



Kirby Road Widening Environmental Assessment Study

Jane Street to Dufferin Street

Transportation and Traffic Analysis Report

City of Vaughan

January 10, 2020



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1 Introduction

HDR has been retained by City of Vaughan to undertake a Schedule ‘C’ Class Environmental Assessment (EA) for the Kirby Road corridor between Jane Street and Dufferin Street. This EA study will reconfirm the need and determine the preferred design for the improvements for Kirby Road which include widening, grade separation and jog elimination along Kirby Road between Jane Street and Dufferin Street.

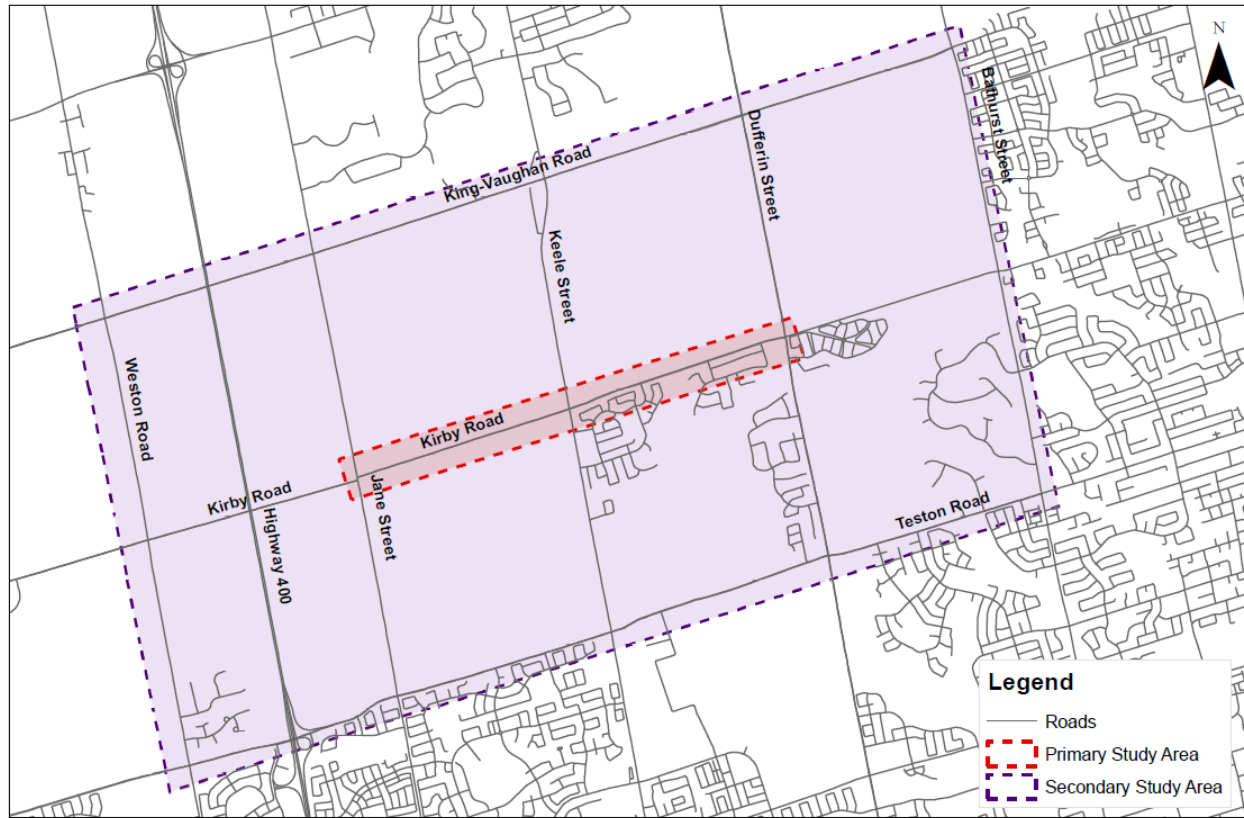
1.1 Background

The City of Vaughan’s Transportation Master Plan (2012) and the York Region Transportation Master Plan (2016) identified the need for Kirby Road improvements. Following completion of those studies the North Vaughan and New Communities Transportation Master Plan (NVNCTMP, 2019) undertook additional transportation planning analysis to support the development of two new community areas in the northern part of Vaughan and the proposed Kirby GO Station. The NVNCTMP study recommended the widening of Kirby Road from Jane Street to Dufferin Street, construction of the missing link between Dufferin Street and Bathurst Street, jog elimination of the Kirby Road intersection at Jane Street, and grade separation of Kirby Road at the Barrie GO rail line. The completion of the NVNCTMP satisfies Phases 1 and 2 of the Environmental Assessment process and has established the need and justification for the Kirby Road improvements (see **Section 2.3.5**).

This Kirby Road Widening EA study will reconfirm the need and recommendations from the NVNCTMP for the Kirby Road corridor and complete Phases 3 and 4 of the Municipal Class EA process for Schedule ‘C’ projects. Specifically the Kirby Road Widening EA Study will reconfirm the need to widen Kirby Road from two to four lanes between Jane Street and Dufferin Street, the grade separation of the Barrie Go Rail line at Kirby Road and the elimination of the jog at the intersection of Kirby Road and Jane Street.

This Transportation and Traffic Assessment Report is prepared in support of the EA study. The primary and secondary transportation study areas for this study are shown in **Figure 1-1**.

Figure 1-1: Study Area



1.2 Study Purpose

The purpose of the Kirby Road Widening Class EA study is to determine specific improvements to accommodate the current and future transportation needs of pedestrians, cyclists, transit users and motorists along Kirby Road corridor from Jane Street to Dufferin Street.

1.3 Study Scope

This Transportation and Traffic Analysis report reconfirms the transportation and traffic needs identified in the NVNCTMP, and establishes an updated baseline for existing and future transportation conditions to the 2031 horizon year. The analysis conducted includes intersection capacity analysis along Kirby Road and at future Kirby GO Station intersections on Keele Street; estimates and examines the traffic growth and expected future traffic volumes; analyzes the traffic impacts from the introduction of the projected traffic volumes; and finally proposes infrastructure improvements to address the deficiencies and accommodate the future traffic growth for the horizon year of 2031.

2 Planning Context

This section provides context for the study in relation to planning policies and guidance at the provincial, regional municipal and local municipal level.

2.1 Provincial Planning Context

Provincial planning policies, summarized in **Table 2-1**, were reviewed to identify their relevance to the Kirby road EA.

Table 2-1: Provincial Planning Policies

Provincial Planning Document	Directions	Impact to Kirby Road EA
Provincial Policy Statement, Ontario, 2014	<p><u>Description:</u> Provides direction on land use planning and development, and the transportation system.</p> <p><u>Directions:</u> The most relevant land use and transportation policies) include:</p> <ul style="list-style-type: none"> • 1.6.7.1 Safe, energy efficient, transportation systems that move people and goods and address projected needs • 1.6.7.2 Use of travel demand management (TDM) strategies to maximize efficiency • 1.6.7.3 A multimodal transportation system that provides connections within and among transportation systems and modes including across jurisdictional boundaries • 1.6.7.4 Land use patterns that minimize length and number of vehicle trips to support transit and active transportation • 1.6.7.5 Integrate transportation and land use considerations at all stages of planning • 1.6.8.2 Protect for major goods movement facilities and corridors • 1.6.8.3 New development should be compatible with the long-term purposes of the corridor 	<p>The Kirby road EA will consider projected needs for both people and goods, encourage travel demand management, and consider all travel modes.</p>

Provincial Planning Document	Directions	Impact to Kirby Road EA
<p>Growth Plan for the Greater Golden Horseshoe (GGH), Ministry of Municipal Affairs, 2006, 2013, 2017 Update</p>	<p><u>Description:</u> The Growth Plan for the GGH was released on June 16, 2006, and is a long-term plan that aims to:</p> <ul style="list-style-type: none"> • Revitalize downtowns • Create complete communities • Provide housing options to meet the needs of people at any age • Curb urban sprawl and protect farmland and green spaces • Reduce traffic gridlock by improving access to a greater range of transportation options <p>The June 2013 amendment extended the growth planning horizon to 2041 while the 2016 update identified new intensification targets.</p> <p><u>Directions:</u> The Growth Plan defines specific policies for where and how to grow, including the identification of defined urbanized areas versus a protected Greenbelt Area. The plan also identifies Urban Growth Centres across the Greater Toronto Area (GTA), Major Transit Station Areas and Intensification Corridors.</p> <p>There has been a 2017 update to the Growth Plan.</p>	<p>The study area is at the northern boundary of the urbanized area. The Vaughan Metropolitan Centre, a designated Urban Growth Centre south of the study area, and the future Kirby GO station through which transit connections to the greater regional rapid transit network can be made will be considered in the study.</p>
<p>2041 Regional Transportation Plan updated in 2018 from The Big Move, Metrolinx, 2008</p>	<p><u>Description:</u> The Big Move is the Greater Toronto and Hamilton Area's (GTHA's) multi-modal long-range regional transportation plan. Since 2008 this plan has been providing strategic direction for planning, designing and building a regional transportation network that enhances quality of life, environment, and prosperity.</p> <p><u>Directions:</u> The Big Move sets the context for Regional Express Rail (RER), a frequent all-day, two-way express rail service on existing GO Rail lines with 15 minute frequencies using future electrification infrastructure.</p> <p>In order to support the expanded services, improvement to infrastructure is needed:</p> <ul style="list-style-type: none"> • Track expansion, including upgrade of existing structures within corridor such as culverts, bridges • Grade separations • Maintenance and storage facilities • Electrification infrastructure • Station Expansion (parking, building, pedestrian access, etc) • New station(s) along corridor that will optimize ridership and minimize delay <p>As of 2018, the 2008 Big Move has been updated to the 2041 Regional Transportation Plan (RTP)</p>	<p>The Kirby GO Station is included as a new station along the Barrie GO Corridor as part of the RER project. The City will work with Metrolinx to implement transit supportive planning around the station, develop sustainable station access solutions, and support the works required for RER, including planning for grade separation of rail crossings.</p>

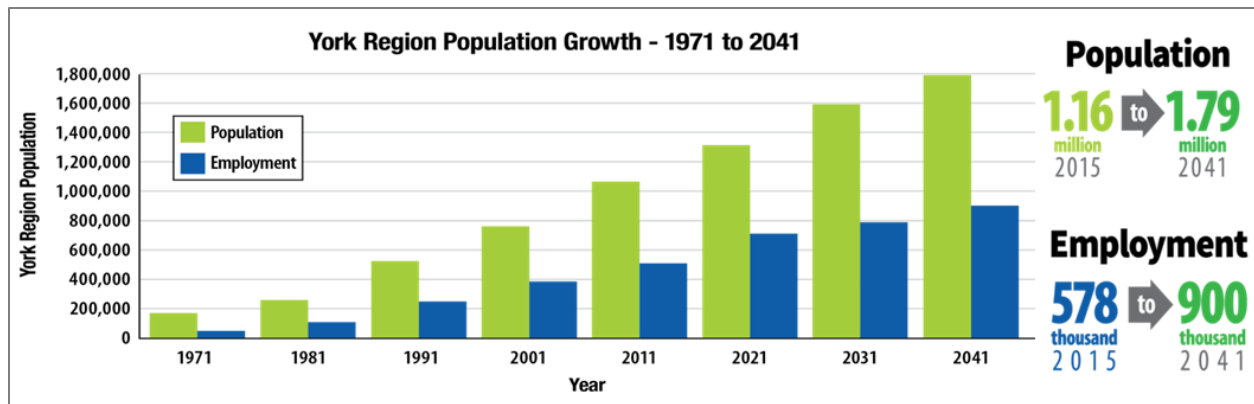
Provincial Planning Document	Directions	Impact to Kirby Road EA
<p>Transit-Supportive Guidelines, Ministry of Transportation, 2012</p>	<p><u>Description:</u> Identifies best practices in Ontario, North America and abroad for transit-friendly land-use planning, urban design, and operations.</p> <p><u>Directions:</u> Key directions relevant to the Kirby Road EA include layout and spacing of arterial and collector streets:</p> <ul style="list-style-type: none"> • Street networks are fine-grained and interconnected to provide efficient transit services and connections to transit stops • Eliminate unnecessary jogs or breaks in the network • Spacing of arterial and collector roads should support a maximum 400 m walk from the interior of a block to a transit stop, and facilitate higher levels of walking and cycling • Access routes to transit stops, such as pedestrian pathways or local roads, should be spaced no greater than 200 m apart. <p>Key directions for planning around major transit station areas include:</p> <ul style="list-style-type: none"> • A rational progression of facilities from passenger pick up and drop off / bus transfer / parking areas to ticketing and wayfinding, safe and comfortable waiting areas, and finally to transit loading areas • Organize surface parking areas into smaller modules to facilitate defined walking and cycling paths to the stations and also establish future development parcels over time • Prioritize pedestrian access • Limit free surface parking where frequent feeder transit service is available 	<p>The road widening shall be planned in accordance with the Transit Supportive Guidelines.</p>
<p>#CycleON: Ontario's Cycling Strategy, Ministry of Transportation, 2013</p>	<p><u>Description:</u> Identifies a vision for cycling in the province over the next 20 years where cycling is valued as a core mode of transportation.</p> <p><u>Directions:</u> Key directions relevant to the Kirby Road EA include:</p> <ul style="list-style-type: none"> • Partner with municipalities to implement Complete Streets policies and develop active transportation plans • Partner with municipalities / transit agencies to integrate cycling and transit • Develop a funding partnership to build provincial and municipal cycling routes, including pilot program funding to gather data and test new ideas • Create communities that have a built form that supports and promotes cycling for all trips under 5 km 	<p>The Kirby Road EA strives to plan for cycling infrastructure and complete communities in accordance with this plan.</p>

Provincial Planning Document	Directions	Impact to Kirby Road EA
Ontario's Climate Change Action Plan	<p><u>Description:</u> Identifies a five-year plan to fight climate change, reduce greenhouse gas pollution, and transition to a low-carbon economy.</p> <p><u>Directions:</u> Specific action areas are identified to meet specific greenhouse gas emission reduction targets:</p> <ul style="list-style-type: none"> • Transportation: Becoming a North American leader in low-carbon and zero-emission transportation <ul style="list-style-type: none"> ○ Increase the use of electric vehicles ○ Support cycling and walking ○ Support the accelerated construction of GO Regional Express Rail • Land use planning: Support low-carbon communities <ul style="list-style-type: none"> ○ Strengthen climate change policies in the municipal land use planning process ○ Eliminate minimum parking requirements 	The implementation of Active Transportation and Travel Demand Management (TDM) to promote sustainable mode of transportation to increase the number of active transportation trips and reduce the number of single-occupancy vehicles will be considered during the alternative analysis.
Greenbelt Plan (2017)	<p><u>Description:</u> In concert with the Growth Plan, Niagara Escarpment Plan (NEP) and Oak Ridges Moraine Conservation Plan (ORCMP), and further to the PPS, the Greenbelt Plan establishes land use planning framework for the GGH to support a clean and healthy environment, a thriving economy and social equity.</p> <p><u>Directions:</u> Identifies areas where urbanization should not occur in order to protect the ecological, agricultural, and hydrological land use. Lands identified in the NEP and ORCMP are also included in the Greenbelt Plan.</p>	Kirby Road EA strives to support the achievement of complete communities and community hubs that are conveniently accessible by active transportation and transit. Infrastructure will integrate with land use planning while minimizing environmental impacts in the Protected Countryside of the Greenbelt Area.
Oak Ridges Moraine Conservation Plan (2002), Updated in May 2017	<p><u>Description:</u> Identifies policy and plans to provide land use and resource management direction for the 190,000 hectares of land and water within the Moraine. The subject area is also accounted for in the Greenbelt Plan.</p> <p><u>Directions:</u> Protect the ecological and hydrological integrity of the Oak Ridges Moraine Area and provide land and resource uses and development that are compatible with other objectives of the Plan. Transportation infrastructure development is permitted in key natural heritage features and hydrological sensitive features if it will not adversely affect these features.</p>	The Oak Ridges Moraine Area is part of the lands designated under the Greenbelt Plan and is a significant portion of the study area between east of Keele Street and Dufferin Street. Similar to the Greenbelt Plan, the Kirby Road EA will strive to minimize disturbance and respect the land and its key natural heritage features.

2.2 Regional Planning Context

York Region is one of the fastest growing municipalities in the GTA. Since 1971, York Region’s population has increased nearly seven-fold. Population and employment growth are expected to continue across the Region. As such, the transportation system and other infrastructure must be prepared to accommodate future growth. As illustrated in **Figure 2-1**, by 2041 regional population will approach 1.79 million, while employment will approach 900,000.

Figure 2-1: York Region Population and Employment Growth – 1971 to 2041



Source: Regional Municipality of York

Given this anticipated growth, the York Region Official Plan and Transportation Master Plan build upon provincial planning guidance and provide more specific direction on the need for transportation improvements to support growth in the Region, and these documents are summarized in the following.

2.2.1 Regional Official Plan (April 2019)

The Regional Official Plan represents the Region’s vision and plan for the way communities are designed, serviced, and supported. As shown below, the objectives of the Plan include: Sustainable Natural Environment, Healthy Communities, and Economic vitality.

The plan emphasizes interconnected and accessible mobility systems, with a priority on pedestrian movement, and on transit use and access. Some of objectives related to the widening of Kirby Road include: create an active transportation system and programs that encourage walking, cycling and the use of public transit, provide transit service that is convenient and accessible to all residents and workers of York Region, ensure streets support all modes of transportation including walking, cycling, transit, automobile use, and the efficient movement of goods, plan and protect future urban and rural streets to accommodate transportation demands, and promote a linked and efficient network for goods movement that supports economic vitality and minimizes conflicts with sensitive land uses.

2.2.2 Regional Transportation Master Plan (November 2016)

York Region's Transportation Master Plan (YRTMP) addresses the Region's mobility needs to 2041. It provides a 25 year outlook to:

Create an advanced interconnected system of mobility in the GTHA in order to give York Region residents and businesses a competitive advantage, making York Region the best place to live, work and play in the GTHA.

The YRTMP has five objectives:

1. Create a world class transit system
2. Develop a road network fit for the future
3. Integrate active transportation in Urban Areas
4. Maximize the potential of employment areas
5. Make the last mile work

Kirby Road, while currently a City Road, forms part of the Regional concession road grid network. The YRTMP identifies Kirby Road from Highway 27 to Bathurst Street as a candidate to be added to the Regional Road network. In addition, the YRTMP makes specific recommendations for Kirby Road to provide regional east-west connectivity and transportation capacity through the study area including:

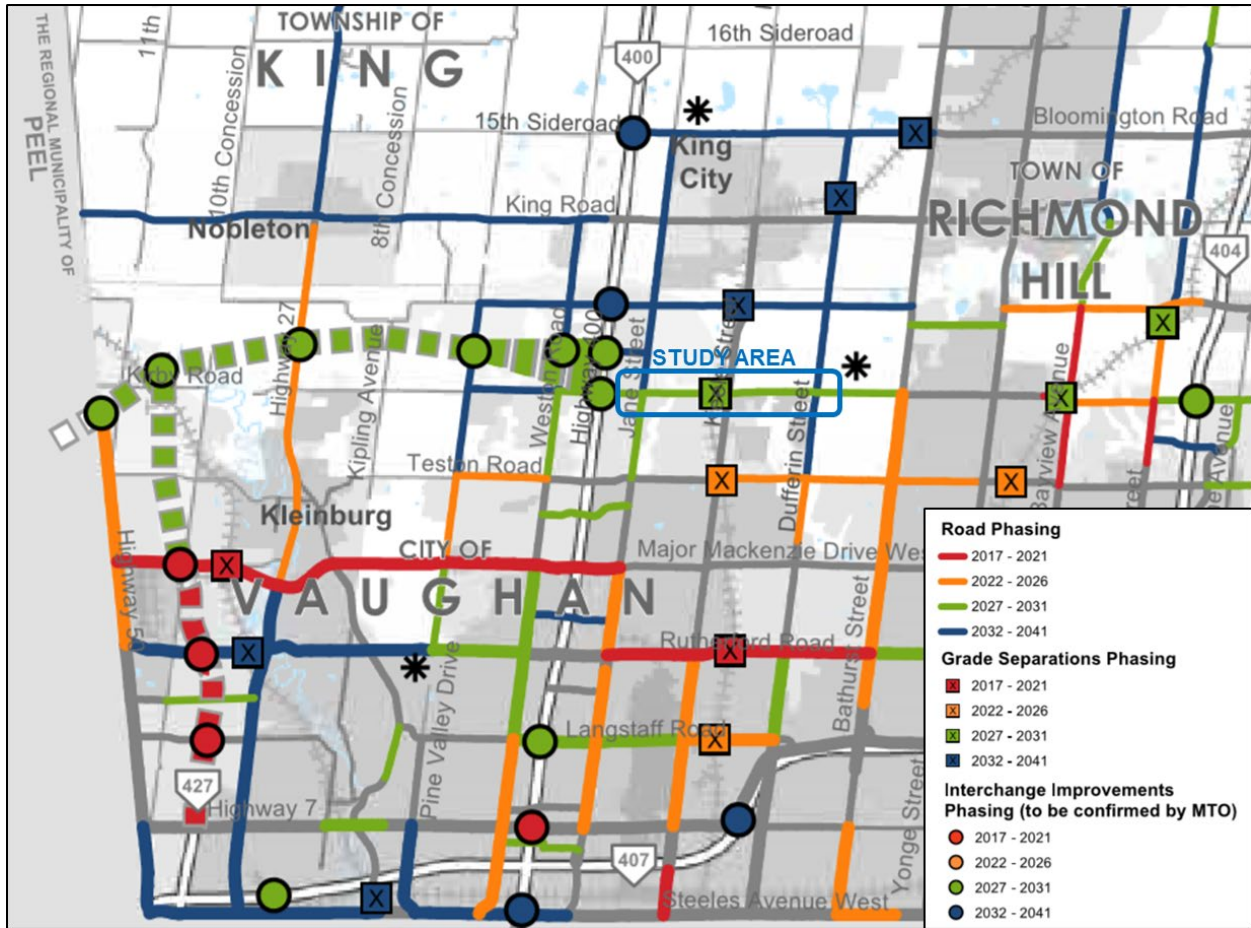
- Widening of Kirby Road plus the completion of the Kirby Road missing link
- Designation as a Frequent Transit Network corridor
- Cycling Facilities as a local cycling route of regional significance
- Designation as a strategic goods movement corridor

Additional mode-specific details on YRTMP recommendations are provided in the following sections.

Road Network Recommendations

The 2016 York Region TMP update has identified the Regional significance of Kirby Road (currently under jurisdiction of the City of Vaughan) as a frequent transit, vehicular traffic, cycling, and strategic goods movement corridor. The road phasing and grade separation phasing are scheduled for 2027-2031 as shown in **Figure 2-2**.

Figure 2-2: 2031 YRTMP Road Network

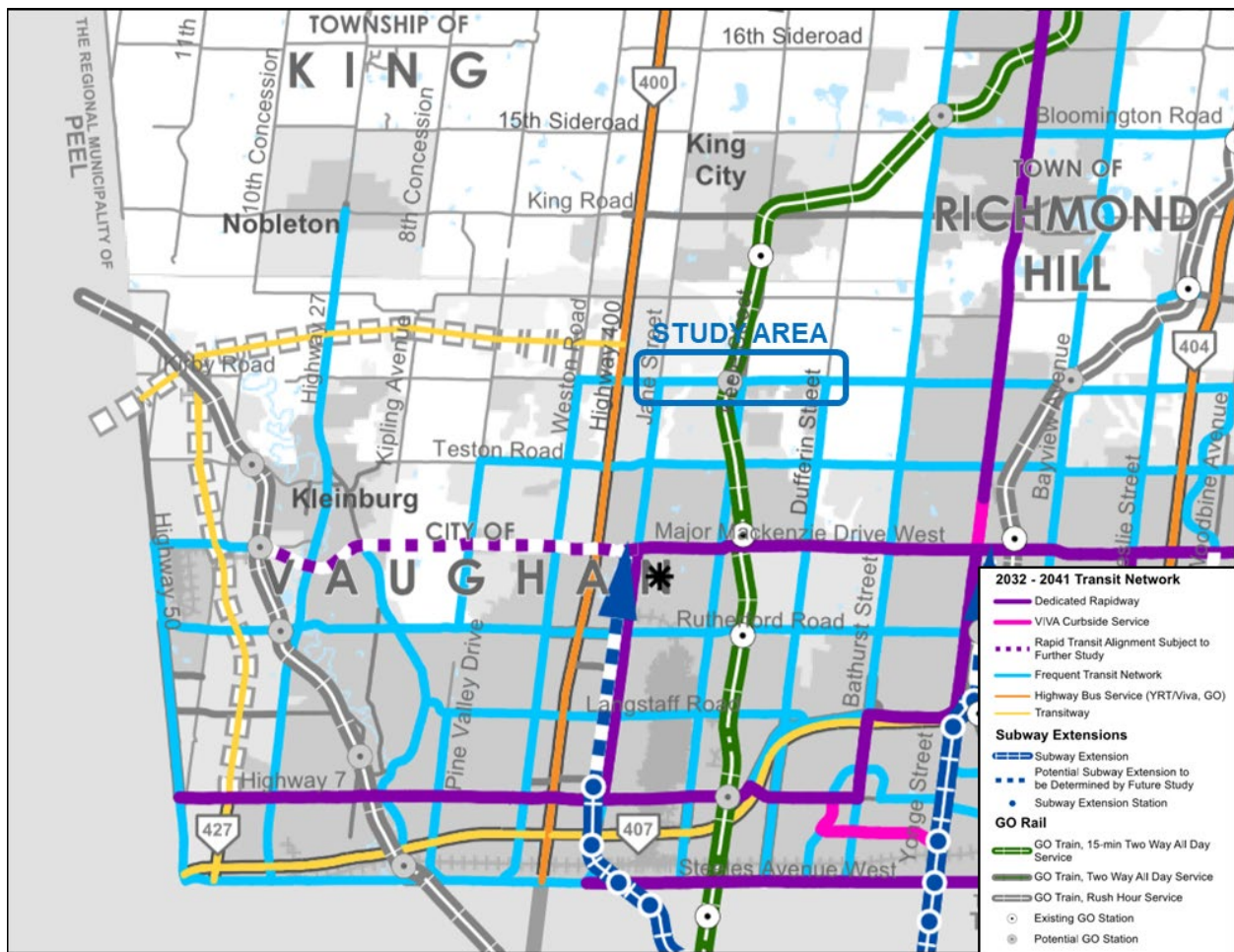


Source: York Region Transportation Master Plan 2016

Transit Network Recommendations

As identified in **Figure 2-3** York Region is planning for frequent transit service on Kirby Road east of Weston Road within the Kirby Road EA study area. This frequent transit service will connect the development of the New Communities and Highway 400 Employment lanes to the proposed Kirby GO Station, Vaughan Metropolitan Centre, the rest of Vaughan and the City of Toronto. Frequent Transit Network service is defined as bus service every 15 minutes or less between 6AM and 10PM, seven days a week.

Figure 2-3: 2041 YRTMP Transit Network

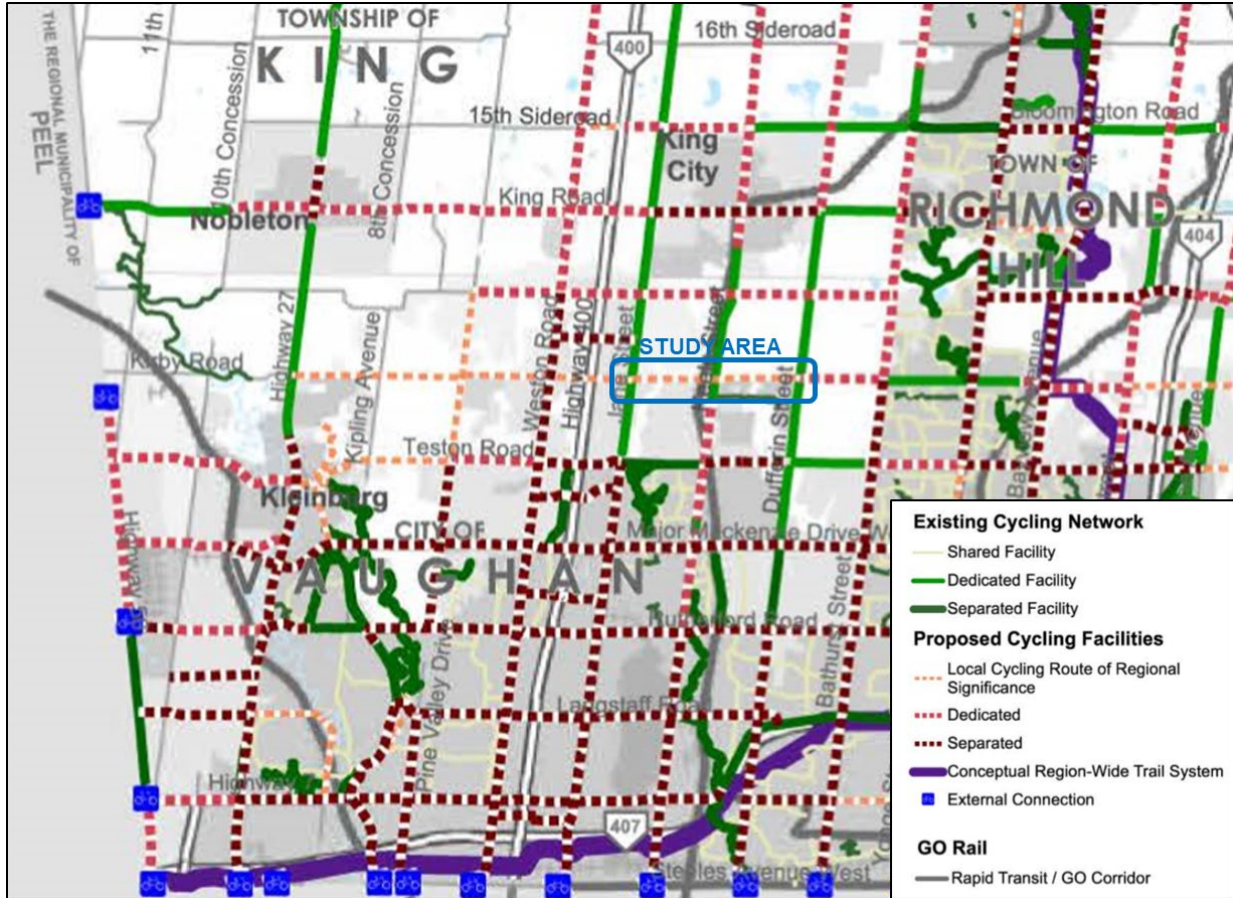


Source: York Region Transportation Master Plan 2016

Cycling Network Recommendations

The York Region TMP 2016 recommends cycling infrastructure for a 10-year horizon and for a 25-year horizon. Within the study area and for the 10-year horizon the TMP recommends local cycling route (shown in **Figure 2-4**).

Figure 2-4: Proposed 2041 YRTMP Cycling Network

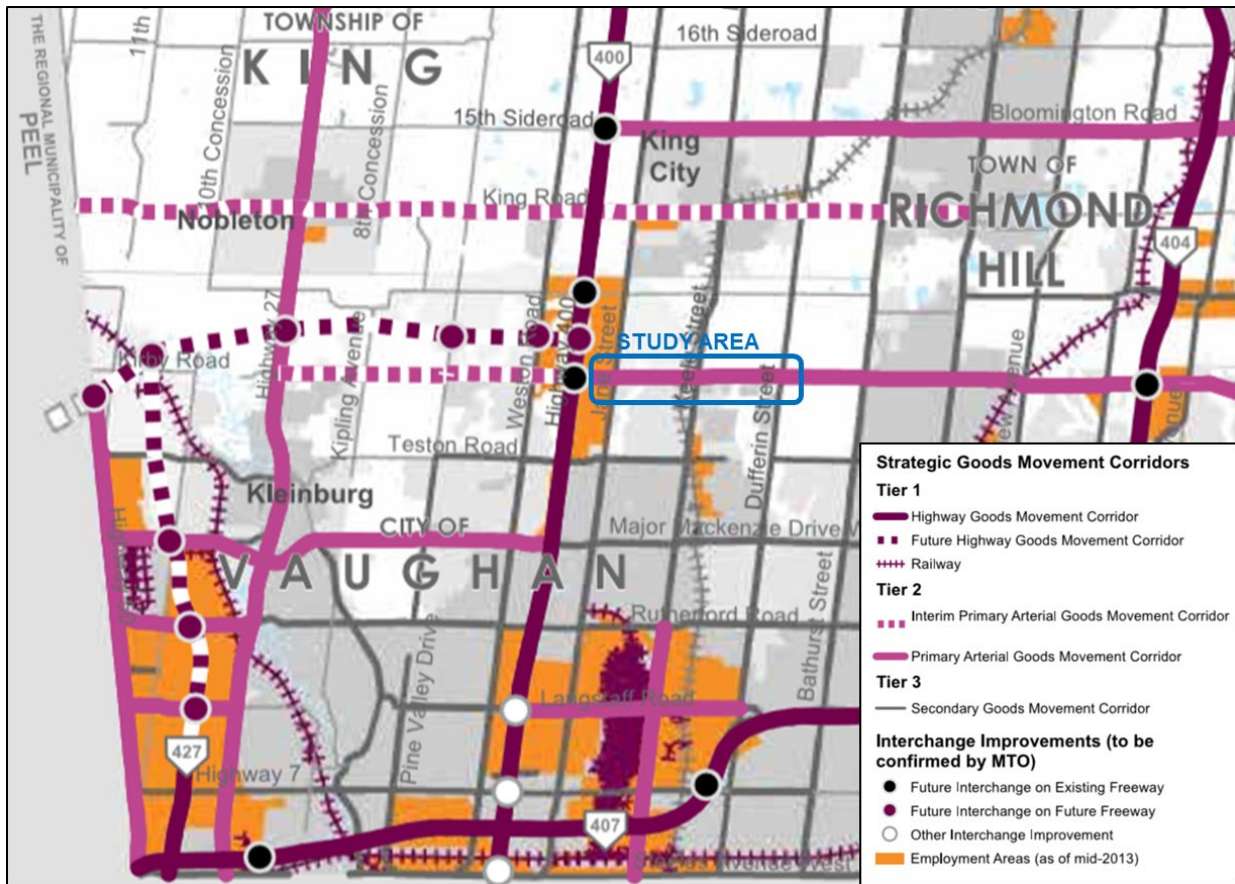


Source: York Region Transportation Master Plan 2016

Goods Movement Network Recommendations

York Region’s Strategic Goods Movement Network provides a framework for future goods movement within the Study Area. It consists of a hierarchy of corridors, identifying all freeways as Tier 1 corridors, strategic arterial roads as Tier 2 corridors, such as Kirby Road through the Study Area, and all other roadways as secondary goods movement corridors. The Region’s Proposed Strategic Goods Movement Network is illustrated for the Study Area in **Figure 2-5**.

Figure 2-5: YRTMP Strategic Goods Movement Network



Source: York Region Transportation Master Plan 2016

Kirby Road Widening Project Sheet

Further to the York Region TMP’s mode specific recommendations for Kirby Road, a project sheet in Appendix E to the York Region TMP outlines the problem and opportunity, alternatives considered, and recommendations as follows:

Problem and Opportunity:

- Transportation network improvements are needed to accommodate expansion of the Designated Urban Area.

- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking and cycling.

Alternatives Considered:

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Optimize existing facility with intersection improvements only - Minor improvement for corridor traffic flow. Does not address overall traffic congestion.
3. Urbanize corridor but maintain 2-lane cross-section - Does not address traffic congestion. Opportunity to improve walking and cycling facilities.
4. Widen corridor to 4 lanes and construct to urban arterial standard - Addresses traffic capacity. Opportunity to improve walking and cycling facilities.
5. Widen parallel/adjacent corridor - Potential to divert some traffic to other corridors. Does not address corridor congestion and provides no improvements to walking and cycling facilities.

Recommended Improvement and Justification:

- Widen corridor to 4 lanes and construct to urban arterial standard and realign jogged intersection. 2027 to 2031 timing to Weston Road to Dufferin Street and 2032 to 2041 timing to widen Pine Valley Drive to Weston Road.
- Serves growth in designated built up areas in North Vaughan. Corridor is an Interim Primary Arterial for Goods Movement. Widening provides for continuous 4-lane east-west corridor tying into 19th Avenue and Donald Cousens Parkway to the east with the planned connection of the missing link east of Dufferin Street. Elimination of jogged intersection at Jane Street to improved traffic flow. Opportunity to improve walking and cycling facilities.

2.3 Municipal Planning Context

2.3.1 City of Vaughan Official Plan

The City of Vaughan Official Plan 2010 (VOP 2010) was approved by Council on September 7, 2010. The Plan was endorsed by Regional Council on June 28, 2012. VOP 2010 is part of a Growth Management Strategy “that will shape the future of the City and guide its continued transformation into a vibrant, beautiful and sustainable City.”

The following policies, with VOP 2010 references in brackets, are of relevance to the study area:

- To establish a comprehensive transportation network that allows a full range of mobility options, including walking, cycling and transit (4.1.1.1).
- That the street network will be the basis for enhanced transportation opportunities, including transit, walking, cycling, and place making initiatives.

Existing rights-of way should be designed to optimize the efficient movement for a variety of modes, potentially resulting in reduced capacity for cars where overall capacity increases can be achieved (4.1.1.5).

- To support the development of a comprehensive network of on-street and off-street pedestrian and bicycle routes, through the implementation of the City's Pedestrian and Cycling Master Plan and York Region's Pedestrian and Cycling Master Plan; and to facilitate walking and cycling and to promote convenience and connectivity (4.1.1.6).
- To plan for a street network that prioritizes safe and efficient pedestrian travel while effectively accommodating cyclists, transit and other vehicles, and to create more pedestrian and transit-friendly street cross-sections (4.2.1.2).
- To provide a minimum of 2 north / south and 2 east / west collector streets in new development where feasible, including grade-separated crossings of 400-series highways and rail corridors. The purpose of these streets will be to provide for local travel between and within concession blocks without the necessity of traveling on arterial streets and to provide effective routing for transit vehicles. (4.2.1.23)

Schedule 9 and Schedule 10 in the VOP 2010 identify the City's Future Transportation Network and Major Transportation Network, respectively. It is noted that these schedules were developed prior to the completion of the 2016 York Region TMP, and as such, incorporate Regional plans based upon the previous version of the York Region TMP. Some of the key transportation improvements related to the study area include:

- Completion of the Kirby Road missing link between Dufferin Street and Bathurst Street.
- Jog eliminations at Jane Street and Kirby Road,
- Grade separations along the GO Rail Barrie Corridor at Kirby Road subject to coordinated studies by Metrolinx, York Region and the City
- Kirby GO Station

2.3.2 Green Directions Vaughan

Green Directions Vaughan is the City's community sustainability and environmental master plan. It identifies actions to ensure the health, well-being and vitality of the community. In relation to the Kirby Road EA, this plan provides direction to ensure that getting around Vaughan is easy and has a low environmental impact. The Kirby Road EA will look to promote sustainable and active transportation in accordance with Green Directions Vaughan.

2.3.3 City of Vaughan Transportation Master Plan 2013: A New Path

The Vaughan Transportation Master Plan (VTMP) identifies City-wide transportation needs to the year 2031, including local improvements, strong Regional investments in transit service, and arterial road improvements, sidewalks, on-street and off-street bicycle facilities, and a mix of land uses. Within the study area the timing of recommended improvements identified in the VTMP varies from the YRTMP recommendations given more up-to-date information on timing of development. As an example, the timing for the Kirby Road widening (from 2 to 4 lanes) and the missing link between Keele Street and Bathurst Street is 2021 as per the VTMP versus 2031 as per the YRTMP. It should be noted that the VTMP is currently being updated.

2.3.4 City of Vaughan Pedestrian and Bicycle Master Plan

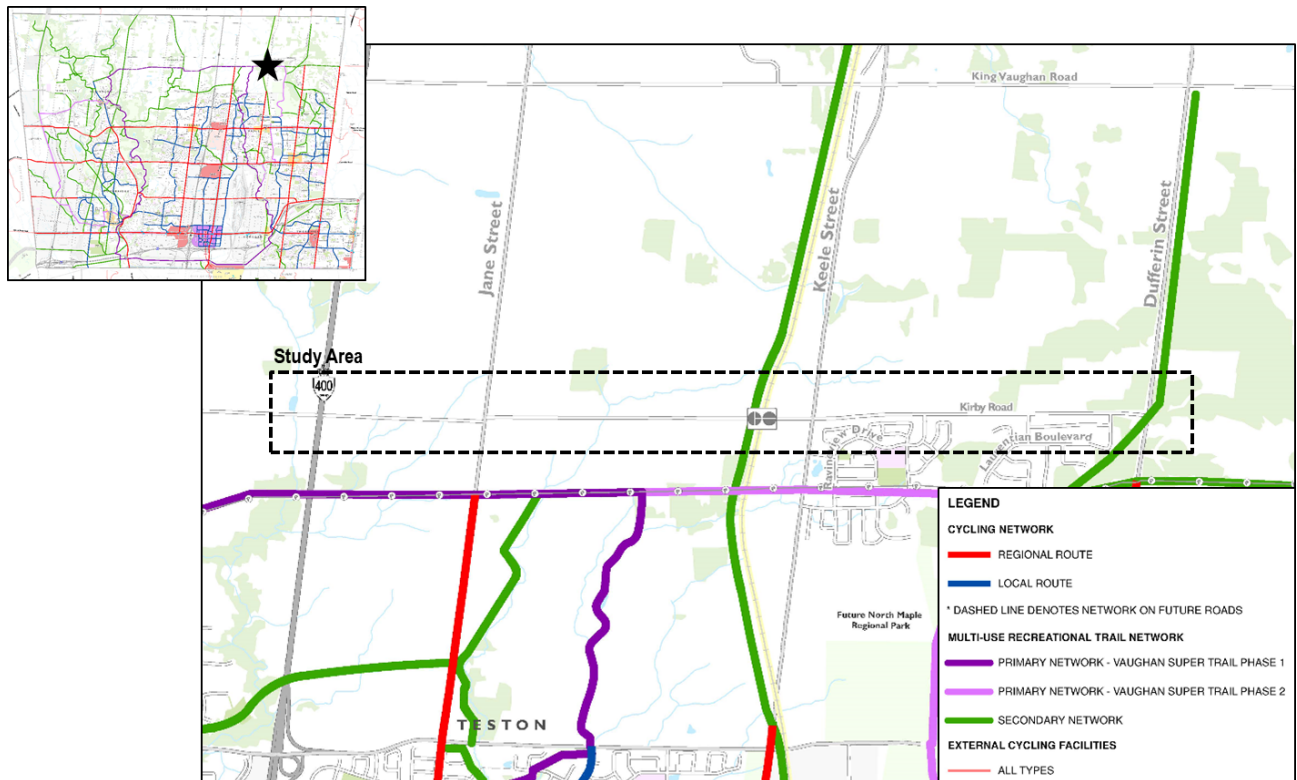
The City of Vaughan adopted the Pedestrian and Cycling Master Plan in January 2007 and is currently being updated. The Plan has a 20-year horizon. The central intent is to guide improvements to existing and proposed pedestrian and cycling infrastructure in order to create a friendlier environment for residents. The two central goals of the plan are:

- To create new environments and enhance existing ones for both pedestrians and cyclists in the City of Vaughan. These environments should be supported by developing a visible and connected pedestrian and cycling network in Vaughan that integrates, enhances and expands the existing on- and off-road pedestrian and cycling facilities.
- To facilitate an increase in walking and cycling for leisure and utilitarian purposes.

Cycling facilities in the study area were initially identified in the City’s Pedestrian and Bicycling Master Plan and more recently updated for the City-wide TMP.

The Pedestrian and Bicycle Master Plan update endorses the Vaughan Super Trail, a signature active transportation facility that links communities to one another, and increases accessibility for residents and visitors alike to important cultural, natural, heritage, and public space destinations. No cycling facilities are, however, identified on Kirby Road as shown in **Figure 2-6**. However, the City of Vaughan policy is to explore active transportation facilities on all arterial roads and this study will explore the need for cycling facilities on Kirby Road.

Figure 2-6: Pedestrian and Bicycle Master Plan Update

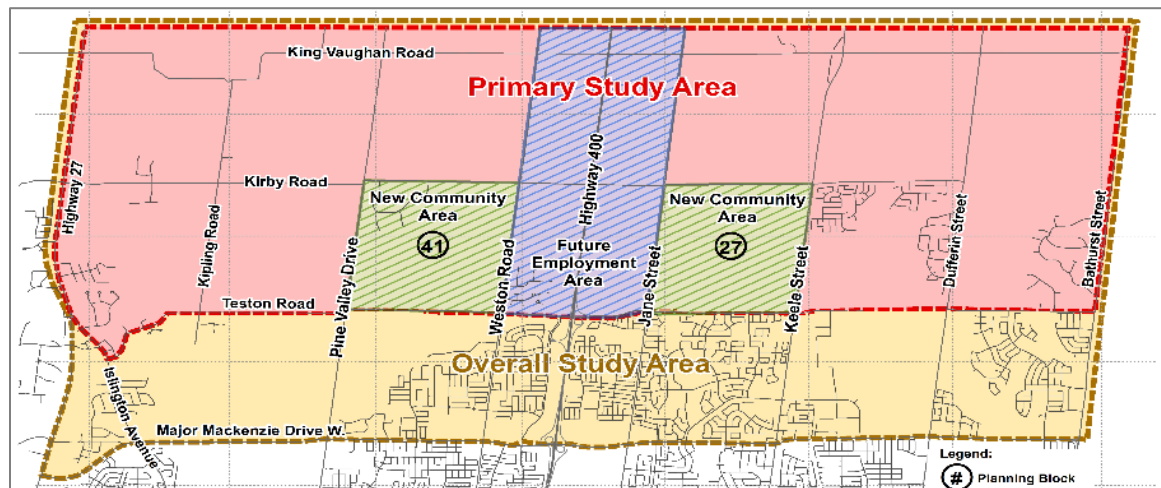


Source: Pedestrian and Bicycle Master Plan Update

2.3.5 North Vaughan and New Communities Transportation Master Plan

The North Vaughan and New Communities Transportation Master Plan (NVNCTMP) is a long-range plan that supports policies, programs and infrastructure required to meet existing and future mobility needs and provide context for transportation decisions within North Vaughan. The primary and overall study areas are shown in Figure 2-7 below.

