7	1255	93	63	610	12
Future Volume (vph)	10	8	11	102	3	169	7	1255	93	63	610	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	80.0		0.0	45.0		0.0	70.0		0.0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.98			0.95		0.98		0.93		1.00	
Frt		0.949			0.917				0.850		0.997	
Flt Protected		0.983			0.982		0.950			0.950		
Satd. Flow (prot)	0	1747	0	0	1588	0	1805	1863	1524	1656	3492	0
Flt Permitted		0.819			0.865		0.406			0.065		
Satd. Flow (perm)	0	1446	0	0	1386	0	759	1863	1420	113	3492	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			44				73		3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		117.1			249.4			186.9			210.9	
Travel Time (s)		8.4			18.0			13.5			15.2	
Confl. Peds. (#/hr)	16		15	15		16	15		19	19		15
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
Heavy Vehicles (%)	0%	0%	0%	6%	0%	2%	0%	2%	6%	9%	3%	0%
Adj. Flow (vph)	10	8	11	102	3	169	7	1255	93	63	610	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	274	0	7	1255	93	63	622	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	2	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	34.3	34.3		34.3	34.3		37.0	37.0	37.0	37.0	37.0	
Total Split (s)	34.3	34.3		34.3	34.3		125.7	125.7	125.7	125.7	125.7	
Total Split (%)	21.4%	21.4%		21.4%	21.4%		78.6%	78.6%	78.6%	78.6%	78.6%	
Maximum Green (s)	28.0	28.0		28.0	28.0		119.7	119.7	119.7	119.7	119.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.3	2.3		2.3	2.3		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.3			6.3		6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		19.0	19.0	19.0	19.0	19.0	
Pedestrian Calls (#/hr)	15	15		15	15		19	19	19	19	19	
Act Effct Green (s)		28.0			28.0		119.7	119.7	119.7	119.7	119.7	
Actuated g/C Ratio		0.18			0.18		0.75	0.75	0.75	0.75	0.75	
v/c Ratio		0.11			0.99		0.01	0.90	0.09	0.75	0.24	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		40.2			104.3		5.3	26.3	1.8	64.9	6.4	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		40.2			104.3		5.3	26.3	1.8	64.9	6.4	
LOS		D			F		A	C	A	E	A	
Approach Delay		40.2			104.3			24.5			11.8	
Approach LOS		D			F			C			B	
Queue Length 50th (m)		5.1			79.6		0.5	293.5	1.6	10.9	30.1	
Queue Length 95th (m)		15.4			#142.9		2.0	403.8	6.3	#20.2	37.1	
Internal Link Dist (m)		93.1			225.4			162.9			186.9	
Turn Bay Length (m)							45.0			70.0		
Base Capacity (vph)		262			278		567	1393	1080	84	2613	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.11			0.99		0.01	0.90	0.09	0.75	0.24	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 29.7 (19%), Referenced to phase 2:NBSB and 6:, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 30.3		Intersection LOS: C	
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.			

Splits and Phases: 4: Kennedy Rd & Chamney Crt/Glidden Rd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	344	134	42	309	87	319	1212	73	151	683	438
Future Volume (vph)	204	344	134	42	309	87	319	1212	73	151	683	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	30.0		0.0	105.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99	0.98		0.98	0.99		0.99	1.00				0.95
Frt		0.958			0.967			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3387	0	1752	1807	0	1787	3486	0	1787	3505	1615
Flt Permitted	0.118			0.479			0.319			0.108		
Satd. Flow (perm)	220	3387	0	864	1807	0	593	3486	0	203	3505	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			8			5				341
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		127.3			91.1			176.9			218.4	
Travel Time (s)		9.2			6.6			10.6			13.1	
Confl. Peds. (#/hr)	25		31	31		25	29		25	25		29
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
Heavy Vehicles (%)	1%	0%	2%	3%	0%	3%	1%	2%	8%	1%	3%	0%
Adj. Flow (vph)	204	344	134	42	309	87	319	1212	73	151	683	438
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	478	0	42	396	0	319	1285	0	151	683	438
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	41.6		41.6	41.6		8.0	40.2		8.0	40.2	40.2
Total Split (s)	15.0	60.0		45.0	45.0		15.0	85.0		15.0	85.0	85.0
Total Split (%)	9.4%	37.5%		28.1%	28.1%		9.4%	53.1%		9.4%	53.1%	53.1%
Maximum Green (s)	12.0	53.4		38.4	38.4		12.0	78.8		12.0	78.8	78.8
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.6		2.6	2.6		0.0	2.2		0.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.6		6.6	6.6		3.0	6.2		3.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
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
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		12.0		12.0	12.0			12.0			12.0	12.0
Flash Dont Walk (s)		23.0		23.0	23.0			22.0			22.0	22.0
Pedestrian Calls (#/hr)		31		25	25			25			29	29
Act Effct Green (s)	55.1	51.5		36.4	36.4		95.2	80.2		92.6	78.8	78.8
Actuated g/C Ratio	0.35	0.33		0.23	0.23		0.60	0.51		0.59	0.50	0.50
v/c Ratio	1.05	0.42		0.21	0.94		0.71	0.73		0.67	0.39	0.47

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	116.5	39.4		52.1	88.8		26.4	33.8		31.1	25.8	7.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	116.5	39.4		52.1	88.8		26.4	33.8		31.1	25.8	7.3
LOS	F	D		D	F		C	C		C	C	A
Approach Delay		62.4			85.2			32.3			20.1	
Approach LOS		E			F			C			C	
Queue Length 50th (m)	~51.6	60.0		11.3	127.5		49.2	176.6		20.9	74.6	17.3
Queue Length 95th (m)	#107.8	77.3		23.9	#189.9		67.9	207.2		37.8	90.8	44.7
Internal Link Dist (m)		103.3			67.1			152.9			194.4	
Turn Bay Length (m)	70.0			30.0			105.0			60.0		
Base Capacity (vph)	195	1169		209	444		447	1771		241	1747	934
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.05	0.41		0.20	0.89		0.71	0.73		0.63	0.39	0.47

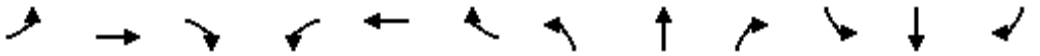
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 158.1			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 39.4		Intersection LOS: D	
Intersection Capacity Utilization 100.7%		ICU Level of Service G	
Analysis 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: 5: Kennedy Road & Clarence St



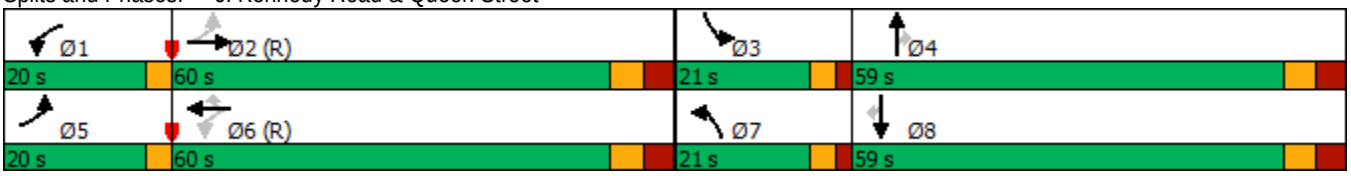


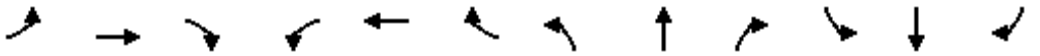
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	760	103	226	947	507	157	870	168	231	504	90
Future Volume (vph)	158	760	103	226	947	507	157	870	168	231	504	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		80.0	75.0		0.0	115.0		85.0	85.0		70.0
Storage Lanes	1		0	1		1	2		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99	0.98		0.97		0.93	0.90		0.93	0.97		0.86
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3419	0	1787	3539	1599	3502	3539	1583	3433	3505	1615
Flt Permitted	0.108			0.149			0.950			0.950		
Satd. Flow (perm)	201	3419	0	273	3539	1482	3137	3539	1468	3327	3505	1396
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				272			141			90
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		145.1			201.5			179.9			152.2	
Travel Time (s)		10.4			14.5			13.0			11.0	
Confl. Peds. (#/hr)	52		113	113		52	97		48	48		97
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
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%	0%	2%	2%	2%	3%	0%
Adj. Flow (vph)	158	760	103	226	947	507	157	870	168	231	504	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	158	863	0	226	947	507	157	870	168	231	504	90
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Minimum Split (s)	8.0	47.9		8.0	47.9	47.9	13.0	44.7	44.7	13.0	44.7	44.7
Total Split (s)	20.0	60.0		20.0	60.0	60.0	21.0	59.0	59.0	21.0	59.0	59.0
Total Split (%)	12.5%	37.5%		12.5%	37.5%	37.5%	13.1%	36.9%	36.9%	13.1%	36.9%	36.9%
Maximum Green (s)	17.0	52.1		17.0	52.1	52.1	16.0	51.3	51.3	16.0	51.3	51.3
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.9		0.0	3.9	3.9	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.9		3.0	7.9	7.9	5.0	7.7	7.7	5.0	7.7	7.7
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Walk Time (s)		8.0			8.0	8.0		8.0	8.0		8.0	8.0
Flash Dont Walk (s)		32.0			32.0	32.0		29.0	29.0		29.0	29.0
Pedestrian Calls (#/hr)		113			52	52		48	48		97	97
Act Effct Green (s)	74.0	52.1		74.0	52.1	52.1	16.0	51.3	51.3	16.0	51.3	51.3
Actuated g/C Ratio	0.46	0.33		0.46	0.33	0.33	0.10	0.32	0.32	0.10	0.32	0.32
v/c Ratio	0.61	0.77		0.79	0.82	0.76	0.45	0.77	0.30	0.67	0.45	0.18
Control Delay	36.8	53.5		46.7	56.8	29.9	72.3	54.3	10.3	80.0	44.7	7.7
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	36.8	53.5		46.7	56.8	29.9	72.3	54.3	10.3	80.0	44.7	7.7
LOS	D	D		D	E	C	E	D	B	E	D	A
Approach Delay		50.9			47.3			50.5			50.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			D			D	
Queue Length 50th (m)	29.7	135.9		44.3	154.1	75.5	25.9	138.6	6.3	39.1	70.6	0.0
Queue Length 95th (m)	51.1	162.6		#80.4	182.3	126.6	38.9	165.1	25.4	54.8	88.8	13.8
Internal Link Dist (m)		121.1			177.5			155.9			128.2	
Turn Bay Length (m)	95.0			75.0			115.0		85.0	85.0		70.0
Base Capacity (vph)	261	1120		287	1152	666	350	1134	566	343	1123	508
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	0.61	0.77		0.79	0.82	0.76	0.45	0.77	0.30	0.67	0.45	0.18

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 45 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 115			
Control Type: Pretimed			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 49.5		Intersection LOS: D	
Intersection Capacity Utilization 103.9%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: Kennedy Road & Queen Street