Figure 2-7: NVNCTMP Primary and Overall Study Area



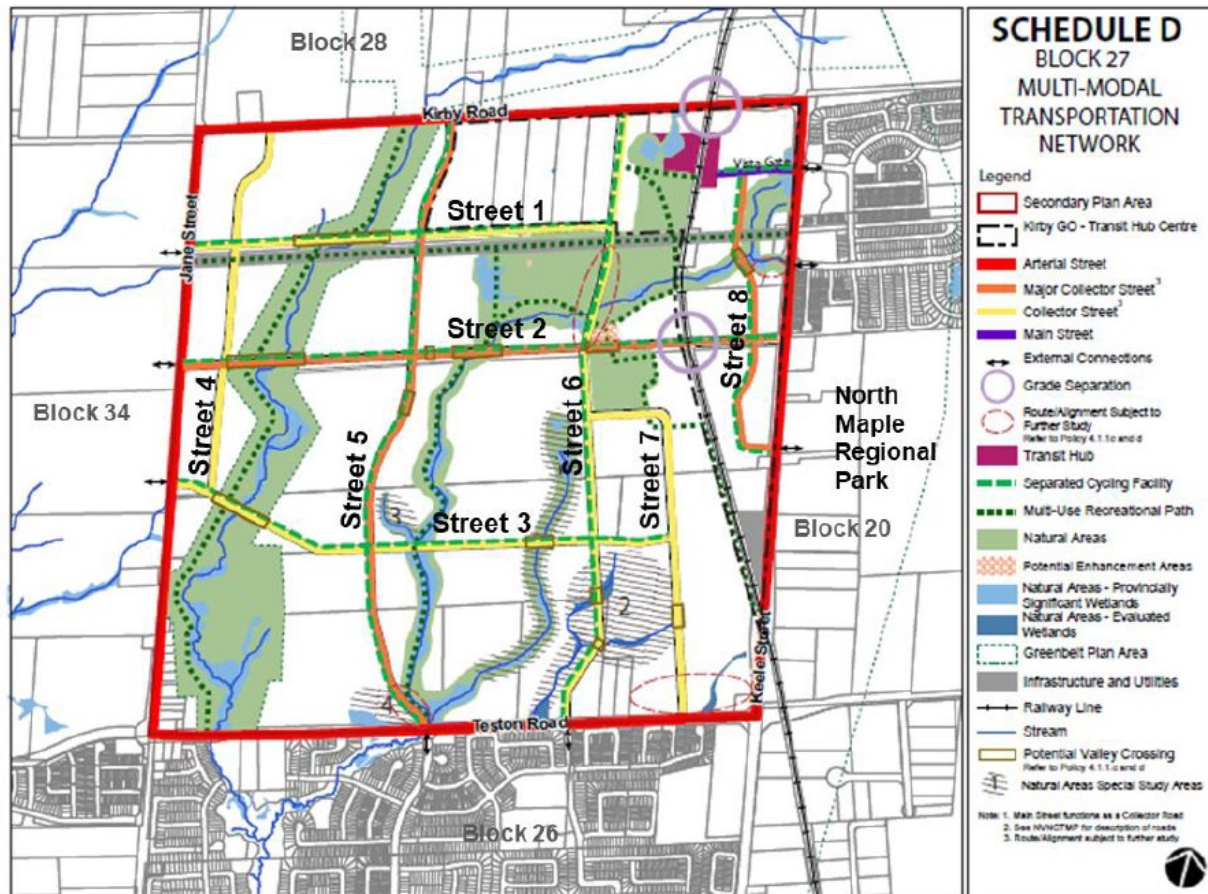
Source: North Vaughan and New Communities Transportation Master Plan, August 2019

The objective of the plan is to look at both internal and external factors that contribute to achieving sustainable transportation for residents and businesses while ensuring recommendations of the plan address the transportation network needs from immediate to future growth. The NVNCTMP has satisfied the phases 1 and 2 of the Class EA and recommended a Kirby Road Environmental Assessment Study from Jane Street to Dufferin Street, including grade separation at Barrie Corridor GO railway and active transportation improvements, to satisfy Phase 3 and 4 of the Class EA. The TMP also recommended the widening of the road from two to four lanes to a 36m ROW width to support Block 27 and the future Kirby GO station.

2.3.6 Block 27 Secondary Plan

The NVNCTMP was conducted in parallel and in close coordination with the secondary plan study for the New Community Area of Block 27, bound by Teston Road to the south, Keele Street to the east, Kirby Road to the north and Jane Street to the west (**Figure 2-8**). The Secondary plan was adopted by City Council in September 2018. This secondary plan study is still subject to review and approval by York Region.

Figure 2-8: Block 27 Study Area



Source: Block 27 Secondary Plan, OPA 33 adopted by Vaughan Council June 2018

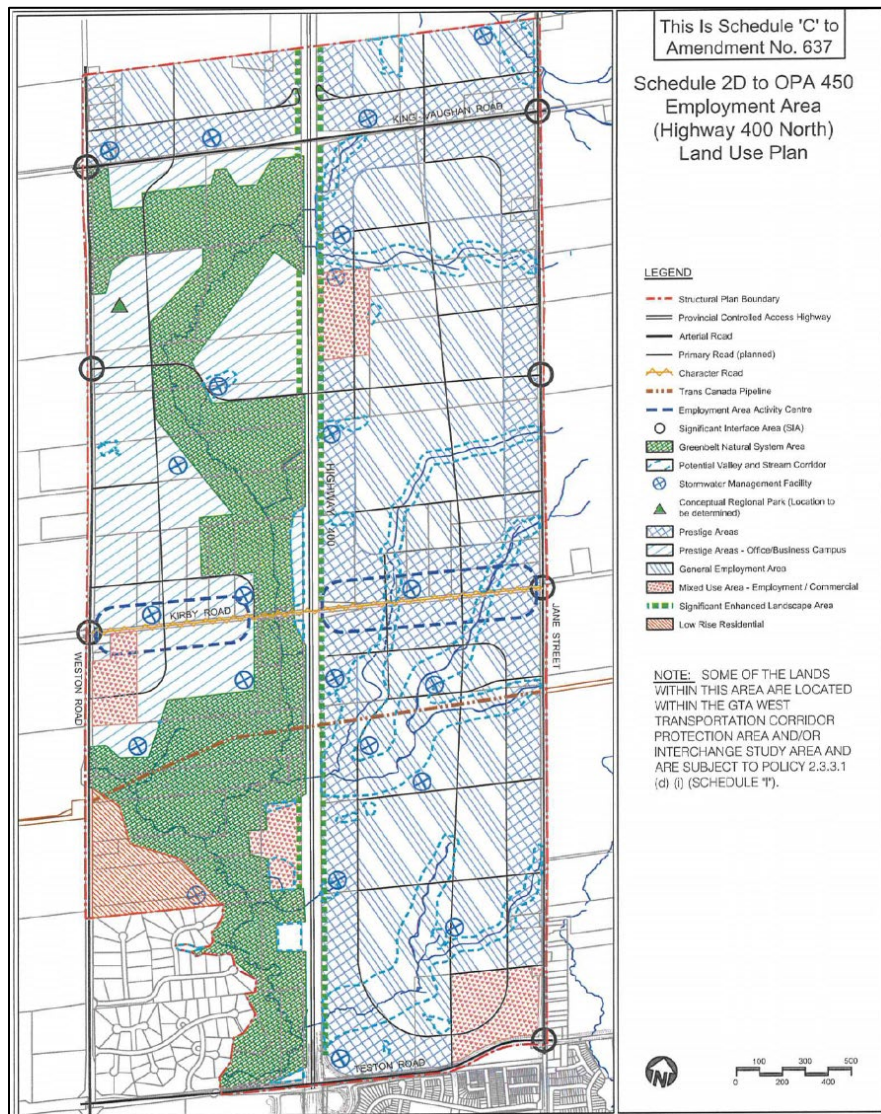
Block 27 is planned to have a mix of low and mid-rise buildings with a blend of residential, commercial and institutional uses. It will be anchored by a transit hub centre that has schools, community facilities, and a transit hub with the future Kirby GO station in the north-east quadrant, as proposed by Metrolinx' Regional Express Rail (RER) 2025 and as planned for through the Block 27 Secondary Plan by the City.

In addition to the projected growth from the Secondary Plan and the demand generated by the GO Station, this Kirby Road EA study will also need to consider the proposed street connections identified in **Figure 2-8**, including Street 4, Street 5, Street 6, and a potential access for the Kirby GO Station between the Barrie GO Line and Keele Street.

2.3.7 Highway 400 North Employment Lands Secondary Plan

The Highway 400 North Employment Lands Secondary Plan area (**Figure 2-9**) is bound by Teston Road on the south, Weston Road on the west, King-Vaughan Road on the north and Jane Street on the east. It is just west of the study limits of Kirby Road EA.

Figure 2-9: Block 34 and 35 Plan (Schedule 2D to OPA 450)



Source: Vaughan OPA 637, November 2011

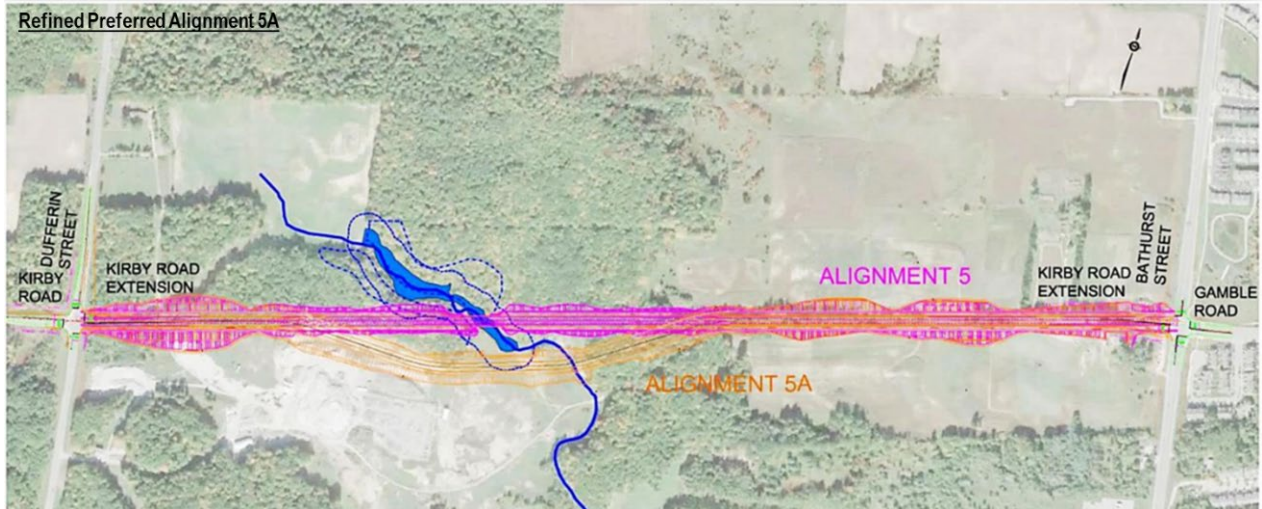
The Secondary Plan area has many environmental features and shows future employment areas, mid-block linkages, the Region’s widening of Weston Road and Jane Street for transit and active transportation facilities, interchanges at Kirby/Hwy 400 and King- Vaughan/Hwy 400 and potential GTA West Highway Corridor. The plan identifies lands primarily for prestige areas, prestige office and business campuses and general employment areas, with some lands designated as low rise residential and Employment / Commercial mixed use areas.

2.3.8 Kirby Road Extension Municipal Class Environmental Assessment

The Kirby Road Extension report (September 2019) analyzes various alignments for the extension connecting Dufferin Street and Bathurst Street. The new roadway (**Figure 2-10**) will include a four-lane roadway, a crossing over the significant

environmental features within the Oak Ridges Moraine Conservation Plan area and active transportation facilities. The construction is currently planned for 2020.

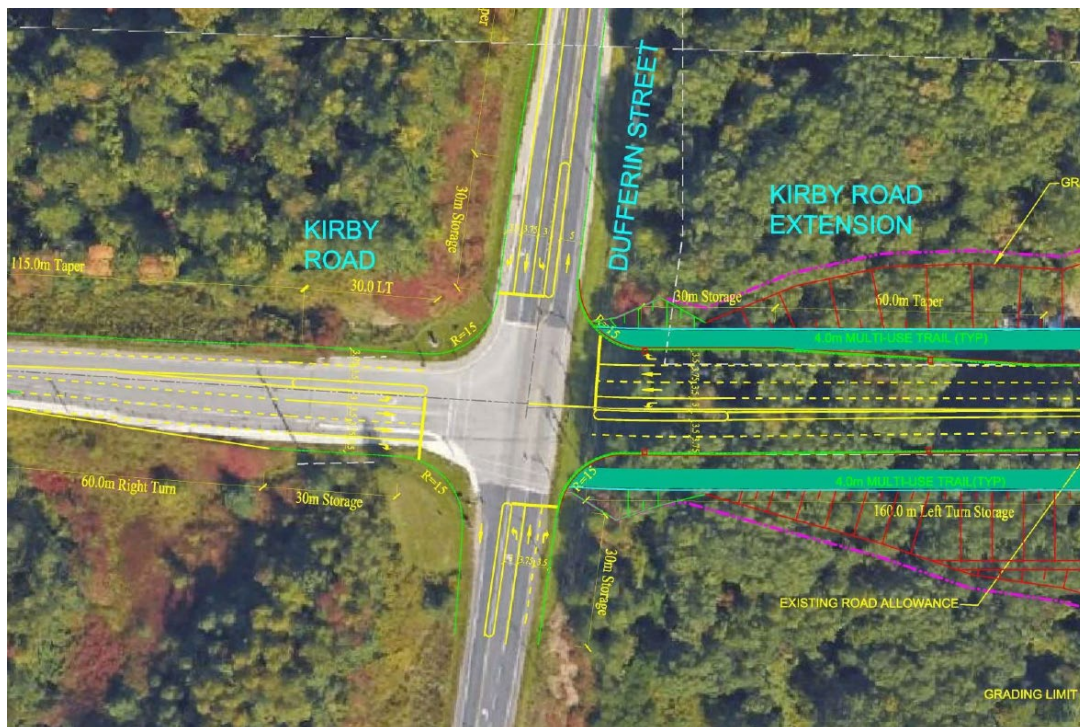
Figure 2-10: Kirby Road Extension EA - Refined Preferred Alternative



Source: Kirby Road Extension Municipal Class Environmental Assessment Environmental Study Report, Appendix D, Rizmi Holdings Limited and City of Vaughan, September 2019

Figure 2-11 illustrates the lane configuration for the preferred alternative for the intersection of Kirby Road at Dufferin Street which will inform the baseline future conditions to be assessed in this study.

Figure 2-11: Kirby Road at Dufferin Street Lane Configuration



Source: Kirby Road Extension Municipal Class Environmental Assessment Environmental Study Report, Appendix D, Rizmi Holdings Limited and City of Vaughan, September 2019

3 Existing Transportation Conditions

This section provides an overview of existing conditions within the Study Area. Data was obtained from various sources including City of Vaughan, York Region, MTO, Transportation Tomorrow Survey (TTS), Google Maps, and the City’s GIS and travel data.

3.1 Existing Transportation Infrastructure

3.1.1 Existing Road Network

Kirby Road (shown in **Figure 3-1**) is designated as an east-west minor arterial. It is under the jurisdiction of the City of Vaughan with plans to become a regional road, under the jurisdiction of Regional Municipality of York, to function as a strategic goods movement corridor. It has a posted speed limit of 60 km/h within the study area.

Figure 3-1: Existing Transportation Conditions along Kirby Road



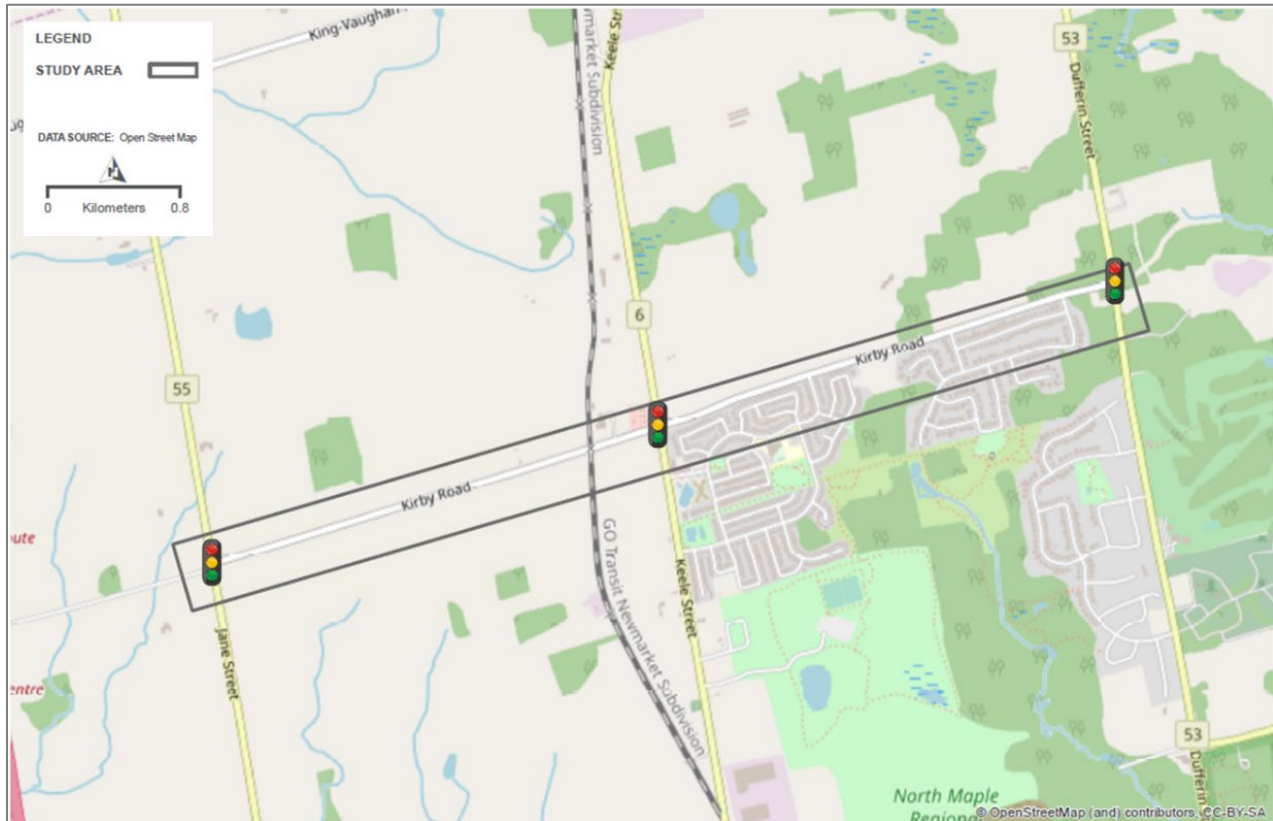
Image Source: Google Maps

According to City of Vaughan’s OP, arterials play an important role in moving large volumes of traffic and are the primary location for rapid transit service. Arterials form the basis for the location of nearly all the Intensification Areas. In addition to enhanced pedestrian, bicycle and transit capacity, arterials are the focus for streetscaping and other place-making initiatives to improve the quality of place.

Kirby road corridor within study limits is a two (2) lane minor arterial road with posted speed limit at 60 km/h within the study area from Jane Street to Dufferin Street. It is noted that Kirby road is planned for an extension from Dufferin Street to Bathurst Street as a four lane roadway in 2020.

The corridor within the study area has three (3) signalized intersections at Jane Street, Keele Street, and Dufferin Street. There are five (5) unsignalized intersections at Mid Ontario Truck Center Access, Petro Canada Access, Ravineview Drive, Foot Hills Road, and Laurentian Boulevard. The study area and the signalized intersections are shown in **Figure 3-2**.

Figure 3-2: Signalized Intersections within the Study Area

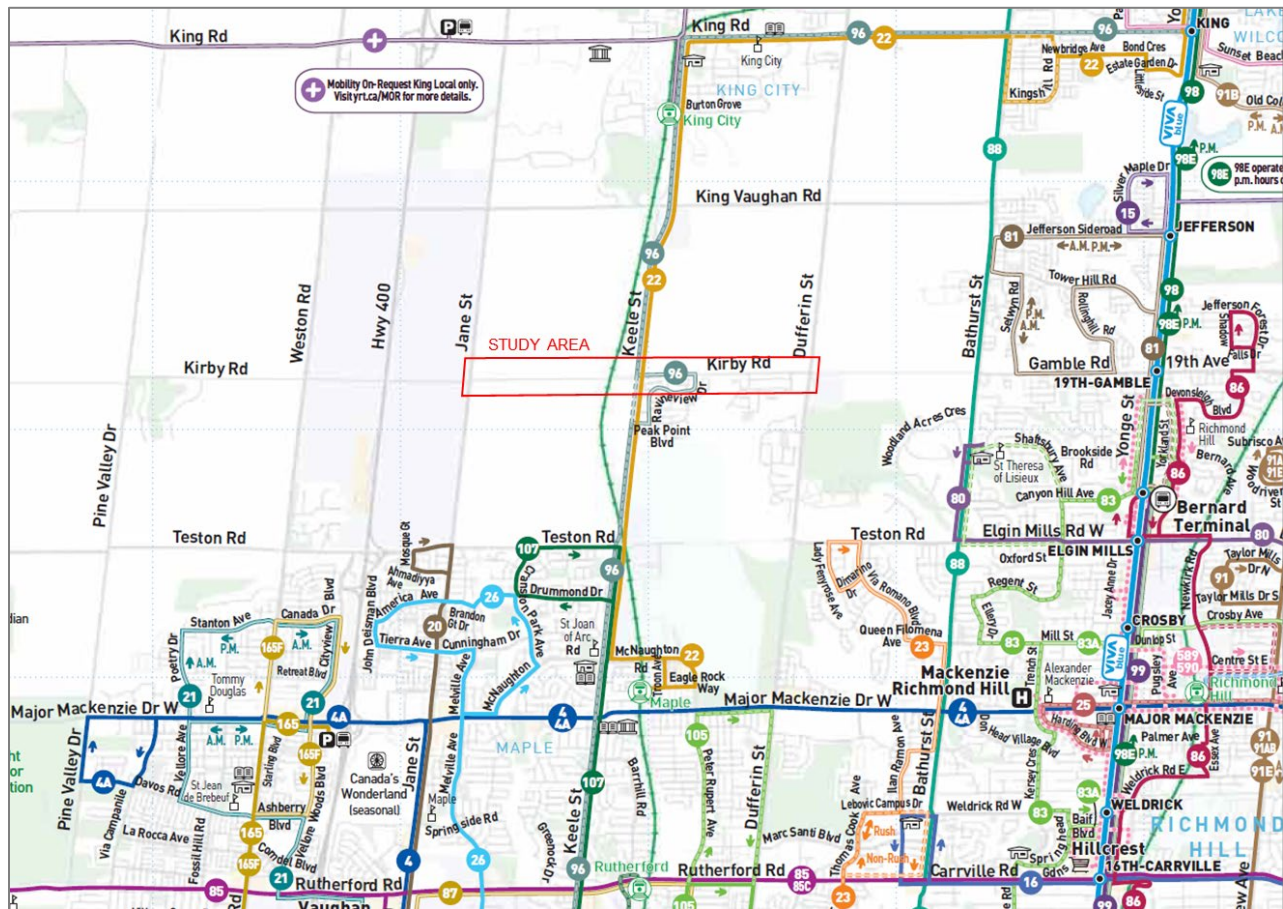


The majority of side streets crossing Kirby Road within the study area are designated as local roads under the jurisdiction of City of Vaughan except for Jane Street (major arterial as Regional Road), Keele Street (major arterial as Regional Road), and Dufferin Street (major arterial as Regional Road).

3.1.2 Existing Transit Network

City of Vaughan is serviced by York Region Transit (YRT). There are two local routes that travel within the study area, namely Route 22 and 96. Route 22 connects Maple GO Station to Seneca College (King Campus) and runs along Keele Street, King Road, and Yonge Street. In addition, the local Route 96 connects Pioneer Village to Newmarket GO Bus Terminal and runs along Steeles Avenue, Keele Street, King Road, and Yonge Street. The routes within the study area are shown in **Figure 3-3**.

Figure 3-3: Existing Transit Network



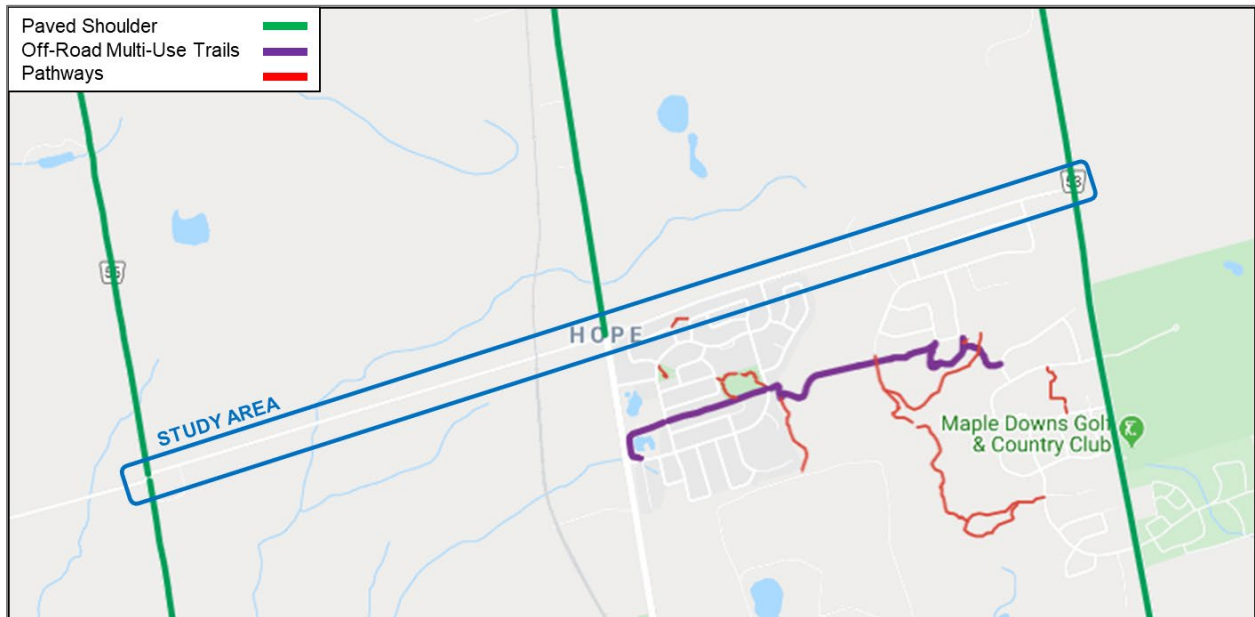
Source: York Region Transit System Map, January 5, 2020

During the weekday, Route 22 has a 30-minute headway during AM Peak Hour and 35-minute headway during PM peak hour, while Route 96 has a 30-minute headway during AM Peak Hour and 25-minute headway during PM peak hour.

3.1.3 Existing Pedestrian/ Cyclist Network

There are currently no pedestrian facilities on Kirby Road within the study area. As shown in **Figure 3-4**, Jane Street, Keele Street, and Dufferin Street currently have paved shoulder that can be used by cyclist. There are also some off-road multi-use trails and pathways within the neighbourhood south of Kirby Road between Keele Street and Dufferin Street as well.

Figure 3-4: Existing Cycling Network



Source: Vaughan Cycling Map, June 2015

3.2 Travel Patterns and Mode Share

The following section summarizes travel and mode share data from the 2016 Transportation Tomorrow Survey (TTS) for trips made by residents within the secondary study area.

During a typical day, approximately 3,303 trips were completed during the AM Peak Period by people residing within the area. The trips were destined for various locations across the GTA as shown in **Figure 3-5**. Of the total trips, 69% were made by car, 8% by transit, and 2% by active modes such as walking or cycling, as illustrated in **Figure 3-6**.

Out of the 190 internal trips within the secondary study area, 104 trips were less than 1 km long, 68 were approximately 1-2 km long, and 18 were approximately 2-3 km long. Provision of improved active transportation connectivity may help provide additional travel options for these short trips.

Figure 3-5 Distribution of Study Area AM Work Trips (TTS 2016)

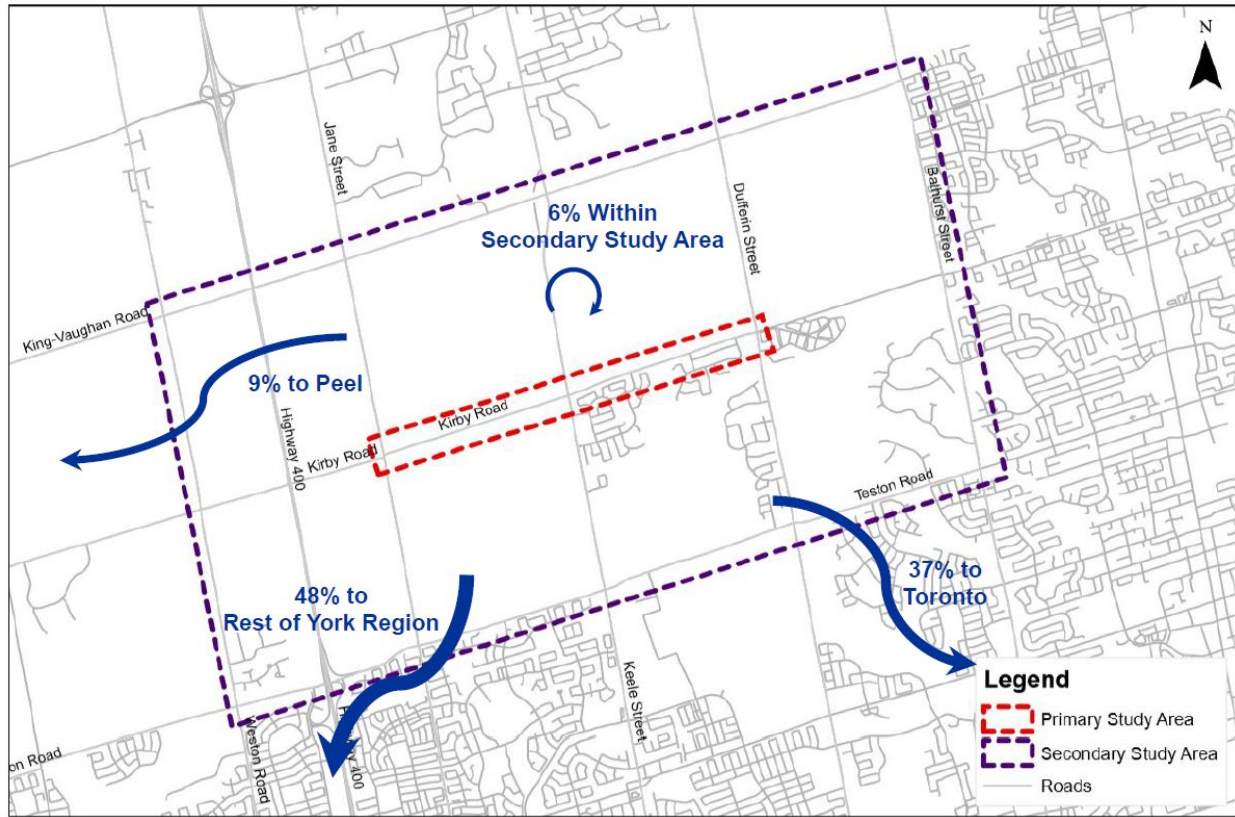
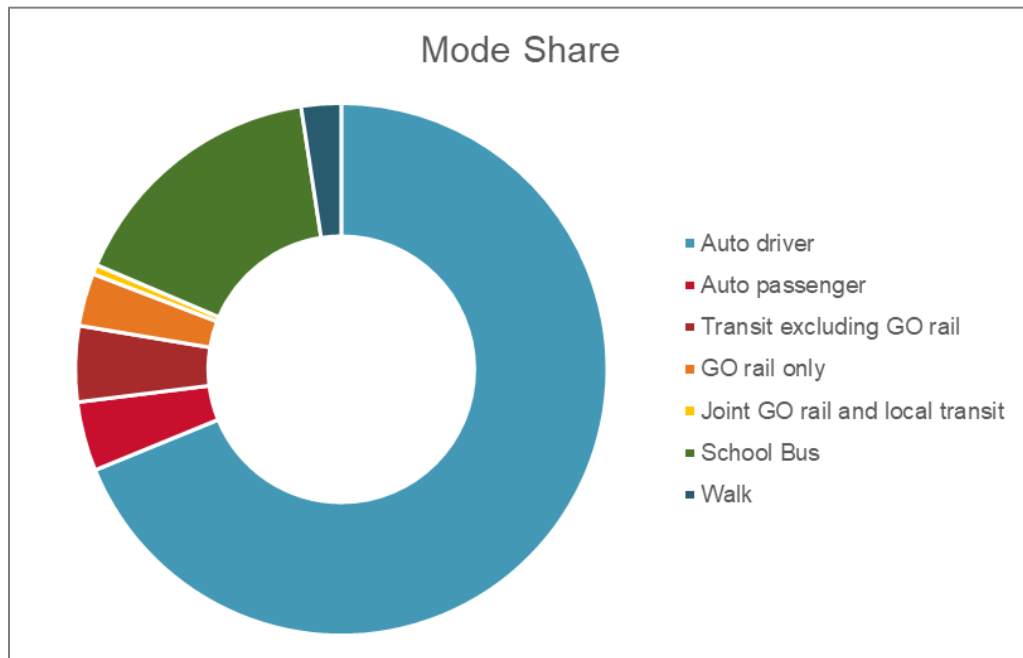


Figure 3-6: Mode Share – Secondary Study Area



3.3 Transit

York Region’s Transportation Mobility Plan Guidelines for Development Applications (2016) was used for the multimodal (Transit, Pedestrian, Bicycle) level of Service analysis.

The transit level of service is determined by the access to transit stops, the transit headways and the transit vehicle performance approaching the intersection. The transit level of service result summary is shown in **Table 3-1**. As seen in the table, the majority of the intersections within the study area currently do not have a transit stop location with the exception of a Northbound/Southbound transit route at Kirby Road and Keele Street.

Table 3-1: Transit Level of Service Summary

Transit Stop Location	Direction	Access to Transit Stops	Transit Headways	Intersection Approach (transit or curb lanes)
		LOS	LOS	LOS
Kirby Road / Jane Street	Eastbound	-	-	-
	Westbound	-	-	-
	Northbound	-	-	-
	Southbound	-	-	-
Kirby Road / Keele Street	Eastbound	-	-	-
	Westbound	-	-	-
	Northbound	A	F	B
	Southbound	A	F	C
Kirby Road / Dufferin Street	Eastbound	-	-	-
	Northbound	-	-	-
	Southbound	-	-	-

3.4 Pedestrian/ Cyclists

The pedestrian level of service was analyzed based on the sidewalk width and buffer width. The pedestrian model level of service performance is calculated at the intersection and road segments as a pedestrian’s experience is determined by both the conditions between intersections and at intersection crossings themselves. The pedestrian level of service result is shown in **Table 3-2**. Based on the results, the majority of road segments are operating at LOS F. Within the study area, along Kirby Road some road segments include pedestrian sidewalks with buffers. A buffer is a green or landscaped space separating the sidewalk and the street curb. Based on the results, the intersections within the study area have are operating at LOS C due to the inclusion of pedestrian signal heads and clearly delineated cross-walks.

Table 3-2: Pedestrian Level of Service Summary

Intersection	Direction	Segment	Segment	Intersection
		Description	LOS	
Kirby Road / Jane Street	Eastbound	Kirby Road	F	F
	Westbound	Kirby Road	F	F
	Northbound	Jane Street	F	F
	Southbound	Jane Street	F	F
Kirby Road / Keele Street	Eastbound	Kirby Road	F	C
	Westbound	Kirby Road	B	C
	Northbound	Keele Street	F	C
	Southbound	Keele Street	F	C
Kirby Road / Dufferin Street	Eastbound	Kirby Road	B	C
	Northbound	Dufferin Street	E	C
	Southbound	Dufferin Street	E	C

Bicycle level of service was analyzed based on the provision of cycling facilities within the study area. The bicycle level of service result summary is shown in **Table 3-3**. Based on these results, within the study area all the segments and intersections are operating at LOS F. The study corridor between Jane Street and Dufferin Street currently not accommodate for cyclists along the road segments or at intersections.

Table 3-3: Bicycle Level of Service Summary

Intersection	Direction	Segment	Segment	Intersection
		Description	LOS	
Kirby Road / Jane Street	Eastbound	Kirby Road	F	F
	Westbound	Kirby Road	F	F
	Northbound	Jane Street	F	F
	Southbound	Jane Street	F	F
Kirby Road / Keele Street	Eastbound	Kirby Road	F	F
	Westbound	Kirby Road	F	F
	Northbound	Keele Street	F	F
	Southbound	Keele Street	F	F
Kirby Road / Dufferin Street	Eastbound	Kirby Road	F	F
	Westbound	Dufferin Street	F	F
	Northbound	Dufferin Street	F	F
	Southbound	Kirby Road	F	F

3.5 Auto Traffic

This section describes the existing auto traffic operations at signalized and unsignalized intersections along the study corridor.

3.5.1 Data Collection

The Turning Movement Counts (TMC) and signal timing plans for the study area were provided by the City of Vaughan. All the TMCs were recorded on the weekday of October 2019. **Table 3-4** provides a list of traffic volumes inventory utilized for the existing condition analyses. Detailed TMCs and signal timing plans are provided in **Appendix A**.

Table 3-4: Turning Movement Counts Inventory

No.	Intersection	Intersection Control	Date	Source
1	Kirby Road at Jane Street	Signalized	October 2, 2019	OTI
2	Kirby Road at Mid Ontario Truck Access	Unsignalized	October 2, 2019	OTI
3	Kirby Road at Petro Canada Access	Unsignalized	October 2, 2019	OTI
4	Kirby Road at Keele Street	Signalized	October 2, 2019	OTI
5	Kirby Road at Ravineview Drive	Unsignalized	October 2, 2019	OTI
6	Kirby Road at Foot Hills Road	Unsignalized	October 2, 2019	OTI
7	Kirby Road at Laurentian Boulevard	Unsignalized	October 2, 2019	OTI
8	Kirby Road at Dufferin Street	Signalized	October 2, 2019	OTI

3.5.2 Lane Configuration and Intersection Volumes

It is noted that existing turning movement counts were not balanced between intersections with a driveway in between. **Figure 3-7** and **Figure 3-8** illustrate lane configuration and existing traffic volumes at key study area intersections.

Figure 3-7: Lane Configuration

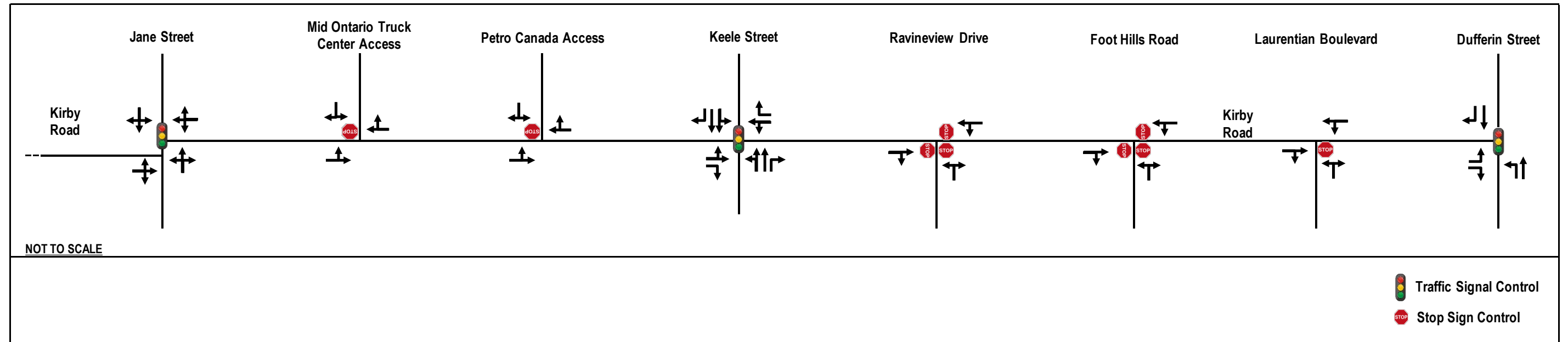
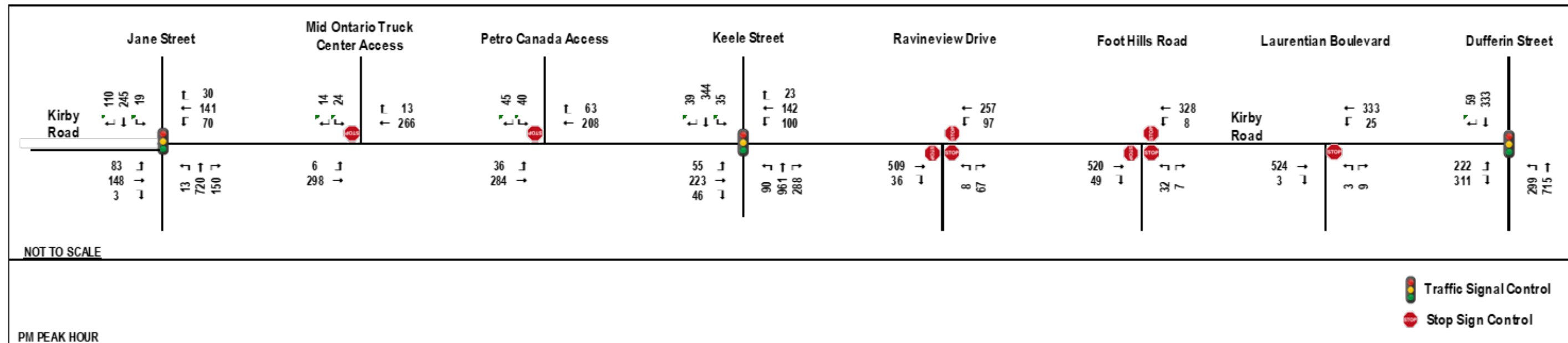
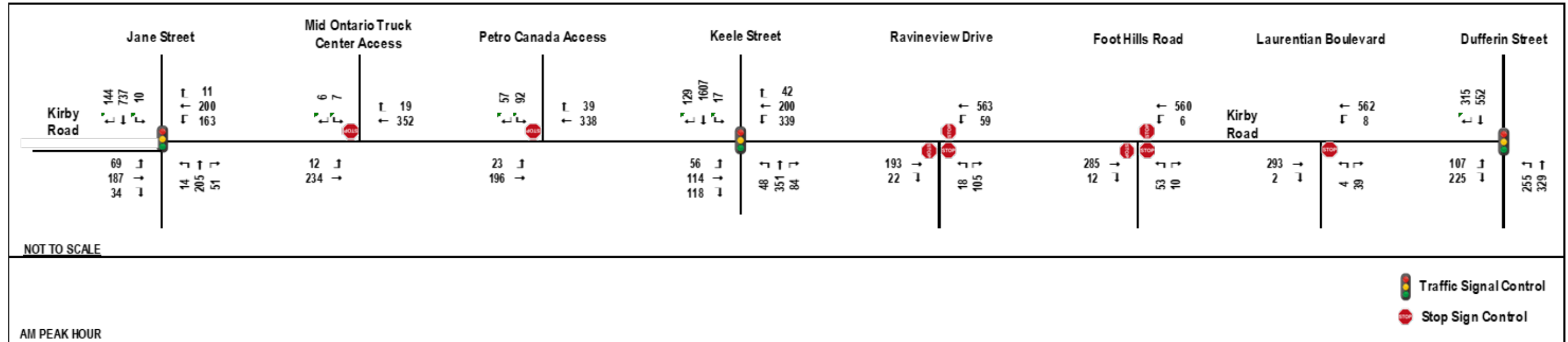


Figure 3-8: Existing Turning Movement Volumes (AM and PM Peak Hour)



3.5.3 Existing Peak Hour Traffic Analysis

Traffic analysis was conducted to determine existing conditions at key intersections within the study area using performance metrics such as Level of Service (LOS) and volume-to-capacity ratio (v/c).

Traffic operations for all the intersections within the study area were analyzed using the Synchro Software. The Synchro software is developed based on the Highway Capacity Manual (HCM 2000) methodologies and provides a detailed assessment of traffic operations including levels of service (LOS), delays and volume to capacity ratios for overall, approaches, as well as individual movements of unsignalized and signalized intersections. LOS describes the “driver experience” on a transportation facility, with each LOS associated with the average delay each driver would experience at an intersection (**Table 3-5**).

Table 3-5: Level of Service Descriptions

LOS	Signalized Intersections	Unsignalized Intersections		
	Description	Delay	Description	Delay
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 sec	Little or no traffic delay occurs. Approaches appear open, turning movements are easily made, and drivers have freedom of operation.	≤10 sec
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.	≤20 sec	Short traffic delays occur. Many drivers begin to feel somewhat restricted in terms of freedom of operation.	≤15 sec
C	Intersection operation is stable but often has fully used greens. Drivers feel more restricted and occasionally may wait more than one red light. Queues may develop behind turning vehicles.	≤35 sec	Average traffic delays occur. Operations are generally stable, but drivers emerging from the minor street may experience difficulty in completing their movement. This may occasionally impact on the stability of flow on the major street.	≤25 sec
D	Drivers experience increasing restriction 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.	≤55 sec	Long traffic delays occur. Drivers emerging from minor streets experience significant restriction and frustration. Drivers on the major street will experience congestion and delay.	≤35 sec
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.	≤80 sec	Very long traffic delays occur. Operations approach the capacity of the intersection.	≤50 sec
F	Vehicle demand exceeds the available capacity and delays extending through the peak hour are experienced.	>80 sec	Vehicle demand exceeds the available capacity. Very long traffic delays occur frequently.	>50 sec

The V/C ratio represents how full a road or intersection movement is, based on actual volumes versus the maximum number of vehicles that can travel. A V/C between 0.00 and 0.49 means that less than half the capacity is being used by vehicles; this is generally associated with good operating conditions. As the V/C approaches 1.00, traffic conditions worsen and at 1.00 the theoretical maximum number of vehicles is reached and operations are generally very poor. The V/C can exceed 1.00, indicating very bad operations and extended traffic delays.

The “critical movements” identified in the capacity analyses summary tables are those having an LOS of E or F and/or a V/C ratio of 0.85 or greater for signalized intersections. Since the analysis is based on actual volumes, V/C > 1.00 indicates that the counted traffic volumes exceeded the capacity calculated by the analysis procedure/software. Individual movements at intersections with calculated V/C > 1.00 are operating essentially above capacity and can be expected to experience severe recurring queuing and congestion during both the AM and PM peak periods.

The existing traffic volumes were analysed using existing lane configuration and signal timings provided by the City. The traffic operational analysis results of the study area signalized and unsignalized intersections are summarized in **Table 3-6**. Detailed Synchro outputs are provided in **Appendix B**.

Table 3-6: Synchro Results – Existing Conditions

Intersection	Approach/Movement		AM Peak Hour			PM Peak Hour		
			Delay (s)	LOS	v/c	Delay (s)	LOS	v/c
Kirby Road at Jane Street (Signalized)	EB	EBLTR	156.0	F	1.07	124.6	F	0.95
	WB	WBLTR	156.6	F	1.09	120.3	F	0.94
	NB	NBLTR	25.4	C	0.35	64.6	E	0.98
	SB	SBLTR	68.0	E	0.98	26.1	C	0.45
	Overall Intersection		93.9	F	1.03	72.1	E	0.96
Kirby Road at Mid Ontario Truck Access (Unsignalized)	EB	EBLT	0.6	A	0.01	0.3	A	0.01
	WB	WBTR	0.0	-	0.25	0.0	-	0.21
	SB	SBLR	13.4	B	0.03	14.3	B	0.11
	Overall Intersection		0.5	A	0.32	1.0	A	0.31
Kirby Road at Petro Canada Access (Unsignalized)	EB	EBLT	1.1	A	0.0	1.3	A	0.04
	WB	WBTR	0.0	-	0.24	0.0	-	0.19
	SB	SBLR	15.9	C	0.33	14.1	B	0.21
	Overall Intersection		3.5	A	0.45	2.4	A	0.47
Kirby Road at Keele Street (Signalized)	EB	EBLT	35.4	D	0.45	79.3	E	0.94
		EBR	33.9	C	0.23	36.0	D	0.05
	WB	WBL	119.3	F	1.09	76.4	E	0.82
		WBTR	37.7	D	0.52	39.3	D	0.42
	NB	NBLT/T	13.0	B	0.36	14.1	B	0.63
		NBR	10.0	A	0.07	9.0	A	0.21

Intersection	Approach/Movement	AM Peak Hour			PM Peak Hour			
		Delay (s)	LOS	v/c	Delay (s)	LOS	v/c	
	SB	SBLT/T	25.8	C	0.87	9.3	A	0.25
		SBR	10.1	B	0.09	7.6	A	0.03
	Overall Intersection		35.1	D	0.97	25.2	C	0.71
Kirby Road at Ravineview Drive (Unsignalized)	EB	EBTR	11.2	B	0.34	27.2	D	0.84
	WB	WBL	32.7	D	0.88	14.9	B	0.58
	SB	SBL	10.3	B	0.21	9.8	A	0.14
	Overall Intersection		25.0	C	0.62	21.4	C	0.63
Kirby Road at Foot Hills Road (Unsignalized)	EB	EBTR	12.0	B	0.44	22.4	C	0.79
	WB	WBLT	22.2	C	0.78	12.6	B	0.50
	NB	NBLR	10.1	B	0.12	9.9	A	0.08
	Overall Intersection		18.1	C	0.45	18.4	C	0.40
Kirby Road at Laurentian Boulevard (Unsignalized)	EB	EBTR	0.0	-	0.18	0.0	-	0.35
	WB	WBLT	0.2	A	0.01	0.9	A	0.03
	NB	NBLR	11.2	B	0.07	14.4	B	0.03
	Overall Intersection		0.7	A	0.46	0.6	A	0.48
Kirby Road at Dufferin Street (Signalized)	EB	EBL	67.1	E	0.63	66.6	E	0.77
		EBR	57.6	E	0.17	49.7	D	0.21
	NB	NBL	5.6	A	0.47	7.6	A	0.44
		NBT	4.3	A	0.25	12.0	B	0.60
	SB	SBT	11.2	B	0.48	14.6	B	0.33
		SBR	8.5	A	0.24	11.4	B	0.04
	Overall Intersection		17.8	B	0.50	24.0	C	0.65

Based on the intersection capacity analyses results presented in **Table 3-6**, the majority of signalized and unsignalized intersections within the study area are operating at overall LOS C or better with reserved capacity during both the AM and PM peak hours, except for the intersection of Kirby Road at Jane Street and Kirby Road at Keele Street. The following individual movements are operating at LOS E or worse:

AM Peak Hour

- Kirby Road at Jane Street – eastbound left/ through/ right, westbound left/ through/ right, southbound left/ through/ right
- Kirby Road at Keele Street – westbound left
- Kirby Road at Dufferin Street – eastbound left, eastbound right

PM Peak Hour

- Kirby Road at Jane Street – eastbound left/ through/ right, westbound left/ through/ right, northbound left/ through/ right
- Kirby Road at Keele Street – eastbound left/ through, westbound left
- Kirby Road at Dufferin Street – eastbound left

As shown in **Table 3-6**, signalized intersection of Kirby Road at Jane Street is operating at overall LOS F with a few individual movements operating at v/c ratio greater than 1.0 during the AM peak hour. The operational performance observed at this intersection is the result of the split signal timing plan as a result of the jog. At Kirby Road and Keele Street, there are currently 339 vehicles turning left during the AM peak hour for the WBL movement which results in high v/c ratios, observing the video taken at the site showed that the WBT vehicles bypass left-turning vehicles by using the right-turn lanes. The Synchro analysis was therefore modified to reflect this. The overall intersection LOS are illustrated in **Figure 3-9**.

Keele Street Intersection Analysis

In order to better understand the current operation on Keele Street, two intersections (Vista Gate and Peak Point Boulevard) south of Kirby Road at Keele Street were analyzed as per the City's request. The existing turning movement counts at these two intersections are shown in **Figure 3-10** and **Figure 3-11**.

Based on the intersection capacity analyses using Synchro, Peak Point Boulevard is operating with an overall LOS of C ($v/c = 0.96$) and LOS of A ($v/c = 0.54$) during AM and PM peak hours respectively. The westbound approach at Vista Gate operates with LOS C (15.7 sec delay) and LOS E (41.4 sec delay) during AM and PM peak hours respectively.

Figure 3-9: Existing Intersection Level of Service (AM and PM Peak Hour)

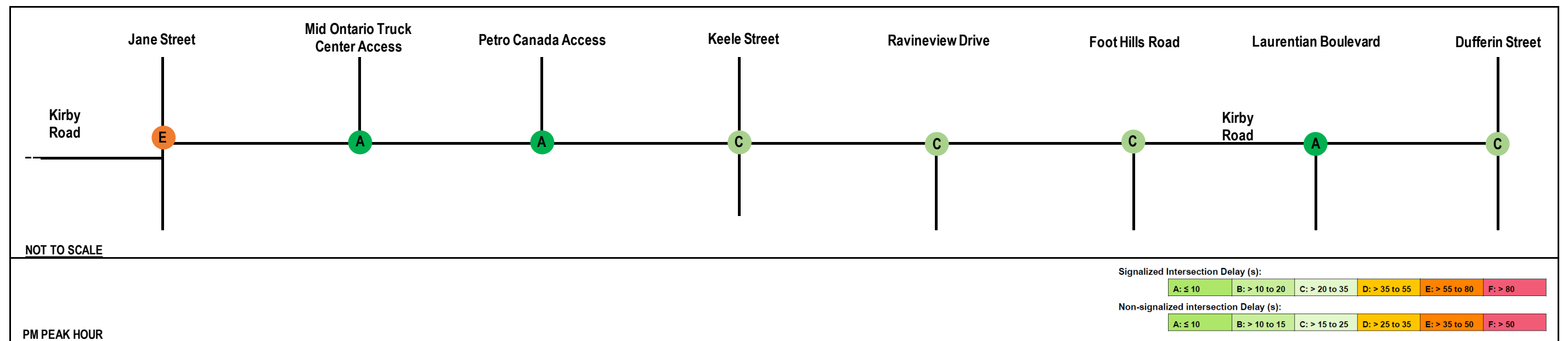
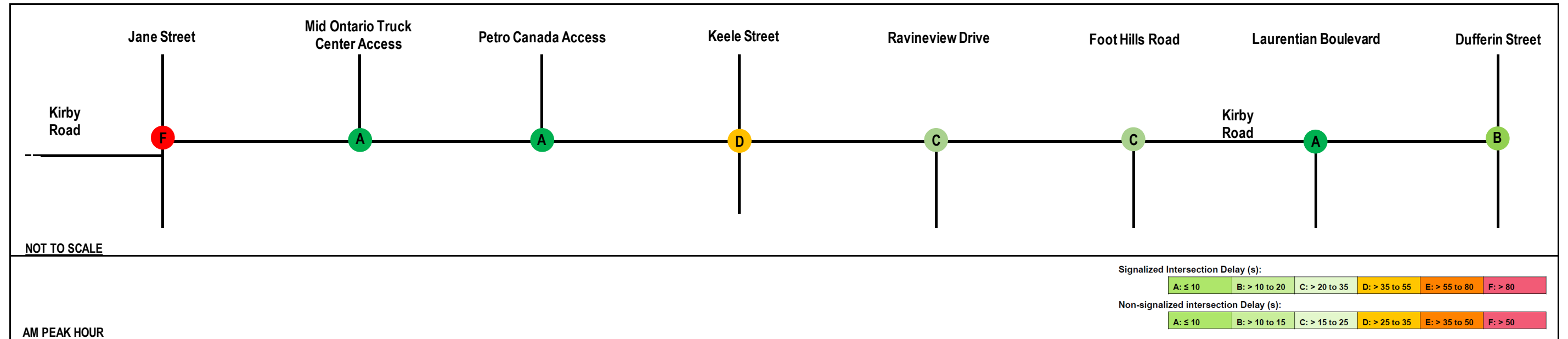


Figure 3-10: AM Peak Hour - Keele Street

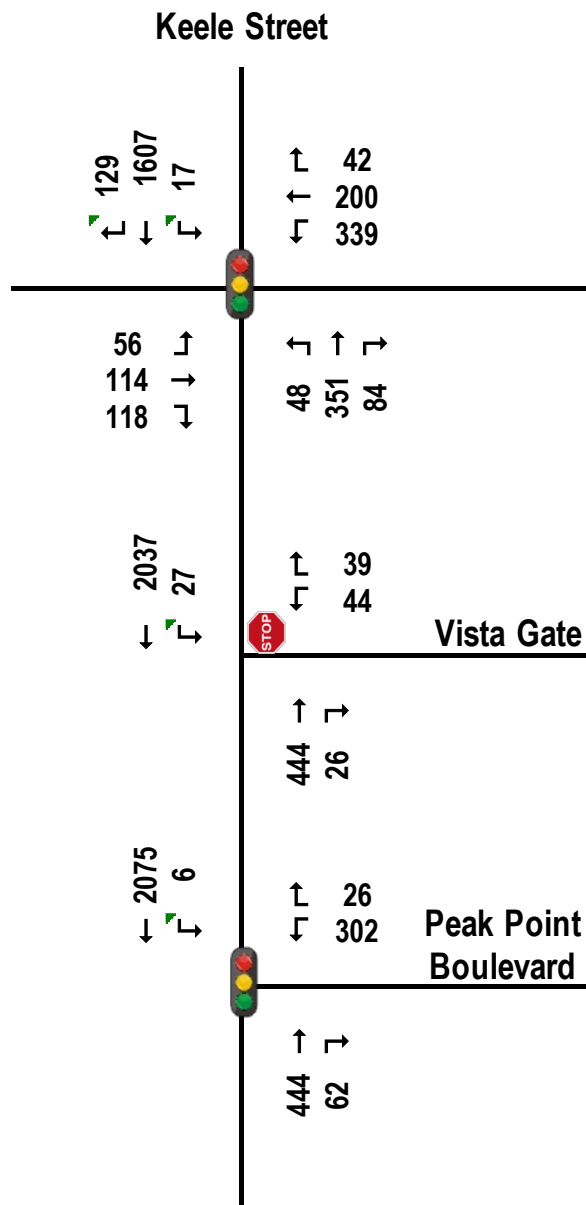
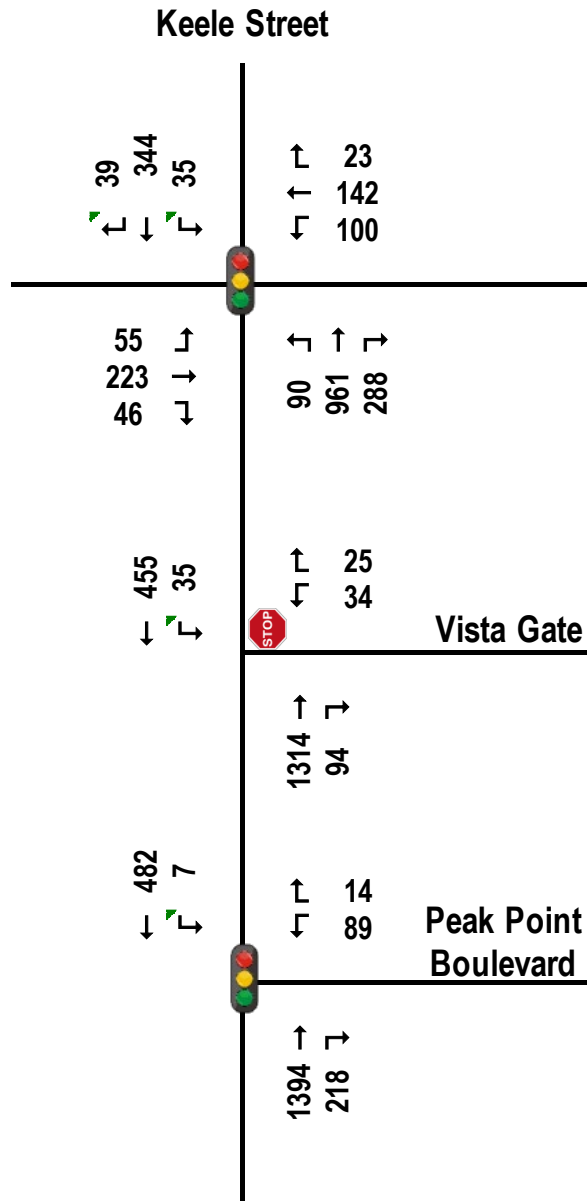


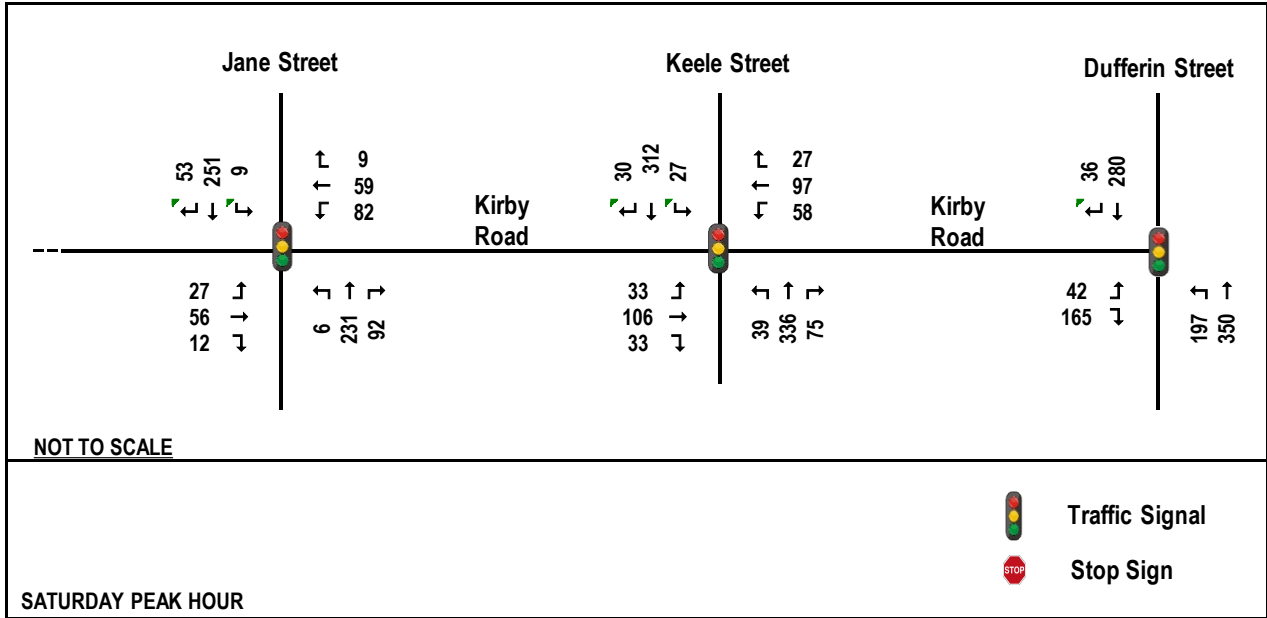
Figure 3-11: PM Peak Hour – Keele Street



Weekend Peak Analysis

Weekend volumes (shown in **Figure 3-12**) during the Saturday afternoon peak hour were also considered, however, due to relatively low volumes were not further analyzed.

Figure 3-12: Existing Weekend Turning Movement Counts



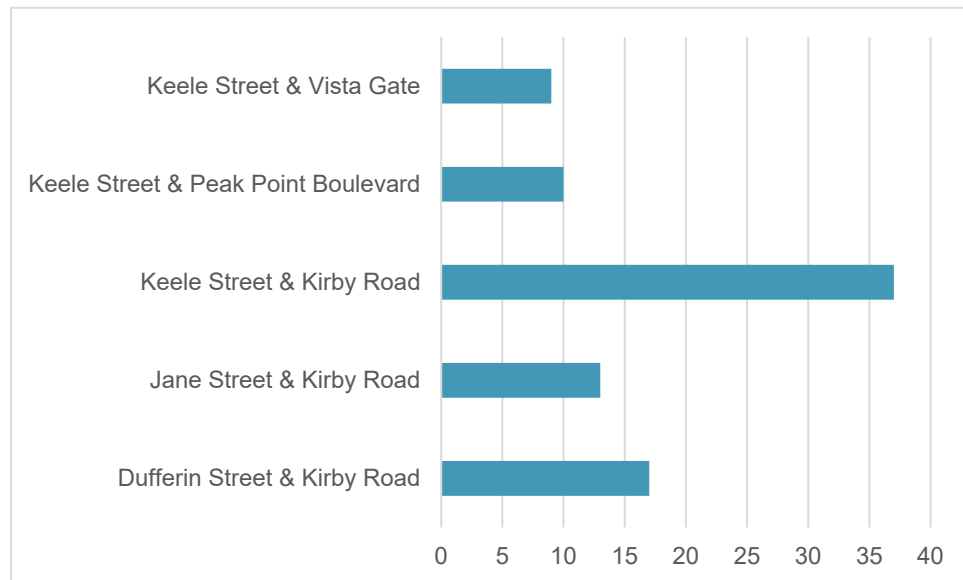
4 Traffic Collision Review

Intersection collision data was provided by York Region for collision records spanning 5 years between January 1, 2014 and December 31, 2018. In addition to the three intersections on Kirby Road between Jane Street and Dufferin Street, 2 intersections on Keele Street were also included in the analysis due to proximity to the future GO access.

4.1 Total Collisions

A total of 86 collisions have been reported for the five intersections as summarized in **Figure 4-1**. It is to be noted there was only one recorded incident of a collision occurring midblock/within a segment along Keele Street between Visa Gate and Kirby Road. Details pertaining to the collision will be mentioned if relevant.

Figure 4-1: Number of Collisions by Intersection



Collisions were analyzed by year, weekday and month of occurrence, severity, initial impact type, environmental condition, and light condition to identify trends and patterns in the collisions. A heatmap of all collisions within the study area is shown in **Figure 4-2**.

Figure 4-2: Kirby Collision Heat Map



4.2 Study Area versus City-Wide Collisions

Overall collision statistics are provided in **Figure 4-3**. A decrease in collisions have been since yearly since 2015, with a sudden increase once again in 2018. This is inconsistent with the rest of City of Vaughan, where total collisions have been consistent since 2014 as seen in **Figure 4-4**. The number of collisions per month varies throughout the year; with the most observed between September and October. Collisions are observed to be highest during the weekday, which is expected due the larger volume of vehicles on the road as opposed to the weekend. The predominant initial impact type are rear end and turning movements, comprising of more than two-thirds of all collisions. Other external factors such as environment conditions and light conditions all show that most collisions (>75%) occur in normal conditions (clear ad in daylight, respectively). It is to be noted that no collisions that resulted in fatalities has been recorded for the study area.

As seen in **Figure 4-5**, the intersection of Keele Street and Kirby Road is also within the top five for highest number of collisions north of Major Mackenzie Drive in the less urban areas of Vaughan. Improvements at this intersection should be made to mitigate factors causing this higher than average number of collisions.

Figure 4-3: Study Area Collision Statistics (January 2014 to December 2018)

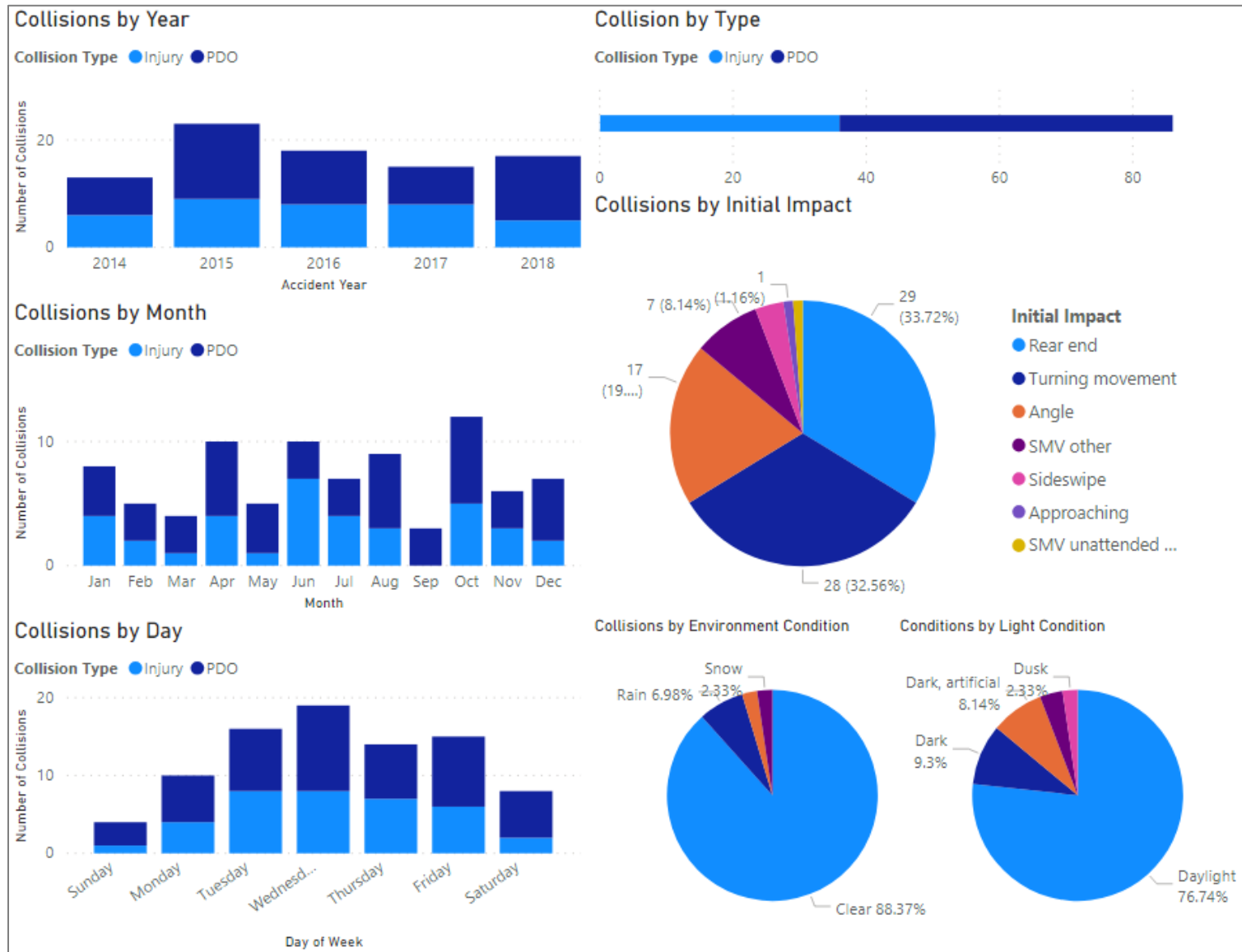


Figure 4-4: City of Vaughan Collisions By Year (January 2014 to December 2018)

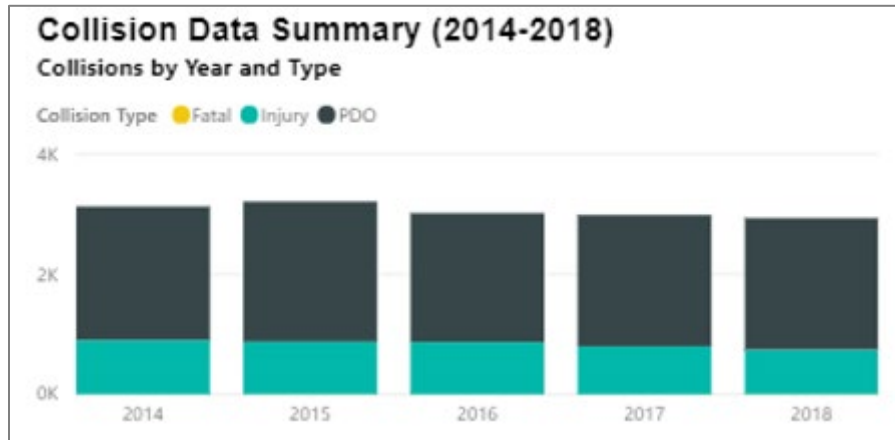


Figure 4-5: Top Collision Intersections in Vaughan



4.3 Average Collision Rate

Average collision rates per intersection were calculated to identify any critical locations that would not have been otherwise identified due to lower absolute number of collisions. Collision rates per million vehicle kilometres travelled (MVK) for each of the intersections is calculated using the following formula:

$$\text{Intersection Collision Rate} = \frac{\text{Number of Collisions} \times 1,000,000}{\text{AADT} \times 365 \times \text{Years}}$$

Annual Average Daily Traffic (AADT) was estimated to be ten times the average of the AM and PM peak hour volumes. The collision rate for each intersection has been calculated and provided in **Table 4-1**.

Table 4-1: Average Collision Rates of Intersections

Intersection	Total Collisions (2014-2018)	Intersection Collision Rate	Average Collision Rate
Keele Street & Kirby Road	37	7.4	1.49
Dufferin Street & Kirby Road	17	5.0	1.00
Jane Street & Kirby Road	13	4.0	0.80
Keele Street & Vista Gate	9	2.2	0.43
Keele Street & Peak Point Boulevard	10	2.1	0.43

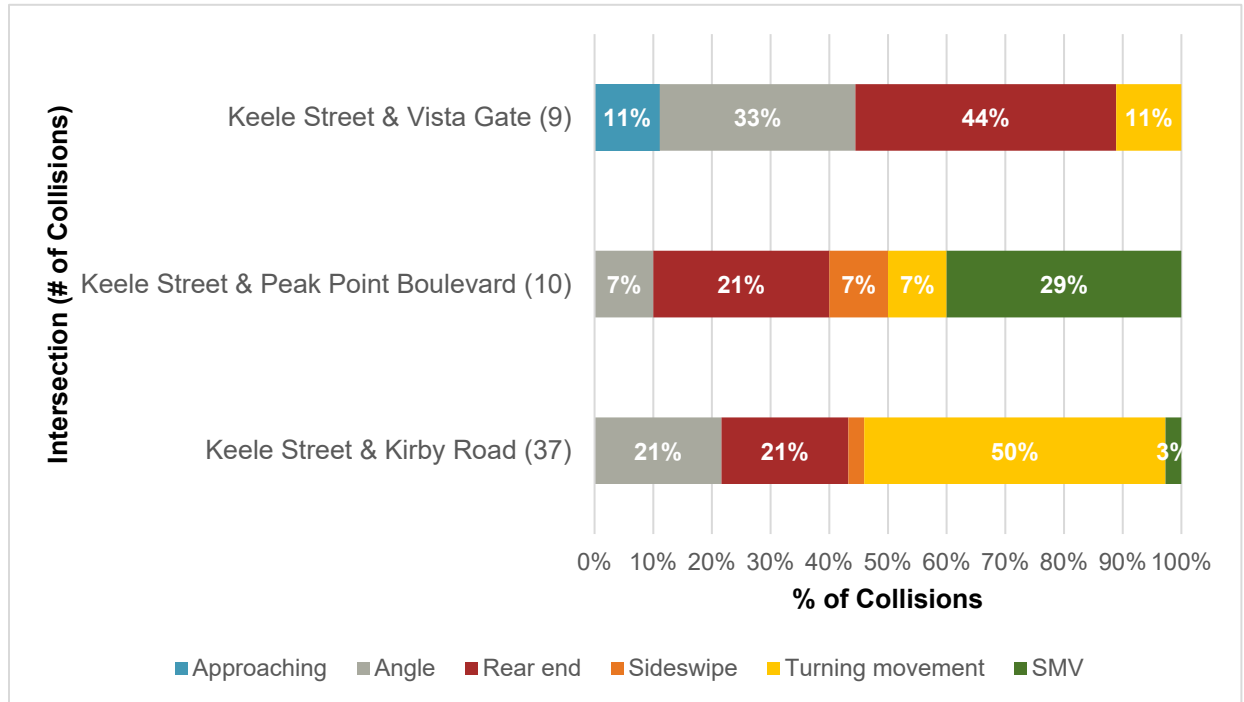
Consistent with **Figure 4-5**, a high average intersection collision rate (1.49) is observed at Keele Street and Kirby Road, and this will be carried forward for a more detailed analysis. In addition, the two intersections along Keele Street at Vista Gate and Peak Point Boulevard will also be further investigated as requested by the City due to future access to the GO Station.

4.4 Detailed Collision Analysis

Impact types at all locations along Keele Street have been analyzed to identify potential geometric or other location specific conditions that could contribute to particular collisions. All impact types for these intersections have been summarized in **Figure 4-6**.



Figure 4-6: Impact Type by Intersection (January 2014 to December 2018)



Keele Street and Kirby Road: This intersection is observed to have a high percentage of turning movement collisions (50%). A desktop review of street conditions on Google Streetview shows acceptable sightline for right turning vehicles. Turning movement collisions may be occurring from left turning vehicles, as the existing signal timings do not provide dedicated left turn phases for any approaches. There may not be enough gaps in through traffic to permit safe left turns and should be further investigated.

Keele Street and Peak Point Boulevard: This intersection has high Single-Motor-Vehicle or SMV collisions (29%), and these collisions typically include run-off-road and roll-over crashes, which may be due to the lack of a curb on the west side of Keele Street. Alternatively since the average collision rate is low, there may be no specific causes related to infrastructure or site conditions.

Keele Street and Vista Gate: This intersection has high rear end collisions (44%), Rear end collisions may be due to the sidewalk crossing on the east end for pedestrians trying to access the bus stop on the southeast corner. It is also noted that although YRT bus stops existing on both sides of Keele Street, there is no traffic signal at this intersection to provide a protected crossing for pedestrians, cyclists or transit users. As the average collision rate is low, there may be no specific causes related to infrastructure or site conditions.

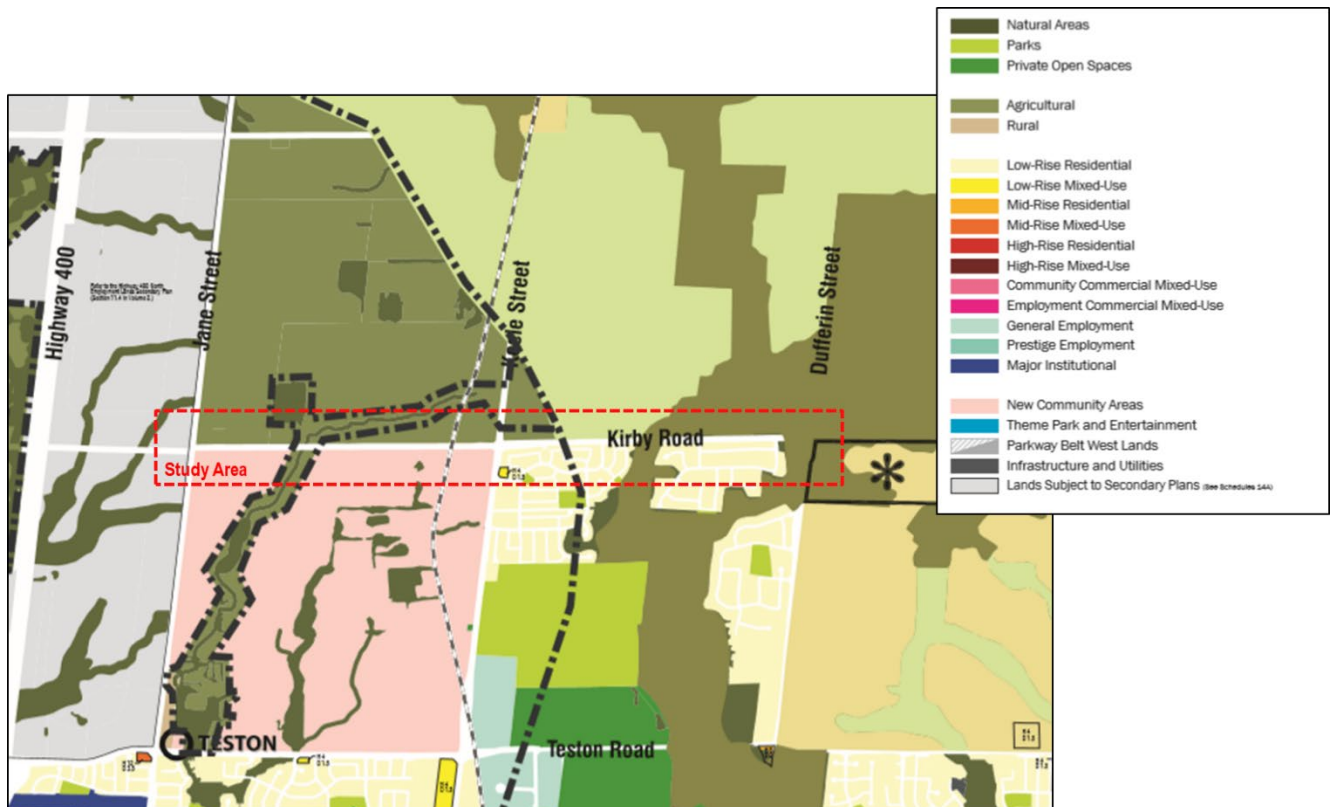
5 Future Transportation Conditions

This section presents the analysis methodology and results for the future conditions operations. The future conditions horizon year is 2031 consistent with NVNCTMP. Travel demand in the study area was forecasted using the Regional travel demand model based on EMME. Intersection operational performance analysis was conducted using Synchro/SimTraffic, based on HCM methodology.

5.1 Land Use and Future Development Context

Land uses adjacent to Kirby Road through the study limits are currently rural with residential houses located south of Kirby Road between Keele Street and Dufferin Street. **Figure 5-1** shows the future planned land use designations along the corridor and surrounding area as listed in Vaughan Official Plan.

Figure 5-1: Land Use – Schedule 13 Official Plan (2019)

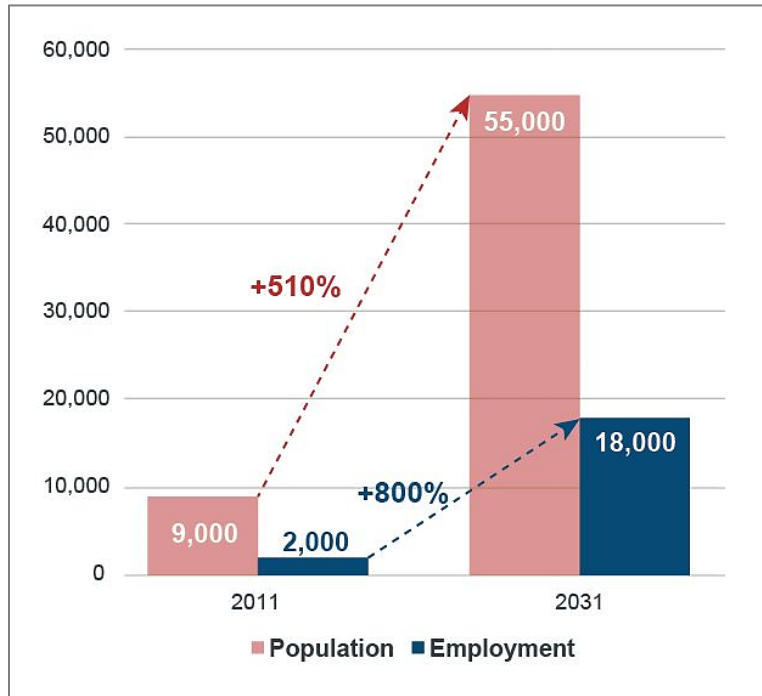


As mentioned in **Section 2.3.6**, Block 27, bounded by Teston Road to the south, Keele Street to the east, Kirby Road to the north and Jane Street to the west, is planned to have a mix of low and mid-rise buildings with a blend of residential, commercial and institutional uses.

5.1.1 2031 Population and Employment Growth

The northern part of Vaughan bounded by Highway 27 to Bathurst and between King-Vaughan Road and Teston Road (NVNCTMP study area) is projected to experience significant growth by 2031 as identified in **Figure 5-2**.

Figure 5-2: North Vaughan Population/ Employment Forecast



Source: NVNCTMP

Population and employment forecasts being considered for this study to the horizon year of 2031 are consistent with NVNCTMP, and the breakdown by traffic zone in the EMME model for the Kirby Road EA secondary study area are presented in **Table 5-1**. Again consistent with NVNCTMP, York Region’s interim 45% land use intensification scenario is being used, with note that York Region is currently undertaking a Municipal Comprehensive Review which will update the Regional population and employment growth forecasts to align with new targets set forth by the 2017 Provincial Growth Plan Amendment.

Table 5-1: Secondary Study Area Population and Employment, 2011 and 2031

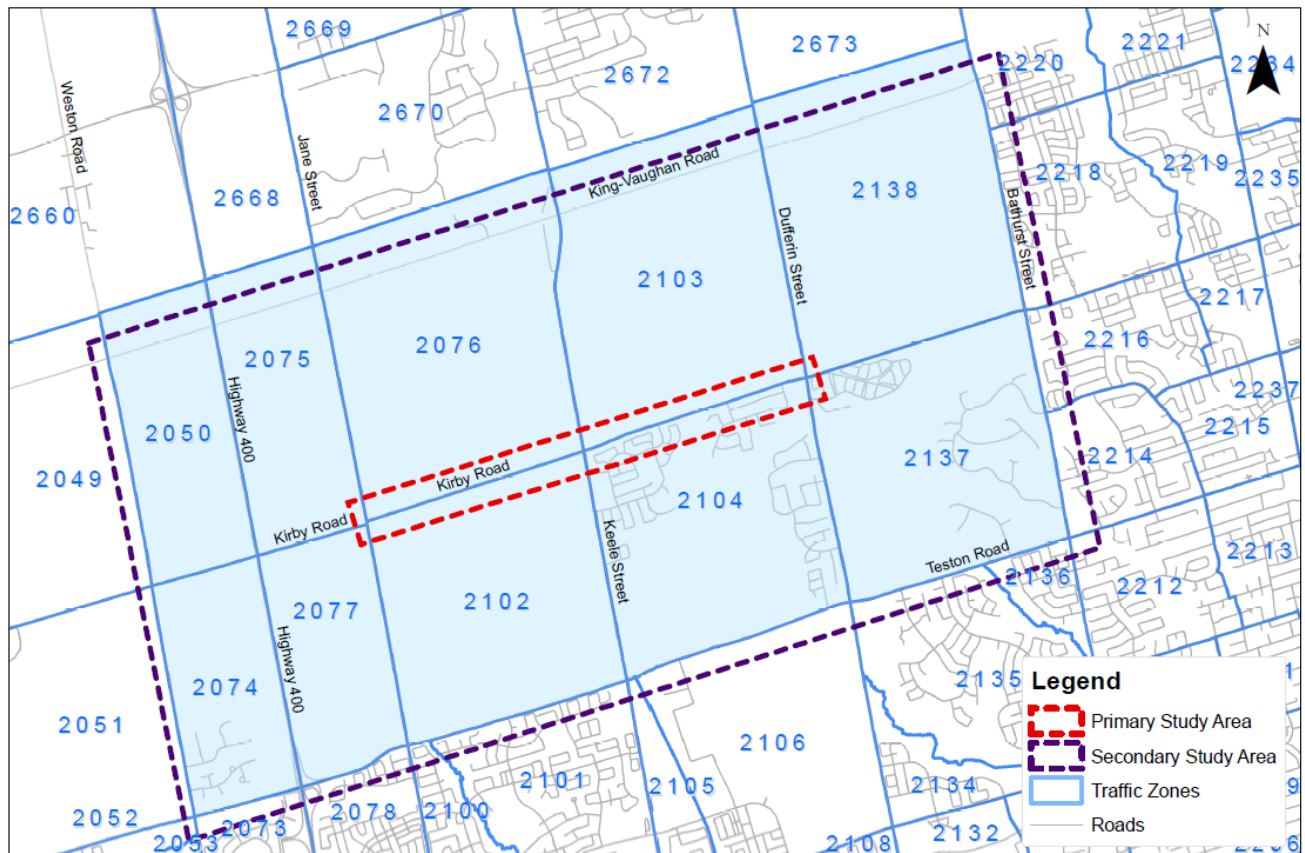
Traffic Zone	Planning Block	2011 Population	2031 Population	2011 Employment	2031 Employment
2102*	27	110	26,360	30	2,150
2074	34	281	468	160	820
2077	34	11	9	2	3,089
2076	28	50	67	190	157
2050	35	94	27	51	758
2075	35	49	18	280	1,758
2103	21	75	72	27	52
2104	20	5,131	5,635	471	501
2137	13	767	1,144	133	107
2138	14	37	36	1	26
TOTAL		6,605	33,836	1,345	9,418

*Zone 2102 has been disaggregated into 4 zones in the EMME model

Source: NVNCTMP October 2019, York Region 45% Intensification Scenario, Block 27 Secondary Plan

A map of the traffic zones in the study area is shown in **Figure 5-3**.

Figure 5-3 Traffic Zones within the Study Area



5.2 EMME Model Calibration

The EMME model includes a base year for the 2011 horizon year and a future horizon year of 2031. The 2011 model is compared against observed traffic volumes at locations across “screenlines” to understand the model’s ability to replicate actual traffic patterns.

5.2.1 Calibration Methodology

The modelled link volumes from the EMME Model were compared to the observed turning movement counts based on the ratio of model to observed traffic and GEH statistic, which is an empirical formula named after its inventor, Geoffrey E. Havers who developed it in the 1970’s.

The GEH statistic is able to address both absolute and relative difference between the modelled and observed volume. It avoids some pitfalls that occur when using simply the relative difference, primarily by allowing for greater variance between modelled and observed data at lower values, but requiring lesser variance at higher values.

The GEH statistic is calculated as:

$$GEH = \sqrt{\frac{2(M-C)^2}{M+C}}$$

Where M is the hourly modelled volume and C is the observed volume (count).

A GEH value less than 5 is considered a good match between the modelled and observed volume; A value between 5 and 10 is acceptable; and a value higher than 10 usually requires further attention for model calibration. Typically 80% to 85% GEH values that are less than 5 is considered as very close match between the modelled and observed volume.

Both GEH and model to observed traffic volume ratio are provided in the following **Table 5-2** for east-west traffic and in **Table 5-3** for north-south traffic.

Through an iterative process, modifications to the network assumptions were made to improve model calibration. Specifically, capacity assumptions on Kirby Road were reduced from 900 vehicles per hour per lane to 700 vehicles per hour per lane to be consistent with the capacity assumption for King-Vaughan Road. Even with this modification, traffic volumes on Kirby Road exceed observed by an absolute number of 150-260 vehicles.

It is noted that based on our judgment, the model appears to over-simulate traffic diversion using Kirby Road instead of other parallel roadways (such as Major Mackenzie Drive). However, because conditions along Kirby Road will change significantly in the future, no specific calibration adjustments are applied, and engineering judgment shall be applied when considering future volume projections.

Table 5-2: East-West Traffic Model to Observed Comparison





East-West Traffic Screenline:		AM Peak Hour Volumes - Peak Direction WB			
East of Jane Street	Existing	2011 Model	Model / Observed	GEH	
King-Vaughan Road	400	600	1.50	9	
Kirby Road	300	560	1.87	13	
Teston Road	1,190	1,200	1.01	0	
Total	1,890	2,360	1.25	10	
West of Keele Street					
King-Vaughan Road	410	600	1.46	8	
Kirby Road	310	560	1.81	12	
Teston Road	820	1,190	1.45	12	
Total	1,540	2,350	1.53	18	
East of Keele Street					
King-Vaughan Road	610	700	1.15	4	
Kirby Road	470	620	1.32	6	
Teston Road	80	0	0.00	13	
Total	1,160	1,320	1.14	5	
West of Dufferin Street					
King-Vaughan Road	620	700	1.13	3	
Kirby Road	400	620	1.55	10	
Teston Road	20	0	0.00	6	
Total	1,040	1,320	1.27	8	
Legend					
Model / Observed within 25%					
GEH <= 10					

Table 5-3: North-South Traffic Model to Observed Comparison

North-South Traffic Screenline:		AM Peak Hour Volumes - Peak Direction SB			
South of King-Vaughan Road	Existing	2011 Model	Model / Observed	GEH	
Jane Street	1,090	779	0.71	10	
Keele Street	1,286	1,478	1.15	5	
Dufferin Street	901	777	0.86	4	
Total	3,277	3,034	0.93	4	
North of Kirby Road					
Jane Street	1,060	760	0.72	10	
Keele Street	1,689	1,478	0.88	5	
Dufferin Street	955	781	0.82	6	
Total	3,704	3,019	0.82	12	
South of Kirby Road					
Jane Street	1,138	869	0.76	8	
Keele Street	1,895	1,533	0.81	9	
Dufferin Street	962	663	0.69	10	
Total	3,995	3,065	0.77	16	
North of Teston Road					
Jane Street	1,023	869	0.85	5	
Keele Street	1,610	2,099	1.30	11	
Dufferin Street	1,017	840	0.83	6	
Total	3,650	3,808	1.04	3	
Legend					
Model / Observed within 25%					
GEH <= 10					

5.3 2031 Travel Demand Forecasting

The York Region travel demand forecasting model used for the NVNCTMP was utilized for this study. The model includes all Regional road and transit improvements by 2031 as per the York Region TMP, with the following exceptions:

- No GTA West Corridor Freeway
- No new freeway interchange at Kirby Road at Highway 400
- No new freeway interchange at 19th Avenue at Highway 404

The decision to exclude these improvements is based firstly on an assumption that implementation of these improvements may not occur by 2031, and secondly because inclusion of these improvements will increase travel demand on Kirby Road. Thus the projected travel demand driving the need for Kirby Road improvements documented in this study can be considered a conservative estimate.

Key improvements which are included:

- Kirby GO station
- Kirby Road extension
- Teston Road missing link

As the planning for the Kirby GO station by Metrolinx and Kirby Road Extension has been advanced, it is reasonable to assume the implementation of these projects by 2031. While the Teston Road Individual Environmental Assessment is currently underway may or may not ultimately recommend the new roadway, it is anticipated that this roadway will decrease demand on Kirby Road, again leading to a conservative estimate of travel demand and thus bolstering the need and justification for the improvement.

5.3.1 Screenline Analysis

To assess the current level of traffic congestion on roadways throughout the study area, a link (road segment) and screenline volume-to-capacity analysis was conducted. The link volume describes the number of cars that pass through a certain segment of the network over a period of time and are collected through traffic counts in the field. These link volumes were divided by the capacity of the roadway to develop v/c ratios for each roadway link during the AM peak hour. Road network conditions at the midblock or link level were also assessed using the v/c ratios. The volume-to-capacity ratio reflects peak hour traffic demand measured against roadway capacity. A description of the v/c ratios is provided in **Table 5-4**.

Table 5-4: Link V/C Ratios and Operating Condition

V/C Ratio	Level of Service (LOS)	Operating Condition
Less than 0.85	LOS A-C	Free-flow, very little to moderate delay
Between 0.85 and 0.99	LOS D-E	Approaching or at capacity, users experience delays and queuing
Greater than 1.00	LOS F	Over capacity, severe delays, and queuing

For a particular link, a v/c ratio of less than 0.85 represents free flow conditions in which little delay is experienced. Between 0.86 and 0.99, as the link reaches capacity, a moderate to high amount of delay is experienced. Above 0.99, the link is at capacity, and major delays and queuing are occurring consistently during the peak periods. The capacity of roadways within the study area are based upon the roadway type definitions from the York Region model and are a function of the existing roadway conditions including free-flow speed and density of access points.

A screenline capacity analysis was completed for Kirby Road and the two parallel arterial roads, King-Vaughan Road and Teston Road. **Table 5-5** summarizes the 2031 screenline traffic growth (east-west), across four traffic screenlines – east of Jane Street, west and east of Keele Street, and west of Dufferin Street.

Table 5-5: Screenline Analysis

Screenline:	AM Peak Hour Volumes		Capacity		V/C Ratio	
	Existing	2031 Model	Existing	2031 Model	Existing	2031 Model
East of Jane Street						
King-Vaughan Road	400	710	700	700	0.57	1.01
Kirby Road	300	640	700	700	0.43	0.91
Teston Road	1,190	1,900	1,800	1,800	0.66	1.06
Total	1,890	3,250	3,200	3,200	0.59	1.02
West of Keele Street						
King-Vaughan Road	410	710	700	700	0.59	1.01
Kirby Road	310	630	700	700	0.44	0.90
Teston Road	820	1,660	1,800	1,800	0.46	0.92
Total	1,540	3,000	3,200	3,200	0.48	0.94
East of Keele Street						
King-Vaughan Road	610	740	700	700	0.87	1.06
Kirby Road	470	600	700	700	0.67	0.86
Teston Road	80	1,620	400	1,800	0.20	0.90
Total	1,160	2,960	1,800	3,200	0.64	0.93
West of Dufferin Street						
King-Vaughan Road	620	740	700	700	0.89	1.06
Kirby Road	400	670	700	700	0.57	0.96
Teston Road	20	1,620	400	1,800	0.05	0.90
Total	1,040	3,030	1,800	3,200	0.58	0.95

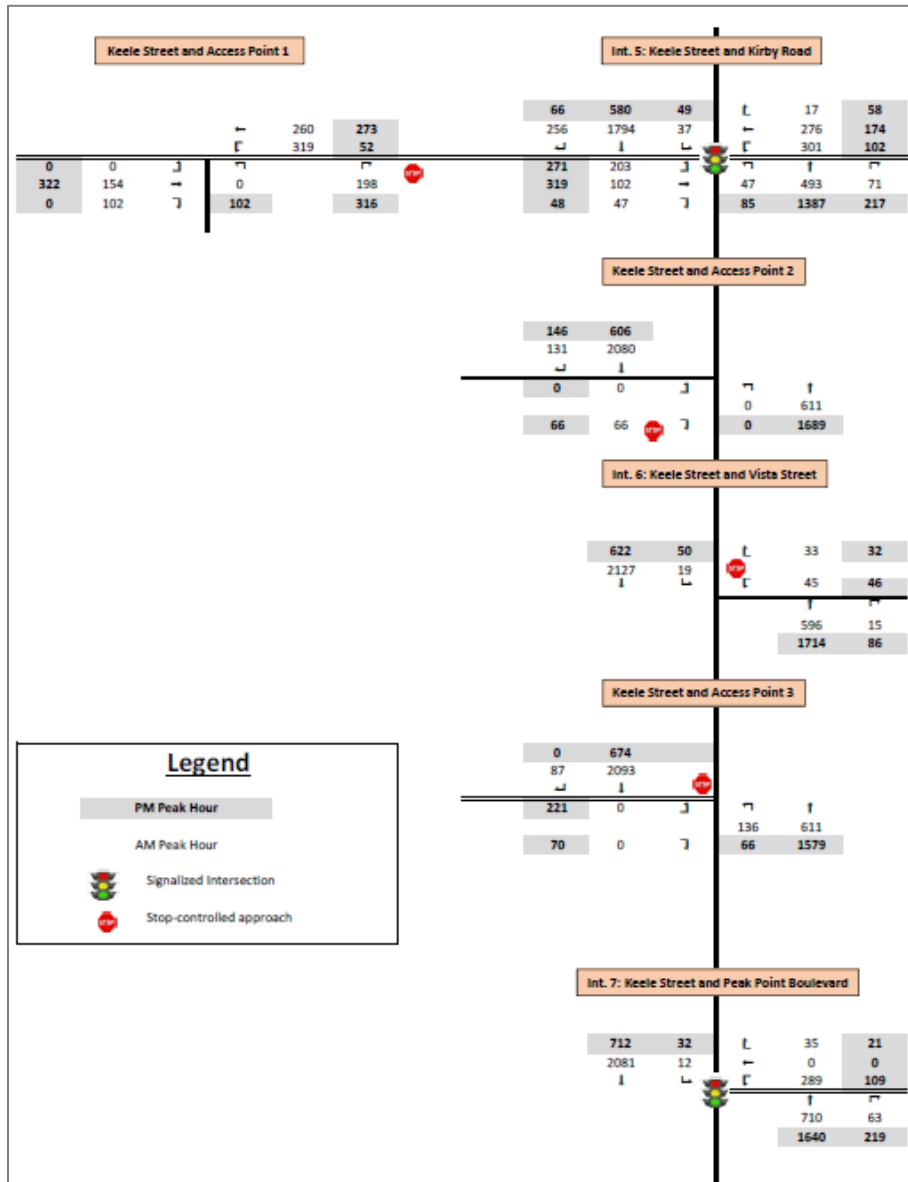
Based on projected demand by 2031 with the Kirby GO station and with the development of Blocks 27, 34, 35, and 41 in North Vaughan, and without any significant improvements to Kirby Road through the study area, the projected travel demand exceeds capacity East of Jane Street and is approaching capacity at the other three screenlines where users are experiencing delays and queuing.