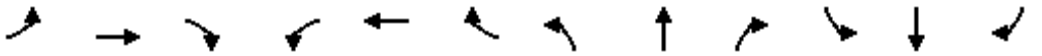
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	479	174	96	472	150	242	1403	156	108	639	65
Future Volume (vph)	119	479	174	96	472	150	242	1403	156	108	639	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	150.0		70.0	125.0		90.0	60.0		0.0	100.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98		0.95	0.99		0.94	0.98	0.99			0.99	
Frt			0.850			0.850		0.985			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1881	1583	1787	1881	1615	1805	3487	0	1805	3437	0
Flt Permitted	0.283			0.100			0.319			0.059		
Satd. Flow (perm)	526	1881	1503	186	1881	1513	593	3487	0	112	3437	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125			117		12			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.8			216.2			152.7			210.0	
Travel Time (s)		17.5			15.6			11.0			15.1	
Confl. Peds. (#/hr)	47		36	36		47	37		41	41		37
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
Heavy Vehicles (%)	0%	1%	2%	1%	1%	0%	0%	1%	1%	0%	3%	0%
Adj. Flow (vph)	119	479	174	96	472	150	242	1403	156	108	639	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	479	174	96	472	150	242	1559	0	108	704	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Detector Phase	8	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	8.0	5.0	12.0		5.0	12.0	
Minimum Split (s)	44.8	44.8	44.8	8.0	44.8	44.8	8.0	43.7		8.0	43.7	
Total Split (s)	45.0	45.0	45.0	10.0	55.0	55.0	10.0	75.0		10.0	75.0	
Total Split (%)	32.1%	32.1%	32.1%	7.1%	39.3%	39.3%	7.1%	53.6%		7.1%	53.6%	
Maximum Green (s)	38.2	38.2	38.2	7.0	48.2	48.2	7.0	68.3		7.0	68.3	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.8	2.8	2.8	0.0	2.8	2.8	0.0	2.7		0.0	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.8	6.8	3.0	6.8	6.8	3.0	6.7		3.0	6.7	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	
Walk Time (s)	12.0	12.0	12.0		12.0	12.0		12.0			12.0	
Flash Dont Walk (s)	26.0	26.0	26.0		26.0	26.0		25.0			25.0	
Pedestrian Calls (#/hr)	36	36	36		47	47		41			37	
Act Effct Green (s)	37.1	37.1	37.1	50.9	47.1	47.1	79.0	68.3		79.0	68.3	
Actuated g/C Ratio	0.27	0.27	0.27	0.37	0.34	0.34	0.57	0.49		0.57	0.49	
v/c Ratio	0.85	0.95	0.35	0.64	0.74	0.25	0.61	0.91		0.73	0.42	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	93.7	80.3	14.9	50.5	48.7	10.1	22.6	41.1		49.4	23.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	93.7	80.3	14.9	50.5	48.7	10.1	22.6	41.1		49.4	23.2	
LOS	F	F	B	D	D	B	C	D		D	C	
Approach Delay		67.7			40.9			38.6			26.7	
Approach LOS		E			D			D			C	
Queue Length 50th (m)	32.8	136.9	10.8	18.5	120.2	6.4	32.3	215.0		13.4	66.8	
Queue Length 95th (m)	#70.9	#205.2	31.6	#33.1	163.1	22.9	47.5	252.8		#44.1	83.3	
Internal Link Dist (m)		218.8			192.2			128.7			186.0	
Turn Bay Length (m)	150.0		70.0	125.0		90.0	60.0			100.0		
Base Capacity (vph)	144	517	503	149	652	601	398	1721		148	1696	
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	0.83	0.93	0.35	0.64	0.72	0.25	0.61	0.91		0.73	0.42	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 138.9			
Natural Cycle: 115			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 42.1		Intersection LOS: D	
Intersection Capacity Utilization 107.2%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 7: Kennedy Road & Vodden St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	704	105	59	902	121	85	218	48	30	121	118
Future Volume (vph)	134	704	105	59	902	121	85	218	48	30	121	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	125.0		0.0	0.0		0.0	0.0		60.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.982			0.982				0.850
Flt Protected	0.950			0.950				0.988			0.990	
Satd. Flow (prot)	1787	1843	0	1770	1845	0	0	1802	0	0	1830	1568
Flt Permitted	0.084			0.216				0.868			0.838	
Satd. Flow (perm)	158	1843	0	402	1845	0	0	1584	0	0	1549	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			13			9				118
Link Speed (k/h)		50			40			40			50	
Link Distance (m)		199.7			193.7			114.4			156.1	
Travel Time (s)		14.4			17.4			10.3			11.2	
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
Heavy Vehicles (%)	1%	1%	2%	2%	1%	2%	2%	2%	4%	2%	3%	3%
Adj. Flow (vph)	134	704	105	59	902	121	85	218	48	30	121	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	809	0	59	1023	0	0	351	0	0	151	118
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	28.0	28.0		28.0	28.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	60.0	60.0		60.0	60.0		30.0	30.0		30.0	30.0	30.0
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	33.3%
Maximum Green (s)	54.0	54.0		54.0	54.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	54.0	54.0		54.0	54.0			21.8			21.8	21.8
Actuated g/C Ratio	0.61	0.61		0.61	0.61			0.25			0.25	0.25
v/c Ratio	1.40	0.71		0.24	0.90			0.88			0.39	0.25
Control Delay	250.6	16.3		11.5	27.7			54.8			30.7	6.6
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	250.6	16.3		11.5	27.7			54.8			30.7	6.6
LOS	F	B		B	C			D			C	A
Approach Delay		49.6			26.8			54.8			20.1	
Approach LOS		D			C			D			C	
Queue Length 50th (m)	~33.1	94.0		4.6	150.9			58.5			22.4	0.0
Queue Length 95th (m)	#53.1	142.0		12.1	#253.8			#105.0			40.0	12.7
Internal Link Dist (m)		175.7			169.7			90.4			132.1	
Turn Bay Length (m)	85.0			125.0								60.0
Base Capacity (vph)	96	1138		247	1139			439			423	514
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	1.40	0.71		0.24	0.90			0.80			0.36	0.23

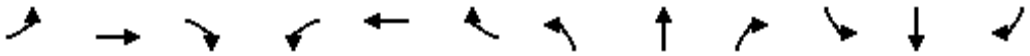
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 87.9			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.40			
Intersection Signal Delay: 38.0		Intersection LOS: D	
Intersection Capacity Utilization 109.4%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 8: Centre St N & Vodden St E





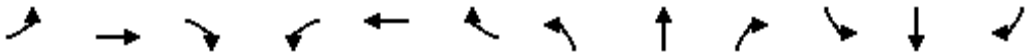
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	884	84	32	927	30	58	4	56	14	2	25
Future Volume (vph)	44	884	84	32	927	30	58	4	56	14	2	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996			0.860			0.918	
Flt Protected		0.998			0.998		0.950				0.983	
Satd. Flow (prot)	0	1861	1599	0	1868	0	1805	1604	0	0	1704	0
Flt Permitted		0.924			0.955		0.730				0.863	
Satd. Flow (perm)	0	1723	1599	0	1788	0	1387	1604	0	0	1496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			84		3			56			25	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		105.0			158.6			90.3			92.1	
Travel Time (s)		7.6			11.4			6.5			6.6	
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
Heavy Vehicles (%)	0%	2%	1%	5%	1%	0%	0%	0%	2%	0%	0%	1%
Adj. Flow (vph)	44	884	84	32	927	30	58	4	56	14	2	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	928	84	0	989	0	58	60	0	0	41	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0		29.0	29.0		29.0	29.0	
Total Split (s)	60.0	60.0	60.0	60.0	60.0		30.0	30.0		30.0	30.0	
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	54.0	54.0	54.0	54.0	54.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		61.3	61.3		61.3		9.3	9.3			9.3	
Actuated g/C Ratio		0.78	0.78		0.78		0.12	0.12			0.12	
v/c Ratio		0.69	0.07		0.71		0.35	0.25			0.21	
Control Delay		9.7	1.1		10.2		37.3	12.7			19.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		9.7	1.1		10.2		37.3	12.7			19.3	
LOS		A	A		B		D	B			B	
Approach Delay		9.0			10.2			24.8			19.3	
Approach LOS		A			B			C			B	
Queue Length 50th (m)		64.9	0.0		71.0		8.2	0.6			2.2	
Queue Length 95th (m)		135.1	3.5		147.8		19.0	10.7			10.8	
Internal Link Dist (m)		81.0			134.6			66.3			68.1	
Turn Bay Length (m)							50.0					
Base Capacity (vph)		1346	1268		1397		425	531			476	
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		0.69	0.07		0.71		0.14	0.11			0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78.5			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 95.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: Ken Whillans Dr & Vodden St E