5.3.2 Intersection Volumes

Once the model was refined, 2011 to 2031 growth (AM peak hour) were extracted from the refined model and applied to observed turning movement counts (TMCs) along Kirby Road. A two-lane cross-section (no widening for Kirby Road) was assumed in model runs that generated the growth rates.

Various adjustments were then made to observe traffic counts to account for the re-distribution of traffic and balancing along Kirby Road. The observed turning movement distribution at Kirby Road and Dufferin Street was adjusted based on the EMME model forecast. Although the peak direction (westbound) traffic is high, the model appears to be predicting more east-west traffic versus north-south traffic through the study area, such that westbound traffic is high but southbound traffic is low. It is expected that changes to land use and the transportation network in the future will change travel patterns significantly such that major model changes for calibration are not required. It should be noted that the side street turn distribution was not changed, however, the distribution at the Kirby GO station access was compared to and based on Metrolinx TIS (shown in **Figure 5-4**). **Figure 5-5** illustrates traffic volumes at key study area intersections. **Figure 5-6** illustrates the intersection LOS at each of the intersections.

Figure 5-4: 2030 Total Traffic Volumes at Kirby GO Station



Kirby GO Station Traffic Impact Study Sketch 12b: 2030 Total Traffic Volumes, Metrolinx (2018)

Figure 5-5: Future Turning Movement Volumes

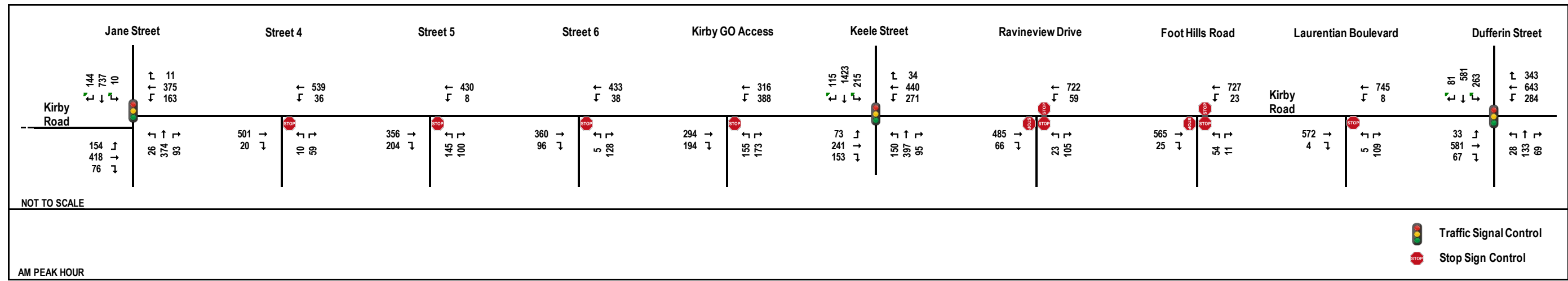
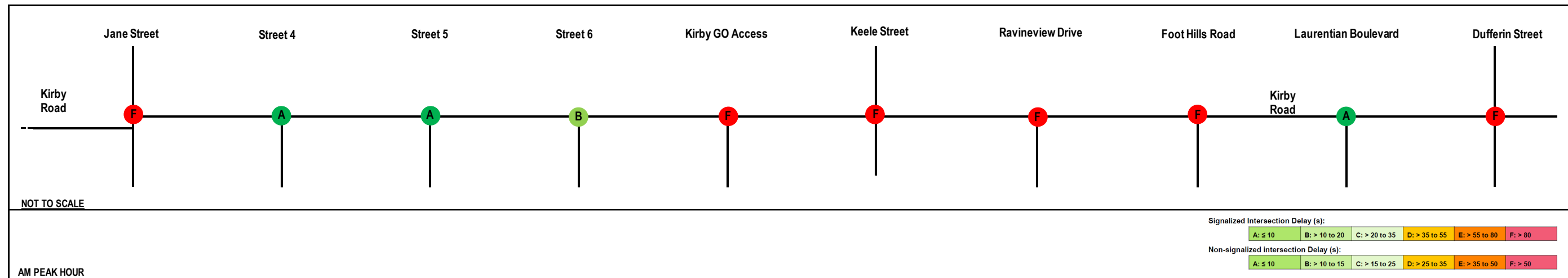


Figure 5-6: Future Intersection LOS Results



5.4 2031 Intersection Operations Analysis

Synchro/SimTraffic 9 was utilized to conduct a HCM and queue analysis at each intersection. A detailed assessment including level of service (LOS), delay, volume to capacity ratios (V/C), as well as the turn lanes queue and storage length analysis was conducted at each intersection for AM peak hour.

The traffic operational analysis results for the intersection along Kirby Road are summarized in **Table 5-6**. Critical delays (LOS E or F) and v/c ratios greater than 1.00 are highlighted. It should be noted that signal timing splits were optimized. Detailed Synchro reports are provided in **Appendix C**.

Table 5-6: Synchro Results – Future Do Nothing Conditions

Intersection	Approach/Movement		AM Peak Hour		
			Delay (s)	LOS	v/c
Kirby Road at Jane Street (Signalized)	EB	EBLTR	296.4	F	1.47
	WB	WBLTR	285.8	F	1.43
	NB	NBLTR	74.5	E	0.91
	SB	SBLTR	187.8	F	1.27
	Overall Intersection		214.3	F	1.38
Kirby Road at Street 4 (Unsignalized)	EB	EBTR	0.0	-	0.33
	WB	WBLT	1.1	A	0.04
	NB	NBLR	15.1	C	0.17
	Overall Intersection		1.4	A	0.69
Kirby Road at Street 5 (Unsignalized)	EB	EBTR	0.0	-	0.36
	WB	WBLT	0.3	A	0.01
	NB	NBLR	42.6	E	0.77
	Overall Intersection		8.5	A	0.52
Kirby Road at Street 6 (Unsignalized)	EB	EBTR	0.0	-	0.36
	WB	WBLT	1.2	A	0.04
	NB	NBLR	57.4	F	0.85
	Overall Intersection		11.4	B	0.75
Kirby Road at Kirby GO Access (Unsignalized)	EB	EBTR	0.0	-	0.3
	WB	WBLT	8.5	A	0.41
	NB	NBLR	Err	F	3.79
	Overall Intersection		2158.7	F	0.95
Kirby Road at Keele Street (Signalized)	EB	EBLT	176.1	F	1.24
		EBR	30.3	C	0.27
	WB	WBL	114.5	F	1.07
		WBTR	49.6	D	0.85
	NB	NBLT/T	22.0	C	2.83dl

Intersection	Approach/Movement		AM Peak Hour		
			Delay (s)	LOS	v/c
	SB	NBR	12.7	B	0.08
		SBLT/T	143.5	F	1.25
		SBR	12.7	B	0.08
	Overall Intersection		101.0	F	1.27
Kirby Road at Ravineview Drive (Unsignalized)	EB	EBTR	39.4	E	0.91
	WB	WBL	143.9	F	1.25
	SB	SBL	11.8	B	0.25
	Overall Intersection		92.9	F	0.89
Kirby Road at Foot Hills Road (Unsignalized)	EB	EBTR	39.7	E	0.92
	WB	WBLT	99.1	F	1.14
	NB	NBLR	11.3	B	0.14
	Overall Intersection		70.1	F	0.67
Kirby Road at Laurentian Boulevard (Unsignalized)	EB	EBTR	0.0	-	0.36
	WB	WBLT	0.3	A	0.01
	NB	NBLR	17.2	C	0.29
	Overall Intersection		1.5	A	0.59
Kirby Road at Dufferin Street (Signalized)	EB	EBL	20.0	B	0.21
		EBTR	31.6	C	0.76
	WB	WBL	357.9	F	1.67
		WBT	28.4	C	0.72
		WBR	19.1	B	0.27
	NB	NBL	43.0	D	0.31
		NBTR	50.0	D	0.49
	SB	SBL	34.5	C	0.64
		SBTR	137.5	F	1.16
	Overall Intersection		83.1	F	1.48

Based on the intersection capacity analyses results presented in **Table 6-2**, the majority of signalized and unsignalized intersections within the study area are operating at overall LOS E or worse with some unsignalized intersections warranting a signal.

5.4.1 Keele Street Intersections Future Analysis

Future volumes were analyzed for the intersections of Keele Street at Vista Gate and Keele Street at Peak Point Boulevard. Based on the intersection capacity analyses using Synchro, Peak Point Boulevard is operating with an overall LOS of B (v/c = 0.88) after optimization.

5.5 Grade Separation and Kirby GO Station Access

In early 2016, the City initiated the Kirby GO Transit Hub Sub-Study as an extension of NVNCTMP and the Block 27 Secondary Plan. The purpose of the Kirby GO Transit Hub Sub-Study was to develop a vision, based on a robust planning rationale, which will direct future development of the transit hub and integration with the rest of Block 27 and surrounding areas. Key findings from this study were carried forward to the recommendations for the Kirby GO Station documented in NVNCTMP Appendix F. This includes the grade separation of Kirby Road at the Barrie GO Rail line and preliminary recommendations to accommodate a GO Station access at Kirby Road.

5.5.1 Grade Separation Need and Justification

It should also be noted that the all-day two way schedule of the Barrie GO line including 15 minute service will also increase the number of trains, from 12 today to 120 by 2031, which further warrants the recommendation.

To determine whether a grade separated crossing should be considered, an exposure index was also developed. The exposure index formula used is shown below:

$$\text{Exposure Index} = \text{Total Number of Trains per Day} \times \text{Daily Traffic Crossing Railway}$$

The exposure index, taken from the “Inventory Manual: Municipal Roads and Railway Level Crossings, Ontario Ministry of Transportation”, is traditionally used in Ontario as a baseline for determining if a grade separated crossing is warranted.

Based on the AADT and trains per day, the calculated train exposure index is not yet met today (If the exposure index exceeds 200,000, then a grade separation is warranted), but by 2031 and 2041 the exposure index is more than ten times as large as the warranted value for a grade separation. Exposure index calculations are provided in **Table 5-7**.

Table 5-7: Kirby Rail Exposure Indices

Horizon Year	Trains per Day	AADT	Train Exposure Index
Existing	12	4,600	55,200
2031	120 (RER)	27,900	3,348,000
2041	120 (RER)	31,800	3,816,000

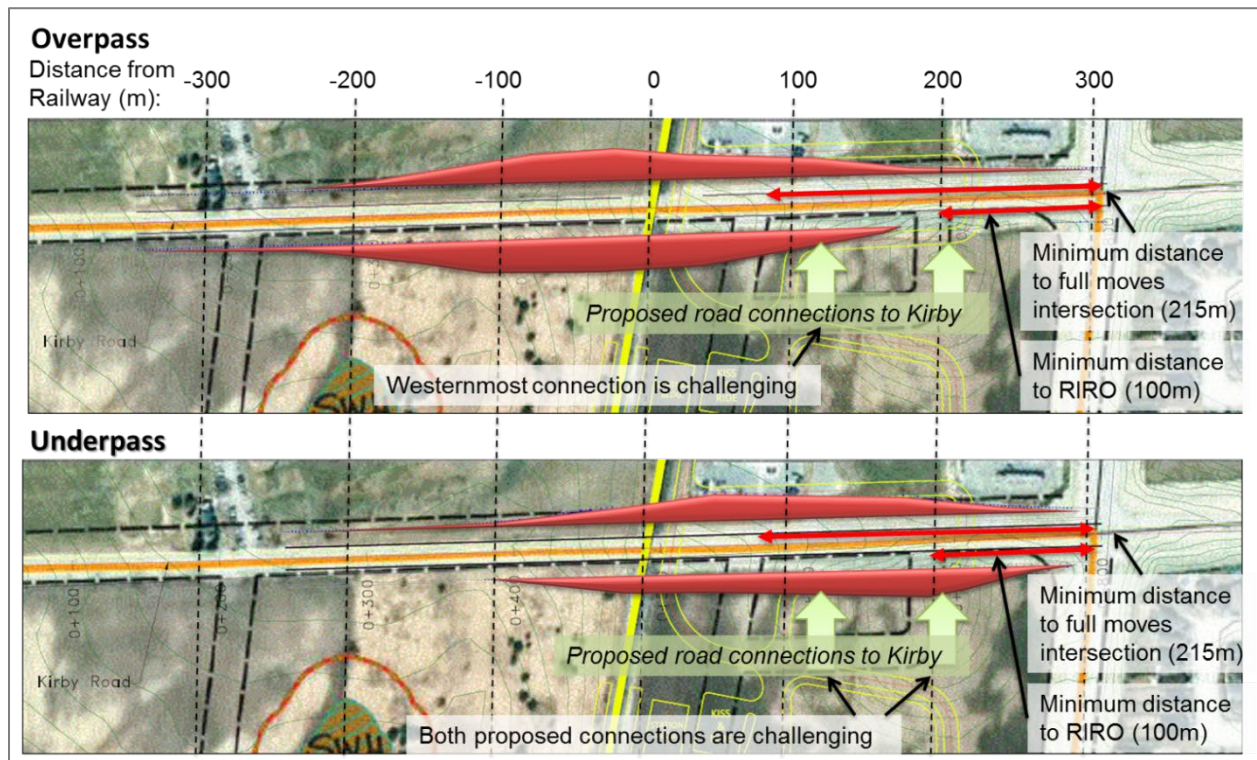
5.5.2 Grade Separation Timing

As part of the NVNCTMP, it was recommended that the design and construction works for the grade separation of Kirby Road at the Barrie GO Rail line be advanced such that it is completed in time for the opening of the Kirby GO Station, development within Block 27, and a Highway 400 interchange. The recommendation was based on benefits such as safety, delay elimination, minimization of throwaway construction costs, avoiding disruption of GO station access, minimization of disruption to GO train services, and minimization traffic disruption.

5.5.3 Grading Requirements

Grading requirements for two Kirby Grade Separation options at the Barrie GO Rail line, firstly a road overpass and secondly a road underpass, were also considered in the NVNCTMP study. The grading impacts of the two options are illustrated in **Figure 5-7**.

Figure 5-7: Grading Impacts of Overpass and Underpass



The Kirby Road Underpass was recommended by the study based on considerations such as issues with the overpass options including the length of a bridge structure and grading requirements west of the rail tracks, and also by considering the urban design benefits of an underpass structure.

5.5.4 Kirby Road Access Constraints

As seen in **Figure 5-7**, there is limited space between the Barrie GO Rail Line and Keele Street – approximately 300m. With grading requirements of either an overpass or an underpass, there are significant constraints to the provision of an intersection with Kirby Road. With the potential for Kirby road to be upgraded to York Region, design should follow York Region guidelines. As York Region’s Access Guideline for Regional Roads, Commuter Corridors recommended a minimum signalized intersection spacing of 215m, this potential access to the Kirby GO Station will either need to be unsignalized, or located within the grading area for the grade separation which would require significant earthworks or retaining wall infrastructure to accommodate. Solutions for this intersection will need to be explored further in this study.

5.6 Future Active Transportation Conditions

As noted in **Section 2.3.4**, the City's Pedestrian and Bicycle Master Plan (PBMP) Update is developing a visible and connected pedestrian and cycling network in Vaughan that integrates, enhances and expands the existing on- and off-road pedestrian and cycling facilities. While the PBMP did not identify cycling facilities on Kirby Road and the proposed Vaughan Super Trail which runs parallel to Kirby Road about 400m to the south, the City of Vaughan policy is to explore active transportation facilities on all arterial roads. This approach is further supported by the YRTMP which identifies Kirby Road as a local cycling route of regional significance (**Section 2.2.2**). With sidewalks currently on the south side of Kirby Road between Keele Street and Dufferin Street, sidewalks and cycling facilities will be considered across the entire study corridor in the next phase of the study.

5.7 Future Transit Needs

With York Region's plans for Frequent Transit Network which envisions 15 minute service or better on Kirby Road (**Section 2.2.2**), improvements are required to the roadway to support vehicular movements as well as active transportation access to potential stop locations in order to support this vision.

5.8 Goods Movement

Improvements to Kirby Road are required to support the Regional vision for Kirby Road as a strategic Goods Movement corridor (**Section 2.2.2**). Preliminary design of the roadway should consider this vision and the potential to upload the roadway to York Region.

6 Conclusions and Next Steps

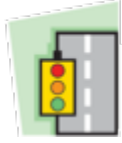
The transportation and traffic study report assesses the existing traffic conditions at the key intersections along Kirby Road between Jane Street and Dufferin Street; estimates and examines the traffic growth and expected future traffic volumes; analyzes the traffic impacts from the introduction of the projected traffic volumes; and finally proposes infrastructure improvements to address the deficiencies and accommodate the future traffic growth for the horizon year of 2031.

Base on the analysis results, this study confirms the following improvements recommended by NVNCTMP, proposed to accommodate future traffic growth on Kirby Road within the Study Area:

- Widening of Kirby Road to a four (4) lane cross-section as planned;
- The grade separation of the Barrie GO Rail line at Kirby Road; and
- The elimination of the jog at the intersection of Kirby Road and Jane Street

The recommendations are based on the growth in travel demand along Kirby due to planned growth in North Vaughan and Block 27 in particular, support Kirby GO Station investment with multimodal access, support regional plans for Frequent Transit service, and regional plans for a strategic goods movement corridor. Rail grade separation is also required to minimize conflicts with all-day two-way GO rail service. The next steps in the study will include detailed recommendations within the study area including lane configurations and active transportation facilities to support the area and the future Kirby GO access.

Appendix A. Turning Movement Counts and Signal Timing Plan



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19326 - City of Vaughan

Intersection Count Report

Intersection:	Kirby Rd & Jane St
Municipality:	Vaughan
Count Date:	Oct 02, 2019
Site Code:	1932600001
Count Categories:	Cars, Trucks, Buses, Bicycles, Pedestrians
Count Period:	07:00-10:00, 14:00-19:00
Weather:	Clear

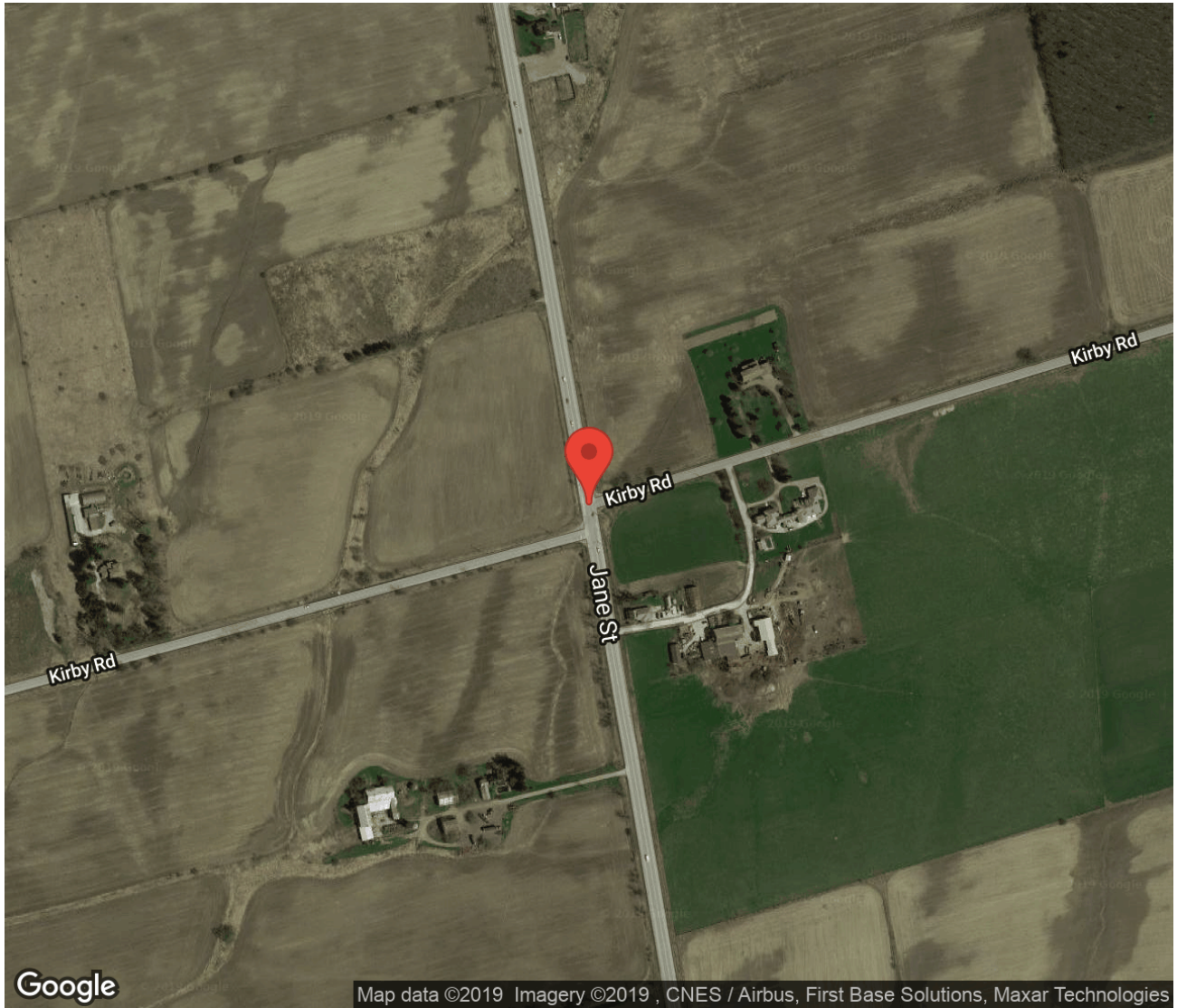


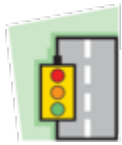
Traffic Count Map

Intersection: Kirby Rd & Jane St

Municipality: Vaughan

Count Date: Oct 02, 2019



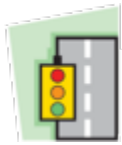


Traffic Count Summary

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Oct 02, 2019

Jane St - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	8	795	94	0	897	0	6	155	37	0	198	0
08:00 - 09:00	10	737	144	0	891	0	14	205	51	0	270	0
09:00 - 10:00	14	904	89	0	1007	0	10	189	48	0	247	0
BREAK												
14:00 - 15:00	15	191	35	1	242	0	15	343	77	0	435	0
15:00 - 16:00	15	238	83	0	336	0	19	585	124	0	728	0
16:00 - 17:00	7	234	95	0	336	0	20	589	116	0	725	0
17:00 - 18:00	19	245	110	0	374	0	13	721	150	0	884	0
18:00 - 19:00	8	174	48	1	231	0	9	452	152	0	613	0
GRAND TOTAL	96	3518	698	2	4314	0	106	3239	755	0	4100	0



Traffic Count Summary

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Oct 02, 2019

Kirby Rd - Traffic Summary

Hour	East Approach Totals						West Approach Totals					
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	127	161	9	0	297	0	77	133	62	0	272	0
08:00 - 09:00	163	200	11	0	374	0	69	187	34	0	290	0
09:00 - 10:00	92	90	13	1	196	0	16	52	19	0	87	0
BREAK												
14:00 - 15:00	60	62	24	0	146	0	24	71	7	0	102	0
15:00 - 16:00	65	113	29	0	207	0	65	102	6	0	173	0
16:00 - 17:00	84	134	26	0	244	0	98	139	9	0	246	0
17:00 - 18:00	70	141	30	0	241	0	85	148	3	0	236	0
18:00 - 19:00	63	86	18	0	167	0	47	122	6	0	175	0
GRAND TOTAL	724	987	160	1	1872	0	481	954	146	0	1581	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Jane St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	2	200	24	0	226	1	18	1	0	20	0	0	0	0	0	0	0	0	0	0	0
07:15	2	173	19	0	194	0	25	3	0	28	0	0	0	0	0	0	0	0	0	0	0
07:30	3	163	24	0	190	0	21	3	0	24	0	0	0	0	0	0	0	0	0	0	0
07:45	0	181	20	0	201	0	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0
08:00	1	169	20	0	190	1	15	5	0	21	0	1	1	0	2	0	0	0	0	0	0
08:15	2	168	30	0	200	0	16	2	0	18	0	0	0	0	0	0	0	0	0	0	0
08:30	2	179	39	0	220	1	20	0	0	21	0	0	0	0	0	0	0	0	0	0	0
08:45	2	153	43	0	198	1	15	3	0	19	0	1	1	0	2	0	0	0	0	0	0
09:00	3	203	32	0	238	1	21	2	0	24	0	3	0	0	3	0	0	0	0	0	0
09:15	3	204	17	0	224	0	24	3	0	27	0	0	0	0	0	0	0	0	0	0	0
09:30	3	217	21	0	241	0	27	1	0	28	0	0	1	0	1	0	0	0	0	0	0
09:45	3	174	11	0	188	1	31	1	0	33	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	26	2184	300	0	2510	6	247	24	0	277	0	5	3	0	8	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	76	3154	613	2	3845	19	356	77	0	452	1	8	8	0	17	0	0	0	0	0	0





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Jane St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	13	12	0	25	0	7	2	0	9	0	1	0	0	1	0	0	0	0	0	0
07:15	1	41	10	0	52	1	5	1	0	7	0	0	0	0	0	0	0	0	0	0	0
07:30	2	42	5	0	49	2	6	0	0	8	0	1	0	0	1	0	0	0	0	0	0
07:45	0	32	5	0	37	0	6	2	0	8	0	1	0	0	1	0	0	0	0	0	0
08:00	4	38	13	0	55	1	4	3	0	8	1	1	2	0	4	0	0	0	0	0	0
08:15	3	47	4	0	54	0	13	5	0	18	0	0	0	0	0	0	0	0	0	0	0
08:30	1	39	9	0	49	0	7	4	0	11	0	0	0	0	0	0	0	0	0	0	0
08:45	4	48	8	0	60	0	7	3	0	10	0	1	0	0	1	0	0	0	0	0	0
09:00	2	40	4	0	46	0	6	6	0	12	0	1	0	0	1	0	0	0	0	0	0
09:15	4	40	11	0	55	1	11	0	0	12	0	1	0	0	1	0	0	0	0	0	0
09:30	2	31	12	0	45	0	10	2	0	12	0	1	0	0	1	0	0	0	0	0	0
09:45	0	40	10	0	50	1	7	3	0	11	0	0	0	0	0	0	1	0	0	1	0
SUBTOTAL	23	451	103	0	577	6	89	31	0	126	1	8	2	0	11	0	1	0	0	1	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Jane St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	2	63	18	0	83	0	15	6	0	21	0	0	0	0	0	0	0	0	0	0	0
14:15	2	75	5	0	82	0	14	5	0	19	0	0	0	0	0	0	0	0	0	0	0
14:30	5	72	13	0	90	0	6	7	0	13	0	0	0	0	0	0	0	0	0	0	0
14:45	5	86	19	0	110	1	11	4	0	16	0	1	0	0	1	0	0	0	0	0	0
15:00	3	114	29	0	146	0	18	5	0	23	0	2	1	0	3	0	0	0	0	0	0
15:15	1	108	32	0	141	1	21	7	0	29	0	1	0	0	1	0	0	0	0	0	0
15:30	6	138	22	0	166	3	24	4	0	31	0	0	0	0	0	0	0	0	0	0	0
15:45	3	139	23	0	165	2	20	1	0	23	0	0	0	0	0	0	0	0	0	0	0
16:00	3	95	28	0	126	0	13	4	0	17	0	0	0	0	0	0	0	0	0	0	0
16:15	4	160	33	0	197	1	17	6	0	24	0	0	0	0	0	0	0	0	0	0	0
16:30	0	138	19	0	157	0	23	3	0	26	0	0	0	0	0	0	0	0	0	0	0
16:45	11	127	22	0	160	1	16	1	0	18	0	0	0	0	0	0	0	0	0	0	0
17:00	4	143	44	0	191	1	18	2	0	21	0	0	0	0	0	0	0	0	0	0	0
17:15	1	145	22	0	168	0	9	8	0	17	0	0	0	0	0	0	0	0	0	0	0
17:30	3	178	22	0	203	0	17	6	0	23	0	0	0	0	0	0	1	0	0	1	0
17:45	2	188	40	0	230	2	22	6	0	30	0	0	0	0	0	0	0	0	0	0	0
18:00	1	133	35	0	169	0	18	10	0	28	0	0	0	0	0	0	0	0	0	0	0
18:15	3	115	26	0	144	0	8	8	0	16	0	0	0	0	0	0	0	0	0	0	0
18:30	2	92	34	0	128	0	5	7	0	12	0	0	0	0	0	0	0	0	0	0	0
18:45	3	79	25	0	107	0	2	7	0	9	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	64	2388	511	0	2963	12	297	107	0	416	0	4	1	0	5	0	1	0	0	1	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	87	2839	614	0	3540	18	386	138	0	542	1	12	3	0	16	0	2	0	0	2	0





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	14	12	2	0	28	4	2	2	0	8	0	1	0	0	1	0	0	0	0	0	0
14:15	13	14	6	0	33	4	1	2	0	7	0	0	0	0	0	0	0	0	0	0	0
14:30	12	15	4	0	31	3	1	1	0	5	0	0	0	0	0	0	0	0	0	0	0
14:45	7	15	4	0	26	3	1	3	0	7	0	0	0	0	0	0	0	0	0	0	0
15:00	9	23	5	0	37	2	3	1	0	6	0	1	0	0	1	0	0	0	0	0	0
15:15	13	18	8	0	39	3	6	1	0	10	0	0	0	0	0	0	0	0	0	0	0
15:30	10	23	2	0	35	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	0
15:45	24	29	7	0	60	3	3	5	0	11	0	1	0	0	1	0	0	0	0	0	0
16:00	12	28	7	0	47	5	4	2	0	11	0	0	0	0	0	0	0	0	0	0	0
16:15	29	10	2	0	41	6	3	1	0	10	0	0	0	0	0	0	0	0	0	0	0
16:30	20	45	6	0	71	1	8	2	0	11	0	1	0	0	1	0	0	0	0	0	0
16:45	10	34	6	0	50	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
17:00	18	42	6	0	66	6	4	1	0	11	0	0	0	0	0	0	0	0	0	0	0
17:15	16	35	6	0	57	2	6	1	0	9	0	0	0	0	0	0	0	0	0	0	0
17:30	9	32	10	0	51	5	2	2	0	9	0	0	0	0	0	0	0	0	0	0	0
17:45	12	19	4	0	35	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0
18:00	17	25	6	0	48	1	2	1	0	4	0	0	0	0	0	0	0	0	0	0	0
18:15	15	21	4	0	40	2	3	1	0	6	0	0	0	0	0	0	0	0	0	0	0
18:30	11	15	2	0	28	3	0	0	0	3	0	1	0	0	1	0	0	0	0	0	0
18:45	10	19	3	0	32	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	281	474	100	0	855	61	56	27	0	144	0	6	0	0	6	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Total Peds					
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total						
GRAND TOTAL	613	867	126	1	1607	109	108	34	0	251	2	12	0	0	14	0	0	0	0	0	0





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	10	29	7	0	46	4	3	5	0	12	0	0	0	0	0	0	0	0	0	0	0
07:15	18	26	9	0	53	3	2	5	0	10	0	2	0	0	2	0	0	0	0	0	0
07:30	17	28	12	0	57	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0
07:45	21	34	23	0	78	2	4	1	0	7	1	1	0	0	2	0	0	0	0	0	0
08:00	20	37	20	0	77	3	3	1	0	7	0	1	0	0	1	0	0	0	0	0	0
08:15	15	58	8	0	81	3	3	0	0	6	1	4	0	0	5	0	0	0	0	0	0
08:30	15	37	3	0	55	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0
08:45	8	39	2	0	49	2	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0
09:00	2	17	4	0	23	0	0	3	0	3	0	1	0	0	1	0	0	0	0	0	0
09:15	5	10	5	0	20	1	2	1	0	4	0	1	0	0	1	0	0	0	0	0	0
09:30	3	8	4	0	15	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0
09:45	2	7	2	0	11	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	136	330	99	0	565	24	32	16	0	72	2	10	0	0	12	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	6	11	2	0	19	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
14:15	2	11	2	0	15	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0
14:30	7	10	0	0	17	2	5	0	0	7	0	0	0	0	0	0	0	0	0	0	0
14:45	7	23	3	0	33	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
15:00	12	16	2	0	30	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	0
15:15	11	22	1	0	34	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
15:30	15	20	1	0	36	5	2	1	0	8	0	0	0	0	0	0	0	0	0	0	0
15:45	21	32	1	0	54	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0
16:00	19	25	2	0	46	4	2	1	0	7	0	0	0	0	0	0	0	0	0	0	0
16:15	22	29	1	0	52	3	8	0	0	11	0	0	0	0	0	0	0	0	0	0	0
16:30	18	32	2	0	52	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
16:45	29	32	1	0	62	3	8	2	0	13	0	0	0	0	0	0	0	0	0	0	0
17:00	18	28	0	0	46	3	6	0	0	9	0	1	0	0	1	0	0	0	0	0	0
17:15	16	29	1	0	46	2	8	1	0	11	0	0	0	0	0	2	0	0	0	2	0
17:30	26	40	1	0	67	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
17:45	16	27	0	0	43	2	6	0	0	8	0	0	0	0	0	0	0	0	0	0	0
18:00	22	27	1	0	50	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0
18:15	8	26	0	0	34	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0
18:30	9	24	3	0	36	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
18:45	3	38	2	0	43	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	287	502	26	0	815	30	76	5	0	111	0	4	0	0	4	2	0	0	0	2	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	423	832	125	0	1380	54	108	21	0	183	2	14	0	0	16	2	0	0	0	2	0





Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

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

Intersection: Kirby Rd & Jane St
Site ID: 1932600001
Count Date: Oct 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Jane St runs N/S

North Approach

	Out	In	Total
	808	239	1047
	79	43	122
	4	3	7
	0	0	0
Totals	891	285	1176

Jane St

	0	0	0	0
	2	2	0	0
	10	66	3	0
	132	669	7	0
Totals	144	737	10	0

East Approach

	Out	In	Total
	332	212	544
	38	29	67
	4	7	11
	0	0	0
Totals	374	248	622

Kirby Rd

				Totals
0	0	0	0	0
0	1	10	58	69
0	5	11	171	187
0	0	1	33	34

Peds: 0



Peds: 0

Peds: 0

Peds: 0

Kirby Rd

Totals				
0	0	0	0	0
11	9	2	0	0
200	178	19	3	0
163	145	17	1	0

West Approach

	Out	In	Total
	262	322	584
	22	30	52
	6	6	12
	0	0	0
Totals	290	358	648

Totals				
14	205	51	0	
	12	172	34	0
	1	31	15	0
	1	2	2	0
	0	0	0	0

Jane St

South Approach

	Out	In	Total
	218	847	1065
	47	84	131
	5	3	8
	0	0	0
Totals	270	934	1204

- Cars

- Trucks

- Buses

- Bicycles

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Jane St
Count Date: Oct 02, 2019
Period: 07:00 - 10:00

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

Start Time	North Approach Jane St						South Approach Jane St						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
08:00	2	185	26	0	0	213	6	43	18	0	0	67	56	60	1	0	0	117	23	41	21	0	0	85	482
08:15	2	184	32	0	0	218	3	60	9	0	0	72	42	48	5	0	0	95	19	65	8	0	0	92	477
08:30	3	199	39	0	0	241	1	46	13	0	0	60	29	44	3	0	0	76	17	39	3	0	0	59	436
08:45	3	169	47	0	0	219	4	56	11	0	0	71	36	48	2	0	0	86	10	42	2	0	0	54	430
Grand Total	10	737	144	0	0	891	14	205	51	0	0	270	163	200	11	0	0	374	69	187	34	0	0	290	1825
Approach %	1.1	82.7	16.2	0	-	-	5.2	75.9	18.9	0	-	-	43.6	53.5	2.9	0	-	-	23.8	64.5	11.7	0	-	-	-
Totals %	0.5	40.4	7.9	0	-	48.8	0.8	11.2	2.8	0	-	14.8	8.9	11	0.6	0	-	20.5	3.8	10.2	1.9	0	-	15.9	-
PHF	0.83	0.93	0.77	0	-	0.92	0.58	0.85	0.71	0	-	0.94	0.73	0.83	0.55	0	-	0.8	0.75	0.72	0.4	0	-	0.79	0.95
Cars	7	669	132	0	-	808	12	172	34	0	-	218	145	178	9	0	-	332	58	171	33	0	-	262	1620
% Cars	70	90.8	91.7	0	-	90.7	85.7	83.9	66.7	0	-	80.7	89	89	81.8	0	-	88.8	84.1	91.4	97.1	0	-	90.3	88.8
Trucks	3	66	10	0	-	79	1	31	15	0	-	47	17	19	2	0	-	38	10	11	1	0	-	22	186
% Trucks	30	9	6.9	0	-	8.9	7.1	15.1	29.4	0	-	17.4	10.4	9.5	18.2	0	-	10.2	14.5	5.9	2.9	0	-	7.6	10.2
Buses	0	2	2	0	-	4	1	2	2	0	-	5	1	3	0	0	-	4	1	5	0	0	-	6	19
% Buses	0	0.3	1.4	0	-	0.4	7.1	1	3.9	0	-	1.9	0.6	1.5	0	0	-	1.1	1.4	2.7	0	0	-	2.1	1
Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
Peds	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0
% Peds	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

From: 17:00:00
To: 18:00:00

Intersection: Kirby Rd & Jane St
Site ID: 1932600001
Count Date: Oct 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Jane St runs N/S

North Approach

	Out	In	Total
	331	756	1087
	43	77	120
	0	0	0
	0	3	3
Totals	374	836	1210

Jane St

	0	0	0	0
	0	0	0	0
	11	27	5	0
	99	218	14	0
Totals	110	245	19	0

East Approach

	Out	In	Total
	209	266	475
	31	50	81
	1	1	2
	0	0	0
Totals	241	317	558

Kirby Rd

					Totals
	0	0	0	0	0
	2	0	7	76	85
	0	1	23	124	148
	0	0	1	2	3

Peds: 0



Peds: 0

Peds: 0

Peds: 0

Kirby Rd

Totals				
0	0	0	0	0
30	26	4	0	0
141	128	12	1	0
70	55	15	0	0

West Approach

	Out	In	Total
	202	237	439
	31	26	57
	1	1	2
	2	0	2
Totals	236	264	500

Totals				
13	721	150	0	
	10	654	128	0
	3	66	22	0
	0	0	0	0
	0	1	0	0

Jane St

South Approach

	Out	In	Total
	792	275	1067
	91	43	134
	0	0	0
	1	0	1
Totals	884	318	1202

- Cars

- Trucks

- Buses

- Bicycles

Comments



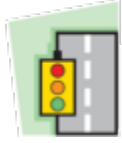
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Jane St
Count Date: Oct 02, 2019
Period: 14:00 - 19:00

Peak Hour Data (17:00 - 18:00)

Start Time	North Approach Jane St						South Approach Jane St						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
17:00	6	59	29	0	0	94	5	161	46	0	0	212	24	46	7	0	0	77	21	35	0	0	0	56	439
17:15	4	60	29	0	0	93	1	154	30	0	0	185	18	41	7	0	0	66	20	37	2	0	0	59	403
17:30	4	66	36	0	0	106	3	196	28	0	0	227	14	34	12	0	0	60	26	43	1	0	0	70	463
17:45	5	60	16	0	0	81	4	210	46	0	0	260	14	20	4	0	0	38	18	33	0	0	0	51	430
Grand Total	19	245	110	0	0	374	13	721	150	0	0	884	70	141	30	0	0	241	85	148	3	0	0	236	1735
Approach %	5.1	65.5	29.4	0	-	-	1.5	81.6	17	0	-	-	29	58.5	12.4	0	-	-	36	62.7	1.3	0	-	-	-
Totals %	1.1	14.1	6.3	0	-	21.6	0.7	41.6	8.6	0	-	51	4	8.1	1.7	0	-	13.9	4.9	8.5	0.2	0	-	13.6	-
PHF	0.79	0.93	0.76	0	-	0.88	0.65	0.86	0.82	0	-	0.85	0.73	0.77	0.63	0	-	0.78	0.82	0.86	0.38	0	-	0.84	0.94
Cars	14	218	99	0	-	331	10	654	128	0	-	792	55	128	26	0	-	209	76	124	2	0	-	202	1534
% Cars	73.7	89	90	0	-	88.5	76.9	90.7	85.3	0	-	89.6	78.6	90.8	86.7	0	-	86.7	89.4	83.8	66.7	0	-	85.6	88.4
Trucks	5	27	11	0	-	43	3	66	22	0	-	91	15	12	4	0	-	31	7	23	1	0	-	31	196
% Trucks	26.3	11	10	0	-	11.5	23.1	9.2	14.7	0	-	10.3	21.4	8.5	13.3	0	-	12.9	8.2	15.5	33.3	0	-	13.1	11.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	2
% Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0.7	0	0	-	0.4	0	0.7	0	0	-	0.4	0.1
Bicycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	2	0	0	0	-	2	3
% Bicycles	0	0	0	0	-	0	0	0.1	0	0	-	0.1	0	0	0	0	-	0	2.4	0	0	0	-	0.8	0.2
Peds	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0
% Peds	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19326 - City of Vaughan

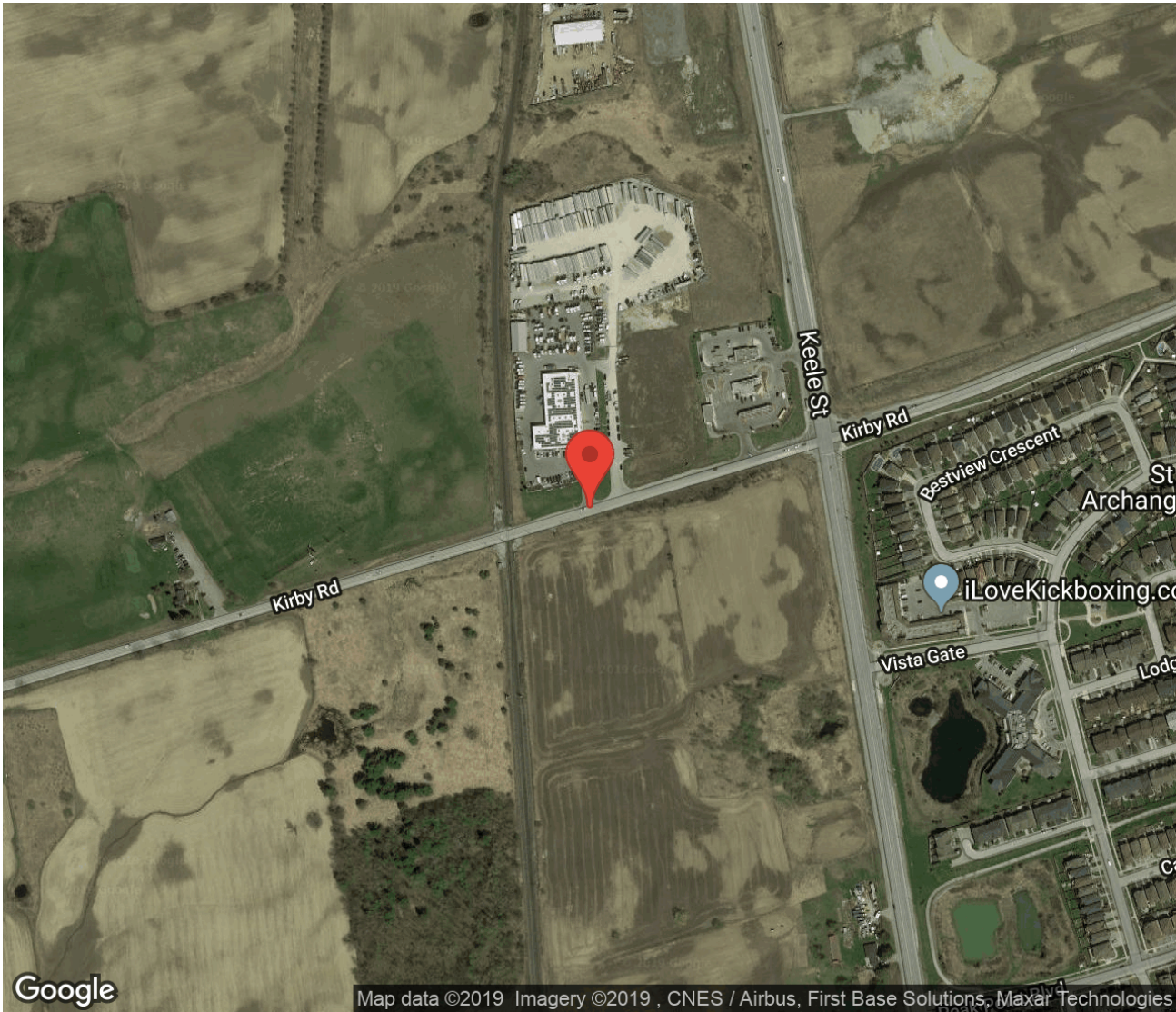
Intersection Count Report

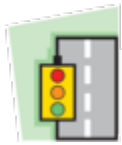
Intersection: Kirby Rd & Mid Ontario Truck Center Access
Municipality: Vaughan
Count Date: Oct 02, 2019
Site Code: 1932600002
Count Categories: Cars, Trucks, Buses, Bicycles, Pedestrians
Count Period: 07:00-10:00, 14:00-19:00
Weather: Clear

Traffic Count Map



Intersection: Kirby Rd & Mid Ontario Truck Center Access
Municipality: Vaughan
Count Date: Oct 02, 2019





Traffic Count Summary

Intersection: Kirby Rd & Mid Ontario Truck Center Access
 Municipality: Vaughan
 Count Date: Oct 02, 2019

Kirby Rd - Traffic Summary

East Approach Totals

West Approach Totals

Hour	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	285	30	0	315	0	11	159	0	0	170	0
08:00 - 09:00	0	351	19	1	371	0	12	234	0	0	246	0
09:00 - 10:00	0	192	17	0	209	0	10	115	0	0	125	0
BREAK												
14:00 - 15:00	0	132	16	0	148	0	10	143	0	0	153	0
15:00 - 16:00	0	180	17	0	197	0	17	226	0	0	243	0
16:00 - 17:00	0	222	20	0	242	0	10	263	0	0	273	0
17:00 - 18:00	0	233	3	0	236	0	6	323	0	0	329	0
18:00 - 19:00	0	151	11	0	162	0	6	269	0	0	275	0
GRAND TOTAL	0	1746	133	1	1880	0	82	1732	0	0	1814	0

Start Time	Cars					Trucks					Buses					Total Peds				
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total					
GRAND TOTAL	122	0	54	1	177	47	0	37	5	89	0	0	0	0	0	0	0	0	0	2





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Mid Ontario Truck Center Access
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	51	2	0	53	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0
07:15	0	62	3	0	65	0	9	0	0	9	0	1	0	0	1	0	0	0	0	0	0
07:30	0	85	8	0	93	0	11	1	0	12	0	0	0	0	0	0	0	0	0	0	0
07:45	0	60	8	0	68	0	1	7	0	8	0	2	0	0	2	0	0	0	0	0	0
08:00	0	107	2	0	109	0	9	1	0	10	0	2	0	0	2	0	0	0	0	0	0
08:15	0	78	7	1	86	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
08:30	0	58	3	0	61	0	8	3	0	11	0	1	0	0	1	0	0	0	0	0	0
08:45	0	69	1	0	70	0	11	2	0	13	0	1	0	0	1	0	0	0	0	0	0
09:00	0	57	2	0	59	0	8	2	0	10	0	1	0	0	1	0	0	0	0	0	0
09:15	0	43	2	0	45	0	7	1	0	8	0	0	0	0	0	0	0	0	0	0	0
09:30	0	29	3	0	32	0	7	2	0	9	0	0	0	0	0	0	0	0	0	0	0
09:45	0	29	3	0	32	0	11	2	0	13	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	728	44	1	773	0	92	22	0	114	0	8	0	0	8	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Mid Ontario Truck Center Access
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	0	25	2	0	27	0	6	1	0	7	0	0	0	0	0	0	0	0	0	0	0
14:15	0	27	4	0	31	0	4	3	0	7	0	0	0	0	0	0	0	0	0	0	0
14:30	0	36	2	0	38	0	4	2	0	6	0	0	0	0	0	0	0	0	0	0	0
14:45	0	26	1	0	27	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	0
15:00	0	31	4	0	35	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
15:15	0	42	3	0	45	0	9	3	0	12	0	0	0	0	0	0	0	0	0	0	0
15:30	0	26	3	0	29	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	0
15:45	0	53	1	0	54	0	8	2	0	10	0	0	0	0	0	0	0	0	0	0	0
16:00	0	38	2	0	40	0	10	2	0	12	0	0	1	0	1	0	0	0	0	0	0
16:15	0	36	2	0	38	0	7	2	0	9	0	0	0	0	0	0	0	0	0	0	0
16:30	0	61	3	0	64	0	11	2	0	13	0	1	0	0	1	0	0	0	0	0	0
16:45	0	54	2	0	56	0	4	4	0	8	0	0	0	0	0	0	0	0	0	0	0
17:00	0	73	0	0	73	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
17:15	0	50	0	0	50	0	6	2	0	8	0	0	0	0	0	0	0	0	0	0	0
17:30	0	52	0	0	52	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0
17:45	0	37	0	0	37	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0
18:00	0	45	1	0	46	0	5	2	0	7	0	0	0	0	0	0	0	0	0	0	0
18:15	0	34	2	0	36	0	5	2	0	7	0	0	0	0	0	0	0	0	0	0	0
18:30	0	26	1	0	27	0	2	3	0	5	0	1	0	0	1	0	0	0	0	0	0
18:45	0	30	0	0	30	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	802	33	0	835	0	112	33	0	145	0	4	1	0	5	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	0	1530	77	1	1608	0	204	55	0	259	0	12	1	0	13	0	0	0	0	0	0





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Mid Ontario Truck Center Access
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	5	33	0	0	38	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
07:15	3	32	0	0	35	3	2	0	0	5	0	2	0	0	2	0	0	0	0	0	0
07:30	0	40	0	0	40	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
07:45	0	35	0	0	35	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	0
08:00	1	48	0	0	49	1	5	0	0	6	0	3	0	0	3	0	0	0	0	0	0
08:15	3	61	0	0	64	0	9	0	0	9	0	4	0	0	4	0	0	0	0	0	0
08:30	3	43	0	0	46	2	8	0	0	10	0	0	0	0	0	0	0	0	0	0	0
08:45	2	47	0	0	49	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
09:00	1	28	0	0	29	1	9	0	0	10	0	1	0	0	1	0	0	0	0	0	0
09:15	1	21	0	0	22	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0
09:30	3	22	0	0	25	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
09:45	1	24	0	0	25	3	4	0	0	7	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	23	434	0	0	457	10	62	0	0	72	0	12	0	0	12	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Mid Ontario Truck Center Access
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	1	27	0	0	28	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	0
14:15	0	21	0	0	21	1	6	0	0	7	0	1	0	0	1	0	0	0	0	0	0
14:30	1	27	0	0	28	1	12	0	0	13	0	0	0	0	0	0	0	0	0	0	0
14:45	2	38	0	0	40	3	6	0	0	9	0	0	0	0	0	0	0	0	0	0	0
15:00	4	46	0	0	50	2	10	0	0	12	0	2	0	0	2	0	0	0	0	0	0
15:15	2	46	0	0	48	1	9	0	0	10	0	0	0	0	0	0	0	0	0	0	0
15:30	3	47	0	0	50	3	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0
15:45	1	59	0	0	60	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	0
16:00	2	51	0	0	53	2	2	0	0	4	0	3	0	0	3	0	0	0	0	0	0
16:15	2	61	0	0	63	2	13	0	0	15	0	0	0	0	0	0	0	0	0	0	0
16:30	1	61	0	0	62	1	10	0	0	11	0	0	0	0	0	0	0	0	0	0	0
16:45	0	54	0	0	54	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0
17:00	1	79	0	0	80	1	14	0	0	15	0	1	0	0	1	0	0	0	0	0	0
17:15	0	59	0	0	59	2	12	0	0	14	0	0	0	0	0	0	0	0	0	0	0
17:30	0	64	0	0	64	2	7	0	0	9	0	0	0	0	0	0	0	0	0	0	0
17:45	0	73	0	0	73	0	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0
18:00	1	57	0	0	58	1	9	0	0	10	0	1	0	0	1	0	0	0	0	0	0
18:15	0	57	0	0	57	2	12	0	0	14	0	0	0	0	0	0	0	0	0	0	0
18:30	0	65	0	0	65	2	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0
18:45	0	60	0	0	60	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	21	1052	0	0	1073	28	164	0	0	192	0	8	0	0	8	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	44	1486	0	0	1530	38	226	0	0	264	0	20	0	0	20	0	0	0	0	0	0





Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00

Intersection: Kirby Rd & Mid Ontario Truck Center Access
Site ID: 1932600002
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Kirby Rd runs E/W

North Approach

	Out	In	Total
	6	29	35
	6	10	16
	0	0	0
	0	0	0
Totals	12	39	51

Mid Ontario Truck Center Access

	0	0	0
	0	0	0
	2	4	0
	1	5	0
Totals	3	9	0

East Approach

	Out	In	Total
	356	190	546
	37	28	65
	4	8	12
	0	0	0
Totals	397	226	623

Kirby Rd

				Totals
0	0	0	0	0
0	0	1	4	5
0	8	24	184	216

Peds: 0



Peds: 0

Peds: 0

Peds: 0

Kirby Rd

Totals				
1	1	0	0	0
34	25	9	0	0
362	330	28	4	0

West Approach

	Out	In	Total
	188	331	519
	25	30	55
	8	4	12
	0	0	0
Totals	221	365	586

- Cars

- Trucks

- Buses

- Bicycles

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Mid Ontario Truck Center Access
 Count Date: Oct 02, 2019
 Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Mid Ontario Truck Center Access						South Approach						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:30	5		0	0	0	5					0			96	9	0	0	105	0	42		0	0	42	152
07:45	1		1	0	0	2					0			63	15	0	0	78	0	44		0	0	44	124
08:00	1		2	0	0	3					0			118	3	0	0	121	2	56		0	0	58	182
08:15	2		0	0	0	2					0			85	7	1	0	93	3	74		0	0	77	172
Grand Total	9		3	0	0	12					0	0		362	34	1	0	397	5	216		0	0	221	630
Approach %	75		25	0		-					-			91.2	8.6	0.3		-	2.3	97.7		0		-	
Totals %	1.4		0.5	0		1.9					0			57.5	5.4	0.2		63	0.8	34.3		0		35.1	
PHF	0.45		0.38	0		0.6					0			0.77	0.57	0.25		0.82	0.42	0.73		0		0.72	0.87
Cars	5		1	0		6					0			330	25	1		356	4	184		0		188	550
% Cars	55.6		33.3	0		50					0			91.2	73.5	100		89.7	80	85.2		0		85.1	87.3
Trucks	4		2	0		6					0			28	9	0		37	1	24		0		25	68
% Trucks	44.4		66.7	0		50					0			7.7	26.5	0		9.3	20	11.1		0		11.3	10.8
Buses	0		0	0		0					0			4	0	0		4	0	8		0		8	12
% Buses	0		0	0		0					0			1.1	0	0		1	0	3.7		0		3.6	1.9
Bicycles	0		0	0		0					0			0	0	0		0	0	0		0		0	0
% Bicycles	0		0	0		0					0			0	0	0		0	0	0		0		0	0
Peds					0	-					0	-						0	-			0	-	0	0
% Peds					0	-					0	-						0	-			0	-	0	0



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

From: 16:30:00
To: 17:30:00

Intersection: Kirby Rd & Mid Ontario Truck Center Access
Site ID: 1932600002
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Kirby Rd runs E/W

North Approach

	Out	In	Total
	27	7	34
	11	14	25
	0	0	0
	0	0	0
Totals	38	21	59

Mid Ontario Truck Center Access

	0	0	0
	0	0	0
	5	4	2
	9	18	0
Totals	14	22	2

East Approach

	Out	In	Total
	243	271	514
	35	48	83
	1	1	2
	0	0	0
Totals	279	320	599

Kirby Rd

				Totals
0	0	0	0	0
0	0	4	2	6
0	1	44	253	298

Peds: 0



Peds: 0

Peds: 0

Peds: 0

Kirby Rd

Totals				
0	0	0	0	0
13	5	8	0	0
266	238	27	1	0

West Approach

	Out	In	Total
	255	247	502
	48	32	80
	1	1	2
	0	0	0
Totals	304	280	584

- Cars

- Trucks

- Buses

- Bicycles

Comments



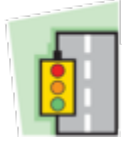
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Mid Ontario Truck Center Access
 Count Date: Oct 02, 2019
 Period: 14:00 - 19:00

Peak Hour Data (16:30 - 17:30)

Start Time	North Approach Mid Ontario Truck Center Access						South Approach						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
16:30	3		2	0	0	5					0			73	5	0	0	78	2	71		0	0	73	156
16:45	4		3	1	0	8					0			58	6	0	0	64	0	62		0	0	62	134
17:00	12		7	1	0	20					0			79	0	0	0	79	2	94		0	0	96	195
17:15	3		2	0	0	5					0			56	2	0	0	58	2	71		0	0	73	136
Grand Total	22		14	2	0	38					0	0		266	13	0	0	279	6	298		0	0	304	621
Approach %	57.9		36.8	5.3		-					-			95.3	4.7	0	-	-	2	98		0		-	
Totals %	3.5		2.3	0.3		6.1					0			42.8	2.1	0		44.9	1	48		0		49	
PHF	0.46		0.5	0.5		0.48					0			0.84	0.54	0		0.88	0.75	0.79		0		0.79	0.8
Cars	18		9	0		27					0			238	5	0		243	2	253		0		255	525
% Cars	81.8		64.3	0		71.1					0			89.5	38.5	0		87.1	33.3	84.9		0		83.9	84.5
Trucks	4		5	2		11					0			27	8	0		35	4	44		0		48	94
% Trucks	18.2		35.7	100		28.9					0			10.2	61.5	0		12.5	66.7	14.8		0		15.8	15.1
Buses	0		0	0		0					0			1	0	0		1	0	1		0		1	2
% Buses	0		0	0		0					0			0.4	0	0		0.4	0	0.3		0		0.3	0.3
Bicycles	0		0	0		0					0			0	0	0		0	0	0		0		0	0
% Bicycles	0		0	0		0					0			0	0	0		0	0	0		0		0	0
Peds					0	-					0	-						0	-			0	-	0	0
% Peds					0	-					0	-						0	-			0	-	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19326 - City of Vaughan

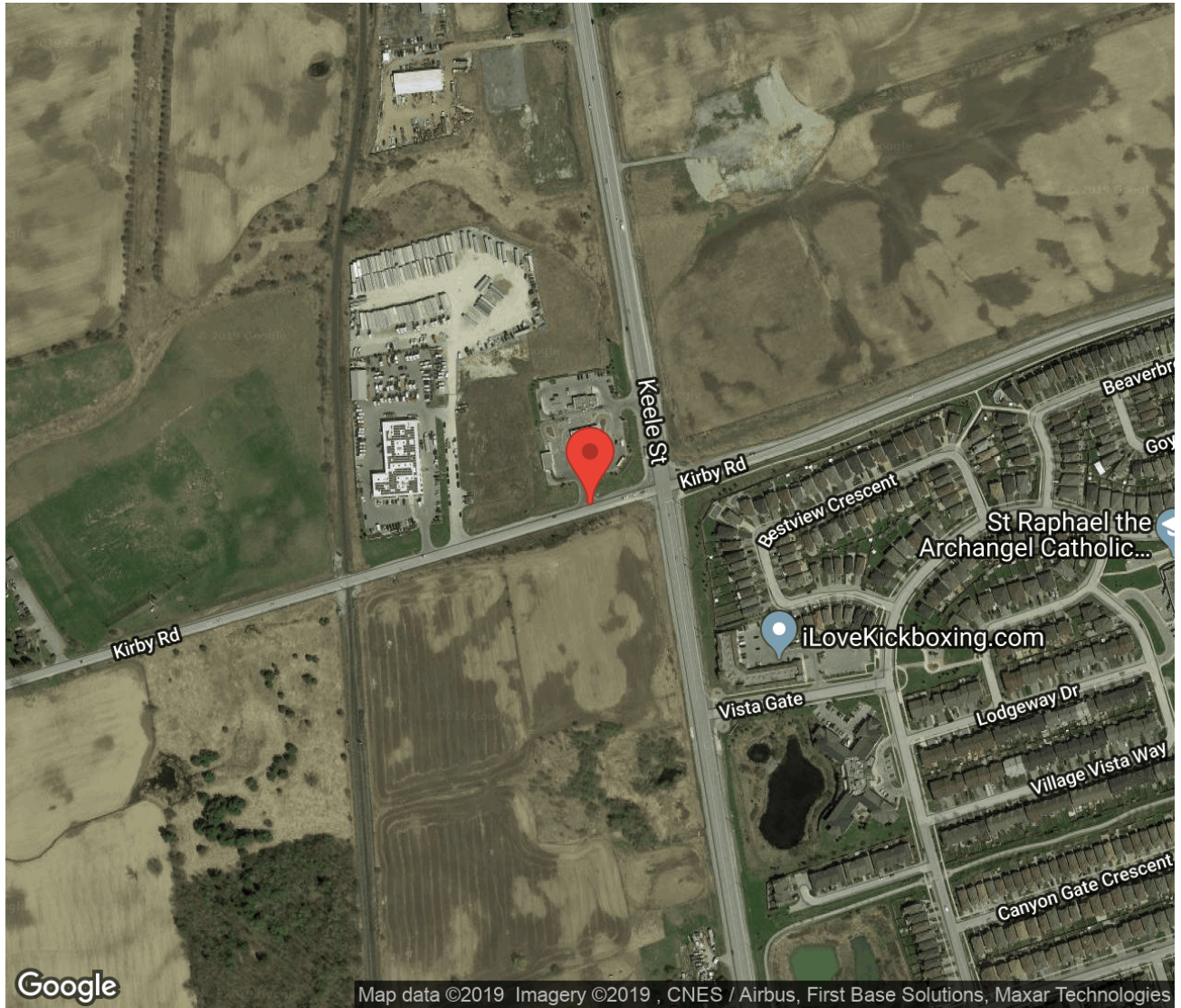
Intersection Count Report

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Municipality: Vaughan
Count Date: Oct 02, 2019
Site Code: 1932600003
Count Categories: Cars, Trucks, Buses, Bicycles, Pedestrians
Count Period: 07:00-10:00, 14:00-19:00
Weather: Clear



Traffic Count Map

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Municipality: Vaughan
Count Date: Oct 02, 2019





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Summary

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Municipality: Vaughan
Count Date: Oct 02, 2019

Kirby Rd - Traffic Summary

East Approach Totals

Includes Cars, Trucks, Buses, Bicycles

West Approach Totals

Includes Cars, Trucks, Buses, Bicycles

Hour	East Approach Totals						West Approach Totals					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	266	42	1	309	0	18	153	0	1	172	0
08:00 - 09:00	0	314	44	0	358	0	27	211	0	0	238	0
09:00 - 10:00	0	163	48	0	211	0	19	117	0	0	136	0
BREAK												
14:00 - 15:00	0	121	43	0	164	0	25	145	0	0	170	0
15:00 - 16:00	0	157	49	0	206	2	40	229	0	1	270	0
16:00 - 17:00	0	203	45	0	248	0	37	239	0	0	276	0
17:00 - 18:00	0	190	55	0	245	0	37	311	0	0	348	0
18:00 - 19:00	0	119	49	0	168	0	37	257	0	0	294	0
GRAND TOTAL	0	1533	375	1	1909	2	240	1662	0	2	1904	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Petro Canada-Tim Hortons Access

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	7	0	7	0	14	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0
07:15	12	0	8	0	20	5	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0
07:30	26	0	15	0	41	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0
07:45	24	0	10	0	34	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0
08:00	15	0	11	0	26	5	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0
08:15	15	0	15	0	30	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0
08:30	11	0	12	0	23	3	0	1	0	4	1	0	0	0	1	0	0	0	0	0	0
08:45	9	0	11	0	20	4	0	2	0	6	0	0	0	0	0	0	0	0	0	0	0
09:00	11	0	13	0	24	3	0	3	0	6	0	0	0	0	0	0	0	0	0	0	0
09:15	7	0	9	0	16	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0
09:30	4	0	8	0	12	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0
09:45	5	0	8	0	13	1	0	3	0	4	1	0	0	0	1	0	0	0	0	0	0
SUBTOTAL	146	0	127	0	273	33	0	22	0	55	2	0	0	0	2	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Petro Canada-Tim Hortons Access

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	6	0	4	0	10	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
14:15	2	0	4	0	6	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0
14:30	6	0	8	0	14	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
14:45	8	0	8	0	16	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0
15:00	7	0	10	0	17	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
15:15	8	0	9	0	17	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0
15:30	6	0	5	0	11	4	0	0	0	4	1	0	0	0	1	0	0	0	0	0	0
15:45	8	0	9	0	17	2	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0
16:00	12	0	6	0	18	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0
16:15	10	0	4	0	14	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
16:30	5	0	8	0	13	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0
16:45	8	0	8	0	16	3	0	1	0	4	1	0	0	0	1	0	0	0	0	0	0
17:00	10	0	12	0	22	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0
17:15	8	0	8	0	16	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
17:30	7	0	12	0	19	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
17:45	10	0	5	0	15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
18:00	9	0	13	0	22	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0
18:15	9	0	11	0	20	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
18:30	12	0	9	0	21	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
18:45	7	0	7	0	14	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	158	0	160	0	318	25	0	24	0	49	3	0	0	0	3	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Total Peds				
	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total					
GRAND TOTAL	304	0	287	0	591	58	0	46	0	104	5	0	0	0	5	0	0	0	0	0





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	45	3	0	48	0	4	3	0	7	0	0	0	0	0	0	0	0	0	0	0
07:15	0	57	15	1	73	0	8	1	0	9	0	1	0	0	1	0	0	0	0	0	0
07:30	0	77	12	0	89	0	6	2	0	8	0	0	0	0	0	0	0	0	0	0	0
07:45	0	59	6	0	65	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	0
08:00	0	95	7	0	102	0	8	2	0	10	0	3	0	0	3	0	0	0	0	0	0
08:15	0	74	8	0	82	0	7	2	0	9	0	0	0	0	0	0	0	0	0	0	0
08:30	0	48	9	0	57	0	10	5	0	15	0	1	0	0	1	0	0	0	0	0	0
08:45	0	58	8	0	66	0	9	3	0	12	0	1	0	0	1	0	0	0	0	0	0
09:00	0	48	11	0	59	0	9	7	0	16	0	1	0	0	1	0	0	0	0	0	0
09:15	0	37	11	0	48	0	4	3	0	7	0	0	0	0	0	0	0	0	0	0	0
09:30	0	22	9	0	31	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
09:45	0	24	6	0	30	0	12	1	0	13	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	644	105	1	750	0	89	29	0	118	0	10	0	0	10	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	0	24	7	0	31	0	7	1	0	8	0	0	0	0	0	0	0	0	0	0	0
14:15	0	28	8	0	36	0	3	2	0	5	0	0	0	0	0	0	0	0	0	0	0
14:30	0	29	6	0	35	0	7	2	0	9	0	0	0	0	0	0	0	0	0	0	0
14:45	0	19	12	0	31	0	4	5	0	9	0	0	0	0	0	0	0	0	0	0	0
15:00	0	28	4	0	32	0	6	2	0	8	0	1	0	0	1	0	0	0	0	0	0
15:15	0	32	12	0	44	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	1
15:30	0	26	11	0	37	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	1
15:45	0	44	16	0	60	0	8	3	0	11	0	0	0	0	0	0	0	0	0	0	0
16:00	0	34	7	0	41	0	8	0	0	8	0	1	1	0	2	0	0	0	0	0	0
16:15	0	34	7	0	41	0	9	1	0	10	0	1	0	0	1	0	0	0	0	0	0
16:30	0	55	8	0	63	0	9	2	0	11	0	1	1	0	2	0	0	0	0	0	0
16:45	0	45	17	0	62	0	6	1	0	7	0	0	0	0	0	0	0	0	0	0	0
17:00	0	59	11	0	70	0	6	2	0	8	0	0	0	0	0	0	0	0	0	0	0
17:15	0	39	7	0	46	0	7	3	0	10	0	0	0	0	0	0	0	0	0	0	0
17:30	0	40	19	0	59	0	6	3	0	9	0	0	0	0	0	0	0	0	0	0	0
17:45	0	32	9	0	41	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0
18:00	0	31	13	0	44	0	5	1	0	6	0	0	0	0	0	0	0	0	0	0	0
18:15	0	27	11	0	38	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
18:30	0	18	12	0	30	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
18:45	0	24	12	0	36	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	668	209	0	877	0	118	30	0	148	0	4	2	0	6	0	0	0	0	0	2

Start Time	Cars				Total	Trucks				Total	Buses				Total	Total Peds					
	↶	↑	↷	↻		↶	↑	↷	↻		↶	↑	↷	↻							
GRAND TOTAL	0	1312	314	1	1627	0	207	59	0	266	0	14	2	0	16	0	0	0	0	0	2





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	3	28	0	0	31	2	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0
07:15	6	36	0	0	42	1	2	0	0	3	0	2	0	0	2	0	0	0	0	0	0
07:30	3	34	0	1	38	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0
07:45	1	36	0	0	37	1	7	0	0	8	0	1	0	0	1	0	0	0	0	0	0
08:00	6	38	0	0	44	3	3	0	0	6	0	3	0	0	3	0	0	0	0	0	0
08:15	5	59	0	0	64	1	8	0	0	9	1	3	0	0	4	0	0	0	0	0	0
08:30	8	38	0	0	46	1	7	0	0	8	0	0	0	0	0	0	0	0	0	0	0
08:45	1	46	0	0	47	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	0
09:00	7	23	0	0	30	3	7	0	0	10	0	1	0	0	1	0	0	0	0	0	0
09:15	3	22	0	0	25	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
09:30	4	22	0	0	26	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	0
09:45	1	29	0	0	30	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	48	411	0	1	460	15	60	0	0	75	1	10	0	0	11	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	4	30	0	0	34	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0
14:15	5	17	0	0	22	3	6	0	0	9	0	1	0	0	1	0	0	0	0	0	0
14:30	3	30	0	0	33	3	14	0	0	17	0	0	0	0	0	0	0	0	0	0	0
14:45	6	35	0	0	41	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0
15:00	11	43	0	0	54	4	6	0	0	10	0	2	0	0	2	0	0	0	0	0	0
15:15	4	47	0	1	52	2	8	0	0	10	0	0	0	0	0	0	0	0	0	0	0
15:30	6	57	0	0	63	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0
15:45	11	53	0	0	64	1	10	0	0	11	0	0	0	0	0	0	0	0	0	0	0
16:00	5	53	0	0	58	1	4	0	0	5	2	1	0	0	3	0	0	0	0	0	0
16:15	9	56	0	0	65	2	10	0	0	12	0	0	0	0	0	0	0	0	0	0	0
16:30	7	55	0	0	62	0	10	0	0	10	0	1	0	0	1	0	0	0	0	0	0
16:45	9	45	0	0	54	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0
17:00	19	68	0	0	87	1	13	0	0	14	0	1	0	0	1	0	0	0	0	0	0
17:15	1	63	0	0	64	1	13	0	0	14	0	0	0	0	0	0	0	0	0	0	0
17:30	1	71	0	0	72	2	6	0	0	8	0	0	0	0	0	0	0	0	0	0	0
17:45	10	62	0	0	72	2	14	0	0	16	0	0	0	0	0	0	0	0	0	0	0
18:00	10	51	0	0	61	4	8	0	0	12	0	0	0	0	0	0	0	0	0	0	0
18:15	8	67	0	0	75	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0
18:30	7	55	0	0	62	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	0
18:45	6	55	0	0	61	1	7	0	0	8	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	142	1013	0	1	1156	32	162	0	0	194	2	6	0	0	8	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	
GRAND TOTAL	190	1424	0	2	1616	47	222	0	0	269	3	16	0	0	19	0	0	0	0	0	0





Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Site ID: 1932600003
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Kirby Rd runs E/W

North Approach

	Out	In	Total
	131	48	179
	18	12	30
	0	1	1
	0	0	0
Totals	149	61	210

Petro Canada-Tim Hortons Access

	0	0	0
	0	0	0
	6	12	0
	51	80	0
Totals	57	92	0

East Approach

	Out	In	Total
	338	247	585
	33	34	67
	6	7	13
	0	0	0
Totals	377	288	665

Kirby Rd

				Totals
0	0	0	1	1
0	1	6	15	22
0	7	22	167	196

Peds: 0



Peds: 0

Peds: 0

Peds: 0

Kirby Rd

Totals				
0	0	0	0	0
39	33	6	0	0
338	305	27	6	0

West Approach

	Out	In	Total
	183	357	540
	28	33	61
	8	6	14
	0	0	0
Totals	219	396	615

- Cars

- Trucks

- Buses

- Bicycles

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
 Count Date: Oct 02, 2019
 Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Petro Canada-Tim Hortons Access						South Approach						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:30	27		18	0	0	45					0		83	14	0	0	97	4	38		1	0	43	185	
07:45	26		11	0	0	37					0		68	6	0	0	74	2	44		0	0	46	157	
08:00	20		12	0	0	32					0		106	9	0	0	115	9	44		0	0	53	200	
08:15	19		16	0	0	35					0		81	10	0	0	91	7	70		0	0	77	203	
Grand Total	92		57	0	0	149					0	0	338	39	0	0	377	22	196		1	0	219	745	
Approach %	61.7		38.3	0	-	-					-	-	89.7	10.3	0	-	-	10	89.5		0.5	-	-	-	
Totals %	12.3		7.7	0	20						0		45.4	5.2	0	50.6		3	26.3		0.1		29.4		
PHF	0.85		0.79	0	0.83						0		0.8	0.7	0	0.82		0.61	0.7		0.25	0.71	0.92		
Cars	80		51	0		131					0		305	33	0	338		15	167		1		183	652	
% Cars	87		89.5	0		87.9					0		90.2	84.6	0	89.7		68.2	85.2		100		83.6	87.5	
Trucks	12		6	0		18					0		27	6	0	33		6	22		0		28	79	
% Trucks	13		10.5	0		12.1					0		8	15.4	0	8.8		27.3	11.2		0		12.8	10.6	
Buses	0		0	0		0					0		6	0	0	6		1	7		0		8	14	
% Buses	0		0	0		0					0		1.8	0	0	1.6		4.5	3.6		0		3.7	1.9	
Bicycles	0		0	0		0					0		0	0	0	0		0	0		0		0	0	
% Bicycles	0		0	0		0					0		0	0	0	0		0	0		0		0	0	
Peds					0	-					0	-				0	-				0	-	0	0	
% Peds					0	-					0	-				0	-				0	-	0	0	



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

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

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
Site ID: 1932600003
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Kirby Rd runs E/W

North Approach

	Out	In	Total
	73	84	157
	11	15	26
	1	0	1
	0	0	0
Totals	85	99	184

Petro Canada-Tim Hortons Access

	0	0	0
	0	1	0
	5	6	0
	40	33	0
Totals	45	40	0

East Approach

	Out	In	Total
	237	280	517
	34	42	76
	0	2	2
	0	0	0
Totals	271	324	595

Kirby Rd

				Totals
0	0	0	0	0
0	0	6	30	36
0	1	36	247	284

Peds: 0



Peds: 0

Peds: 0

Peds: 0

Kirby Rd

Totals				
0	0	0	0	0
63	54	9	0	0
208	183	25	0	0

West Approach

	Out	In	Total
	277	223	500
	42	30	72
	1	0	1
	0	0	0
Totals	320	253	573

- Cars

- Trucks

- Buses

- Bicycles

Comments



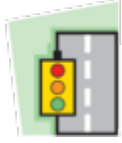
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Petro Canada-Tim Hortons Access
 Count Date: Oct 02, 2019
 Period: 14:00 - 19:00

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

Start Time	North Approach Petro Canada-Tim Hortons Access						South Approach						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles	
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total		
16:45	12		9	0	0	21					0			51	18	0	0	69	11	49			0	0	60	150
17:00	10		15	0	0	25					0			65	13	0	0	78	20	82			0	0	102	205
17:15	9		9	0	0	18					0			46	10	0	0	56	2	76			0	0	78	152
17:30	9		12	0	0	21					0			46	22	0	0	68	3	77			0	0	80	169
Grand Total	40		45	0	0	85					0	0		208	63	0	0	271	36	284			0	0	320	676
Approach %	47.1		52.9	0		-					-			76.8	23.2	0		-	11.3	88.8			0		-	
Totals %	5.9		6.7	0		12.6					0			30.8	9.3	0		40.1	5.3	42			0		47.3	
PHF	0.83		0.75	0		0.85					0			0.8	0.72	0		0.87	0.45	0.87			0		0.78	0.82
Cars	33		40	0		73					0			183	54	0		237	30	247			0		277	587
% Cars	82.5		88.9	0		85.9					0			88	85.7	0		87.5	83.3	87			0		86.6	86.8
Trucks	6		5	0		11					0			25	9	0		34	6	36			0		42	87
% Trucks	15		11.1	0		12.9					0			12	14.3	0		12.5	16.7	12.7			0		13.1	12.9
Buses	1		0	0		1					0			0	0	0		0	0	1			0		1	2
% Buses	2.5		0	0		1.2					0			0	0	0		0	0	0.4			0		0.3	0.3
Bicycles	0		0	0		0					0			0	0	0		0	0	0			0		0	0
% Bicycles	0		0	0		0					0			0	0	0		0	0	0			0		0	0
Peds					0	-					0	-						0	-				0	-	0	0
% Peds					0	-					0	-						0	-				0	-	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19326 - City of Vaughan

Intersection Count Report

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Oct 02, 2019
Site Code: 1932600004
Count Categories: Cars, Trucks, Buses, Bicycles, Pedestrians
Count Period: 07:00-10:00, 14:00-19:00
Weather: Clear

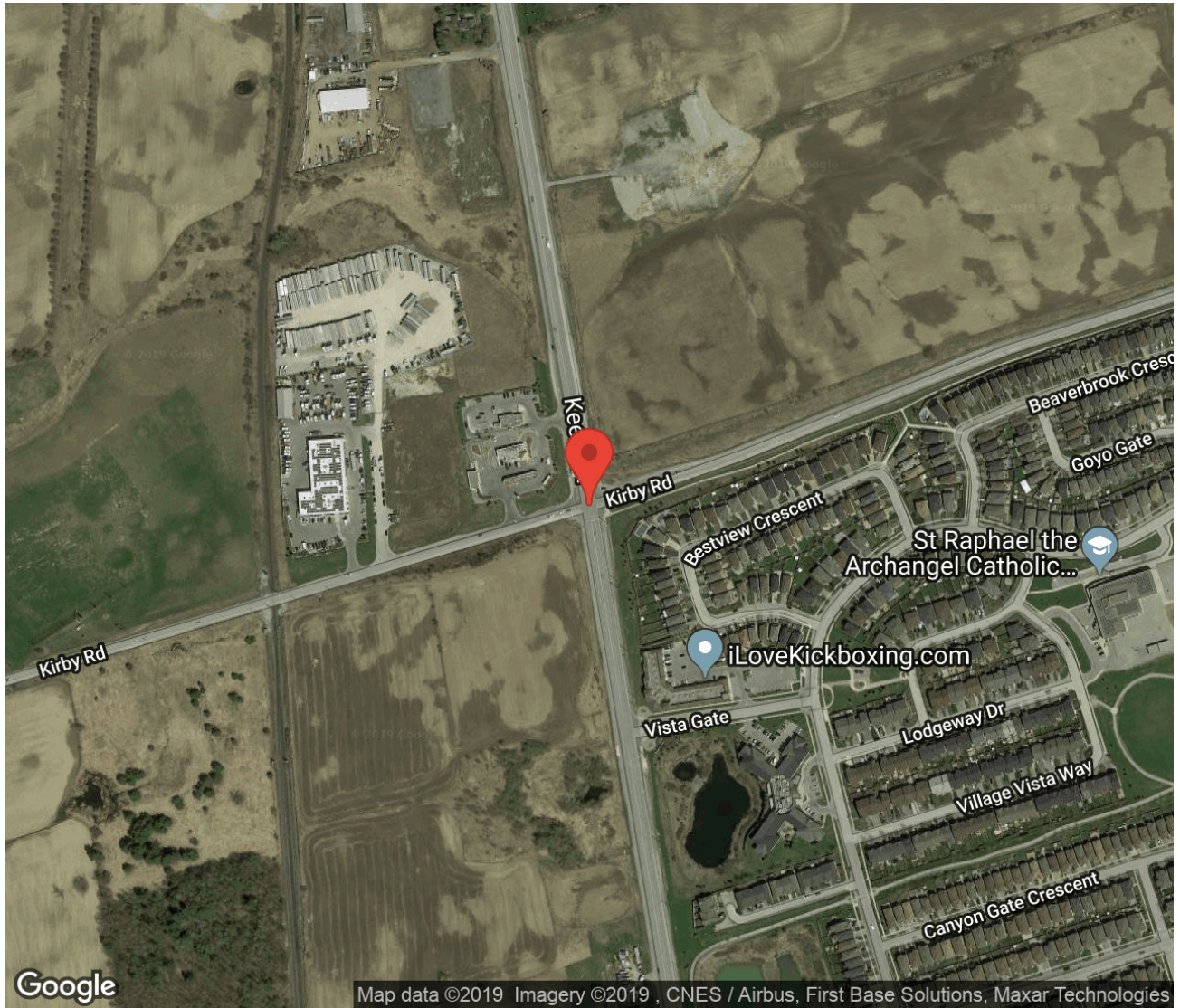


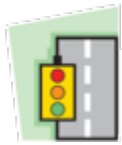
Traffic Count Map

Intersection: Kirby Rd & Keele St

Municipality: Vaughan

Count Date: Oct 02, 2019





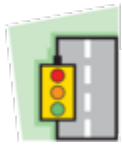
Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Summary

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Oct 02, 2019

Keele St - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	12	1569	119	0	1700	0	27	269	71	0	367	0
08:00 - 09:00	30	1418	113	0	1561	3	65	340	80	0	485	0
09:00 - 10:00	42	787	70	0	899	1	36	211	51	0	298	1
BREAK												
14:00 - 15:00	29	251	37	0	317	3	46	360	86	0	492	2
15:00 - 16:00	26	315	34	0	375	5	63	647	140	0	850	1
16:00 - 17:00	28	318	38	1	385	1	76	851	243	0	1170	0
17:00 - 18:00	36	329	33	1	399	0	80	910	275	0	1265	0
18:00 - 19:00	33	268	32	0	333	0	62	569	195	0	826	0
GRAND TOTAL	236	5255	476	2	5969	13	455	4157	1141	0	5753	4



Traffic Count Summary

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Oct 02, 2019

Kirby Rd - Traffic Summary

East Approach Totals

Includes Cars, Trucks, Buses, Bicycles

West Approach Totals

Includes Cars, Trucks, Buses, Bicycles

Hour	East Approach Totals						West Approach Totals					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	359	163	29	0	551	0	42	92	101	0	235	2
08:00 - 09:00	269	180	49	0	498	1	55	122	101	0	278	0
09:00 - 10:00	129	105	32	0	266	1	24	65	61	0	150	1
BREAK												
14:00 - 15:00	41	81	27	0	149	0	48	85	39	0	172	2
15:00 - 16:00	64	109	40	0	213	4	79	138	50	0	267	1
16:00 - 17:00	84	134	37	0	255	0	69	173	41	0	283	0
17:00 - 18:00	107	132	25	0	264	0	61	242	47	0	350	0
18:00 - 19:00	61	74	33	0	168	0	59	191	45	0	295	0
GRAND TOTAL	1114	978	272	0	2364	6	437	1108	485	0	2030	6



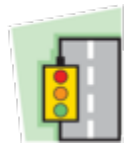
Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	4	252	27	0	283	0	46	3	0	49	1	4	0	0	5	0	0	0	0	0	0
07:15	1	376	27	0	404	1	49	5	0	55	0	3	0	0	3	0	0	0	0	0	0
07:30	1	364	35	0	400	0	34	2	0	36	1	2	0	0	3	0	0	0	0	0	0
07:45	2	395	17	0	414	1	41	2	0	44	0	3	1	0	4	0	0	0	0	0	0
08:00	4	324	34	0	362	0	40	5	0	45	2	6	1	0	9	0	0	0	0	0	0
08:15	5	360	28	0	393	1	34	4	0	39	0	4	0	0	4	0	0	0	0	0	0
08:30	6	300	19	0	325	0	28	4	0	32	0	1	0	0	1	0	0	0	0	0	1
08:45	10	287	16	0	313	1	30	2	0	33	1	4	0	0	5	0	0	0	0	0	2
09:00	9	227	22	0	258	3	27	7	0	37	1	1	1	0	3	0	0	0	0	0	1
09:15	13	201	15	0	229	2	18	3	0	23	0	1	0	0	1	0	0	0	0	0	0
09:30	4	130	10	0	144	1	30	2	0	33	1	1	0	0	2	0	0	0	0	0	0
09:45	6	124	6	0	136	2	27	4	0	33	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	65	3340	256	0	3661	12	404	43	0	459	7	30	3	0	40	0	0	0	0	0	4



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	4	52	10	0	66	1	12	3	0	16	0	1	0	0	1	0	0	0	0	0	1
14:15	3	43	6	0	52	2	10	1	0	13	0	3	0	0	3	0	0	0	0	0	2
14:30	8	47	5	0	60	2	12	3	0	17	0	0	0	0	0	0	0	0	0	0	0
14:45	8	51	7	0	66	1	13	2	0	16	0	7	0	0	7	0	0	0	0	0	0
15:00	5	60	4	0	69	2	8	1	0	11	0	0	1	0	1	0	0	0	0	0	2
15:15	5	74	9	0	88	3	14	3	0	20	0	1	0	0	1	0	0	0	0	0	2
15:30	6	71	7	0	84	2	12	2	0	16	0	2	0	0	2	0	0	0	0	0	0
15:45	3	70	6	0	79	0	1	1	0	2	0	2	0	0	2	0	0	0	0	0	1
16:00	6	51	2	0	59	1	7	4	0	12	1	4	1	0	6	0	0	0	0	0	0
16:15	4	77	4	1	86	0	0	3	0	3	1	2	0	0	3	0	0	0	0	0	0
16:30	6	63	9	0	78	1	11	2	0	14	0	3	1	0	4	0	0	0	0	0	1
16:45	7	85	11	0	103	0	13	1	0	14	1	2	0	0	3	0	0	0	0	0	0
17:00	7	64	7	0	78	0	11	3	0	14	1	1	0	0	2	0	0	0	0	0	0
17:15	6	82	8	1	97	1	6	1	0	8	0	1	0	0	1	0	0	0	0	0	0
17:30	8	70	4	0	82	2	9	4	0	15	1	0	0	0	1	0	0	0	0	0	0
17:45	10	75	5	0	90	0	9	1	0	10	0	1	0	0	1	0	0	0	0	0	0
18:00	15	74	10	0	99	1	4	0	0	5	1	0	0	0	1	0	0	0	0	0	0
18:15	4	56	6	0	66	2	3	4	0	9	0	1	0	0	1	0	0	0	0	0	0
18:30	4	53	6	0	63	0	4	1	0	5	1	0	0	0	1	0	2	0	0	2	0
18:45	3	59	5	0	67	2	12	0	0	14	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	122	1277	131	2	1532	23	171	40	0	234	7	31	3	0	41	0	2	0	0	2	9

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	
GRAND TOTAL	187	4617	387	2	5193	35	575	83	0	693	14	61	6	0	81	0	2	0	0	2	13





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	4	26	10	0	40	1	11	5	0	17	0	1	1	0	2	0	0	0	0	0	0
07:15	7	47	11	0	65	0	15	1	0	16	0	1	1	0	2	0	0	0	0	0	0
07:30	5	58	15	0	78	2	21	6	0	29	0	3	3	0	6	0	0	0	0	0	0
07:45	5	73	14	0	92	3	13	3	0	19	0	0	1	0	1	0	0	0	0	0	0
08:00	14	76	9	0	99	2	15	2	0	19	0	3	0	0	3	0	0	0	0	0	0
08:15	16	76	20	0	112	1	12	11	0	24	0	1	0	0	1	0	0	0	0	0	0
08:30	8	66	23	0	97	8	11	4	0	23	0	3	0	0	3	0	0	0	0	0	0
08:45	12	69	8	0	89	4	7	3	0	14	0	1	0	0	1	0	0	0	0	0	0
09:00	6	47	19	0	72	5	8	4	0	17	0	1	0	0	1	0	0	0	0	0	1
09:15	7	30	3	0	40	3	6	1	0	10	0	2	0	0	2	0	0	0	0	0	0
09:30	5	43	13	0	61	1	16	0	0	17	0	1	1	0	2	0	0	0	0	0	0
09:45	6	32	10	0	48	3	16	0	0	19	0	9	0	0	9	0	0	0	0	0	0
SUBTOTAL	95	643	155	0	893	33	151	40	0	224	0	26	7	0	33	0	0	0	0	0	1

Start Time	Cars					Trucks					Buses					Total Peds					
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total						
GRAND TOTAL	364	3506	998	0	4868	91	598	129	0	818	0	53	14	0	67	0	0	0	0	0	4





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	98	17	3	0	118	1	3	1	0	5	1	0	0	0	1	0	0	0	0	0	0
07:15	73	39	8	0	120	5	4	2	0	11	1	1	1	0	3	0	0	0	0	0	0
07:30	75	49	6	0	130	17	4	2	0	23	1	0	0	0	1	0	0	0	0	0	0
07:45	81	43	6	0	130	6	1	0	0	7	0	2	0	0	2	0	0	0	0	0	0
08:00	83	54	10	0	147	5	3	2	0	10	0	2	2	0	4	0	0	0	0	0	0
08:15	65	38	11	0	114	6	4	3	0	13	0	0	0	0	0	0	0	0	0	0	0
08:30	51	30	9	0	90	6	3	1	0	10	0	1	0	0	1	0	0	0	0	0	1
08:45	47	38	10	0	95	6	6	0	0	12	0	1	1	0	2	0	0	0	0	0	0
09:00	40	31	7	0	78	8	4	3	0	15	1	0	1	0	2	0	0	0	0	0	1
09:15	47	26	5	0	78	5	1	1	0	7	0	0	0	0	0	0	0	0	0	0	0
09:30	15	16	6	0	37	3	3	0	0	6	0	0	1	0	1	0	0	0	0	0	0
09:45	9	18	8	0	35	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	684	399	89	0	1172	69	42	15	0	126	4	7	6	0	17	0	0	0	0	0	2



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	6	12	3	0	21	4	4	1	0	9	0	0	0	0	0	0	0	0	0	0	0
14:15	7	17	10	0	34	4	1	1	0	6	0	0	1	0	1	0	0	0	0	0	0
14:30	8	23	4	0	35	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0
14:45	8	18	6	0	32	3	3	1	0	7	0	0	0	0	0	0	0	0	0	0	0
15:00	9	16	7	0	32	2	4	1	0	7	0	0	1	0	1	0	0	0	0	0	2
15:15	4	27	9	0	40	2	4	1	0	7	1	0	0	0	1	0	0	0	0	0	2
15:30	15	19	8	0	42	6	0	2	0	8	0	0	0	0	0	0	0	0	0	0	0
15:45	16	36	10	0	62	9	3	0	0	12	0	0	1	0	1	0	0	0	0	0	0
16:00	10	29	7	0	46	6	3	2	0	11	0	1	1	0	2	0	0	0	0	0	0
16:15	17	28	10	0	55	3	4	0	0	7	2	1	0	0	3	0	0	0	0	0	0
16:30	22	34	8	0	64	8	1	2	0	11	0	1	1	0	2	0	0	0	0	0	0
16:45	14	29	6	0	49	2	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0
17:00	24	46	9	0	79	7	3	0	0	10	1	0	2	0	3	0	0	0	0	0	0
17:15	18	28	3	0	49	2	4	0	0	6	0	0	0	0	0	1	0	0	0	1	0
17:30	29	26	3	0	58	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	0
17:45	19	22	6	0	47	3	0	0	0	3	0	0	2	0	2	0	0	0	0	0	0
18:00	9	19	3	0	31	3	3	1	0	7	0	0	0	0	0	0	0	0	0	0	0
18:15	20	21	9	0	50	6	2	2	0	10	0	0	1	0	1	0	0	0	0	0	0
18:30	8	12	9	0	29	3	0	1	0	4	0	0	1	0	1	0	0	0	0	0	0
18:45	11	15	4	0	30	1	2	2	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	274	477	134	0	885	78	50	17	0	145	4	3	11	0	18	1	0	0	0	1	4

Start Time	Cars					Trucks					Buses					Bicycles				Total Peds	
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺		Total
GRAND TOTAL	958	876	223	0	2057	147	92	32	0	271	8	10	17	0	35	1	0	0	0	1	6





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

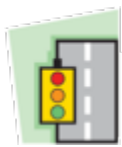
Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	10	17	8	0	35	4	1	2	0	7	0	0	0	0	0	0	0	0	0	0	2
07:15	5	25	19	0	49	2	0	5	0	7	0	2	0	0	2	0	0	0	0	0	0
07:30	8	22	30	0	60	0	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0
07:45	12	20	28	0	60	1	3	5	0	9	0	0	1	0	1	0	0	0	0	0	0
08:00	11	28	14	0	53	3	2	3	0	8	2	1	0	0	3	0	0	0	0	0	0
08:15	15	28	31	0	74	3	6	3	0	12	1	2	0	0	3	0	0	0	0	0	0
08:30	9	31	9	0	49	3	4	3	0	10	0	1	0	0	1	0	0	0	0	0	0
08:45	6	17	32	0	55	2	2	6	0	10	0	0	0	0	0	0	0	0	0	0	0
09:00	6	17	11	0	34	3	2	5	0	10	0	1	0	0	1	0	0	0	0	0	1
09:15	5	10	14	0	29	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
09:30	2	17	7	0	26	2	1	3	0	6	0	0	0	0	0	0	0	0	0	0	0
09:45	3	13	18	0	34	3	3	2	0	8	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	92	245	221	0	558	26	26	41	0	93	3	8	1	0	12	0	0	0	0	0	3

Start Time	Cars					Trucks					Buses					Total Peds				
	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total					
GRAND TOTAL	344	981	404	0	1729	90	111	79	0	280	3	16	2	0	21	0	0	0	0	6





Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00

Intersection: Kirby Rd & Keele St
Site ID: 1932600004
Count Date: Oct 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Keele St runs N/S