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	115	70	247	45	208	1545	0	0	1364	55
Future Volume (vph)	45	0	115	70	247	45	208	1545	0	0	1364	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	110.0		0.0	75.0		0.0	70.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.977						0.994	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	0	1583	1752	1856	0	1787	3438	0	0	3274	0
Flt Permitted	0.344			0.950			0.079					
Satd. Flow (perm)	641	0	1583	1752	1856	0	149	3438	0	0	3274	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			115		9						5	
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		287.9			252.1			382.5			379.1	
Travel Time (s)		14.8			13.0			17.2			17.1	
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
Heavy Vehicles (%)	2%	4%	2%	3%	0%	0%	1%	5%	1%	4%	10%	0%
Adj. Flow (vph)	45	0	115	70	247	45	208	1545	0	0	1364	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	0	115	70	292	0	208	1545	0	0	1419	0
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA			NA	
Protected Phases					8		5	2			6	
Permitted Phases	4		4	8			2					
Detector Phase	4		4	8	8		5	2			6	
Switch Phase												
Minimum Initial (s)	10.0		10.0	10.0	10.0		5.0	10.0			10.0	
Minimum Split (s)	38.3		38.3	38.3	38.3		9.0	38.5			38.5	
Total Split (s)	40.0		40.0	40.0	40.0		15.0	55.0			55.0	
Total Split (%)	36.4%		36.4%	36.4%	36.4%		13.6%	50.0%			50.0%	
Maximum Green (s)	33.7		33.7	33.7	33.7		11.0	48.5			48.5	
Yellow Time (s)	4.2		4.2	4.2	4.2		3.0	4.6			4.6	
All-Red Time (s)	2.1		2.1	2.1	2.1		1.0	1.9			1.9	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.3		6.3	6.3	6.3		4.0	6.5			6.5	
Lead/Lag							Lead	Lag			Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0			3.0	
Recall Mode	None		None	None	None		None	Min			Min	
Walk Time (s)	10.0		10.0	10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	22.0		22.0	22.0	22.0			22.0			22.0	
Pedestrian Calls (#/hr)	0		0	0	0			0			0	
Act Effct Green (s)	19.7		19.7	19.7	19.7		63.7	61.2			46.5	
Actuated g/C Ratio	0.21		0.21	0.21	0.21		0.68	0.65			0.50	
v/c Ratio	0.34		0.27	0.19	0.74		0.72	0.69			0.87	
Control Delay	39.4		7.7	32.1	45.7		34.2	13.0			29.3	
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	9.0
Total Split (s)	15.0
Total Split (%)	14%
Maximum Green (s)	11.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	39.4		7.7	32.1	45.7		34.2	13.0			29.3	
LOS	D		A	C	D		C	B			C	
Approach Delay		16.6			43.1			15.6			29.3	
Approach LOS		B			D			B			C	
Queue Length 50th (m)	7.6		0.0	11.4	52.4		20.7	87.2			121.3	
Queue Length 95th (m)	18.3		13.5	23.1	80.5		#62.0	141.5			#197.0	
Internal Link Dist (m)		263.9			228.1			358.5			355.1	
Turn Bay Length (m)	100.0			110.0			75.0					
Base Capacity (vph)	232		648	636	679		295	2243			1712	
Starvation Cap Reductn	0		0	0	0		0	0			0	
Spillback Cap Reductn	0		0	0	0		0	0			0	
Storage Cap Reductn	0		0	0	0		0	0			0	
Reduced v/c Ratio	0.19		0.18	0.11	0.43		0.71	0.69			0.83	

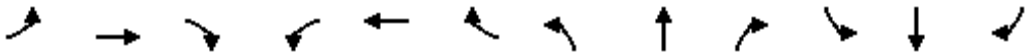
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 93.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 23.6		Intersection LOS: C	
Intersection Capacity Utilization 87.4%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 10: Hurontario Street & Old School Rd



Lane Group	Ø1
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

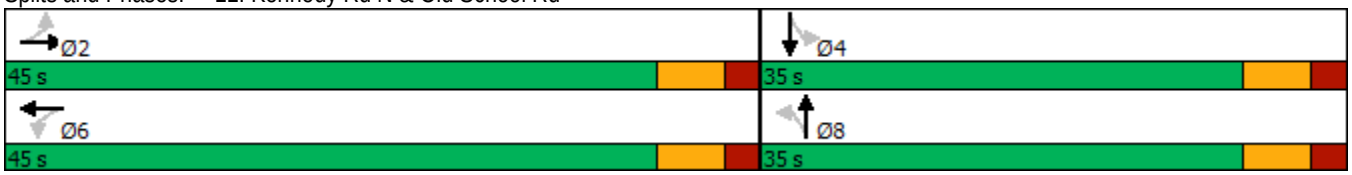


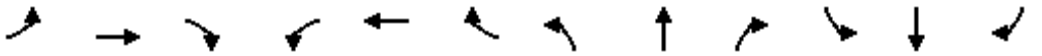
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	164	291	27	88	244	38	0	154	27
Future Volume (vph)	0	0	0	164	291	27	88	244	38	0	154	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992			0.986			0.980	
Flt Protected					0.983			0.988				
Satd. Flow (prot)	0	1863	0	0	1816	0	0	1815	0	0	1825	0
Flt Permitted					0.887			0.863				
Satd. Flow (perm)	0	1863	0	0	1639	0	0	1585	0	0	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5			8			12	
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		102.1			126.9			194.8			181.3	
Travel Time (s)		5.3			6.5			11.7			10.9	
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
Adj. Flow (vph)	0	0	0	164	291	27	88	244	38	0	154	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	482	0	0	370	0	0	181	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.2	21.2		21.2	21.2		21.3	21.3		21.3	21.3	
Total Split (s)	45.0	45.0		45.0	45.0		35.0	35.0		35.0	35.0	
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	38.8	38.8		38.8	38.8		28.7	28.7		28.7	28.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.2			6.2			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)					39.0			20.9			20.9	
Actuated g/C Ratio					0.54			0.29			0.29	
v/c Ratio					0.55			0.80			0.34	
Control Delay					15.1			36.8			20.1	
Queue Delay					0.0			0.0			0.0	
Total Delay					15.1			36.8			20.1	
LOS					B			D			C	
Approach Delay					15.1			36.8			20.1	
Approach LOS					B			D			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)					41.7			47.4			18.8	
Queue Length 95th (m)					84.1			77.5			34.0	
Internal Link Dist (m)		78.1			102.9			170.8			157.3	
Turn Bay Length (m)												
Base Capacity (vph)					884			635			733	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.55			0.58			0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 72.5			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 23.7		Intersection LOS: C	
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 11: Kennedy Rd N & Old School Rd





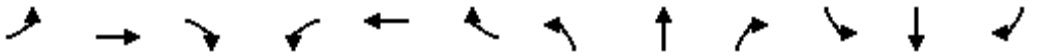
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	261	386	165	26	113	34	82	546	30	93	819	171
Future Volume (vph)	261	386	165	26	113	34	82	546	30	93	819	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	30.0		0.0	105.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99	0.99		0.99	0.99		1.00	1.00		1.00		0.97
Frt		0.955			0.965			0.992				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3417	0	1736	1739	0	1752	3307	0	1703	3471	1509
Flt Permitted	0.449			0.446			0.294			0.403		
Satd. Flow (perm)	806	3417	0	808	1739	0	540	3307	0	722	3471	1464
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			9			5				171
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		127.3			91.1			176.9			218.4	
Travel Time (s)		9.2			6.6			10.6			13.1	
Confl. Peds. (#/hr)	8		13	13		8	13		1	1		13
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
Heavy Vehicles (%)	5%	0%	0%	4%	3%	11%	3%	8%	12%	6%	4%	7%
Adj. Flow (vph)	261	386	165	26	113	34	82	546	30	93	819	171
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	551	0	26	147	0	82	576	0	93	819	171
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	41.6		41.6	41.6		8.0	40.2		8.0	40.2	40.2
Total Split (s)	15.0	60.0		45.0	45.0		15.0	85.0		15.0	85.0	85.0
Total Split (%)	9.4%	37.5%		28.1%	28.1%		9.4%	53.1%		9.4%	53.1%	53.1%
Maximum Green (s)	12.0	53.4		38.4	38.4		12.0	78.8		12.0	78.8	78.8
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.6		2.6	2.6		0.0	2.2		0.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.6		6.6	6.6		3.0	6.2		3.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
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
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		12.0		12.0	12.0			12.0			12.0	12.0
Flash Dont Walk (s)		23.0		23.0	23.0			22.0			22.0	22.0
Pedestrian Calls (#/hr)		13		8	8			1			13	13
Act Effct Green (s)	37.1	33.5		18.4	18.4		90.2	79.2		91.1	79.7	79.7
Actuated g/C Ratio	0.27	0.24		0.13	0.13		0.66	0.58		0.67	0.58	0.58
v/c Ratio	0.88	0.63		0.24	0.61		0.19	0.30		0.17	0.41	0.19