North Approach

	Out	In	Total
	1569	362	1931
	164	75	239
	20	12	32
	0	0	0
Totals	1753	449	2202

Keele St

	0	0	0	0
	2	15	3	0
	13	149	2	0
	114	1443	12	0
Totals	129	1607	17	0

East Approach

	Out	In	Total
	521	168	689
	53	37	90
	7	10	17
	0	0	0
Totals	581	215	796

Kirby Rd

					Totals
	0	0	0	0	0
	0	3	7	46	56
	0	3	13	98	114
	0	1	14	103	118

Peds: 0



Peds: 0

Peds: 0

Peds: 0

Kirby Rd

Totals				
0	0	0	0	0
42	33	7	2	0
200	184	12	4	0
339	304	34	1	0

West Approach

	Out	In	Total
	247	338	585
	34	33	67
	7	6	13
	0	0	0
Totals	288	377	665

Totals				
48	351	84	0	
	40	283	58	0
	8	61	22	0
	0	7	4	0
	0	0	0	0

Keele St

South Approach

	Out	In	Total
	381	1850	2231
	91	197	288
	11	17	28
	0	0	0
Totals	483	2064	2547

- Cars

- Trucks

- Buses

- Bicycles

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Keele St
Count Date: Oct 02, 2019
Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Keele St						South Approach Keele St						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicl es
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:30	2	400	37	0	0	439	7	82	24	0	0	113	93	53	8	0	0	154	8	24	33	0	0	65	771
07:45	3	439	20	0	0	462	8	86	18	0	0	112	87	46	6	0	0	139	13	23	34	0	0	70	783
08:00	6	370	40	0	0	416	16	94	11	0	0	121	88	59	14	0	0	161	16	31	17	0	0	64	762
08:15	6	398	32	0	0	436	17	89	31	0	0	137	71	42	14	0	0	127	19	36	34	0	0	89	789
Grand Total	17	1607	129	0	0	1753	48	351	84	0	0	483	339	200	42	0	0	581	56	114	118	0	0	288	3105
Approach %	1	91.7	7.4	0	-	-	9.9	72.7	17.4	0	-	-	58.3	34.4	7.2	0	-	-	19.4	39.6	41	0	-	-	-
Totals %	0.5	51.8	4.2	0	-	56.5	1.5	11.3	2.7	0	-	15.6	10.9	6.4	1.4	0	-	18.7	1.8	3.7	3.8	0	-	9.3	-
PHF	0.71	0.92	0.81	0	-	0.95	0.71	0.93	0.68	0	-	0.88	0.91	0.85	0.75	0	-	0.9	0.74	0.79	0.87	0	-	0.81	0.98
Cars	12	1443	114	0	-	1569	40	283	58	0	-	381	304	184	33	0	-	521	46	98	103	0	-	247	2718
% Cars	70.6	89.8	88.4	0	-	89.5	83.3	80.6	69	0	-	78.9	89.7	92	78.6	0	-	89.7	82.1	86	87.3	0	-	85.8	87.5
Trucks	2	149	13	0	-	164	8	61	22	0	-	91	34	12	7	0	-	53	7	13	14	0	-	34	342
% Trucks	11.8	9.3	10.1	0	-	9.4	16.7	17.4	26.2	0	-	18.8	10	6	16.7	0	-	9.1	12.5	11.4	11.9	0	-	11.8	11
Buses	3	15	2	0	-	20	0	7	4	0	-	11	1	4	2	0	-	7	3	3	1	0	-	7	45
% Buses	17.6	0.9	1.6	0	-	1.1	0	2	4.8	0	-	2.3	0.3	2	4.8	0	-	1.2	5.4	2.6	0.8	0	-	2.4	1.4
Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	0



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

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

Intersection: Kirby Rd & Keele St
Site ID: 1932600004
Count Date: Oct 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Keele St runs N/S

North Approach

	Out	In	Total
	360	922	1282
	51	113	164
	7	5	12
	0	0	0
Totals	418	1040	1458

Keele St

	0	0	0	0
	0	4	3	0
	9	39	3	0
	30	301	28	1
Totals	39	344	34	1

East Approach

	Out	In	Total
	235	494	729
	27	47	74
	3	4	7
	1	0	1
Totals	266	545	811

Kirby Rd

				Totals
0	0	0	0	0
0	0	11	44	55
0	1	24	198	223
0	1	7	38	46

Peds: 0



Peds: 0

Peds: 0

Peds: 0

Kirby Rd

Totals				
0	0	0	0	0
23	21	0	2	0
142	129	13	0	0
101	85	14	1	1

West Approach

	Out	In	Total
	280	237	517
	42	34	76
	2	0	2
	0	0	0
Totals	324	271	595

Totals				
90	961	288	0	
	78	856	268	0
	12	102	20	0
	0	3	0	0
	0	0	0	0

Keele St

South Approach

	Out	In	Total
	1202	424	1626
	134	60	194
	3	6	9
	0	1	1
Totals	1339	491	1830

- Cars

- Trucks

- Buses

- Bicycles

Comments



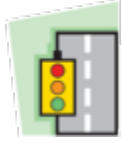
Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Keele St
Count Date: Oct 02, 2019
Period: 14:00 - 19:00

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

Start Time	North Approach Keele St						South Approach Keele St						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
16:45	8	100	12	0	0	120	25	227	66	0	0	318	16	32	6	0	0	54	11	43	7	0	0	61	553
17:00	8	76	10	0	0	94	19	258	78	0	0	355	32	49	11	0	0	92	18	65	9	0	0	92	633
17:15	7	89	9	1	0	106	15	220	67	0	0	302	21	32	3	0	0	56	16	57	12	0	0	85	549
17:30	11	79	8	0	0	98	31	256	77	0	0	364	32	29	3	0	0	64	10	58	18	0	0	86	612
Grand Total	34	344	39	1	0	418	90	961	288	0	0	1339	101	142	23	0	0	266	55	223	46	0	0	324	2347
Approach %	8.1	82.3	9.3	0.2	-	-	6.7	71.8	21.5	0	-	-	38	53.4	8.6	0	-	-	17	68.8	14.2	0	-	-	-
Totals %	1.4	14.7	1.7	0	-	17.8	3.8	40.9	12.3	0	-	57.1	4.3	6.1	1	0	-	11.3	2.3	9.5	2	0	-	13.8	-
PHF	0.77	0.86	0.81	0.25	-	0.87	0.73	0.93	0.92	0	-	0.92	0.79	0.72	0.52	0	-	0.72	0.76	0.86	0.64	0	-	0.88	0.93
Cars	28	301	30	1	-	360	78	856	268	0	-	1202	85	129	21	0	-	235	44	198	38	0	-	280	2077
% Cars	82.4	87.5	76.9	100	-	86.1	86.7	89.1	93.1	0	-	89.8	84.2	90.8	91.3	0	-	88.3	80	88.8	82.6	0	-	86.4	88.5
Trucks	3	39	9	0	-	51	12	102	20	0	-	134	14	13	0	0	-	27	11	24	7	0	-	42	254
% Trucks	8.8	11.3	23.1	0	-	12.2	13.3	10.6	6.9	0	-	10	13.9	9.2	0	0	-	10.2	20	10.8	15.2	0	-	13	10.8
Buses	3	4	0	0	-	7	0	3	0	0	-	3	1	0	2	0	-	3	0	1	1	0	-	2	15
% Buses	8.8	1.2	0	0	-	1.7	0	0.3	0	0	-	0.2	1	0	8.7	0	-	1.1	0	0.4	2.2	0	-	0.6	0.6
Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	1
% Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	0.4	0	0	0	0	-	0	0
Peds	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0
% Peds	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19326 - City of Vaughan

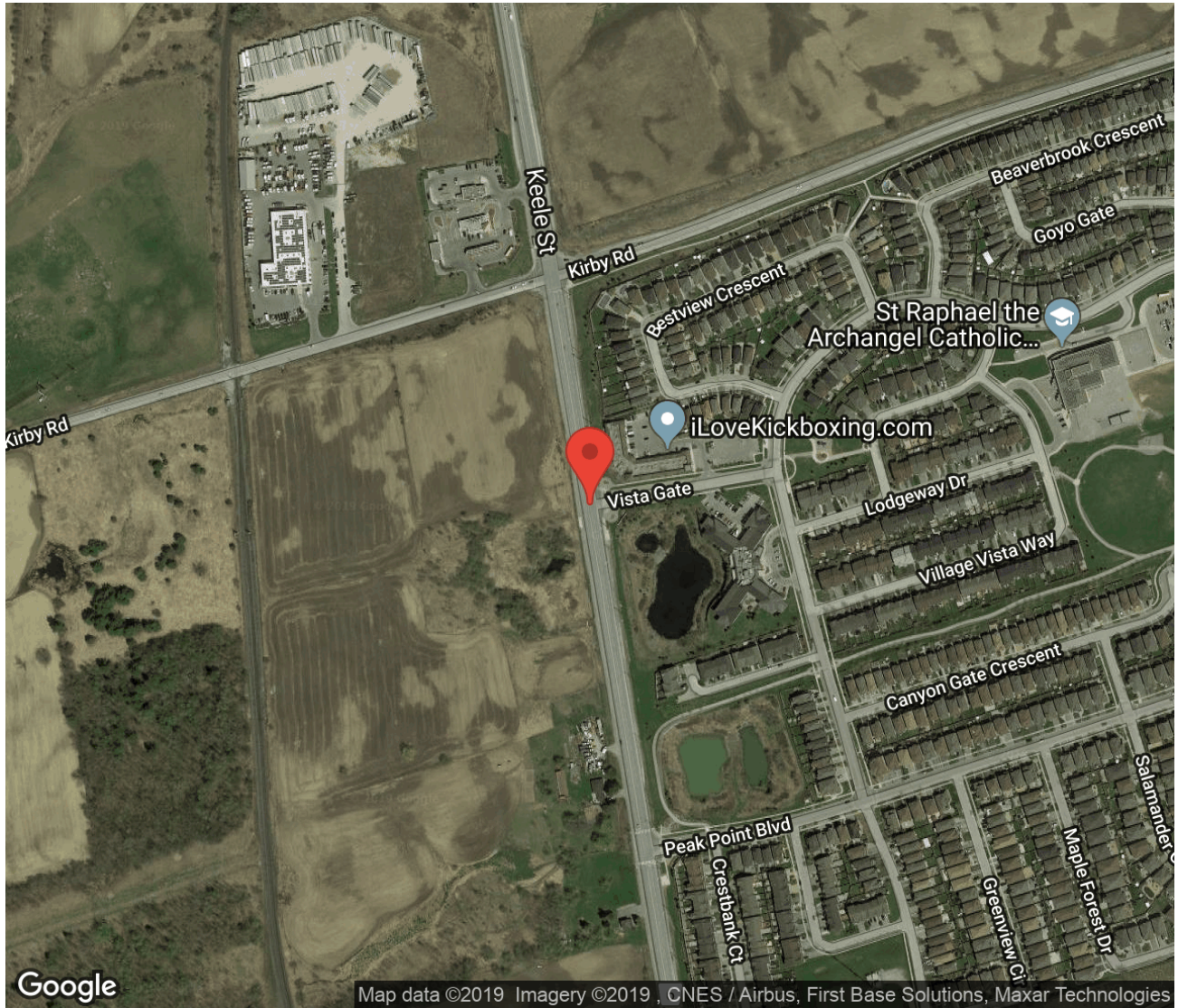
Intersection Count Report

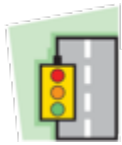
Intersection: Keele St & Vista Gate
Municipality: Vaughan
Count Date: Oct 02, 2019
Site Code: 1932600005
Count Categories: Cars, Trucks, Buses, Bicycles, Pedestrians
Count Period: 07:00-10:00, 14:00-19:00
Weather: Clear



Traffic Count Map

Intersection: Keele St & Vista Gate
Municipality: Vaughan
Count Date: Oct 02, 2019





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Summary

Intersection: Keele St & Vista Gate
Municipality: Vaughan
Count Date: Oct 02, 2019

Keele St - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	20	2009	0	0	2029	0	0	340	23	0	363	0
08:00 - 09:00	44	1744	0	0	1788	0	0	440	37	0	477	0
09:00 - 10:00	18	959	0	0	977	0	0	273	27	1	301	0
BREAK												
14:00 - 15:00	20	311	0	0	331	0	0	469	47	0	516	2
15:00 - 16:00	42	387	0	0	429	0	0	820	47	0	867	6
16:00 - 17:00	33	410	0	0	443	0	0	1143	67	0	1210	0
17:00 - 18:00	37	446	0	0	483	0	0	1237	101	0	1338	0
18:00 - 19:00	49	324	0	1	374	0	0	790	63	0	853	0
GRAND TOTAL	263	6590	0	1	6854	0	0	5512	412	1	5925	8



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Vista Gate
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	5	353	0	0	358	0	49	0	0	49	1	4	0	0	5	0	0	0	0	0	0
07:15	2	466	0	0	468	0	59	0	0	59	1	3	0	0	4	0	0	0	0	0	0
07:30	5	464	0	0	469	0	54	0	0	54	0	3	0	0	3	0	0	0	0	0	0
07:45	4	500	0	0	504	2	50	0	0	52	0	4	0	0	4	0	0	0	0	0	0
08:00	5	416	0	0	421	0	48	0	0	48	2	4	0	0	6	0	0	0	0	0	0
08:15	9	447	0	0	456	0	43	0	0	43	0	4	0	0	4	0	0	0	0	0	0
08:30	15	345	0	0	360	0	37	0	0	37	0	1	0	0	1	0	0	0	0	0	0
08:45	13	353	0	0	366	0	42	0	0	42	0	4	0	0	4	0	0	0	0	0	0
09:00	3	275	0	0	278	0	40	0	0	40	0	2	0	0	2	0	0	0	0	0	0
09:15	5	257	0	0	262	1	23	0	0	24	0	1	0	0	1	0	0	0	0	0	0
09:30	1	151	0	0	152	0	36	0	0	36	0	1	0	0	1	0	0	0	0	0	0
09:45	8	143	0	0	151	0	30	0	0	30	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	75	4170	0	0	4245	3	511	0	0	514	4	31	0	0	35	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Vista Gate
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	6	63	0	0	69	1	16	0	0	17	0	1	0	0	1	0	0	0	0	0	0
14:15	3	49	0	0	52	2	13	0	0	15	0	3	0	0	3	0	0	0	0	0	0
14:30	3	61	0	0	64	1	17	0	0	18	0	0	0	0	0	0	0	0	0	0	0
14:45	4	62	0	0	66	0	19	0	0	19	0	7	0	0	7	0	0	0	0	0	0
15:00	5	70	0	0	75	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
15:15	10	74	0	0	84	1	16	0	0	17	0	2	0	0	2	0	0	0	0	0	0
15:30	13	87	0	0	100	0	20	0	0	20	0	2	0	0	2	0	0	0	0	0	0
15:45	11	90	0	0	101	2	13	0	0	15	0	2	0	0	2	0	0	0	0	0	0
16:00	6	62	0	0	68	0	15	0	0	15	0	4	0	0	4	0	0	0	0	0	0
16:15	7	95	0	0	102	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	0
16:30	11	84	0	0	95	2	22	0	0	24	0	3	0	0	3	0	0	0	0	0	0
16:45	7	96	0	0	103	0	17	0	0	17	0	3	0	0	3	0	0	0	0	0	0
17:00	7	89	0	0	96	1	18	0	0	19	0	2	0	0	2	0	0	0	0	0	0
17:15	10	98	0	0	108	1	11	0	0	12	0	1	0	0	1	0	1	0	0	1	0
17:30	9	108	0	0	117	1	11	0	0	12	0	0	0	0	0	0	0	0	0	0	0
17:45	8	94	0	0	102	0	12	0	0	12	0	1	0	0	1	0	0	0	0	0	0
18:00	12	82	0	0	94	2	5	0	0	7	0	0	0	0	0	0	0	0	0	0	0
18:15	9	73	0	1	83	0	9	0	0	9	0	1	0	0	1	0	0	0	0	0	0
18:30	12	61	0	0	73	0	8	0	0	8	0	0	0	0	0	2	0	0	0	2	0
18:45	14	68	0	0	82	0	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	167	1566	0	1	1734	14	273	0	0	287	0	36	0	0	36	0	3	0	0	3	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	242	5736	0	1	5979	17	784	0	0	801	4	67	0	0	71	0	3	0	0	3	0





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Vista Gate
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	36	4	0	40	0	17	0	0	17	0	2	1	0	3	0	0	0	0	0	0
07:15	0	56	5	0	61	0	16	0	0	16	0	1	0	0	1	0	0	0	0	0	0
07:30	0	74	5	0	79	0	29	1	0	30	0	6	1	0	7	0	0	0	0	0	0
07:45	0	85	6	0	91	0	17	0	0	17	0	1	0	0	1	0	0	0	0	0	0
08:00	0	88	8	0	96	0	18	0	0	18	0	3	1	0	4	0	0	0	0	0	0
08:15	0	99	3	0	102	0	23	1	0	24	0	1	0	0	1	0	0	0	0	0	0
08:30	0	90	10	0	100	0	22	0	0	22	0	3	0	0	3	0	0	0	0	0	0
08:45	0	79	14	0	93	0	13	0	0	13	0	1	0	0	1	0	0	0	0	0	0
09:00	0	65	10	0	75	0	17	0	0	17	0	1	0	0	1	0	0	0	0	0	0
09:15	0	38	5	0	43	0	10	0	0	10	0	2	0	0	2	0	0	0	0	0	0
09:30	0	54	4	1	59	0	16	0	0	16	0	2	0	0	2	0	0	0	0	0	0
09:45	0	40	8	0	48	0	19	0	0	19	0	9	0	0	9	0	0	0	0	0	0
SUBTOTAL	0	804	82	1	887	0	217	2	0	219	0	32	3	0	35	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Vista Gate
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	0	75	11	0	86	0	28	1	0	29	0	4	0	0	4	0	0	0	0	0	0
14:15	0	76	10	0	86	0	21	1	0	22	0	3	0	0	3	0	0	0	0	0	2
14:30	0	101	11	0	112	0	19	1	0	20	0	6	2	0	8	0	0	0	0	0	0
14:45	0	118	8	0	126	0	18	2	0	20	0	0	0	0	0	0	0	0	0	0	0
15:00	0	138	5	0	143	0	35	1	0	36	0	4	0	0	4	0	0	0	0	0	2
15:15	0	153	9	0	162	0	33	0	0	33	0	2	0	0	2	0	0	0	0	0	2
15:30	0	169	14	0	183	0	34	2	0	36	0	1	0	0	1	0	0	0	0	0	1
15:45	0	208	14	0	222	0	41	2	0	43	0	2	0	0	2	0	0	0	0	0	1
16:00	0	200	13	0	213	0	37	0	0	37	0	3	1	0	4	0	0	0	0	0	0
16:15	0	257	16	0	273	0	42	2	0	44	0	0	0	0	0	0	0	0	0	0	0
16:30	0	245	22	0	267	0	44	1	0	45	0	1	0	0	1	0	0	0	0	0	0
16:45	0	280	11	0	291	0	33	1	0	34	0	1	0	0	1	0	0	0	0	0	0
17:00	0	318	20	0	338	0	33	1	0	34	0	1	0	0	1	0	0	0	0	0	0
17:15	0	270	28	0	298	0	24	4	0	28	0	0	0	0	0	0	0	0	0	0	0
17:30	0	310	29	0	339	0	43	0	0	43	0	1	0	0	1	0	0	0	0	0	0
17:45	0	214	18	0	232	0	23	1	0	24	0	0	0	0	0	0	0	0	0	0	0
18:00	0	225	7	0	232	0	29	1	0	30	0	2	0	0	2	0	0	0	0	0	0
18:15	0	195	13	0	208	0	13	2	0	15	0	1	1	0	2	0	0	0	0	0	0
18:30	0	169	20	0	189	0	23	0	0	23	0	0	0	0	0	0	0	0	0	0	0
18:45	0	120	18	0	138	0	12	1	0	13	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	0	3841	297	0	4138	0	585	24	0	609	0	33	4	0	37	0	0	0	0	0	8

Start Time	Cars				Total	Trucks				Total	Buses				Total	Total Peds				
	↶	↑	↷	↻		↶	↑	↷	↻		↶	↑	↷	↻						
GRAND TOTAL	0	4645	379	1	5025	0	802	26	0	828	0	65	7	0	72	0	0	0	0	8





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Vista Gate
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Vista Gate

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	12	0	4	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	12	0	9	0	21	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	1
07:30	16	0	4	1	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	8	0	7	0	15	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0
08:00	8	0	11	0	19	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0
08:15	7	0	13	0	20	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:30	11	0	7	0	18	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:45	14	0	10	0	24	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
09:00	9	0	7	0	16	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
09:15	9	0	2	0	11	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
09:30	7	0	7	0	14	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
09:45	8	0	8	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	121	0	89	1	211	7	0	7	0	14	0	0	1	0	1	0	0	0	0	0	3



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Vista Gate
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Vista Gate

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	6	0	4	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	6	0	5	0	11	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0
14:30	12	0	5	0	17	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
14:45	6	0	6	0	12	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0
15:00	13	0	6	0	19	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
15:15	12	0	6	0	18	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
15:30	9	0	7	0	16	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
15:45	12	0	8	0	20	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:00	9	0	8	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	2	0	5	0	7	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
16:30	10	0	9	1	20	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
16:45	3	0	4	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	6	0	3	0	9	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:15	10	0	8	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	10	0	9	0	19	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
17:45	7	0	7	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	11	0	10	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	6	0	5	0	11	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
18:30	6	0	9	1	16	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0
18:45	17	0	9	0	26	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	173	0	133	2	308	13	0	9	0	22	1	0	1	0	2	0	0	0	0	0	2

Start Time	Cars					Trucks					Buses					Total Peds				
	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total					
GRAND TOTAL	294	0	222	3	519	20	0	16	0	36	1	0	2	0	3	0	0	0	0	5





Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00

Intersection: Keele St & Vista Gate
Site ID: 1932600005
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Keele St runs N/S

North Approach

	Out	In	Total
	1850	381	2231
	197	91	288
	17	11	28
	0	0	0
Totals	2064	483	2547

Keele St

	0	0	0
	15	2	0
	195	2	0
	1827	23	0
Totals	2037	27	0

Peds: 0



Peds: 0

Peds: 0

Peds: 0

Totals	444	26	0
	346	22	0
	87	2	0
	11	2	0
	0	0	0

Keele St

East Approach

	Out	In	Total
	75	46	121
	8	4	12
	0	4	4
	0	0	0
Totals	83	54	137

Vista Gate

Totals				
1	1	0	0	0
39	35	4	0	0
43	39	4	0	0

South Approach

	Out	In	Total
	368	1866	2234
	89	199	288
	13	15	28
	0	0	0
Totals	470	2080	2550

- Cars

- Trucks

- Buses

- Bicycles

Comments



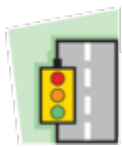
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Keele St & Vista Gate
Count Date: Oct 02, 2019
Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Keele St						South Approach Keele St						East Approach Vista Gate						West Approach						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:30	5	521		0	0	526		109	7	0	0	116	16		4	1	0	21					0		663
07:45	6	554		0	0	560		103	6	0	0	109	9		9	0	0	18					0		687
08:00	7	468		0	0	475		109	9	0	0	118	11		12	0	0	23					0		616
08:15	9	494		0	0	503		123	4	0	0	127	7		14	0	0	21					0		651
Grand Total	27	2037		0	0	2064		444	26	0	0	470	43		39	1	0	83					0	0	2617
Approach %	1.3	98.7		0	-	-		94.5	5.5	0	-	-	51.8		47	1.2	-	-					-	-	-
Totals %	1	77.8		0	-	78.9		17	1	0	-	18	1.6		1.5	0	-	3.2					0	-	-
PHF	0.75	0.92		0	0.92	-		0.9	0.72	0	0.93	-	0.67		0.7	0.25	0.9	-					0	0.95	-
Cars	23	1827		0	-	1850		346	22	0	-	368	39		35	1	-	75					0	-	2293
% Cars	85.2	89.7		0	-	89.6		77.9	84.6	0	-	78.3	90.7		89.7	100	-	90.4					0	-	87.6
Trucks	2	195		0	-	197		87	2	0	-	89	4		4	0	-	8					0	-	294
% Trucks	7.4	9.6		0	-	9.5		19.6	7.7	0	-	18.9	9.3		10.3	0	-	9.6					0	-	11.2
Buses	2	15		0	-	17		11	2	0	-	13	0		0	0	-	0					0	-	30
% Buses	7.4	0.7		0	-	0.8		2.5	7.7	0	-	2.8	0		0	0	-	0					0	-	1.1
Bicycles	0	0		0	-	0		0	0	0	-	0	0		0	0	-	0					0	-	0
% Bicycles	0	0		0	-	0		0	0	0	-	0	0		0	0	-	0					0	-	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	0



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

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

Intersection: Keele St & Vista Gate
Site ID: 1932600005
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Keele St runs N/S

North Approach

	Out	In	Total
	424	1202	1626
	60	134	194
	6	3	9
	1	0	1
Totals	491	1339	1830

Keele St

	1	0	0
	6	0	0
	57	3	0
	391	33	0
Totals	455	36	0

Peds: 0



Peds: 0

Peds: 0

Peds: 0

Totals	1314	94	0
	1178	88	0
	133	6	0
	3	0	0
	0	0	0

Keele St

East Approach

	Out	In	Total
	53	121	174
	2	9	11
	0	0	0
	0	0	0
Totals	55	130	185

Vista Gate

Totals				
0	0	0	0	0
25	24	1	0	0
30	29	1	0	0

South Approach

	Out	In	Total
	1266	420	1686
	139	58	197
	3	6	9
	0	1	1
Totals	1408	485	1893

- Cars

- Trucks

- Buses

- Bicycles

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Keele St & Vista Gate
Count Date: Oct 02, 2019
Period: 14:00 - 19:00

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

Start Time	North Approach Keele St						South Approach Keele St						East Approach Vista Gate						West Approach						Total Vehicles	
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total		
16:45	7	116		0	0	123		314	12	0	0	326	3		4	0	0	7					0		456	
17:00	8	109		0	0	117		352	21	0	0	373	7		3	0	0	10					0		500	
17:15	11	111		0	0	122		294	32	0	0	326	10		8	0	0	18					0		466	
17:30	10	119		0	0	129		354	29	0	0	383	10		10	0	0	20					0		532	
Grand Total	36	455		0	0	491		1314	94	0	0	1408	30		25	0	0	55					0	0	1954	
Approach %	7.3	92.7		0		-		93.3	6.7	0		-	54.5		45.5	0		-							-	
Totals %	1.8	23.3		0		25.1		67.2	4.8	0		72.1	1.5		1.3	0		2.8							0	
PHF	0.82	0.96		0		0.95		0.93	0.73	0		0.92	0.75		0.63	0		0.69						0	0.92	
Cars	33	391		0		424		1178	88	0		1266	29		24	0		53					0		1743	
% Cars	91.7	85.9		0		86.4		89.6	93.6	0		89.9	96.7		96	0		96.4					0		89.2	
Trucks	3	57		0		60		133	6	0		139	1		1	0		2					0		201	
% Trucks	8.3	12.5		0		12.2		10.1	6.4	0		9.9	3.3		4	0		3.6					0		10.3	
Buses	0	6		0		6		3	0	0		3	0		0	0		0					0		9	
% Buses	0	1.3		0		1.2		0.2	0	0		0.2	0		0	0		0					0		0.5	
Bicycles	0	1		0		1		0	0	0		0	0		0	0		0					0		1	
% Bicycles	0	0.2		0		0.2		0	0	0		0	0		0	0		0					0		0.1	
Peds					0	-					0	-					0	-					0	-	0	
% Peds					0	-					0	-					0	-					0	-	0	



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19326 - City of Vaughan

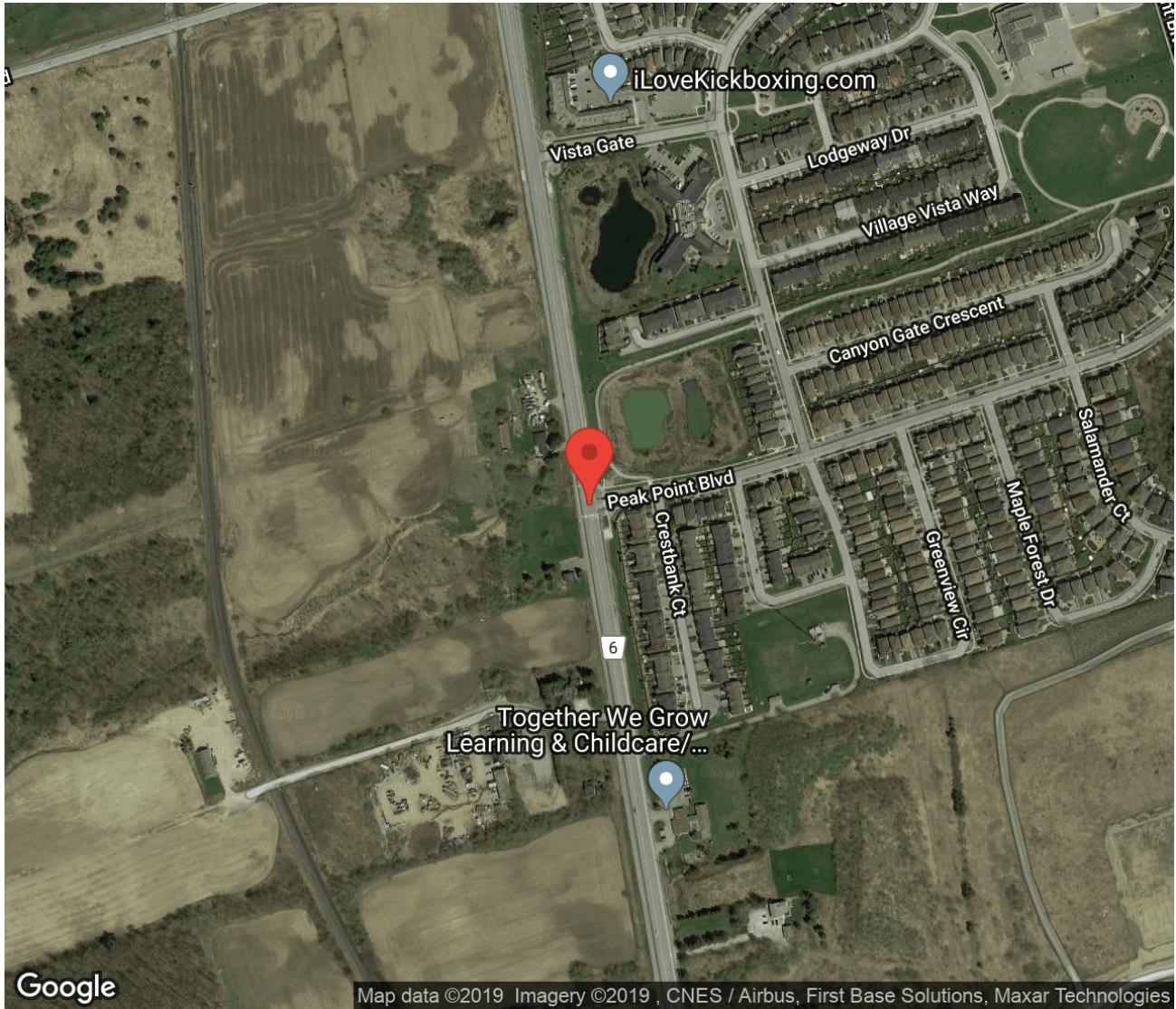
Intersection Count Report

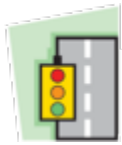
Intersection:	Keele St & Peak Point Blvd
Municipality:	Vaughan
Count Date:	Oct 02, 2019
Site Code:	1932600006
Count Categories:	Cars, Trucks, Buses, Bicycles, Pedestrians
Count Period:	07:00-10:00, 14:00-19:00
Weather:	Clear



Traffic Count Map

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Summary

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

Keele St - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	4	2049	0	0	2053	3	0	343	33	0	376	0
08:00 - 09:00	6	1800	0	1	1807	1	0	443	82	0	525	0
09:00 - 10:00	9	988	0	0	997	0	0	289	45	0	334	0
BREAK												
14:00 - 15:00	10	331	0	0	341	1	0	507	95	0	602	0
15:00 - 16:00	8	428	0	0	436	0	0	850	142	0	992	0
16:00 - 17:00	16	418	0	0	434	2	0	1185	185	0	1370	2
17:00 - 18:00	12	474	0	0	486	1	0	1325	207	0	1532	0
18:00 - 19:00	10	355	0	1	366	0	0	841	174	0	1015	0
GRAND TOTAL	75	6843	0	2	6920	8	0	5783	963	0	6746	2



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	1	364	0	0	365	0	49	0	0	49	2	2	0	0	4	0	0	0	0	0	0
07:15	0	478	0	0	478	0	64	0	0	64	0	3	0	0	3	0	0	0	0	0	0
07:30	0	480	0	0	480	0	52	0	0	52	1	2	0	0	3	0	0	0	0	0	1
07:45	0	504	0	0	504	0	47	0	0	47	0	4	0	0	4	0	0	0	0	0	2
08:00	1	422	0	0	423	0	55	0	0	55	0	4	0	0	4	0	0	0	0	0	0
08:15	2	457	0	1	460	1	44	0	0	45	0	4	0	0	4	0	0	0	0	0	0
08:30	1	358	0	0	359	0	32	0	0	32	0	1	0	0	1	0	0	0	0	0	0
08:45	0	373	0	0	373	1	46	0	0	47	0	4	0	0	4	0	0	0	0	0	1
09:00	2	285	0	0	287	0	40	0	0	40	0	2	0	0	2	0	0	0	0	0	0
09:15	2	263	0	0	265	1	27	0	0	28	0	1	0	0	1	0	0	0	0	0	0
09:30	3	159	0	0	162	0	38	0	0	38	0	1	0	0	1	0	0	0	0	0	0
09:45	1	146	0	0	147	0	26	0	0	26	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	13	4289	0	1	4303	3	520	0	0	523	3	28	0	0	31	0	0	0	0	0	4



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	3	63	0	0	66	0	15	0	0	15	0	1	0	0	1	0	0	0	0	0	0
14:15	1	53	0	0	54	0	11	0	0	11	0	3	0	0	3	0	0	0	0	0	1
14:30	2	74	0	0	76	1	18	0	0	19	0	0	0	0	0	0	0	0	0	0	0
14:45	2	65	0	0	67	0	21	0	0	21	1	7	0	0	8	0	0	0	0	0	0
15:00	2	79	0	0	81	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0
15:15	3	86	0	0	89	0	14	0	0	14	0	2	0	0	2	0	0	0	0	0	0
15:30	1	93	0	0	94	0	22	0	0	22	0	2	0	0	2	0	0	0	0	0	0
15:45	2	102	0	0	104	0	16	0	0	16	0	2	0	0	2	0	0	0	0	0	0
16:00	4	64	0	0	68	3	11	0	0	14	0	4	0	0	4	0	0	0	0	0	2
16:15	3	96	0	0	99	0	9	0	0	9	0	4	0	0	4	0	0	0	0	0	0
16:30	3	91	0	0	94	2	18	0	0	20	0	3	0	0	3	0	0	0	0	0	0
16:45	1	102	0	0	103	0	13	0	0	13	0	3	0	0	3	0	0	0	0	0	0
17:00	0	93	0	0	93	0	16	0	0	16	0	2	0	0	2	0	0	0	0	0	1
17:15	2	109	0	0	111	0	15	0	0	15	0	1	0	0	1	0	1	0	0	1	0
17:30	4	114	0	0	118	0	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0
17:45	6	100	0	0	106	0	9	0	0	9	0	1	0	0	1	0	0	0	0	0	0
18:00	3	92	0	0	95	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
18:15	3	75	0	0	78	0	12	0	0	12	0	1	0	0	1	0	0	0	0	0	0
18:30	1	60	0	1	62	0	6	0	0	6	0	0	0	0	0	0	2	0	0	2	0
18:45	2	84	0	0	86	1	19	0	0	20	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	48	1695	0	1	1744	7	272	0	0	279	1	36	0	0	37	0	3	0	0	3	4

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	61	5984	0	2	6047	10	792	0	0	802	4	64	0	0	68	0	3	0	0	3	8





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	33	5	0	38	0	19	0	0	19	0	3	0	0	3	0	0	0	0	0	0
07:15	0	55	5	0	60	0	20	0	0	20	0	1	1	0	2	0	0	0	0	0	0
07:30	0	75	7	0	82	0	25	0	0	25	0	6	1	0	7	0	0	0	0	0	0
07:45	0	85	12	0	97	0	20	0	0	20	0	1	2	0	3	0	0	0	0	0	0
08:00	0	89	13	0	102	0	16	0	0	16	0	3	1	0	4	0	0	0	0	0	0
08:15	0	98	25	0	123	0	20	1	0	21	0	1	0	0	1	0	0	0	0	0	0
08:30	0	93	24	0	117	0	19	3	0	22	0	3	1	0	4	0	0	0	0	0	0
08:45	0	87	14	0	101	0	13	0	0	13	0	1	0	0	1	0	0	0	0	0	0
09:00	0	75	15	0	90	0	14	1	0	15	0	1	2	0	3	0	0	0	0	0	0
09:15	0	40	7	0	47	0	15	1	0	16	0	2	0	0	2	0	0	0	0	0	0
09:30	0	56	7	0	63	0	17	0	0	17	0	2	1	0	3	0	0	0	0	0	0
09:45	0	43	9	0	52	0	15	2	0	17	0	9	0	0	9	0	0	0	0	0	0
SUBTOTAL	0	829	143	0	972	0	213	8	0	221	0	33	9	0	42	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Keele St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	0	79	14	0	93	0	26	1	0	27	0	4	0	0	4	0	0	0	0	0	0
14:15	0	89	14	0	103	0	27	2	0	29	0	3	0	0	3	0	0	0	0	0	0
14:30	0	110	25	0	135	0	20	3	0	23	0	8	1	0	9	0	0	0	0	0	0
14:45	0	124	32	0	156	0	17	2	0	19	0	0	1	0	1	0	0	0	0	0	0
15:00	0	134	16	0	150	0	32	1	0	33	0	4	1	0	5	0	0	0	0	0	0
15:15	0	162	41	0	203	0	32	1	0	33	0	1	0	0	1	0	0	0	0	0	0
15:30	0	180	42	0	222	0	32	2	0	34	0	1	1	0	2	0	0	0	0	0	0
15:45	0	228	34	0	262	0	42	3	0	45	0	2	0	0	2	0	0	0	0	0	0
16:00	0	209	36	0	245	0	36	5	0	41	0	4	2	0	6	0	0	0	0	0	0
16:15	0	273	30	0	303	0	40	1	0	41	0	0	2	0	2	0	0	0	0	0	2
16:30	0	263	50	0	313	0	43	2	0	45	0	1	1	0	2	0	0	0	0	0	0
16:45	0	281	53	0	334	0	34	3	0	37	0	1	0	0	1	0	0	0	0	0	0
17:00	0	330	58	0	388	0	29	6	0	35	0	1	2	0	3	0	0	0	0	0	0
17:15	0	297	43	0	340	0	29	3	0	32	0	0	0	0	0	0	0	0	0	0	0
17:30	0	335	48	0	383	0	43	2	0	45	0	1	0	0	1	0	0	0	0	0	0
17:45	0	231	42	0	273	0	29	1	0	30	0	0	2	0	2	0	0	0	0	0	0
18:00	0	229	48	0	277	0	28	2	0	30	0	2	0	0	2	0	0	0	0	0	0
18:15	0	209	45	0	254	0	16	4	0	20	0	2	1	0	3	0	0	0	0	0	0
18:30	0	183	33	0	216	0	24	2	0	26	0	0	1	0	1	0	0	0	0	0	0
18:45	0	135	34	0	169	0	12	3	0	15	0	1	1	0	2	0	0	0	0	0	0
SUBTOTAL	0	4081	738	0	4819	0	591	49	0	640	0	36	16	0	52	0	0	0	0	0	2

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	
GRAND TOTAL	0	4910	881	0	5791	0	804	57	0	861	0	69	25	0	94	0	0	0	0	0	2





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

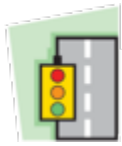
Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Peak Point Blvd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	54	0	2	0	56	7	0	1	0	8	0	0	0	0	0	0	0	0	0	0	0
07:15	64	0	3	0	67	6	0	0	0	6	2	0	0	0	2	0	0	0	0	0	0
07:30	80	0	4	0	84	5	0	0	0	5	4	0	1	0	5	0	0	0	0	0	0
07:45	70	0	7	0	77	1	0	0	0	1	3	0	0	0	3	0	0	0	0	0	1
08:00	87	0	7	0	94	3	0	0	0	3	1	0	1	0	2	0	0	0	0	0	0
08:15	44	0	6	0	50	3	0	0	0	3	1	0	0	0	1	0	0	0	0	0	0
08:30	57	0	7	0	64	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0
08:45	49	0	5	0	54	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0
09:00	30	0	4	0	34	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
09:15	26	0	3	0	29	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
09:30	17	0	4	0	21	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0
09:45	23	0	4	0	27	4	0	0	0	4	1	0	0	0	1	0	0	0	0	0	0
SUBTOTAL	601	0	56	0	657	37	0	4	0	41	16	0	2	0	18	0	0	0	0	0	1

Start Time	Cars					Trucks					Buses					Total Peds				
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total					
GRAND TOTAL	1022	0	100	0	1122	66	0	9	0	75	26	0	3	0	29	0	0	0	0	6





Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00

Intersection: Keele St & Peak Point Blvd
Site ID: 1932600006
Count Date: Oct 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Keele St runs N/S

North Approach

	Out	In	Total
	1867	372	2239
	199	81	280
	15	13	28
	0	0	0
Totals	2081	466	2547

Keele St

	0	0	0
	14	1	0
	198	1	0
	1863	3	1
Totals	2075	5	1

East Approach

	Out	In	Total
	305	60	365
	12	2	14
	11	5	16
	0	0	0
Totals	328	67	395

Peds: 3



Peds: 0

Peds: 1

Peds: 0

Totals	439	62	0
	347	57	0
	81	1	0
	11	4	0
	0	0	0

Peak Point Blvd

Totals				
0	0	0	0	0
26	24	0	2	0
302	281	12	9	0

South Approach

	Out	In	Total
	404	2144	2548
	82	210	292
	15	23	38
	0	0	0
Totals	501	2377	2878

Keele St

- Cars

- Trucks

- Buses

- Bicycles

Comments



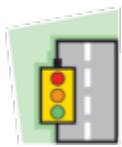
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Keele St & Peak Point Blvd
Count Date: Oct 02, 2019
Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Keele St						South Approach Keele St						East Approach Peak Point Blvd						West Approach						Total Vehic es
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:30	1	534		0	1	535		106	8	0	0	114	89		5	0	0	94					0		743
07:45	0	555		0	2	555		106	14	0	0	120	74		7	0	1	81					0		756
08:00	1	481		0	0	482		108	14	0	0	122	91		8	0	0	99					0		703
08:15	3	505		1	0	509		119	26	0	0	145	48		6	0	0	54					0		708
Grand Total	5	2075		1	3	2081		439	62	0	0	501	302		26	0	1	328					0	0	2910
Approach %	0.2	99.7		0	-	-		87.6	12.4	0	-	-	92.1		7.9	0	-	-					-	-	-
Totals %	0.2	71.3		0		71.5		15.1	2.1	0		17.2	10.4		0.9	0		11.3							0
PHF	0.42	0.93		0.25		0.94		0.92	0.6	0		0.86	0.83		0.81	0		0.83					0		0.96
Cars	3	1863		1		1867		347	57	0		404	281		24	0		305					0		2576
% Cars	60	89.8		100		89.7		79	91.9	0		80.6	93		92.3	0		93					0		88.5
Trucks	1	198		0		199		81	1	0		82	12		0	0		12					0		293
% Trucks	20	9.5		0		9.6		18.5	1.6	0		16.4	4		0	0		3.7					0		10.1
Buses	1	14		0		15		11	4	0		15	9		2	0		11					0		41
% Buses	20	0.7		0		0.7		2.5	6.5	0		3	3		7.7	0		3.4					0		1.4
Bicycles	0	0		0		0		0	0	0		0	0		0	0		0					0		0
% Bicycles	0	0		0		0		0	0	0		0	0		0	0		0					0		0
Peds					3	-					0	-					1	-					0	-	4
% Peds					75	-					0	-					25	-					0	-	-



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

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

Intersection: Keele St & Peak Point Blvd
Site ID: 1932600006
Count Date: Oct 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Keele St runs N/S

North Approach

	Out	In	Total
	425	1257	1682
	57	135	192
	6	3	9
	1	0	1
Totals	489	1395	1884

Keele St

	1	0	0
	6	0	0
	57	0	0
	418	7	0
Totals	482	7	0

Peds: 1



Peds: 0

Peds: 4

Peds: 0

Totals	1381	218	0
	1243	202	0
	135	14	0
	3	2	0
	0	0	0

Keele St

East Approach

	Out	In	Total
	96	209	305
	4	14	18
	3	2	5
	0	0	0
Totals	103	225	328

Peak Point Blvd

Totals				
0	0	0	0	0
14	14	0	0	0
89	82	4	3	0

South Approach

	Out	In	Total
	1445	500	1945
	149	61	210
	5	9	14
	0	1	1
Totals	1599	571	2170

- Cars

- Trucks

- Buses

- Bicycles

Comments



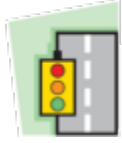
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Keele St & Peak Point Blvd
Count Date: Oct 02, 2019
Period: 14:00 - 19:00

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

Start Time	North Approach Keele St						South Approach Keele St						East Approach Peak Point Blvd						West Approach						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
16:45	1	118		0	0	119		316	56	0	0	372	17		4	0	1	21					0		512
17:00	0	111		0	1	111		360	66	0	0	426	25		4	0	2	29					0		566
17:15	2	126		0	0	128		326	46	0	0	372	20		2	0	1	22					0		522
17:30	4	127		0	0	131		379	50	0	0	429	27		4	0	0	31					0		591
Grand Total	7	482		0	1	489		1381	218	0	0	1599	89		14	0	4	103					0	0	2191
Approach %	1.4	98.6		0	-	-		86.4	13.6	0	-	-	86.4		13.6	0	-	-					-	-	-
Totals %	0.3	22		0		22.3		63	9.9	0		73	4.1		0.6	0		4.7					0		
PHF	0.44	0.95		0		0.93		0.91	0.83	0		0.93	0.82		0.88	0		0.83					0		0.93
Cars	7	418		0		425		1243	202	0		1445	82		14	0		96					0		1966
% Cars	100	86.7		0		86.9		90	92.7	0		90.4	92.1		100	0		93.2					0		89.7
Trucks	0	57		0		57		135	14	0		149	4		0	0		4					0		210
% Trucks	0	11.8		0		11.7		9.8	6.4	0		9.3	4.5		0	0		3.9					0		9.6
Buses	0	6		0		6		3	2	0		5	3		0	0		3					0		14
% Buses	0	1.2		0		1.2		0.2	0.9	0		0.3	3.4		0	0		2.9					0		0.6
Bicycles	0	1		0		1		0	0	0		0	0		0	0		0					0		1
% Bicycles	0	0.2		0		0.2		0	0	0		0	0		0	0		0					0		0
Peds					1	-					0	-					4	-					0	-	5
% Peds					20	-					0	-					80	-					0	-	-



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19326 - City of Vaughan

Intersection Count Report

Intersection: Kirby Rd & Ravineview Dr
Municipality: Vaughan
Count Date: Oct 02, 2019
Site Code: 1932600007
Count Categories: Cars, Trucks, Buses, Bicycles, Pedestrians
Count Period: 07:00-10:00, 14:00-19:00
Weather: Clear