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	73.1	45.4		57.3	62.7		9.7	16.3		9.3	17.6	2.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	73.1	45.4		57.3	62.7		9.7	16.3		9.3	17.6	2.9
LOS	E	D		E	E		A	B		A	B	A
Approach Delay		54.3			61.9			15.5			14.5	
Approach LOS		D			E			B			B	
Queue Length 50th (m)	63.6	67.7		6.7	37.2		6.6	39.3		7.6	60.5	0.0
Queue Length 95th (m)	#95.4	89.1		16.3	61.3		18.0	71.8		19.9	106.1	12.5
Internal Link Dist (m)		103.3			67.1			152.9			194.4	
Turn Bay Length (m)	70.0			30.0			105.0			60.0		
Base Capacity (vph)	298	1368		228	497		475	1917		579	2022	924
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	0.88	0.40		0.11	0.30		0.17	0.30		0.16	0.41	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 136.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 29.6		Intersection LOS: C	
Intersection Capacity Utilization 80.5%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 5: Kennedy Road & Clarence St



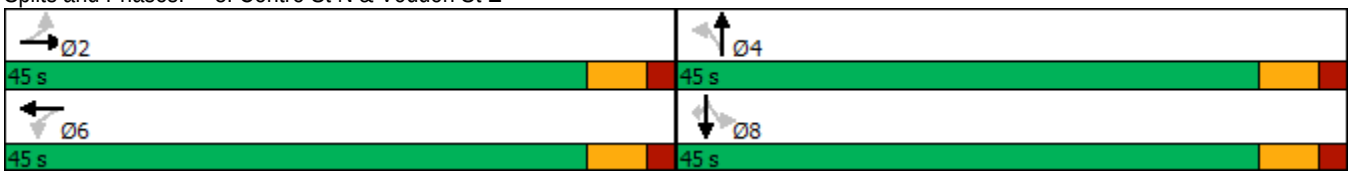


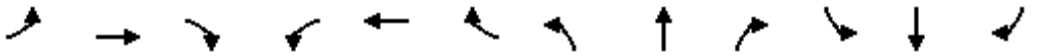
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	530	156	40	305	43	78	127	54	54	167	118
Future Volume (vph)	102	530	156	40	305	43	78	127	54	54	167	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	125.0		0.0	0.0		0.0	0.0		60.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.981			0.972				0.850
Flt Protected	0.950			0.950				0.985			0.988	
Satd. Flow (prot)	1703	1807	0	1752	1780	0	0	1748	0	0	1810	1553
Flt Permitted	0.542			0.288				0.759			0.827	
Satd. Flow (perm)	972	1807	0	531	1780	0	0	1347	0	0	1515	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			10			19				118
Link Speed (k/h)		50			40			40			50	
Link Distance (m)		199.7			193.7			114.4			156.1	
Travel Time (s)		14.4			17.4			10.3			11.2	
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
Heavy Vehicles (%)	6%	2%	0%	3%	4%	10%	6%	2%	6%	6%	3%	4%
Adj. Flow (vph)	102	530	156	40	305	43	78	127	54	54	167	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	686	0	40	348	0	0	259	0	0	221	118
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	28.0	28.0		28.0	28.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Maximum Green (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	39.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	39.2	39.2		39.2	39.2			16.0			16.0	16.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.24			0.24	0.24
v/c Ratio	0.18	0.65		0.13	0.33			0.78			0.62	0.26
Control Delay	9.0	13.8		9.3	9.1			38.3			30.4	5.9
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	9.0	13.8		9.3	9.1			38.3			30.4	5.9
LOS	A	B		A	A			D			C	A
Approach Delay		13.1			9.1			38.3			21.9	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	5.6	51.8		2.1	20.3			29.4			25.9	0.0
Queue Length 95th (m)	16.0	110.6		8.2	45.0			53.7			45.9	10.7
Internal Link Dist (m)		175.7			169.7			90.4			132.1	
Turn Bay Length (m)	85.0			125.0								60.0
Base Capacity (vph)	566	1062		309	1042			793			883	954
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.18	0.65		0.13	0.33			0.33			0.25	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 67.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 90.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Centre St N & Vodden St E





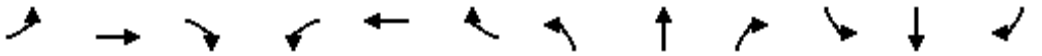
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	344	134	42	309	87	319	1212	73	151	683	438
Future Volume (vph)	204	344	134	42	309	87	319	1212	73	151	683	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	30.0		0.0	105.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99	0.98		0.98	0.99		0.99	1.00		1.00		0.95
Frt		0.958			0.967			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3387	0	1752	1807	0	1787	3486	0	1787	3505	1615
Flt Permitted	0.134			0.479			0.278			0.098		
Satd. Flow (perm)	249	3387	0	864	1807	0	517	3486	0	184	3505	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			9			5				378
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		127.3			91.1			176.9			218.4	
Travel Time (s)		9.2			6.6			10.6			13.1	
Confl. Peds. (#/hr)	25		31	31		25	29		25	25		29
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
Heavy Vehicles (%)	1%	0%	2%	3%	0%	3%	1%	2%	8%	1%	3%	0%
Adj. Flow (vph)	204	344	134	42	309	87	319	1212	73	151	683	438
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	478	0	42	396	0	319	1285	0	151	683	438
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	8.0		8.0	8.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	41.6		41.6	41.6		8.0	40.2		8.0	40.2	40.2
Total Split (s)	19.0	67.0		48.0	48.0		29.0	78.0		15.0	64.0	64.0
Total Split (%)	11.9%	41.9%		30.0%	30.0%		18.1%	48.8%		9.4%	40.0%	40.0%
Maximum Green (s)	16.0	60.4		41.4	41.4		26.0	71.8		12.0	57.8	57.8
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.6		2.6	2.6		0.0	2.2		0.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.6		6.6	6.6		3.0	6.2		3.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
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
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		12.0		12.0	12.0			12.0			12.0	12.0
Flash Dont Walk (s)		23.0		23.0	23.0			22.0			22.0	22.0
Pedestrian Calls (#/hr)		31		25	25			25			29	29
Act Effct Green (s)	58.3	54.7		36.5	36.5		89.4	72.0		78.0	63.6	63.6
Actuated g/C Ratio	0.38	0.36		0.24	0.24		0.58	0.47		0.51	0.41	0.41
v/c Ratio	0.83	0.39		0.20	0.91		0.69	0.79		0.72	0.47	0.51

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	61.0	34.4		49.8	81.2		25.6	39.6		45.4	35.9	8.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	61.0	34.4		49.8	81.2		25.6	39.6		45.4	35.9	8.2
LOS	E	C		D	F		C	D		D	D	A
Approach Delay		42.3			78.2			36.8			27.5	
Approach LOS		D			E			D			C	
Queue Length 50th (m)	46.1	55.3		11.1	123.9		53.9	191.3		22.9	88.3	12.4
Queue Length 95th (m)	#82.8	71.4		23.3	#177.4		76.1	226.6		#58.4	116.2	46.1
Internal Link Dist (m)		103.3			67.1			152.9			194.4	
Turn Bay Length (m)	70.0			30.0			105.0			60.0		
Base Capacity (vph)	254	1360		233	494		516	1636		220	1450	854
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.80	0.35		0.18	0.80		0.62	0.79		0.69	0.47	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 153.7			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 39.3		Intersection LOS: D	
Intersection Capacity Utilization 100.7%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 5: Kennedy Road & Clarence St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	704	105	59	902	121	85	218	48	30	121	118
Future Volume (vph)	134	704	105	59	902	121	85	218	48	30	121	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	125.0		0.0	0.0		0.0	0.0		60.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.982			0.982				0.850
Flt Protected	0.950			0.950				0.988			0.990	
Satd. Flow (prot)	1787	1843	0	1770	1845	0	0	1802	0	0	1830	1568
Flt Permitted	0.116			0.235				0.801			0.810	
Satd. Flow (perm)	218	1843	0	438	1845	0	0	1461	0	0	1497	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			12			6				118
Link Speed (k/h)		50			40			40			50	
Link Distance (m)		199.7			193.7			114.4			156.1	
Travel Time (s)		14.4			17.4			10.3			11.2	
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
Heavy Vehicles (%)	1%	1%	2%	2%	1%	2%	2%	2%	4%	2%	3%	3%
Adj. Flow (vph)	134	704	105	59	902	121	85	218	48	30	121	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	809	0	59	1023	0	0	351	0	0	151	118
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	28.0	28.0		28.0	28.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	85.0	85.0		85.0	85.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	70.8%	70.8%		70.8%	70.8%		29.2%	29.2%		29.2%	29.2%	29.2%
Maximum Green (s)	79.0	79.0		79.0	79.0		29.0	29.0		29.0	29.0	29.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	79.0	79.0		79.0	79.0			29.0			29.0	29.0
Actuated g/C Ratio	0.66	0.66		0.66	0.66			0.24			0.24	0.24
v/c Ratio	0.94	0.66		0.20	0.84			0.98			0.42	0.25
Control Delay	83.7	15.6		10.3	23.5			88.7			42.6	7.8
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	83.7	15.6		10.3	23.5			88.7			42.6	7.8
LOS	F	B		B	C			F			D	A
Approach Delay		25.3			22.8			88.7			27.4	
Approach LOS		C			C			F			C	
Queue Length 50th (m)	27.1	110.0		5.3	176.4			85.7			31.7	0.0
Queue Length 95th (m)	#73.4	153.2		12.1	252.1			#148.9			53.0	15.1
Internal Link Dist (m)		175.7			169.7			90.4			132.1	
Turn Bay Length (m)	85.0			125.0								60.0
Base Capacity (vph)	143	1217		288	1218			357			361	468
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.94	0.66		0.20	0.84			0.98			0.42	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 32.9		Intersection LOS: C	
Intersection Capacity Utilization 109.4%		ICU Level of Service H	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 8: Centre St N & Vodden St E

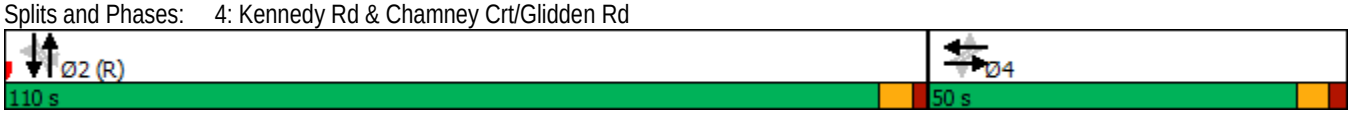


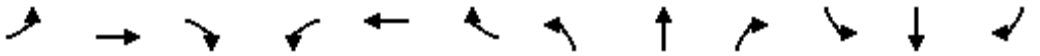
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	3	15	53	0	62	9	421	43	194	986	12
Future Volume (vph)	12	3	15	53	0	62	9	421	43	194	986	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	80.0		0.0	45.0		50.0	70.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor		0.97			0.97			1.00	0.95		1.00	
Frt		0.932			0.927				0.850		0.998	
Flt Protected		0.980			0.977			0.999			0.992	
Satd. Flow (prot)	0	1529	0	0	1524	0	0	3333	1553	0	3470	0
Flt Permitted		0.874			0.838			0.922			0.769	
Satd. Flow (perm)	0	1361	0	0	1284	0	0	3075	1475	0	2683	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			36				43		1	
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		117.1			249.4			186.9			210.9	
Travel Time (s)		8.4			15.0			11.2			12.7	
Confl. Peds. (#/hr)	4		23	23		4	28		12	12		28
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
Heavy Vehicles (%)	9%	0%	14%	15%	0%	9%	18%	8%	4%	2%	3%	9%
Adj. Flow (vph)	12	3	15	53	0	62	9	421	43	194	986	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	115	0	0	430	43	0	1192	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	2	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	34.3	34.3		34.3	34.3		37.0	37.0	37.0	37.0	37.0	
Total Split (s)	50.0	50.0		50.0	50.0		110.0	110.0	110.0	110.0	110.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		68.8%	68.8%	68.8%	68.8%	68.8%	
Maximum Green (s)	43.7	43.7		43.7	43.7		104.0	104.0	104.0	104.0	104.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.3	2.3		2.3	2.3		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.3			6.3			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		19.0	19.0	19.0	19.0	19.0	
Pedestrian Calls (#/hr)	23	23		23	23		28	28	28	28	28	
Act Effct Green (s)		20.8			20.8			126.9	126.9		126.9	
Actuated g/C Ratio		0.13			0.13			0.79	0.79		0.79	
v/c Ratio		0.16			0.58			0.18	0.04		0.56	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		35.9			54.5			4.8	1.4		8.4	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		35.9			54.5			4.8	1.4		8.4	
LOS		D			D			A	A		A	
Approach Delay		35.9			54.5			4.5			8.4	
Approach LOS		D			D			A			A	
Queue Length 50th (m)		4.2			23.8			20.0	0.0		85.8	
Queue Length 95th (m)		14.8			46.0			25.8	3.3		103.5	
Internal Link Dist (m)		93.1			225.4			162.9			186.9	
Turn Bay Length (m)									50.0			
Base Capacity (vph)		382			376			2439	1179		2128	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.08			0.31			0.18	0.04		0.56	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 119 (74%), Referenced to phase 2:NBSB and 6:, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Kennedy Rd & Chamney Crt/Glidden Rd





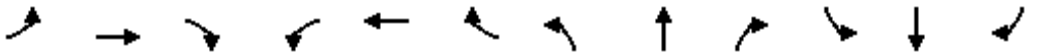
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	8	11	102	3	169	7	1255	93	63	610	12
Future Volume (vph)	10	8	11	102	3	169	7	1255	93	63	610	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	80.0		0.0	45.0		50.0	70.0		0.0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor		0.98			0.97			1.00	0.93		1.00	
Frt		0.949			0.917				0.850		0.997	
Flt Protected		0.983			0.982						0.995	
Satd. Flow (prot)	0	1747	0	0	1614	0	0	3540	1524	0	3457	0
Flt Permitted		0.819			0.865			0.951			0.674	
Satd. Flow (perm)	0	1450	0	0	1409	0	0	3366	1420	0	2340	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			44				91		3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		117.1			249.4			186.9			210.9	
Travel Time (s)		8.4			18.0			13.5			15.2	
Confl. Peds. (#/hr)	16		15	15		16	15		19	19		15
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
Heavy Vehicles (%)	0%	0%	0%	6%	0%	2%	0%	2%	6%	9%	3%	0%
Adj. Flow (vph)	10	8	11	102	3	169	7	1255	93	63	610	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	274	0	0	1262	93	0	685	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	2	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	34.3	34.3		34.3	34.3		37.0	37.0	37.0	37.0	37.0	
Total Split (s)	34.3	34.3		34.3	34.3		125.7	125.7	125.7	125.7	125.7	
Total Split (%)	21.4%	21.4%		21.4%	21.4%		78.6%	78.6%	78.6%	78.6%	78.6%	
Maximum Green (s)	28.0	28.0		28.0	28.0		119.7	119.7	119.7	119.7	119.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.3	2.3		2.3	2.3		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.3			6.3			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		19.0	19.0	19.0	19.0	19.0	
Pedestrian Calls (#/hr)	15	15		15	15		19	19	19	19	19	
Act Effct Green (s)		28.0			28.0			119.7	119.7		119.7	
Actuated g/C Ratio		0.18			0.18			0.75	0.75		0.75	
v/c Ratio		0.11			0.97			0.50	0.09		0.39	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		40.2			100.6			8.9	1.2		7.9	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		40.2			100.6			8.9	1.2		7.9	
LOS		D			F			A	A		A	
Approach Delay		40.2			100.6			8.4			7.9	
Approach LOS		D			F			A			A	
Queue Length 50th (m)		5.1			79.3			80.9	0.2		38.6	
Queue Length 95th (m)		15.4			#141.5			94.3	4.8		48.5	
Internal Link Dist (m)		93.1			225.4			162.9			186.9	
Turn Bay Length (m)									50.0			
Base Capacity (vph)		262			282			2518	1085		1751	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.11			0.97			0.50	0.09		0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 29.7 (19%), Referenced to phase 2:NBSB and 6:, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 99.0%		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: 4: Kennedy Rd & Chamney Crt/Glidden Rd





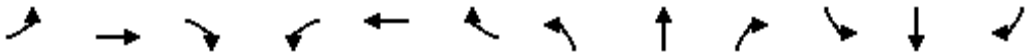
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	128	98	65	131	26	84	1068	64	39	1812	41
Future Volume (vph)	46	128	98	65	131	26	84	1068	64	39	1812	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	110.0		0.0	75.0		0.0	70.0		0.0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00				1.00		1.00		
Frt		0.951			0.975			0.992			0.997	
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1743	0	1656	1739	0	1736	2977	0	1752	3336	0
Flt Permitted		0.910		0.402			0.069			0.196		
Satd. Flow (perm)	0	1599	0	700	1739	0	126	2977	0	361	3336	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			9			8			3	
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		287.9			252.1			382.5			379.1	
Travel Time (s)		14.8			13.0			17.2			17.1	
Confl. Peds. (#/hr)			1	1					1	1		
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
Heavy Vehicles (%)	9%	1%	1%	9%	7%	4%	4%	21%	6%	3%	8%	3%
Adj. Flow (vph)	46	128	98	65	131	26	84	1068	64	39	1812	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	272	0	65	157	0	84	1132	0	39	1853	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	38.3	38.3		38.3	38.3		9.5	38.5		9.5	38.5	
Total Split (s)	38.3	38.3		38.3	38.3		9.5	62.1		9.6	62.2	
Total Split (%)	34.8%	34.8%		34.8%	34.8%		8.6%	56.5%		8.7%	56.5%	
Maximum Green (s)	32.0	32.0		32.0	32.0		5.5	55.6		5.6	55.7	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.6		3.0	4.6	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.3		6.3	6.3		4.0	6.5		4.0	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			22.0			22.0	
Pedestrian Calls (#/hr)	1	1		0	0			1			0	
Act Effct Green (s)		20.4		20.4	20.4		63.9	58.2		63.2	56.3	
Actuated g/C Ratio		0.21		0.21	0.21		0.66	0.60		0.65	0.58	
v/c Ratio		0.76		0.44	0.42		0.48	0.63		0.12	0.96	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		46.9		43.3	34.5		20.0	16.7		7.5	34.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		46.9		43.3	34.5		20.0	16.7		7.5	34.4	
LOS		D		D	C		B	B		A	C	
Approach Delay		46.9			37.1			17.0			33.9	
Approach LOS		D			D			B			C	
Queue Length 50th (m)		47.0		11.5	25.9		4.8	77.6		2.2	177.8	
Queue Length 95th (m)		74.9		24.8	44.5		18.9	130.5		7.5	#295.7	
Internal Link Dist (m)		263.9			228.1			358.5			355.1	
Turn Bay Length (m)				110.0			75.0			70.0		
Base Capacity (vph)		550		233	586		175	1790		316	1938	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.49		0.28	0.27		0.48	0.63		0.12	0.96	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 97			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 29.3		Intersection LOS: C	
Intersection Capacity Utilization 99.4%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 10: Hurontario Street & Old School Rd





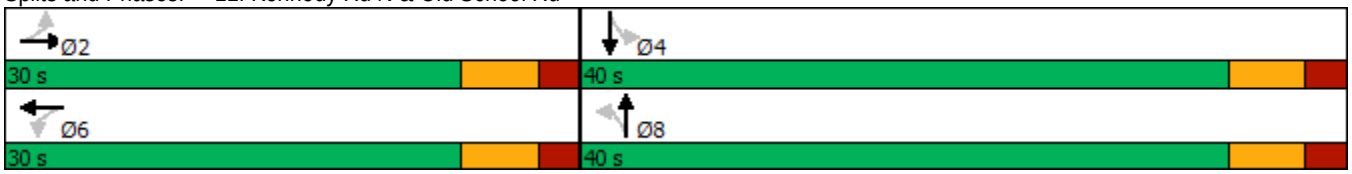
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	210	16	5	83	0	138	246	150	138	290	13
Future Volume (vph)	36	210	16	5	83	0	138	246	150	138	290	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992						0.962			0.996	
Flt Protected		0.993			0.997			0.987			0.985	
Satd. Flow (prot)	0	1835	0	0	1857	0	0	1769	0	0	1827	0
Flt Permitted		0.952			0.981			0.763			0.677	
Satd. Flow (perm)	0	1759	0	0	1827	0	0	1367	0	0	1256	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						39			3	
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		102.1			126.9			194.8			181.3	
Travel Time (s)		5.3			6.5			11.7			10.9	
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
Adj. Flow (vph)	36	210	16	5	83	0	138	246	150	138	290	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	262	0	0	88	0	0	534	0	0	441	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.2	21.2		21.2	21.2		21.3	21.3		21.3	21.3	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		40.0	40.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%		57.1%	57.1%		57.1%	57.1%	
Maximum Green (s)	23.8	23.8		23.8	23.8		33.7	33.7		33.7	33.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.2			6.2			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		24.1			24.1			27.0			27.0	
Actuated g/C Ratio		0.38			0.38			0.42			0.42	
v/c Ratio		0.39			0.13			0.89			0.83	
Control Delay		18.1			15.8			34.2			30.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		18.1			15.8			34.2			30.5	
LOS		B			B			C			C	
Approach Delay		18.1			15.8			34.2			30.5	
Approach LOS		B			B			C			C	

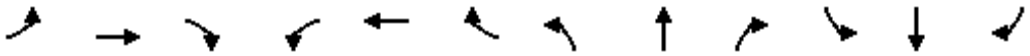
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)		23.9			7.4			53.9			45.5	
Queue Length 95th (m)		46.8			17.8			#110.8			#86.3	
Internal Link Dist (m)		78.1			102.9			170.8			157.3	
Turn Bay Length (m)												
Base Capacity (vph)		668			690			749			673	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.39			0.13			0.71			0.66	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 63.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 28.5		Intersection LOS: C	
Intersection Capacity Utilization 68.0%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 11: Kennedy Rd N & Old School Rd





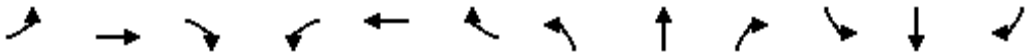
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	122	100	65	229	42	208	1545	106	55	1431	57
Future Volume (vph)	39	122	100	65	229	42	208	1545	106	55	1431	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	110.0		0.0	75.0		0.0	70.0		0.0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.948			0.977			0.990			0.994	
Flt Protected		0.993		0.950			0.950			0.950		
Satd. Flow (prot)	0	1738	0	1752	1856	0	1787	3412	0	1736	3274	0
Flt Permitted		0.670		0.417			0.074			0.080		
Satd. Flow (perm)	0	1172	0	769	1856	0	139	3412	0	146	3274	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			8			9			5	
Link Speed (k/h)		70			70			80			80	
Link Distance (m)		287.9			252.1			382.5			379.1	
Travel Time (s)		14.8			13.0			17.2			17.1	
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
Heavy Vehicles (%)	2%	4%	2%	3%	0%	0%	1%	5%	1%	4%	10%	0%
Adj. Flow (vph)	39	122	100	65	229	42	208	1545	106	55	1431	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	261	0	65	271	0	208	1651	0	55	1488	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	38.3	38.3		38.3	38.3		9.0	38.5		9.0	38.5	
Total Split (s)	38.6	38.6		38.6	38.6		14.0	62.4		9.0	57.4	
Total Split (%)	35.1%	35.1%		35.1%	35.1%		12.7%	56.7%		8.2%	52.2%	
Maximum Green (s)	32.3	32.3		32.3	32.3		10.0	55.9		5.0	50.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.6		3.0	4.6	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.3		6.3	6.3		4.0	6.5		4.0	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			22.0			22.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		20.2		20.2	20.2		65.5	56.1		56.4	48.8	
Actuated g/C Ratio		0.21		0.21	0.21		0.68	0.58		0.59	0.51	
v/c Ratio		0.97		0.40	0.68		0.78	0.83		0.33	0.89	
Control Delay		82.8		40.9	43.4		41.6	22.7		12.5	30.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		82.8		40.9	43.4		41.6	22.7		12.5	30.5	
LOS		F		D	D		D	C		B	C	
Approach Delay		82.8			42.9			24.8			29.9	
Approach LOS		F			D			C			C	
Queue Length 50th (m)		47.1		11.3	48.9		22.8	133.8		3.1	130.5	
Queue Length 95th (m)		#87.7		24.5	75.7		#70.8	#229.0		9.2	#217.0	
Internal Link Dist (m)		263.9			228.1			358.5			355.1	
Turn Bay Length (m)				110.0			75.0			70.0		
Base Capacity (vph)		417		261	635		268	2010		169	1756	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.63		0.25	0.43		0.78	0.82		0.33	0.85	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 96.1			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 32.1		Intersection LOS: C	
Intersection Capacity Utilization 101.4%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 10: Hurontario Street & Old School Rd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	98	182	175	310	29	96	268	42	0	128	22
Future Volume (vph)	8	98	182	175	310	29	96	268	42	0	128	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.915			0.992			0.986			0.980	
Flt Protected		0.999			0.983			0.988				
Satd. Flow (prot)	0	1703	0	0	1816	0	0	1815	0	0	1825	0
Flt Permitted		0.986			0.784			0.874				
Satd. Flow (perm)	0	1681	0	0	1449	0	0	1605	0	0	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		150			5			8			12	
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		102.1			126.9			194.8			181.3	
Travel Time (s)		5.3			6.5			11.7			10.9	
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
Adj. Flow (vph)	8	98	182	175	310	29	96	268	42	0	128	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	288	0	0	514	0	0	406	0	0	150	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.2	21.2		21.2	21.2		21.3	21.3		21.3	21.3	
Total Split (s)	45.0	45.0		45.0	45.0		35.0	35.0		35.0	35.0	
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	38.8	38.8		38.8	38.8		28.7	28.7		28.7	28.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.2			6.2			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		39.0			39.0			22.3			22.3	
Actuated g/C Ratio		0.53			0.53			0.30			0.30	
v/c Ratio		0.30			0.67			0.83			0.27	
Control Delay		6.3			19.5			38.5			18.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.3			19.5			38.5			18.6	
LOS		A			B			D			B	
Approach Delay		6.3			19.5			38.5			18.6	
Approach LOS		A			B			D			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)		9.9			52.0			53.6			15.0	
Queue Length 95th (m)		26.5			101.6			86.4			28.5	
Internal Link Dist (m)		78.1			102.9			170.8			157.3	
Turn Bay Length (m)												
Base Capacity (vph)		958			767			631			720	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.30			0.67			0.64			0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 73.9			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 22.3		Intersection LOS: C	
Intersection Capacity Utilization 95.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 11: Kennedy Rd N & Old School Rd