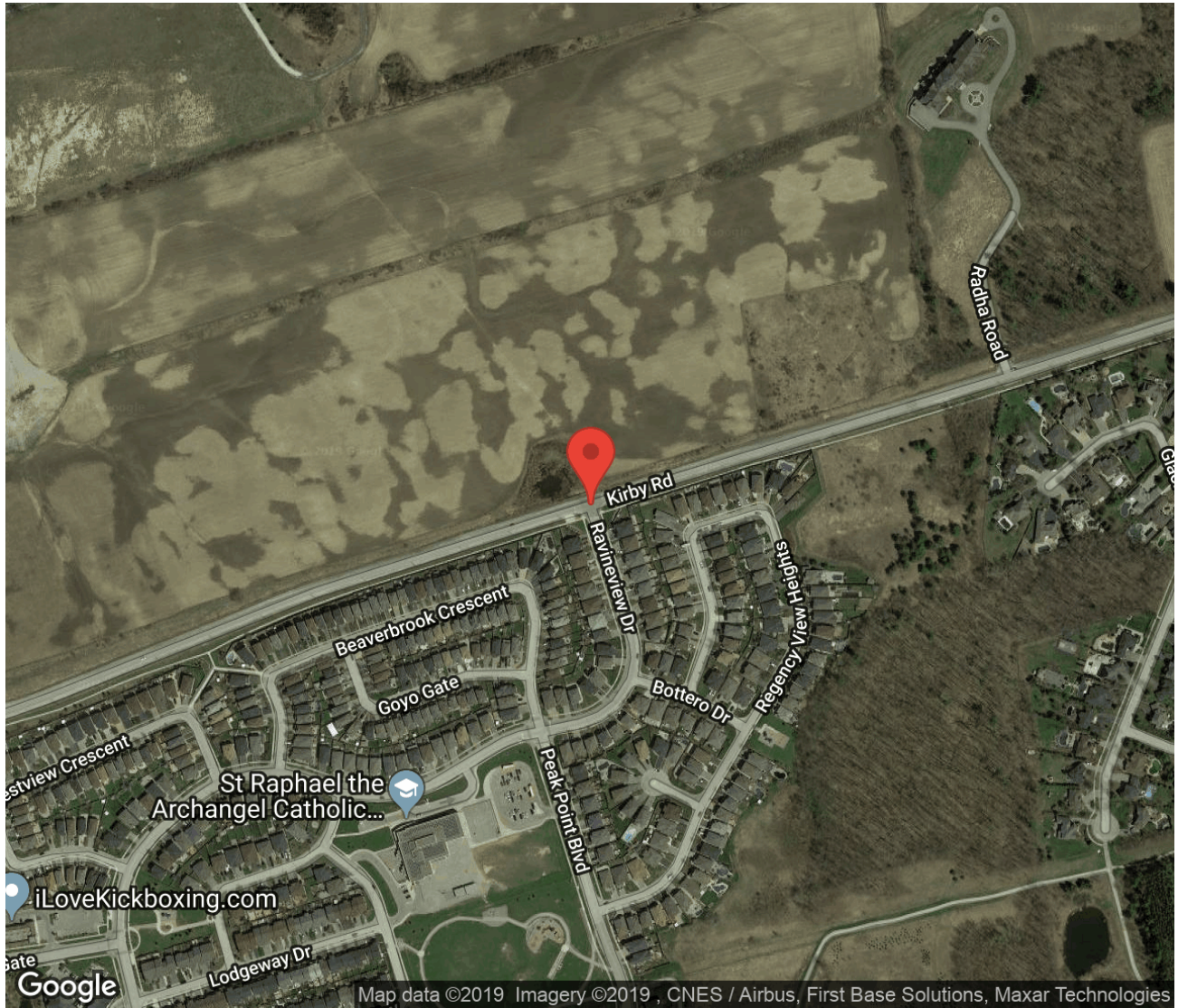
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TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Map

Intersection: Kirby Rd & Ravineview Dr

Municipality: Vaughan

Count Date: Oct 02, 2019





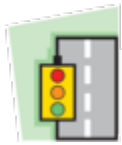
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TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Summary

Intersection: Kirby Rd & Ravineview Dr
Municipality: Vaughan
Count Date: Oct 02, 2019

Ravineview Dr - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	0	0	0	0	0	19	0	95	0	114	2
08:00 - 09:00	0	0	0	0	0	0	28	0	101	0	129	1
09:00 - 10:00	0	0	0	0	0	0	16	0	42	0	58	0
BREAK												
14:00 - 15:00	0	0	0	0	0	0	8	0	45	0	53	1
15:00 - 16:00	0	0	0	0	0	0	24	0	68	0	92	2
16:00 - 17:00	0	0	0	0	0	0	17	0	73	0	90	0
17:00 - 18:00	0	0	0	0	0	0	12	0	58	0	70	0
18:00 - 19:00	0	0	0	0	0	1	20	0	60	0	80	0
GRAND TOTAL	0	0	0	0	0	1	144	0	542	0	686	6



Traffic Count Summary

Intersection: Kirby Rd & Ravineview Dr
Municipality: Vaughan
Count Date: Oct 02, 2019

Kirby Rd - Traffic Summary

Hour	East Approach Totals						West Approach Totals					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	32	532	0	0	564	0	0	163	12	0	175	0
08:00 - 09:00	74	470	0	0	544	0	0	208	24	0	232	0
09:00 - 10:00	30	250	0	0	280	0	0	144	14	0	158	0
BREAK												
14:00 - 15:00	54	141	0	0	195	0	0	183	17	0	200	0
15:00 - 16:00	73	189	0	0	262	0	0	286	18	0	304	0
16:00 - 17:00	84	238	0	0	322	0	0	422	22	0	444	0
17:00 - 18:00	94	252	0	0	346	0	0	518	35	0	553	0
18:00 - 19:00	91	148	0	0	239	0	0	388	31	0	419	0
GRAND TOTAL	532	2220	0	0	2752	0	0	2312	173	0	2485	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Ravineview Dr
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Ravineview Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	5	0	17	0	22	1	0	2	0	3	0	0	1	0	1	0	0	0	0	0	0
07:15	4	0	15	0	19	0	0	1	0	1	1	0	2	0	3	0	0	0	0	0	0
07:30	4	0	18	0	22	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0
07:45	4	0	33	0	37	0	0	1	0	1	0	0	3	0	3	0	0	0	0	0	2
08:00	3	0	27	0	30	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0
08:15	5	0	16	0	21	1	0	2	0	3	0	0	2	0	2	0	0	0	0	0	0
08:30	5	0	25	0	30	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
08:45	11	0	27	0	38	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	1
09:00	6	0	13	0	19	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
09:15	2	0	13	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	3	0	11	0	14	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
09:45	2	0	5	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	54	0	220	0	274	3	0	8	0	11	6	0	10	0	16	0	0	0	0	0	3

Start Time	Cars					Trucks					Buses					Total Peds				
	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total					
GRAND TOTAL	120	0	501	0	621	8	0	20	0	28	16	0	21	0	37	0	0	0	0	6





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Ravineview Dr
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	4	113	0	0	117	3	4	0	0	7	2	1	0	0	3	0	0	0	0	0	0
07:15	4	116	0	0	120	0	11	0	0	11	1	2	0	0	3	0	0	0	0	0	0
07:30	5	126	0	0	131	0	23	0	0	23	2	1	0	0	3	0	0	0	0	0	0
07:45	11	126	0	0	137	0	7	0	0	7	0	2	0	0	2	0	0	0	0	0	0
08:00	15	144	0	0	159	2	10	0	0	12	0	3	0	0	3	0	0	0	0	0	0
08:15	23	109	0	0	132	0	12	0	0	12	1	0	0	0	1	0	0	0	0	0	0
08:30	17	85	0	0	102	2	10	0	0	12	2	0	0	0	2	0	0	0	0	0	0
08:45	11	84	0	0	95	0	12	0	0	12	1	1	0	0	2	0	0	0	0	0	0
09:00	9	72	0	0	81	1	14	0	0	15	0	1	0	0	1	0	0	0	0	0	0
09:15	4	76	0	0	80	1	7	0	0	8	0	0	0	0	0	0	0	0	0	0	0
09:30	10	34	0	0	44	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	0
09:45	3	33	0	0	36	1	7	0	0	8	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	116	1118	0	0	1234	11	123	0	0	134	9	11	0	0	20	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Ravineview Dr
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	7	20	0	0	27	1	9	0	0	10	0	0	0	0	0	0	0	0	0	0	0
14:15	11	29	0	0	40	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
14:30	10	34	0	0	44	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0
14:45	18	31	0	0	49	2	7	0	0	9	3	0	0	0	3	0	0	0	0	0	0
15:00	13	32	0	0	45	1	6	0	0	7	1	1	0	0	2	0	0	0	0	0	0
15:15	16	38	0	0	54	0	6	0	0	6	1	1	0	0	2	0	0	0	0	0	0
15:30	21	38	0	0	59	1	8	0	0	9	2	0	0	0	2	0	0	0	0	0	0
15:45	17	48	0	0	65	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
16:00	19	42	0	0	61	0	10	0	0	10	1	1	0	0	2	0	0	0	0	0	0
16:15	19	54	0	0	73	2	7	0	0	9	1	2	0	0	3	0	0	0	0	0	0
16:30	19	59	0	0	78	2	11	0	0	13	0	1	0	0	1	0	0	0	0	0	0
16:45	20	46	0	0	66	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	0
17:00	23	78	0	0	101	2	10	0	0	12	0	1	0	0	1	0	0	0	0	0	0
17:15	25	48	0	0	73	1	6	0	0	7	0	0	0	0	0	0	1	0	0	1	0
17:30	24	57	0	0	81	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	0
17:45	17	42	0	0	59	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0
18:00	30	28	0	0	58	1	7	0	0	8	0	0	0	0	0	0	0	0	0	0	0
18:15	22	43	0	0	65	2	10	0	0	12	0	0	0	0	0	0	0	0	0	0	0
18:30	17	25	0	0	42	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
18:45	18	27	0	0	45	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	366	819	0	0	1185	21	140	0	0	161	9	8	0	0	17	0	1	0	0	1	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
GRAND TOTAL	482	1937	0	0	2419	32	263	0	0	295	18	19	0	0	37	0	1	0	0	1	0





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Ravineview Dr
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	27	4	0	31	0	6	0	0	6	0	1	1	0	2	0	0	0	0	0	0
07:15	0	37	0	0	37	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	0
07:30	0	37	1	0	38	0	7	1	0	8	0	2	2	0	4	0	0	0	0	0	0
07:45	0	34	2	0	36	0	6	1	0	7	0	1	0	0	1	0	0	0	0	0	0
08:00	0	33	8	0	41	0	3	1	0	4	0	2	1	0	3	0	0	0	0	0	0
08:15	0	48	5	0	53	0	18	0	0	18	0	2	0	0	2	0	0	0	0	0	0
08:30	0	57	3	0	60	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	0
08:45	0	31	4	0	35	0	5	1	0	6	0	0	1	0	1	0	0	0	0	0	0
09:00	0	41	4	0	45	0	8	1	0	9	0	1	1	0	2	0	0	0	0	0	0
09:15	0	24	2	0	26	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
09:30	0	32	2	0	34	0	2	0	0	2	0	1	1	0	2	0	0	0	0	0	0
09:45	0	26	3	0	29	0	5	0	0	5	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	0	427	38	0	465	0	73	5	0	78	0	15	7	0	22	0	0	0	0	0	0



Ontario Traffic Inc.
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Traffic Count Data

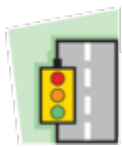
Intersection: Kirby Rd & Ravineview Dr
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	0	30	4	0	34	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0
14:15	0	34	2	0	36	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	0
14:30	0	38	5	0	43	0	9	0	0	9	0	1	0	0	1	0	0	0	0	0	0
14:45	0	46	5	0	51	0	8	1	0	9	0	0	0	0	0	0	0	0	0	0	0
15:00	0	62	4	0	66	0	9	1	0	10	0	3	0	0	3	0	0	0	0	0	0
15:15	0	50	5	0	55	0	10	1	0	11	0	1	0	0	1	0	0	0	0	0	0
15:30	0	73	4	0	77	0	13	1	0	14	0	1	0	0	1	0	0	0	0	0	0
15:45	0	57	2	0	59	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
16:00	0	92	2	0	94	0	7	1	0	8	0	1	1	0	2	0	0	0	0	0	0
16:15	0	92	1	0	93	0	13	0	0	13	0	2	0	0	2	0	0	0	0	0	0
16:30	0	93	7	0	100	0	13	0	0	13	0	2	0	0	2	0	0	0	0	0	0
16:45	0	100	8	0	108	0	7	1	0	8	0	0	1	0	1	0	0	0	0	0	0
17:00	0	125	9	0	134	0	14	1	0	15	0	2	0	0	2	0	0	0	0	0	0
17:15	0	113	6	0	119	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0
17:30	0	126	7	0	133	0	10	2	0	12	0	0	1	0	1	0	0	0	0	0	0
17:45	0	105	8	0	113	0	11	1	0	12	0	0	0	0	0	0	0	0	0	0	0
18:00	0	100	9	0	109	0	10	0	0	10	0	0	1	0	1	0	0	0	0	0	0
18:15	0	116	6	0	122	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	0
18:30	0	74	8	0	82	0	6	0	0	6	0	0	1	0	1	0	0	0	0	0	0
18:45	0	67	6	0	73	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	1593	108	0	1701	0	187	10	0	197	0	17	5	0	22	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	0	2020	146	0	2166	0	260	15	0	275	0	32	12	0	44	0	0	0	0	0	0





Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00

Intersection: Kirby Rd & Ravineview Dr
Site ID: 1932600007
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Kirby Rd runs E/W

East Approach

	Out	In	Total
	559	246	805
	54	38	92
	9	14	23
	0	0	0
Totals	622	298	920

Kirby Rd

				Totals
0	0	0	0	0
0	7	34	152	193
0	3	3	16	22

Peds: 0

Peds: 0



Peds: 0

Kirby Rd

Totals				
0	0	0	0	0
563	505	52	6	0
59	54	2	3	0

Peds: 2

West Approach

	Out	In	Total
	168	521	689
	37	53	90
	10	7	17
	0	0	0
Totals	215	581	796

Totals	18	105	0
	16	94	0
	1	4	0
	1	7	0
	0	0	0

Ravineview Dr

South Approach

	Out	In	Total
	110	70	180
	5	5	10
	8	6	14
	0	0	0
Totals	123	81	204

- Cars

- Trucks

- Buses

- Bicycles

Comments



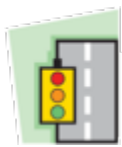
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Ravineview Dr
Count Date: Oct 02, 2019
Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach				South Approach Ravineview Dr				East Approach Kirby Rd				West Approach Kirby Rd				Total Vehicles									
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻		Peds	Total							
07:30					0		4		20	0	0	24	7	150			0	0	157		46	4	0	0	50	231
07:45					0		4		37	0	2	41	11	135			0	0	146		41	3	0	0	44	231
08:00					0		4		28	0	0	32	17	157			0	0	174		38	10	0	0	48	254
08:15					0		6		20	0	0	26	24	121			0	0	145		68	5	0	0	73	244
Grand Total					0	0	18	105	0	2	123	59	563	0	0	0	0	622	193	22	0	0	215	960		
Approach %					-		14.6	85.4	0	-		9.5	90.5	0	-				89.8	10.2	0	-				
Totals %						0	1.9	10.9	0	12.8		6.1	58.6	0	64.8				20.1	2.3	0	22.4				
PHF					0		0.75	0.71	0	0.75	0.61	0.9	0	0.89	0.71	0.55	0	0.74	0.94							
Cars					0		16	94	0	110	54	505	0	559	152	16	0	168						837		
% Cars					0		88.9	89.5	0	89.4	91.5	89.7	0	89.9	78.8	72.7	0	78.1						87.2		
Trucks					0		1	4	0	5	2	52	0	54	34	3	0	37						96		
% Trucks					0		5.6	3.8	0	4.1	3.4	9.2	0	8.7	17.6	13.6	0	17.2						10		
Buses					0		1	7	0	8	3	6	0	9	7	3	0	10						27		
% Buses					0		5.6	6.7	0	6.5	5.1	1.1	0	1.4	3.6	13.6	0	4.7						2.8		
Bicycles					0		0	0	0	0	0	0	0	0	0	0	0	0						0		
% Bicycles					0		0	0	0	0	0	0	0	0	0	0	0	0						0		
Peds					0	-				2	-				0	-				0	-	2				
% Peds					0	-				100	-				0	-				0	-					



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

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

Intersection: Kirby Rd & Ravineview Dr
Site ID: 1932600007
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Kirby Rd runs E/W

East Approach

	Out	In	Total
	321	530	851
	32	44	76
	1	2	3
	1	0	1
Totals	355	576	931

Kirby Rd

				Totals
0	0	0	0	0
0	2	43	464	509
0	2	4	30	36

Peds: 0



Kirby Rd

Totals				
0	0	0	0	0
258	229	27	1	1
97	92	5	0	0

West Approach

	Out	In	Total
	494	235	729
	47	27	74
	4	3	7
	0	1	1
Totals	545	266	811

Peds: 0

Totals	8	67	0
	6	66	0
	0	1	0
	2	0	0
	0	0	0

South Approach

	Out	In	Total
	72	122	194
	1	9	10
	2	2	4
	0	0	0
Totals	75	133	208

Ravineview Dr

- Cars

- Trucks

- Buses

- Bicycles

Comments



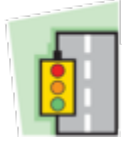
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Ravineview Dr
Count Date: Oct 02, 2019
Period: 14:00 - 19:00

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

Start Time	North Approach				South Approach Ravineview Dr				East Approach Kirby Rd				West Approach Kirby Rd				Total Vehicles								
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻		Peds	Total						
16:45					0		3		23	0	0	26	21	51			0	0	72	107	10	0	0	117	215
17:00					0		3		11	0	0	14	25	89			0	0	114	141	10	0	0	151	279
17:15					0		1		17	0	0	18	26	55			0	0	81	125	6	0	0	131	230
17:30					0		1		16	0	0	17	25	63			0	0	88	136	10	0	0	146	251
Grand Total					0	0	8		67	0	0	75	97	258			0	0	355	509	36	0	0	545	975
Approach %					-		10.7		89.3	0	-		27.3	72.7			0	-		93.4	6.6	0		-	
Totals %							0		0.8	6.9	0	7.7	9.9	26.5			0	36.4		52.2	3.7	0		55.9	
PHF					0		0.67		0.73	0		0.72	0.93	0.72			0	0.78		0.9	0.9	0		0.9	0.87
Cars					0		6		66	0		72	92	229			0	321		464	30	0		494	887
% Cars					0		75		98.5	0		96	94.8	88.8			0	90.4		91.2	83.3	0		90.6	91
Trucks					0		0		1	0		1	5	27			0	32		43	4	0		47	80
% Trucks					0		0		1.5	0		1.3	5.2	10.5			0	9		8.4	11.1	0		8.6	8.2
Buses					0		2		0	0		2	0	1			0	1		2	2	0		4	7
% Buses					0		25		0	0		2.7	0	0.4			0	0.3		0.4	5.6	0		0.7	0.7
Bicycles					0		0		0	0		0	0	1			0	1		0	0	0		0	1
% Bicycles					0		0		0	0		0	0	0.4			0	0.3		0	0	0		0	0.1
Peds					0	-						0					0	-						0	0
% Peds					0	-						0					0	-						0	0



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19326 - City of Vaughan

Intersection Count Report

Intersection: Kirby Rd & Foot Hills Rd
Municipality: Vaughan
Count Date: Oct 02, 2019
Site Code: 1932600008
Count Categories: Cars, Trucks, Buses, Bicycles, Pedestrians
Count Period: 07:00-10:00, 14:00-19:00
Weather: Clear

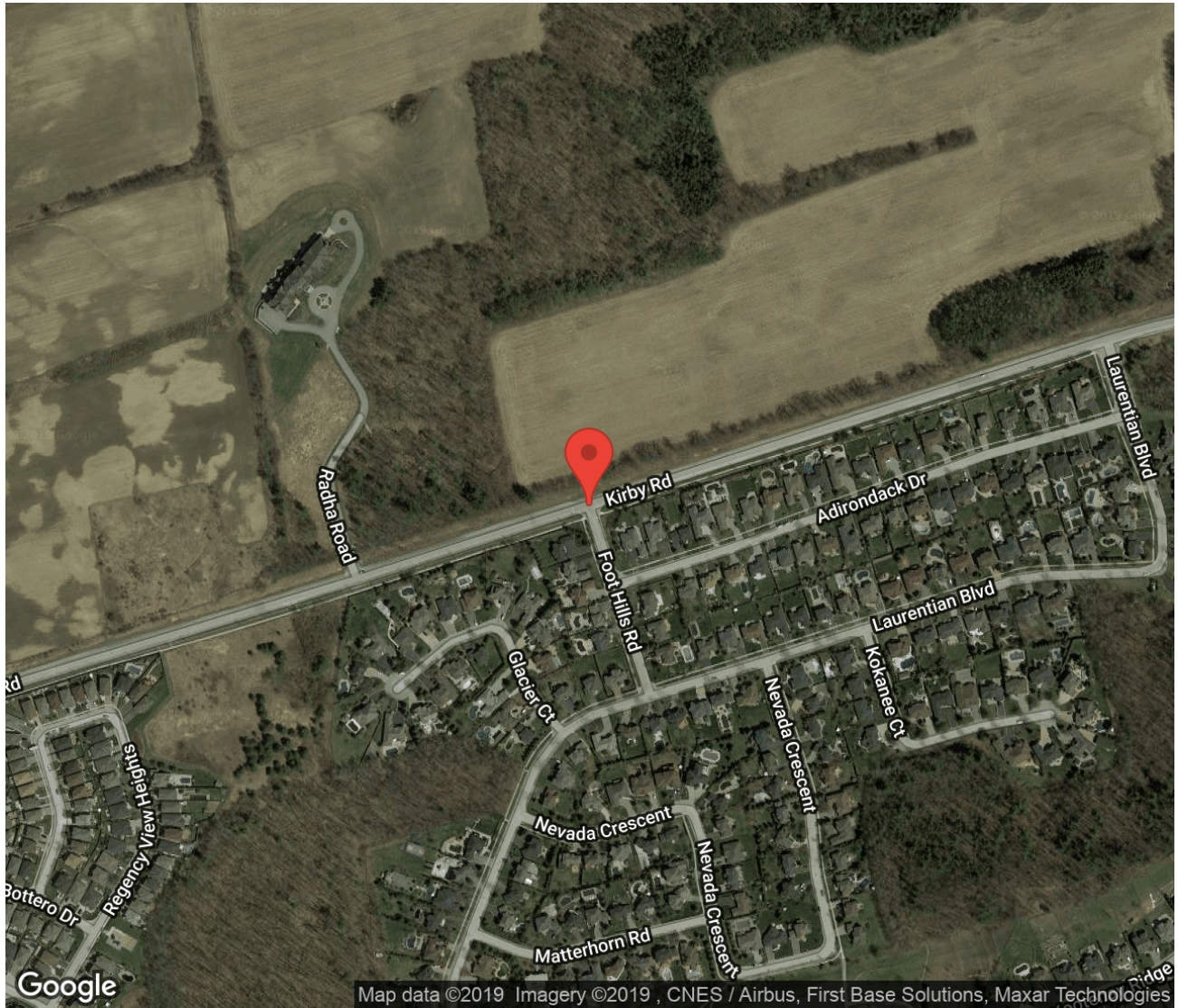


Traffic Count Map

Intersection: Kirby Rd & Foot Hills Rd

Municipality: Vaughan

Count Date: Oct 02, 2019



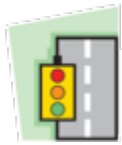


Traffic Count Summary

Intersection: Kirby Rd & Foot Hills Rd
Municipality: Vaughan
Count Date: Oct 02, 2019

Foot Hills Rd - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	0	0	0	0	0	57	0	12	0	69	0
08:00 - 09:00	0	0	0	0	0	0	45	0	10	0	55	2
09:00 - 10:00	0	0	0	0	0	0	40	0	7	0	47	1
BREAK												
14:00 - 15:00	0	0	0	0	0	0	19	0	6	0	25	0
15:00 - 16:00	0	0	0	0	0	0	20	0	10	0	30	0
16:00 - 17:00	0	0	0	0	0	0	26	0	9	0	35	0
17:00 - 18:00	0	0	0	0	0	0	29	0	11	0	40	2
18:00 - 19:00	0	0	0	0	0	0	24	0	3	0	27	1
GRAND TOTAL	0	0	0	0	0	0	260	0	68	0	328	6



Traffic Count Summary

Intersection: Kirby Rd & Foot Hills Rd
Municipality: Vaughan
Count Date: Oct 02, 2019

Kirby Rd - Traffic Summary

Hour	East Approach Totals						West Approach Totals					
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	6	508	0	0	514	0	0	238	14	0	252	0
08:00 - 09:00	6	484	0	1	491	0	0	305	14	0	319	0
09:00 - 10:00	6	232	0	0	238	0	0	167	19	0	186	0
BREAK												
14:00 - 15:00	14	171	0	0	185	0	0	192	26	0	218	0
15:00 - 16:00	14	239	0	0	253	0	0	320	30	0	350	0
16:00 - 17:00	10	309	0	0	319	0	0	441	56	0	497	0
17:00 - 18:00	9	316	0	0	325	0	0	522	44	0	566	0
18:00 - 19:00	9	210	0	0	219	0	0	396	58	2	456	1
GRAND TOTAL	74	2469	0	1	2544	0	0	2581	261	2	2844	1



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Foot Hills Rd
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Foot Hills Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	3	0	1	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:15	15	0	4	0	19	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0
07:30	12	0	6	0	18	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0
07:45	19	0	0	0	19	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0
08:00	9	0	2	0	11	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:15	6	0	1	0	7	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
08:30	14	0	4	0	18	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
08:45	9	0	2	0	11	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	2
09:00	11	0	0	0	11	2	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0
09:15	12	0	2	0	14	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
09:30	7	0	2	0	9	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0
09:45	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	122	0	24	0	146	17	0	4	0	21	3	0	1	0	4	0	0	0	0	0	3



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Foot Hills Rd
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Foot Hills Rd

Start Time	Cars				Total	Trucks				Total	Buses				Total	Bicycles				Total Peds	
	←	↑	→	↻		←	↑	→	↻		←	↑	→	↻		←	↑	→	↻		
14:00	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14:15	6	0	0	0	6	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
14:30	9	0	2	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14:45	1	0	2	0	3	1	0	0	0	1	0	1	0	1	0	0	0	0	0	0	
15:00	6	0	1	0	7	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	
15:15	0	0	3	0	3	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	
15:30	2	0	4	0	6	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	
15:45	7	0	2	0	9	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
16:00	6	0	3	0	9	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	
16:15	5	0	0	0	5	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	
16:30	5	0	3	0	8	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
16:45	7	0	1	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17:00	4	0	1	0	5	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
17:15	5	0	4	0	9	2	0	0	0	2	0	0	0	0	1	0	0	0	1	1	
17:30	12	0	1	0	13	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
17:45	3	0	5	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
18:00	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18:15	6	0	0	0	6	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
18:30	5	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18:45	4	0	2	0	6	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
SUBTOTAL	101	0	36	0	137	11	0	1	0	12	5	0	2	0	7	1	0	0	0	1	3

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	223	0	60	0	283	28	0	5	0	33	8	0	3	0	11	1	0	0	0	1	6





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Foot Hills Rd
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	2	109	0	0	111	0	6	0	0	6	1	3	0	0	4	0	0	0	0	0	0
07:15	1	100	0	0	101	0	13	0	0	13	0	3	0	0	3	0	0	0	0	0	0
07:30	2	128	0	0	130	0	18	0	0	18	0	2	0	0	2	0	0	0	0	0	0
07:45	0	118	0	0	118	0	7	0	0	7	0	1	0	0	1	0	0	0	0	0	0
08:00	1	145	0	0	146	0	11	0	0	11	0	3	0	0	3	0	0	0	0	0	0
08:15	1	118	0	1	120	0	9	0	0	9	1	0	0	0	1	0	0	0	0	0	0
08:30	2	90	0	0	92	0	7	0	0	7	0	3	0	0	3	0	0	0	0	0	0
08:45	0	88	0	0	88	1	10	0	0	11	0	0	0	0	0	0	0	0	0	0	0
09:00	3	68	0	0	71	0	8	0	0	8	0	2	0	0	2	0	0	0	0	0	0
09:15	1	68	0	0	69	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
09:30	2	36	0	0	38	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
09:45	0	29	0	0	29	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	15	1097	0	1	1113	1	109	0	0	110	2	18	0	0	20	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Foot Hills Rd
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	1	24	0	0	25	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
14:15	5	37	0	0	42	1	3	0	0	4	0	2	0	0	2	0	0	0	0	0	0
14:30	3	38	0	0	41	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
14:45	3	45	0	0	48	1	6	0	0	7	0	3	0	0	3	0	0	0	0	0	0
15:00	1	44	0	0	45	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
15:15	4	50	0	0	54	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
15:30	5	60	0	0	65	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0
15:45	4	53	0	0	57	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
16:00	1	56	0	0	57	0	12	0	0	12	0	1	0	0	1	0	0	0	0	0	0
16:15	3	70	0	0	73	0	8	0	0	8	0	2	0	0	2	0	0	0	0	0	0
16:30	4	69	0	0	73	0	15	0	0	15	0	1	0	0	1	0	0	0	0	0	0
16:45	2	68	0	0	70	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
17:00	2	94	0	0	96	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
17:15	3	73	0	0	76	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
17:30	1	66	0	0	67	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
17:45	3	60	0	0	63	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
18:00	2	49	0	0	51	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
18:15	2	60	0	0	62	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
18:30	3	35	0	0	38	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
18:45	2	42	0	0	44	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	54	1093	0	0	1147	2	139	0	0	141	0	13	0	0	13	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	69	2190	0	1	2260	3	248	0	0	251	2	31	0	0	33	0	0	0	0	0	0





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Foot Hills Rd
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	44	4	0	48	0	6	0	0	6	0	2	1	0	3	0	0	0	0	0	0
07:15	0	48	1	0	49	0	3	1	0	4	0	3	2	0	5	0	0	0	0	0	0
07:30	0	52	0	0	52	0	4	0	0	4	0	4	1	0	5	0	0	0	0	0	0
07:45	0	66	2	0	68	0	4	1	0	5	0	2	1	0	3	0	0	0	0	0	0
08:00	0	60	4	0	64	0	5	2	0	7	0	2	0	0	2	0	0	0	0	0	0
08:15	0	62	0	0	62	0	19	1	0	20	0	4	0	0	4	0	0	0	0	0	0
08:30	0	75	2	0	77	0	9	0	0	9	0	1	0	0	1	0	0	0	0	0	0
08:45	0	60	5	0	65	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0
09:00	0	49	2	0	51	0	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0
09:15	0	33	7	0	40	0	3	2	0	5	0	1	0	0	1	0	0	0	0	0	0
09:30	0	44	3	0	47	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
09:45	0	25	1	0	26	0	1	1	0	2	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	0	618	31	0	649	0	71	11	0	82	0	21	5	0	26	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Foot Hills Rd
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	0	36	5	0	41	0	8	1	0	9	0	0	0	0	0	0	0	0	0	0	0
14:15	0	47	3	0	50	0	5	0	0	5	0	3	0	0	3	0	0	0	0	0	0
14:30	0	36	7	0	43	0	7	0	0	7	0	1	0	0	1	0	0	0	0	0	0
14:45	0	43	8	0	51	0	5	1	0	6	0	1	1	0	2	0	0	0	0	0	0
15:00	0	63	8	0	71	0	8	1	0	9	0	5	1	0	6	0	0	0	0	0	0
15:15	0	56	6	0	62	0	11	1	0	12	0	2	0	0	2	0	0	0	0	0	0
15:30	0	84	4	0	88	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	0
15:45	0	70	8	0	78	0	8	1	0	9	0	4	0	0	4	0	0	0	0	0	0
16:00	0	100	6	0	106	0	11	2	0	13	0	0	1	0	1	0	0	0	0	0	0
16:15	0	105	11	0	116	0	10	1	0	11	0	3	1	0	4	0	0	0	0	0	0
16:30	0	83	16	0	99	0	12	3	0	15	0	1	0	0	1	0	0	0	0	0	0
16:45	0	110	12	0	122	0	6	2	0	8	0	0	1	0	1	0	0	0	0	0	0
17:00	0	121	12	0	133	0	10	1	0	11	0	1	0	0	1	0	0	0	0	0	0
17:15	0	118	8	0	126	0	11	0	0	11	0	1	0	0	1	0	0	0	0	0	0
17:30	0	130	13	0	143	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0
17:45	0	106	8	0	114	0	12	2	0	14	0	0	0	0	0	0	0	0	0	0	0
18:00	0	108	16	0	124	0	7	2	0	9	0	0	0	0	0	0	0	0	0	0	0
18:15	0	119	14	0	133	0	7	2	0	9	0	1	0	0	1	0	0	0	0	0	0
18:30	0	81	12	0	93	0	5	0	1	6	0	0	0	0	0	0	0	0	0	0	1
18:45	0	63	10	0	73	0	5	2	1	8	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	1679	187	0	1866	0	168	22	2	192	0	24	5	0	29	0	0	0	0	0	1

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	
GRAND TOTAL	0	2297	218	0	2515	0	239	33	2	274	0	45	10	0	55	0	0	0	0	0	1





Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00

Intersection: Kirby Rd & Foot Hills Rd
Site ID: 1932600008
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Kirby Rd runs E/W

East Approach

	Out	In	Total
	514	250	764
	45	33	78
	7	12	19
	0	0	0
Totals	566	295	861

Kirby Rd

				Totals
0	0	0	0	0
0	12	32	240	284
0	2	4	6	12

Peds: 0



Kirby Rd

Totals				
1	1	0	0	0
560	509	45	6	0
5	4	0	1	0

West Approach

Out	In	Total
246	555	801
36	50	86
14	8	22
0	0	0
296	613	909

Totals	53	10	0
	46	9	0
	5	1	0
	2	0	0
	0	0	0

Foot Hills Rd

South Approach

Out	In	Total
55	10	65
6	4	10
2	3	5
0	0	0
63	17	80

- Cars

- Trucks

- Buses

- Bicycles

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Foot Hills Rd
Count Date: Oct 02, 2019
Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach				South Approach Foot Hills Rd				East Approach Kirby Rd				West Approach Kirby Rd				Total Vehicles							
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻		Peds	Total					
07:30					0		15		6	0	0	21	2	148		0	0	150	60	1	0	0	61	232
07:45					0		22		0	0	0	22	0	126		0	0	126	72	4	0	0	76	224
08:00					0		9		3	0	0	12	1	159		0	0	160	67	6	0	0	73	245
08:15					0		7		1	0	0	8	2	127		1	0	130	85	1	0	0	86	224
Grand Total					0	0	53	10	0	0	63	5	560	1	0	566	284	12	0	0	296	925		
Approach %					-		84.1	15.9	0	-			0.9	98.9	0.2	-			95.9	4.1	0	-		
Totals %					0		5.7	1.1	0	6.8			0.5	60.5	0.1	61.2			30.7	1.3	0	32		
PHF					0		0.6	0.42	0	0.72			0.63	0.88	0.25	0.88			0.84	0.5	0	0.86	0.94	
Cars					0		46	9	0	55			4	509	1	514			240	6	0	246	815	
% Cars					0		86.8	90	0	87.3			80	90.9	100	90.8			84.5	50	0	83.1	88.1	
Trucks					0		5	1	0	6			0	45	0	45			32	4	0	36	87	
% Trucks					0		9.4	10	0	9.5			0	8	0	8			11.3	33.3	0	12.2	9.4	
Buses					0		2	0	0	2			1	6	0	7			12	2	0	14	23	
% Buses					0		3.8	0	0	3.2			20	1.1	0	1.2			4.2	16.7	0	4.7	2.5	
Bicycles					0		0	0	0	0			0	0	0	0			0	0	0	0	0	
% Bicycles					0		0	0	0	0			0	0	0	0			0	0	0	0	0	
Peds					0	-				0	-				0	-					0	-	0	
% Peds					0	-				0	-				0	-					0	-	0	



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

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

Intersection: Kirby Rd & Foot Hills Rd
Site ID: 1932600008
Count Date: Oct 02, 2019

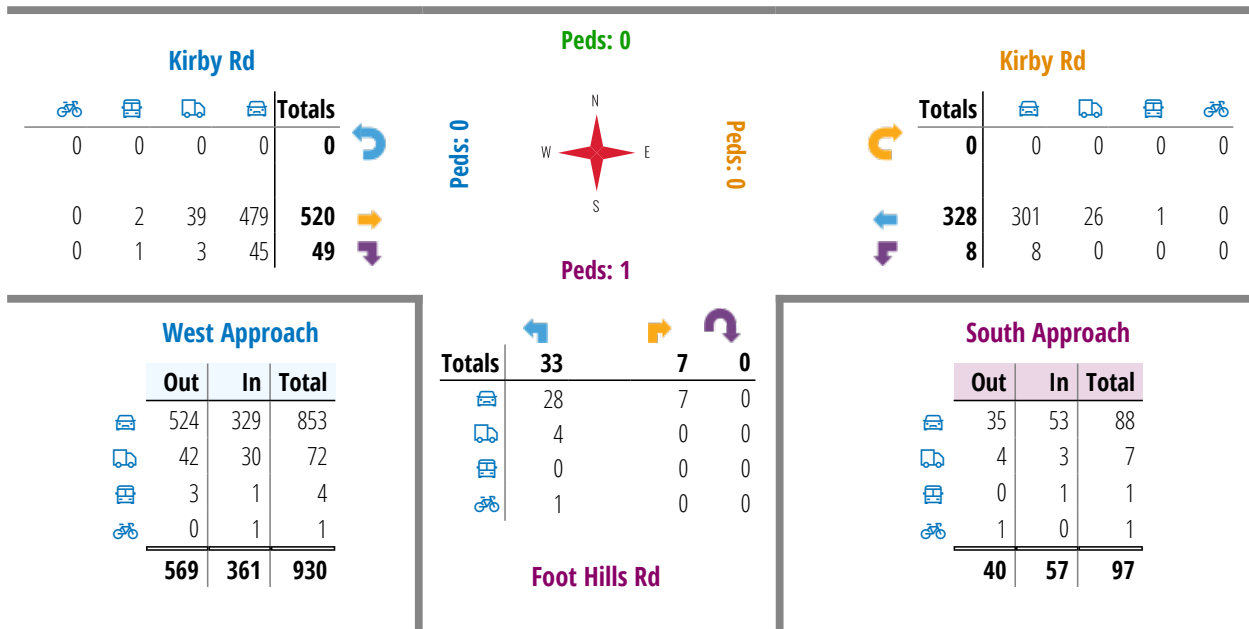
Weather conditions:

**** Unsignalized Intersection ****

Major Road: Kirby Rd runs E/W

East Approach

	Out	In	Total
	309	486	795
	26	39	65
	1	2	3
	0	0	0
Totals	336	527	863



- Cars

- Trucks

- Buses

- Bicycles

Comments



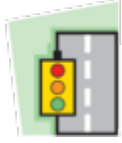
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Foot Hills Rd
Count Date: Oct 02, 2019
Period: 14:00 - 19:00

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

Start Time	North Approach				South Approach Foot Hills Rd				East Approach Kirby Rd				West Approach Kirby Rd				Total Vehicles								
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻		Peds	Total						
16:45					0		7		1	0	0	8	2	75			0	0	77	116	15	0	0	131	216
17:00					0		5		1	0	0	6	2	105			0	0	107	132	13	0	0	145	258
17:15					0		8		4	0	1	12	3	77			0	0	80	130	8	0	0	138	230
17:30					0		13		1	0	0	14	1	71			0	0	72	142	13	0	0	155	241
Grand Total					0	0	33	7	0	1	40	8	328	0	0	336	520	49	0	0	569	945			
Approach %					-		82.5	17.5	0	-		2.4	97.6	0	-		91.4	8.6	0	-					
Totals %					0		3.5	0.7	0		4.2	0.8	34.7	0		35.6	55	5.2	0				60.2		
PHF					0		0.63	0.44	0		0.71	0.67	0.78	0		0.79	0.92	0.82	0				0.92	0.92	
Cars					0		28	7	0		35	8	301	0		309	479	45	0			524	868		
% Cars					0		84.8	100	0		87.5	100	91.8	0		92	92.1	91.8	0			92.1	91.9		
Trucks					0		4	0	0		4	0	26	0		26	39	3	0			42	72		
% Trucks					0		12.1	0	0		10	0	7.9	0		7.7	7.5	6.1	0			7.4	7.6		
Buses					0		0	0	0		0	0	1	0		1	2	1	0			3	4		
% Buses					0		0	0	0		0	0	0.3	0		0.3	0.4	2	0			0.5	0.4		
Bicycles					0		1	0	0		1	0	0	0		0	0	0	0			0	1		
% Bicycles					0		3	0	0		2.5	0	0	0		0	0	0	0			0	0.1		
Peds					0	-				1	-				0	-				0	-		1		
% Peds					0	-				100	-				0	-				0	-		-		



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19326 - City of Vaughan

Intersection Count Report

Intersection: Kirby Rd & Laurentian Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019
Site Code: 1932600009
Count Categories: Cars, Trucks, Buses, Bicycles, Pedestrians
Count Period: 07:00-10:00, 14:00-19:00
Weather: Clear



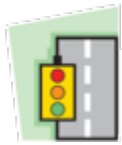
Traffic Count Map

Intersection: Kirby Rd & Laurentian Blvd

Municipality: Vaughan

Count Date: Oct 02, 2019



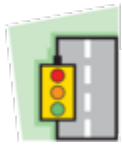


Traffic Count Summary

Intersection: Kirby Rd & Laurentian Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

Laurentian Blvd - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	0	0	0	0	0	5	0	35	0	40	0
08:00 - 09:00	0	0	0	0	0	0	3	0	32	0	35	0
09:00 - 10:00	0	0	0	0	0	0	3	0	19	0	22	0
BREAK												
14:00 - 15:00	0	0	0	0	0	0	1	0	19	0	20	0
15:00 - 16:00	0	0	0	0	0	0	1	0	12	0	13	0
16:00 - 17:00	0	0	0	0	0	0	3	0	15	0	18	2
17:00 - 18:00	0	0	0	0	0	0	3	0	8	0	11	2
18:00 - 19:00	0	0	0	0	0	0	5	0	24	0	29	1
GRAND TOTAL	0	0	0	0	0	0	24	0	164	0	188	5



Traffic Count Summary

Intersection: Kirby Rd & Laurentian Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

Kirby Rd - Traffic Summary

East Approach Totals

West Approach Totals

Hour	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	9	509	0	0	518	0	0	249	1	0	250	0
08:00 - 09:00	6	488	0	0	494	0	0	314	2	0	316	0
09:00 - 10:00	11	235	0	0	246	0	0	173	1	0	174	0
BREAK												
14:00 - 15:00	16	184	0	0	200	0	0	196	2	0	198	0
15:00 - 16:00	26	252	0	0	278	0	0	327	3	0	330	0
16:00 - 17:00	16	316	0	0	332	0	0	449	1	0	450	0
17:00 - 18:00	29	322	0	0	351	0	0	530	3	0	533	0
18:00 - 19:00	21	214	0	1	236	0	0	395	4	0	399	0
GRAND TOTAL	134	2520	0	1	2655	0	0	2633	17	0	2650	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Laurentian Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Laurentian Blvd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	1	0	5	0	6	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
07:15	1	0	5	0	6	0	0	1	0	1	1	0	1	0	2	0	0	0	0	0	0
07:30	2	0	9	0	11	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0
07:45	0	0	10	0	10	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
08:00	1	0	9	0	10	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0
08:15	1	0	5	0	6	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	6	0	6	0	0	0	0	0	1	0	2	0	3	0	0	0	0	0	0
08:45	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	1	0	9	0	10	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	5	0	5	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
09:45	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	8	0	74	0	82	1	0	5	0	6	2	0	7	0	9	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
GRAND TOTAL	18	0	140	0	158	2	0	13	0	15	4	0	11	0	15	0	0	0	0	0	5





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Laurentian Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	2	110	0	0	112	0	6	0	0	6	0	4	0	0	4	0	0	0	0	0	0
07:15	0	100	0	0	100	0	13	0	0	13	1	2	0	0	3	0	0	0	0	0	0
07:30	3	128	0	0	131	1	18	0	0	19	2	2	0	0	4	0	0	0	0	0	0
07:45	0	118	0	0	118	0	7	0	0	7	0	1	0	0	1	0	0	0	0	0	0
08:00	0	145	0	0	145	0	11	0	0	11	0	3	0	0	3	0	0	0	0	0	0
08:15	2	119	0	0	121	0	9	0	0	9	0	1	0	0	1	0	0	0	0	0	0
08:30	1	92	0	0	93	0	7	0	0	7	0	2	0	0	2	0	0	0	0	0	0
08:45	1	88	0	0	89	1	11	0	0	12	1	0	0	0	1	0	0	0	0	0	0
09:00	2	71	0	0	73	1	8	0	0	9	0	2	0	0	2	0	0	0	0	0	0
09:15	4	68	0	0	72	1	7	0	0	8	0	0	0	0	0	0	0	0	0	0	0
09:30	1	38	0	0	39	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
09:45	1	28	0	0	29	1	8	0	0	9	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	17	1105	0	0	1122	5	109	0	0	114	4	18	0	0	22	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Laurentian Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	2	25	0	0	27	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
14:15	4	42	0	0	46	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	0
14:30	3	41	0	0	44	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
14:45	7	47	0	0	54	0	7	0	0	7	0	3	0	0	3	0	0	0	0	0	0
15:00	5	44	0	0	49	0	6	0	0	6	2	1	0	0	3	0	0	0	0	0	0
15:15	7	54	0	0	61	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
15:30	5	65	0	0	70	0	12	0	0	12	1	0	0	0	1	0	0	0	0	0	0
15:45	6	57	0	0	63	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
16:00	2	57	0	0	59	0	12	0	0	12	3	0	0	0	3	0	0	0	0	0	0
16:15	5	72	0	0	77	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	0
16:30	1	73	0	0	74	1	15	0	0	16	0	1	0	0	1	0	0	0	0	0	0
16:45	3	70	0	0	73	1	6	0	0	7	0	1	0	0	1	0	0	0	0	0	0
17:00	10	93	0	0	103	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
17:15	5	76	0	0	81	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
17:30	6	67	0	0	73	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
17:45	6	63	0	0	69	2	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0
18:00	3	51	0	0	54	1	6	0	0	7	0	0	0	1	1	1	0	0	0	1	0
18:15	6	61	0	0	67	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
18:30	2	37	0	0	39	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
18:45	7	42	0	0	49	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	95	1137	0	0	1232	6	140	0	0	146	6	11	0	1	18	1	0	0	0	1	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds	
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total		
GRAND TOTAL	112	2242	0	0	2354	11	249	0	0	260	10	29	0	1	40	1	0	0	0	1	0	





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Laurentian Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	44	1	0	45	0	6	0	0	6	0	2	0	0	2	0	0	0	0	0	0
07:15	0	52	0	0	52	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0
07:30	0	58	0	0	58	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	0
07:45	0	66	0	0	66	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	0
08:00	0	62	0	0	62	0	6	0	0	6	0	2	0	0	2	0	0	0	0	0	0
08:15	0	64	0	0	64	0	19	0	0	19	0	2	2	0	4	0	0	0	0	0	0
08:30	0	79	0	0	79	0	9	0	0	9	0	1	0	0	1	0	0	0	0	0	0
08:45	0	62	0	0	62	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0
09:00	0	49	0	0	49	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
09:15	0	34	1	0	35	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	0
09:30	0	46	0	0	46	0	7	0	0	7	0	1	0	0	1	0	0	0	0	0	0
09:45	0	25	0	0	25	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	0	641	2	0	643	0	75	0	0	75	0	20	2	0	22	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

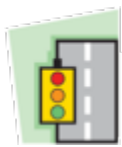
Intersection: Kirby Rd & Laurentian Blvd
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	0	36	1	0	37	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0
14:15	0	46	1	0	47	0	5	0	0	5	0	3	0	0	3	0	0	0	0	0	0
14:30	0	38	0	0	38	0	7	0	0	7	0	1	0	0	1	0	0	0	0	0	0
14:45	0	45	0	0	45	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	0
15:00	0	64	0	0	64	0	8	0	0	8	0	5	0	0	5	0	0	0	0	0	0
15:15	0	58	1	0	59	0	11	0	0	11	0	2	0	0	2	0	0	0	0	0	0
15:30	0	87	1	0	88	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	0
15:45	0	72	0	0	72	0	8	0	0	8	0	3	1	0	4	0	0	0	0	0	0
16:00	0	102	1	0	103	0	11	0	0	11	0	1	0	0	1	0	0	0	0	0	0
16:15	0	105	0	0	105	0	11	0	0	11	0	3	0	0	3	0	0	0	0	0	0
16:30	0	86	0	0	86	0	12	0	0	12	0	1	0	0	1	0	0	0	0	0	0
16:45	0	111	0	0	111	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
17:00	0	120	2	0	122	0	10	0	0	10	0	1	0	0	1	0	0	0	0	0	0
17:15	0	121	1	0	122	0	11	0	0	11	0	1	0	0	1	0	0	0	0	0	0
17:30	0	131	0	0	131	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0
17:45	0	111	0	0	111	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0
18:00	0	108	0	0	108	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
18:15	0	119	0	0	119	0	7	0	0	7	0	1	0	0	1	0	0	0	0	0	0
18:30	0	81	1	0	82	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
18:45	0	62	3	0	65	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	1703	12	0	1715	0	169	0	0	169	0	25	1	0	26	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Total Peds					
	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total						
GRAND TOTAL	0	2344	14	0	2358	0	244	0	0	244	0	45	3	0	48	0	0	0	0	0	0





Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00

Intersection: Kirby Rd & Laurentian Blvd
Site ID: 1932600009
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Kirby Rd runs E/W

East Approach

	Out	In	Total
	515	283	798
	46	35	81
	9	14	23
	0	0	0
Totals	570	332	902

Kirby Rd

				Totals
0	0	0	0	0
0	10	33	250	293
0	2	0	0	2

Peds: 0



Kirby Rd

Totals				
0	0	0	0	0
562	510	45	7	0
8	5	1	2	0

Peds: 0

West Approach

Out	In	Total
250	514	764
33	45	78
12	7	19
0	0	0
295	566	861

Totals	4	39	0
	4	33	0
	0	2	0
	0	4	0
	0	0	0

Laurentian Blvd

South Approach

Out	In	Total
37	5	42
2	1	3
4	4	8
0	0	0
43	10	53

- Cars

- Trucks

- Buses

- Bicycles

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Laurentian Blvd
Count Date: Oct 02, 2019
Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach				South Approach Laurentian Blvd				East Approach Kirby Rd				West Approach Kirby Rd				Total Vehicles								
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻		Peds	Total						
07:30					0		2		11	0	0	13	6	148			0	0	154	66	0	0	0	66	233
07:45					0		0		11	0	0	11	0	126			0	0	126	72	0	0	0	72	209
08:00					0		1		11	0	0	12	0	159			0	0	159	70	0	0	0	70	241
08:15					0		1		6	0	0	7	2	129			0	0	131	85	2	0	0	87	225
Grand Total					0	0	4		39	0	0	43	8	562			0	0	570	293	2	0	0	295	908
Approach %					-		9.3		90.7	0		-	1.4	98.6			0		-	99.3	0.7	0		-	
Totals %					0		0.4		4.3	0		4.7	0.9	61.9			0		62.8	32.3	0.2	0		32.5	
PHF					0		0.5		0.89	0		0.83	0.33	0.88			0		0.9	0.86	0.25	0		0.85	0.94
Cars					0		4		33	0		37	5	510			0		515	250	0	0		250	802
% Cars					0		100		84.6	0		86	62.5	90.7			0		90.4	85.3	0	0		84.7	88.3
Trucks					0		0		2	0		2	1	45			0		46	33	0	0		33	81
% Trucks					0		0		5.1	0		4.7	12.5	8			0		8.1	11.3	0	0		11.2	8.9
Buses					0		0		4	0		4	2	7			0		9	10	2	0		12	25
% Buses					0		0		10.3	0		9.3	25	1.2			0		1.6	3.4	100	0		4.1	2.8
Bicycles					0		0		0	0		0	0	0			0		0	0	0	0		0	0
% Bicycles					0		0		0	0		0	0	0			0		0	0	0	0		0	0
Peds					0		-					-							-					-	0
% Peds					0		-					-							-					-	0



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

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

Intersection: Kirby Rd & Laurentian Blvd
Site ID: 1932600009
Count Date: Oct 02, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: Kirby Rd runs E/W

East Approach

	Out	In	Total
	330	490	820
	27	40	67
	1	3	4
	0	0	0
Totals	358	533	891

Kirby Rd

				Totals
0	0	0	0	0
0	2	39	483	524
0	0	0	3	3

Peds: 0



Kirby Rd

Totals				
0	0	0	0	0
333	306	26	1	0
25	24	1	0	0

West Approach

	Out	In	Total
	486	309	795
	39	26	65
	2	1	3
	0	0	0
Totals	527	336	863

Totals	3	9	0
	3	7	0
	0	1	0
	0	1	0
	0	0	0

Laurentian Blvd

South Approach

	Out	In	Total
	10	27	37
	1	1	2
	1	0	1
	0	0	0
Totals	12	28	40

- Cars

- Trucks

- Buses

- Bicycles

Comments



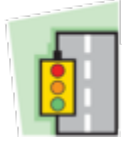
Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Laurentian Blvd
 Count Date: Oct 02, 2019
 Period: 14:00 - 19:00

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

Start Time	North Approach				South Approach Laurentian Blvd				East Approach Kirby Rd				West Approach Kirby Rd				Total Vehicles								
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻		Peds	Total						
16:45					0		0		3	0	0	3	4	77			0	0	81	117	0	0	0	117	201
17:00					0		3		2	0	0	5	10	104			0	0	114	131	2	0	0	133	252
17:15					0		0		2	0	1	2	5	80			0	0	85	133	1	0	0	134	221
17:30					0		0		2	0	0	2	6	72			0	0	78	143	0	0	0	143	223
Grand Total					0	0	3	9	0	1	12	25	333	0	0	358	524	3	0	0	0	527	897		
Approach %					-		25	75	0	-		7	93	0	-		99.4	0.6	0		-				
Totals %					0		0.3	1	0	1.3		2.8	37.1	0	39.9		58.4	0.3	0		58.8				
PHF					0		0.25	0.75	0	0.6		0.63	0.8	0	0.79		0.92	0.38	0		0.92	0.89			
Cars					0		3	7	0	10		24	306	0	330		483	3	0		486		826		
% Cars					0		100	77.8	0	83.3		96	91.9	0	92.2		92.2	100	0		92.2		92.1		
Trucks					0		0	1	0	1		1	26	0	27		39	0	0		39		67		
% Trucks					0		0	11.1	0	8.3		4	7.8	0	7.5		7.4	0	0		7.4		7.5		
Buses					0		0	1	0	1		0	1	0	1		2	0	0		2		4		
% Buses					0		0	11.1	0	8.3		0	0.3	0	0.3		0.4	0	0		0.4		0.4		
Bicycles					0		0	0	0	0		0	0	0	0		0	0	0		0		0		
% Bicycles					0		0	0	0	0		0	0	0	0		0	0	0		0		0		
Peds					0	-				1	-				0	-					0	-	1		
% Peds					0	-				100	-				0	-					0	-			



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19326 - City of Vaughan

Intersection Count Report

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Oct 02, 2019
Site Code: 1932600010
Count Categories: Cars, Trucks, Buses, Bicycles, Pedestrians
Count Period: 07:00-10:00, 14:00-19:00
Weather: Clear

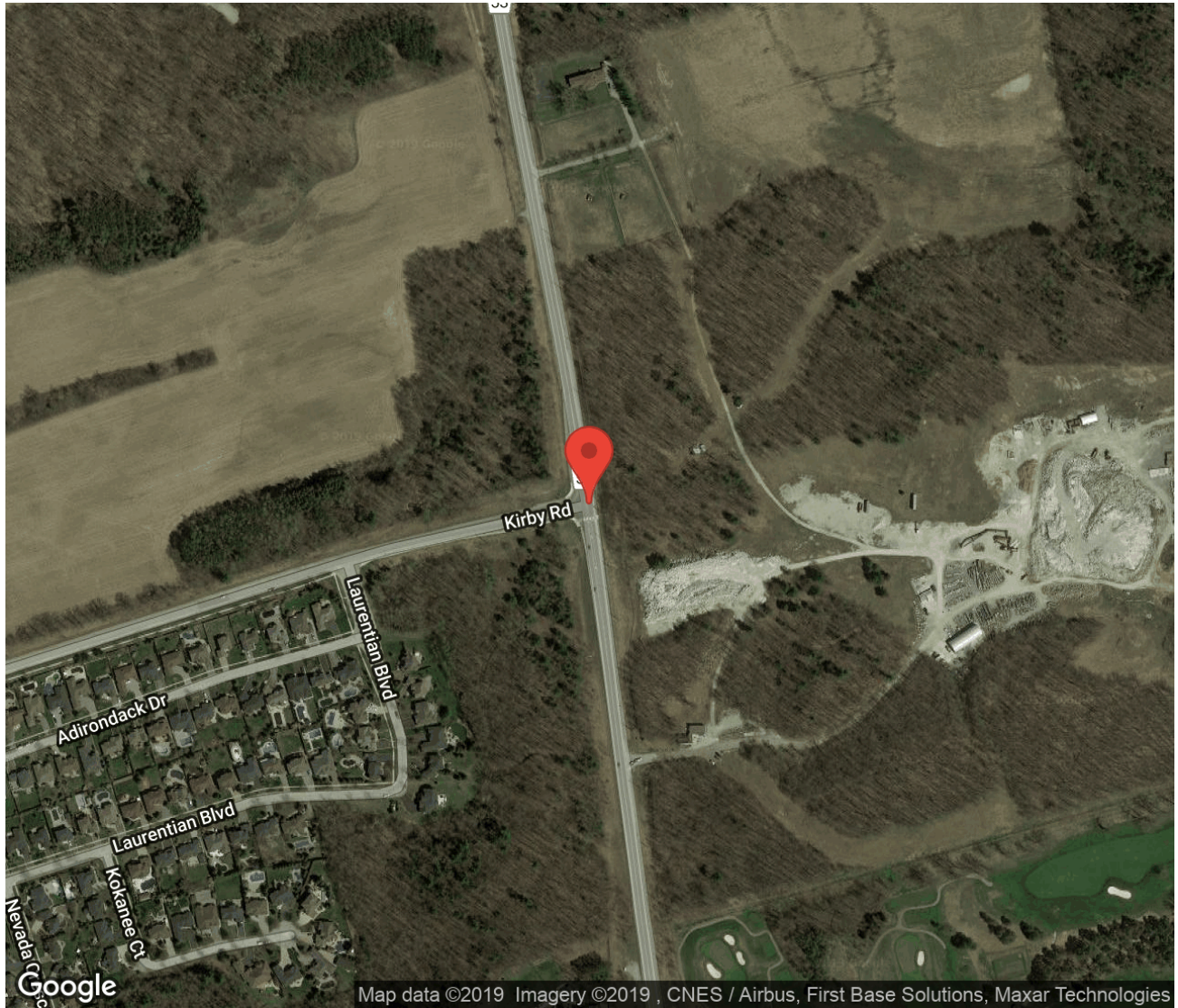


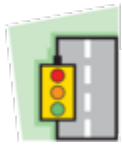
Traffic Count Map

Intersection: Kirby Rd & Dufferin St

Municipality: Vaughan

Count Date: Oct 02, 2019



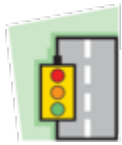


Traffic Count Summary

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Oct 02, 2019

Dufferin St - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	627	281	0	908	0	237	243	0	0	480	0
08:00 - 09:00	0	545	211	0	756	0	283	309	0	0	592	0
09:00 - 10:00	0	475	84	0	559	0	162	232	0	0	394	0
BREAK												
14:00 - 15:00	0	255	34	0	289	0	166	415	0	0	581	0
15:00 - 16:00	0	311	51	0	362	0	227	482	0	0	709	0
16:00 - 17:00	0	311	65	0	376	0	267	701	0	0	968	0
17:00 - 18:00	0	304	49	0	353	0	302	690	0	0	992	0
18:00 - 19:00	0	248	30	0	278	0	206	493	0	0	699	0
GRAND TOTAL	0	3076	805	0	3881	0	1850	3565	0	0	5415	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Summary

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Oct 02, 2019

Kirby Rd - Traffic Summary

East Approach Totals

West Approach Totals

Hour	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	0	0	0	0	0	65	8	211	0	284	0
08:00 - 09:00	0	0	0	0	0	0	106	6	234	0	346	0
09:00 - 10:00	0	0	0	0	0	0	36	16	140	0	192	0
BREAK												
14:00 - 15:00	0	0	0	0	0	0	69	3	143	0	215	0
15:00 - 16:00	0	0	0	0	0	0	137	24	178	0	339	0
16:00 - 17:00	0	0	0	0	0	0	196	22	246	0	464	0
17:00 - 18:00	0	0	0	0	0	0	204	8	326	0	538	0
18:00 - 19:00	0	0	0	0	0	0	123	17	280	0	420	0
GRAND TOTAL	0	0	0	0	0	0	936	104	1758	0	2798	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Dufferin St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	161	35	0	196	0	16	3	0	19	0	0	2	0	2	0	0	0	0	0	0
07:15	0	148	45	0	193	0	24	3	0	27	0	0	1	0	1	0	0	0	0	0	0
07:30	0	114	91	0	205	0	8	2	0	10	0	0	0	0	0	0	0	0	0	0	0
07:45	0	140	94	0	234	0	16	4	0	20	0	0	1	0	1	0	0	0	0	0	0
08:00	0	142	61	0	203	0	14	3	0	17	0	1	0	0	1	0	1	0	0	1	0
08:15	0	101	58	0	159	0	13	1	0	14	0	3	0	0	3	0	0	0	0	0	0
08:30	0	143	35	0	178	0	12	3	0	15	0	1	0	0	1	0	0	0	0	0	0
08:45	0	102	44	0	146	0	12	5	0	17	0	0	1	0	1	0	0	0	0	0	0
09:00	0	110	31	0	141	0	13	2	0	15	0	1	1	0	2	0	0	0	0	0	0
09:15	0	104	21	0	125	0	13	5	0	18	0	1	0	0	1	0	0	0	0	0	0
09:30	0	119	13	0	132	0	14	1	0	15	0	0	0	0	0	0	0	0	0	0	0
09:45	0	91	6	0	97	0	9	4	0	13	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	1475	534	0	2009	0	164	36	0	200	0	7	6	0	13	0	1	0	0	1	0



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TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Oct 02, 2019

North Approach - Dufferin St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	0	51	3	0	54	0	8	2	0	10	0	1	0	0	1	0	0	0	0	0	0
14:15	0	58	9	0	67	0	8	3	0	11	0	0	0	0	0	0	0	0	0	0	0
14:30	0	47	3	0	50	0	7	1	0	8	0	1	0	0	1	0	0	0	0	0	0
14:45	0	64	11	0	75	0	10	1	0	11	0	0	1	0	1	0	0	0	0	0	0
15:00	0	73	5	0	78	0	5	0	0	5	0	1	1	0	2	0	0	0	0	0	0
15:15	0	55	10	0	65	0	2	1	0	3	0	2	0	0	2	0	0	0	0	0	0
15:30	0	81	20	0	101	0	7	1	0	8	0	0	0	0	0	0	0	0	0	0	0
15:45	0	81	13	0	94	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	0
16:00	0	62	12	0	74	0	6	1	0	7	0	3	0	0	3	0	0	0	0	0	0
16:15	0	67	12	0	79	0	8	3	0	11	0	1	0	0	1	0	0	0	0	0	0
16:30	0	72	13	0	85	0	6	3	0	9	0	1	0	0	1	0	0	0	0	0	0
16:45	0	73	20	0	93	0	11	1	0	12	0	1	0	0	1	0	0	0	0	0	0
17:00	0	50	8	0	58	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
17:15	0	91	19	0	110	0	5	0	0	5	0	1	0	0	1	0	0	0	0	0	0
17:30	0	84	10	0	94	0	10	1	0	11	0	0	0	0	0	0	0	0	0	0	0
17:45	0	50	10	0	60	0	6	1	0	7	0	0	0	0	0	0	0	0	0	0	0
18:00	0	56	8	0	64	0	7	2	0	9	0	0	0	0	0	0	0	0	0	0	0
18:15	0	59	4	0	63	0	6	2	0	8	0	1	0	0	1	0	0	0	0	0	0
18:30	0	57	6	0	63	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0
18:45	0	48	8	0	56	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	1279	204	0	1483	0	136	23	0	159	0	14	2	0	16	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds	
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total		
GRAND TOTAL	0	2754	738	0	3492	0	300	59	0	359	0	21	8	0	29	0	1	0	0	1	0	





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Dufferin St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	77	27	0	0	104	3	2	0	0	5	2	2	0	0	4	0	0	0	0	0	0
07:15	55	36	0	0	91	10	7	0	0	17	2	1	0	0	3	0	0	0	0	0	0
07:30	40	71	0	0	111	17	10	0	0	27	4	2	0	0	6	0	0	0	0	0	0
07:45	24	77	0	0	101	3	7	0	0	10	0	1	0	0	1	0	0	0	0	0	0
08:00	84	55	0	0	139	8	9	0	0	17	3	1	0	0	4	0	0	0	0	0	0
08:15	63	87	0	0	150	8	7	0	0	15	1	2	0	0	3	0	0	0	0	0	0
08:30	58	66	0	0	124	4	9	0	0	13	2	2	0	0	4	0	0	0	0	0	0
08:45	45	60	0	0	105	7	11	0	0	18	0	0	0	0	0	0	0	0	0	0	0
09:00	42	50	0	0	92	7	9	0	0	16	1	0	0	0	1	0	0	0	0	0	0
09:15	51	56	0	0	107	3	8	0	0	11	0	1	0	0	1	0	0	0	0	0	0
09:30	26	47	0	0	73	3	9	0	0	12	0	0	0	0	0	0	0	0	0	0	0
09:45	23	45	0	0	68	5	7	0	0	12	1	0	0	0	1	0	0	0	0	0	0
SUBTOTAL	588	677	0	0	1265	78	95	0	0	173	16	12	0	0	28	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Oct 02, 2019

South Approach - Dufferin St

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	24	77	0	0	101	4	15	0	0	19	1	2	0	0	3	0	0	0	0	0	0
14:15	37	95	0	0	132	1	24	0	0	25	2	0	0	0	2	0	0	0	0	0	0
14:30	41	87	0	0	128	5	10	0	0	15	0	0	0	0	0	0	0	0	0	0	0
14:45	43	88	0	0	131	6	16	0	0	22	2	1	0	0	3	0	0	0	0	0	0
15:00	44	110	0	0	154	6	16	0	0	22	2	1	0	0	3	0	0	0	0	0	0
15:15	51	105	0	0	156	5	19	0	0	24	1	2	0	0	3	0	0	0	0	0	0
15:30	50	116	0	0	166	11	20	0	0	31	1	0	0	0	1	0	0	0	0	0	0
15:45	50	87	0	0	137	6	5	0	0	11	0	1	0	0	1	0	0	0	0	0	0
16:00	47	157	0	0	204	11	14	0	0	25	3	0	0	0	3	0	0	0	0	0	0
16:15	65	158	0	0	223	5	15	0	0	20	1	0	0	0	1	0	0	0	0	0	0
16:30	61	147	0	0	208	13	26	0	0	39	1	0	0	0	1	0	0	0	0	0	0
16:45	53	164	0	0	217	6	20	0	0	26	1	0	0	0	1	0	0	0	0	0	0
17:00	95	162	0	0	257	11	19	0	0	30	0	0	0	0	0	0	0	0	0	0	0
17:15	62	162	0	0	224	4	26	0	0	30	0	0	0	0	0	0	0	0	0	0	0
17:30	63	143	0	0	206	4	18	0	0	22	0	1	0	0	1	0	0	0	0	0	0
17:45	59	146	0	0	205	4	13	0	0	17	0	0	0	0	0	0	0	0	0	0	0
18:00	46	126	0	0	172	5	15	0	0	20	1	0	0	0	1	1	0	0	0	1	0
18:15	63	125	0	0	188	9	11	0	0	20	0	0	0	0	0	0	1	0	0	1	0
18:30	33	113	0	0	146	3	8	0	0	11	0	0	0	0	0	0	0	0	0	0	0
18:45	41	90	0	0	131	4	4	0	0	8	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	1028	2458	0	0	3486	123	314	0	0	437	16	8	0	0	24	1	1	0	0	2	0

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	↶	↑	↷	↶	Total	
GRAND TOTAL	1616	3135	0	0	4751	201	409	0	0	610	32	20	0	0	52	1	1	0	0	2	0





Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	10	0	39	0	49	3	0	4	0	7	0	0	2	0	2	0	0	0	0	0	0
07:15	13	2	42	0	57	1	0	3	0	4	0	0	5	0	5	0	0	0	0	0	0
07:30	22	0	45	0	67	1	0	3	0	4	1	0	5	0	6	0	0	0	0	0	0
07:45	14	6	56	0	76	0	0	4	0	4	0	0	3	0	3	0	0	0	0	0	0
08:00	27	2	42	0	71	1	0	6	0	7	1	0	2	0	3	0	0	0	0	0	0
08:15	27	0	42	0	69	5	0	15	0	20	0	0	2	0	2	0	0	0	0	0	0
08:30	22	4	59	0	85	2	0	7	0	9	1	0	2	0	3	0	0	0	0	0	0
08:45	19	0	50	0	69	1	0	7	0	8	0	0	0	0	0	0	0	0	0	0	0
09:00	9	5	38	0	52	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0
09:15	8	0	35	0	43	1	0	3	0	4	0	0	1	0	1	0	0	0	0	0	0
09:30	7	11	33	0	51	2	0	5	0	7	0	0	1	0	1	0	0	0	0	0	0
09:45	6	0	20	0	26	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
SUBTOTAL	184	30	501	0	715	19	0	61	0	80	4	0	23	0	27	0	0	0	0	0	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

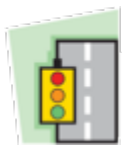
Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Oct 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
14:00	11	0	29	0	40	1	0	9	0	10	0	0	0	0	0	0	0	0	0	0	0
14:15	19	2	28	0	49	2	0	3	0	5	1	0	2	0	3	0	0	0	0	0	0
14:30	10	1	32	0	43	4	0	3	0	7	1	0	0	0	1	0	0	0	0	0	0
14:45	18	0	31	0	49	1	0	4	0	5	1	0	2	0	3	0	0	0	0	0	0
15:00	24	13	31	0	68	2	0	6	0	8	2	0	4	0	6	0	0	0	0	0	0
15:15	23	0	38	0	61	6	0	6	0	12	1	0	1	0	2	0	0	0	0	0	0
15:30	38	11	38	0	87	4	0	4	0	8	0	0	1	0	1	0	0	0	0	0	0
15:45	33	0	42	0	75	4	0	4	0	8	0	0	3	0	3	0	0	0	0	0	0
16:00	38	13	55	0	106	4	0	8	0	12	1	0	1	0	2	0	0	0	0	0	0
16:15	45	0	63	0	108	7	0	4	0	11	0	0	3	0	3	0	0	0	0	0	0
16:30	38	8	42	0	88	5	0	8	0	13	1	0	0	0	1	0	0	0	0	0	0
16:45	53	1	59	0	113	4	0	2	0	6	0	0	1	0	1	0	0	0	0	0	0
17:00	49	0	73	0	122	4	0	6	0	10	0	0	1	0	1	0	0	0	0	0	0
17:15	48	6	68	0	122	6	0	6	0	12	0	0	1	0	1	0	0	0	0	0	0
17:30	48	0	85	0	133	3	0	9	0	12	0	0	0	0	0	0	0	0	0	0	0
17:45	42	2	69	0	113	4	0	8	0	12	0	0	0	0	0	0	0	0	0	0	0
18:00	47	0	67	0	114	2	0	6	0	8	0	0	1	0	1	0	0	0	0	0	0
18:15	36	14	74	0	124	0	0	8	0	8	1	0	0	0	1	0	0	0	0	0	0
18:30	18	3	66	0	87	2	0	3	0	5	0	0	0	0	0	0	0	0	0	0	0
18:45	16	0	51	0	67	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	654	74	1041	0	1769	66	0	111	0	177	9	0	21	0	30	0	0	0	0	0	0

Start Time	Cars					Trucks					Buses					Total Peds				
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total					
GRAND TOTAL	838	104	1542	0	2484	85	0	172	0	257	13	0	44	0	57	0	0	0	0	0





Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00

Intersection: Kirby Rd & Dufferin St
Site ID: 1932600010
Count Date: Oct 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Dufferin St runs N/S

North Approach

	Out	In	Total
	801	380	1181
	61	40	101
	5	8	13
	1	0	1
Totals	868	428	1296

Dufferin St

	0	1	0
	1	4	0
	10	51	0
	304	497	0
Totals	315	553	0

Peds: 0

Kirby Rd

					Totals
	0	0	0	0	0
	0	2	7	90	99
	0	12	28	185	225

Peds: 0



Peds: 0

Peds: 0

West Approach

	Out	In	Total
	283	515	798
	35	46	81
	14	9	23
	0	0	0
Totals	332	570	902

Totals			
	255	329	0
	211	290	0
	36	33	0
	8	6	0
	0	0	0

Dufferin St

South Approach

	Out	In	Total
	501	682	1183
	69	79	148
	14	16	30
	0	1	1
Totals	584	778	1362

- Cars

- Trucks

- Buses

- Bicycles

Comments



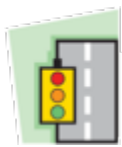
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Dufferin St
Count Date: Oct 02, 2019
Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Dufferin St						South Approach Dufferin St						East Approach						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:30		122	93	0	0	215	61	83		0	0	144					0		24		53	0	0	77	436
07:45		156	99	0	0	255	27	85		0	0	112					0		14		63	0	0	77	444
08:00		158	64	0	0	222	95	65		0	0	160					0		29		50	0	0	79	461
08:15		117	59	0	0	176	72	96		0	0	168					0		32		59	0	0	91	435
Grand Total		553	315	0	0	868	255	329		0	0	584					0	0	99		225	0	0	324	1776
Approach %		63.7	36.3	0	-	-	43.7	56.3		0	-	-					-	-	30.6		69.4	0	-	-	
Totals %		31.1	17.7	0	-	48.9	14.4	18.5		0	-	32.9					0	-	5.6		12.7	0	-	18.2	
PHF		0.88	0.8	0	-	0.85	0.67	0.86		0	-	0.87					0	-	0.77		0.89	0	-	0.89	0.96
Cars		497	304	0	-	801	211	290		0	-	501					0	-	90		185	0	-	275	1577
% Cars		89.9	96.5	0	-	92.3	82.7	88.1		0	-	85.8					0	-	90.9		82.2	0	-	84.9	88.8
Trucks		51	10	0	-	61	36	33		0	-	69					0	-	7		28	0	-	35	165
% Trucks		9.2	3.2	0	-	7	14.1	10		0	-	11.8					0	-	7.1		12.4	0	-	10.8	9.3
Buses		4	1	0	-	5	8	6		0	-	14					0	-	2		12	0	-	14	33
% Buses		0.7	0.3	0	-	0.6	3.1	1.8		0	-	2.4					0	-	2		5.3	0	-	4.3	1.9
Bicycles		1	0	0	-	1	0	0		0	-	0					0	-	0		0	0	-	0	1
% Bicycles		0.2	0	0	-	0.1	0	0		0	-	0					0	-	0		0	0	-	0	0.1
Peds					0	-				0	-						0	-				0	-		0
% Peds					0	-				0	-						0	-				0	-		0



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

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

Intersection: Kirby Rd & Dufferin St
Site ID: 1932600010
Count Date: Oct 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Dufferin St runs N/S

North Approach

	Out	In	Total
	355	829	1184
	35	100	135
	2	1	3
	0	0	0
Totals	392	930	1322

Dufferin St

	0	0	0
	0	2	0
	2	33	0
	57	298	0
Totals	59	333	0



Peds: 0

Kirby Rd

					Totals
	0	0	0	0	0
	0	0	17	198	215
	0	3	23	285	311

Peds: 0



Peds: 0

Peds: 0

West Approach

	Out	In	Total
	490	330	820
	40	27	67
	3	1	4
	0	0	0
Totals	533	358	891

Totals			
	299	715	0

Dufferin St

South Approach

	Out	In	Total
	904	583	1487
	108	56	164
	2	5	7
	0	0	0
Totals	1014	644	1658

- Cars

- Trucks

- Buses

- Bicycles

Comments



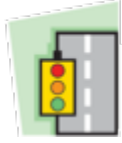
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Dufferin St
Count Date: Oct 02, 2019
Period: 14:00 - 19:00

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

Start Time	North Approach Dufferin St						South Approach Dufferin St						East Approach						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
16:45		85	21	0	0	106	60	184		0	0	244					0		57		62	0	0	119	469
17:00		57	8	0	0	65	106	181		0	0	287					0		53		80	0	0	133	485
17:15		97	19	0	0	116	66	188		0	0	254					0		54		75	0	0	129	499
17:30		94	11	0	0	105	67	162		0	0	229					0		51		94	0	0	145	479
Grand Total		333	59	0	0	392	299	715		0	0	1014					0	0	215		311	0	0	526	1932
Approach %		84.9	15.1	0	-	-	29.5	70.5		0	-	-					-	-	40.9		59.1	0	-	-	
Totals %		17.2	3.1	0	-	20.3	15.5	37		0	-	52.5					0	-	11.1		16.1	0	-	27.2	
PHF		0.86	0.7	0	-	0.84	0.71	0.95		0	-	0.88					0	-	0.94		0.83	0	-	0.91	0.97
Cars		298	57	0	-	355	273	631		0	-	904					0	-	198		285	0	-	483	1742
% Cars		89.5	96.6	0	-	90.6	91.3	88.3		0	-	89.2					0	-	92.1		91.6	0	-	91.8	90.2
Trucks		33	2	0	-	35	25	83		0	-	108					0	-	17		23	0	-	40	183
% Trucks		9.9	3.4	0	-	8.9	8.4	11.6		0	-	10.7					0	-	7.9		7.4	0	-	7.6	9.5
Buses		2	0	0	-	2	1	1		0	-	2					0	-	0		3	0	-	3	7
% Buses		0.6	0	0	-	0.5	0.3	0.1		0	-	0.2					0	-	0		1	0	-	0.6	0.4
Bicycles		0	0	0	-	0	0	0		0	-	0					0	-	0		0	0	-	0	0
% Bicycles		0	0	0	-	0	0	0		0	-	0					0	-	0		0	0	-	0	0
Peds					0	-				0	-						0	-				0	-		0
% Peds					0	-				0	-						0	-				0	-		0



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19361 - City of Vaughan

Intersection Count Report

Intersection:	Kirby Rd & Jane St
Municipality:	Vaughan
Count Date:	Nov 02, 2019
Site Code:	1936100001
Count Categories:	Cars, Trucks, Pedestrians
Count Period:	11:00-19:00
Weather:	Clear

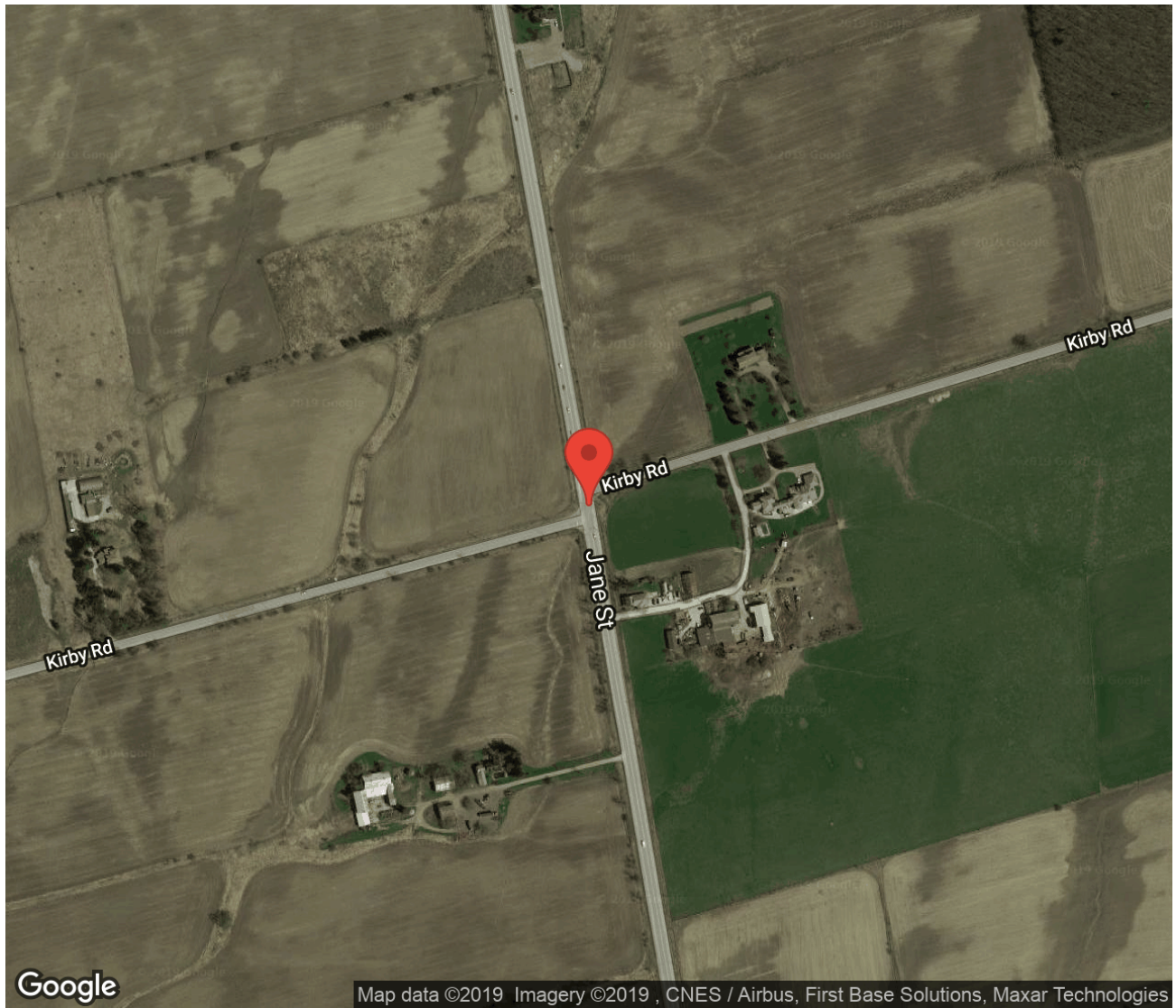


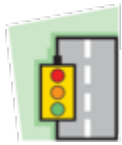
Traffic Count Map

Intersection: Kirby Rd & Jane St

Municipality: Vaughan

Count Date: Nov 02, 2019





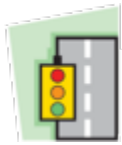
Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Summary

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Nov 02, 2019

Jane St - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks						Includes Cars, Trucks					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
11:00 - 12:00	16	270	29	0	315	0	7	176	76	0	259	0
12:00 - 13:00	10	274	44	0	328	0	6	196	86	0	288	0
13:00 - 14:00	6	213	41	0	260	0	11	259	104	0	374	0
14:00 - 15:00	7	223	45	0	275	0	10	262	94	0	366	0
15:00 - 16:00	9	205	52	0	266	0	12	256	87	0	355	0
16:00 - 17:00	11	193	47	0	251	0	19	293	91	0	403	0
17:00 - 18:00	10	202	46	0	258	0	6	248	85	0	339	0
18:00 - 19:00	6	186	34	0	226	0	5	226	78	0	309	0
GRAND TOTAL	75	1766	338	0	2179	0	76	1916	701	0	2693	0



Traffic Count Summary

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Nov 02, 2019

Kirby Rd - Traffic Summary

East Approach Totals

West Approach Totals

Hour	Includes Cars, Trucks						Includes Cars, Trucks					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
11:00 - 12:00	75	42	10	0	127	0	18	48	10	0	76	1
12:00 - 13:00	94	55	14	0	163	0	36	54	10	0	100	0
13:00 - 14:00	78	57	11	0	146	0	24	49	9	0	82	0
14:00 - 15:00	78	59	18	0	155	0	22	64	8	0	94	0
15:00 - 16:00	60	71	14	0	145	0	27	65	13	0	105	0
16:00 - 17:00	55	66	10	0	131	0	25	63	10	0	98	0
17:00 - 18:00	68	61	9	0	138	0	38	69	6	0	113	0
18:00 - 19:00	46	35	14	0	95	0	27	50	4	0	81	0
GRAND TOTAL	554	446	100	0	1100	0	217	462	70	0	749	1



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Nov 02, 2019

North Approach - Jane St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	1	66	9	0	76	0	4	0	0	4	0
11:15	5	60	4	0	69	1	6	0	0	7	0
11:30	4	50	6	0	60	0	10	2	0	12	0
11:45	5	66	8	0	79	0	8	0	0	8	0
12:00	2	75	8	0	85	2	5	2	0	9	0
12:15	2	53	4	0	59	0	3	1	0	4	0
12:30	1	65	14	0	80	0	8	3	0	11	0
12:45	2	61	9	0	72	1	4	3	0	8	0
13:00	3	50	8	0	61	0	5	0	0	5	0
13:15	2	55	14	0	71	0	3	2	0	5	0
13:30	0	40	6	0	46	1	9	1	0	11	0
13:45	0	48	7	0	55	0	3	3	0	6	0
14:00	3	50	7	0	60	1	4	2	0	7	0
14:15	0	50	10	0	60	1	5	1	0	7	0
14:30	1	51	12	0	64	0	2	0	0	2	0
14:45	1	53	10	0	64	0	8	3	0	11	0
15:00	1	50	11	0	62	0	2	0	0	2	0
15:15	2	58	16	0	76	1	2	0	0	3	0
15:30	1	44	12	0	57	0	7	4	0	11	0
15:45	4	40	9	0	53	0	2	0	0	2	0
16:00	4	37	9	0	50	0	3	0	0	3	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Nov 02, 2019

North Approach - Jane St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	2	45	6	0	53	0	1	2	0	3	0
16:30	2	55	13	0	70	0	0	1	0	1	0
16:45	3	51	15	0	69	0	1	1	0	2	0
17:00	3	58	13	0	74	0	1	0	0	1	0
17:15	1	46	9	0	56	0	6	1	0	7	0
17:30	4	40	11	0	55	0	2	1	0	3	0
17:45	1	46	11	0	58	1	3	0	0	4	0
18:00	1	41	10	0	52	0	4	0	0	4	0
18:15	4	51	13	0	68	0	4	1	0	5	0
18:30	1	38	4	0	43	0	1	0	0	1	0
18:45	0	47	6	0	53	0	0	0	0	0	0
SUBTOTAL	66	1640	304	0	2010	9	126	34	0	169	0
GRAND TOTAL	66	1640	304	0	2010	9	126	34	0	169	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Nov 02, 2019

South Approach - Jane St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	0	42	13	0	55	1	5	2	0	8	0
11:15	4	32	17	0	53	0	7	2	0	9	0
11:30	0	32	22	0	54	0	7	6	0	13	0
11:45	2	44	13	0	59	0	7	1	0	8	0
12:00	1	41	19	0	61	0	7	5	0	12	0
12:15	3	34	18	0	55	0	3	2	0	5	0
12:30	2	51	16	0	69	0	7	2	0	9	0
12:45	0	48	20	0	68	0	5	4	0	9	0
13:00	0	52	19	0	71	0	12	5	0	17	0
13:15	3	48	23	0	74	1	8	3	0	12	0
13:30	3	62	21	0	86	1	8	3	0	12	0
13:45	2	59	28	0	89	1	10	2	0	13	0
14:00	2	57	18	0	77	0	5	4	0	9	0
14:15	2	73	22	0	97	0	7	4	0	11	0
14:30	3	52	26	0	81	1	8	2	0	11	0
14:45	2	53	15	0	70	0	7	3	0	10	0
15:00	3	59	10	0	72	0	6	3	0	9	0
15:15	0	63	21	0	84	1	8	1	0	10	0
15:30	2	46	24	0	72	2	7	3	0	12	0
15:45	3	64	20	0	87	1	3	5	0	9	0
16:00	4	54	15	0	73	2	6	4	0	12	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Nov 02, 2019

South Approach - Jane St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	5	68	24	0	97	1	8	1	0	10	0
16:30	1	62	20	0	83	0	5	2	0	7	0
16:45	5	85	21	0	111	1	5	4	0	10	0
17:00	2	79	20	0	101	0	4	4	0	8	0
17:15	1	65	19	0	85	0	3	2	0	5	0
17:30	3	50	18	0	71	0	4	0	0	4	0
17:45	0	42	21	0	63	0	1	1	0	2	0
18:00	1	59	13	0	73	0	4	2	0	6	0
18:15	2	55	21	0	78	0	1	1	0	2	0
18:30	2	48	12	0	62	0	2	1	0	3	0
18:45	0	50	23	0	73	0	7	5	0	12	0
SUBTOTAL	63	1729	612	0	2404	13	187	89	0	289	0
GRAND TOTAL	63	1729	612	0	2404	13	187	89	0	289	0



Traffic Count Data

Intersection: Kirby Rd & Jane St
 Municipality: Vaughan
 Count Date: Nov 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	11	6	1	0	18	3	1	1	0	5	0
11:15	20	13	2	0	35	5	1	0	0	6	0
11:30	14	11	2	0	27	2	4	0	0	6	0
11:45	17	4	2	0	23	3	2	2	0	7	0
12:00	26	11	4	0	41	4	2	1	0	7	0
12:15	16	7	2	0	25	3	0	1	0	4	0
12:30	19	16	2	0	37	3	1	2	0	6	0
12:45	15	16	2	0	33	8	2	0	0	10	0
13:00	13	13	2	0	28	5	0	0	0	5	0
13:15	19	8	1	0	28	0	3	0	0	3	0
13:30	16	17	2	0	35	0	1	2	0	3	0
13:45	23	15	4	0	42	2	0	0	0	2	0
14:00	20	15	1	0	36	2	0	2	0	4	0
14:15	15	10	3	0	28	2	5	1	0	8	0
14:30	17	13	2	0	32	1	1	2	0	4	0
14:45	17	11	7	0	35	4	4	0	0	8	0
15:00	19	24	5	0	48	1	4	0	0	5	0
15:15	10	11	4	0	25	0	4	0	0	4	0
15:30	16	13	2	0	31	2	1	0	0	3	0
15:45	9	13	3	0	25	3	1	0	0	4	0
16:00	11	18	2	0	31	2	2	0	0	4	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Nov 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	18	15	4	0	37	1	2	0	0	3	0
16:30	8	13	1	0	22	2	1	0	0	3	0
16:45	10	14	3	0	27	3	1	0	0	4	0
17:00	13	17	1	0	31	6	2	0	0	8	0
17:15	18	14	0	0	32	3	0	0	0	3	0
17:30	15	13	6	0	34	0	1	1	0	2	0
17:45	12	14	1	0	27	1	0	0	0	1	0
18:00	8	11	2	0	21	0	0	0	0	0	0
18:15	15	12	2	0	29	2	0	0	0	2	0
18:30	8	8	5	0	21	1	0	0	0	1	0
18:45	12	4	5	0	21	0	0	0	0	0	0
SUBTOTAL	480	400	85	0	965	74	46	15	0	135	0
GRAND TOTAL	480	400	85	0	965	74	46	15	0	135	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Nov 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	6	5	3	0	14	1	1	0	0	2	0
11:15	3	7	5	0	15	1	0	1	0	2	1
11:30	4	16	1	0	21	0	2	0	0	2	0
11:45	3	15	0	0	18	0	2	0	0	2	0
12:00	6	13	1	0	20	2	1	0	0	3	0
12:15	8	9	3	0	20	1	1	1	0	3	0
12:30	6	15	1	0	22	0	4	0	0	4	0
12:45	11	9	4	0	24	2	2	0	0	4	0
13:00	0	8	3	0	11	2	3	0	0	5	0
13:15	5	11	3	0	19	1	4	1	0	6	0
13:30	6	8	0	0	14	5	1	1	0	7	0
13:45	5	12	1	0	18	0	2	0	0	2	0
14:00	5	13	2	0	20	1	0	0	0	1	0
14:15	2	17	1	0	20	0	2	0	0	2	0
14:30	5	14	0	0	19	1	3	1	0	5	0
14:45	7	13	4	0	24	1	2	0	0	3	0
15:00	5	13	1	0	19	2	2	0	0	4	0
15:15	7	14	2	0	23	0	1	1	0	2	0
15:30	8	17	0	0	25	0	2	1	0	3	0
15:45	5	15	7	0	27	0	1	1	0	2	0
16:00	3	17	3	0	23	1	1	1	0	3	0



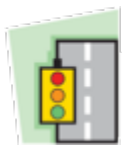
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Jane St
Municipality: Vaughan
Count Date: Nov 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	3	14	3	0	20	0	3	0	0	3	0
16:30	7	12	1	0	20	1	1	0	0	2	0
16:45	10	14	1	0	25	0	1	1	0	2	0
17:00	7	15	0	0	22	2	5	0	0	7	0
17:15	11	16	3	0	30	1	2	0	0	3	0
17:30	6	17	1	0	24	0	0	0	0	0	0
17:45	11	14	2	0	27	0	0	0	0	0	0
18:00	4	11	2	0	17	0	0	0	0	0	0
18:15	9	18	0	0	27	1	0	0	0	1	0
18:30	5	14	2	0	21	1	2	0	0	3	0
18:45	7	5	0	0	12	0	0	0	0	0	0
SUBTOTAL	190	411	60	0	661	27	51	10	0	88	1
GRAND TOTAL	190	411	60	0	661	27	51	10	0	88	1



Peak Hour Diagram

Specified Period

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

One Hour Peak

From: 12:30:00
To: 13:30:00

Intersection: Kirby Rd & Jane St
Site ID: 1936100001
Count Date: Nov 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Jane St runs N/S

North Approach

	Out	In	Total
	284	228	512
	29	39	68
Totals	313	267	580

Jane St

	8	20	1	0
	45	231	8	0
Totals	53	251	9	0

← ↓ ↘ ↻

East Approach

	Out	In	Total
	126	129	255
	24	28	52
Totals	150	157	307

Kirby Rd

	Out	In	Totals
	0	0	0
	5	22	27
	13	43	56
	1	11	12

↻ ↑ → ↓

Peds: 0

Peds: 0



Peds: 0

Peds: 0

Kirby Rd

Totals	Out	In	Total
	0	0	0
	9	7	2
	59	53	6
	82	66	16

↻ ↑ → ↓

West Approach

	Out	In	Total
	76	103	179
	19	15	34
Totals	95	118	213

	6	231	92	0
	5	199	78	0
	1	32	14	0
Totals	6	231	92	0

← ↑ → ↻

Jane St

South Approach

	Out	In	Total
	282	308	590
	47	37	84
Totals	329	345	674

- Cars

- Trucks

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Jane St
Count Date: Nov 02, 2019
Period: 11:00 - 14:00

Peak Hour Data (12:30 - 13:30)

Start Time	North Approach Jane St						South Approach Jane St						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
12:30	1	73	17	0	0	91	2	58	18	0	0	78	22	17	4	0	0	43	6	19	1	0	0	26	238
12:45	3	65	12	0	0	80	0	53	24	0	0	77	23	18	2	0	0	43	13	11	4	0	0	28	228
13:00	3	55	8	0	0	66	0	64	24	0	0	88	18	13	2	0	0	33	2	11	3	0	0	16	203
13:15	2	58	16	0	0	76	4	56	26	0	0	86	19	11	1	0	0	31	6	15	4	0	0	25	218
Grand Total	9	251	53	0	0	313	6	231	92	0	0	329	82	59	9	0	0	150	27	56	12	0	0	95	887
Approach %	2.9	80.2	16.9	0	-	-	1.8	70.2	28	0	-	-	54.7	39.3	6	0	-	-	28.4	58.9	12.6	0	-	-	-
Totals %	1	28.3	6	0	-	35.3	0.7	26	10.4	0	-	37.1	9.2	6.7	1	0	-	16.9	3	6.3	1.4	0	-	10.7	-
PHF	0.75	0.86	0.78	0	-	0.86	0.38	0.9	0.88	0	-	0.93	0.89	0.82	0.56	0	-	0.87	0.52	0.74	0.75	0	-	0.85	0.93
Cars	8	231	45	0	-	284	5	199	78	0	-	282	66	53	7	0	-	126	22	43	11	0	-	76	768
% Cars	88.9	92	84.9	0	-	90.7	83.3	86.1	84.8	0	-	85.7	80.5	89.8	77.8	0	-	84	81.5	76.8	91.7	0	-	80	86.6
Trucks	1	20	8	0	-	29	1	32	14	0	-	47	16	6	2	0	-	24	5	13	1	0	-	19	119
% Trucks	11.1	8	15.1	0	-	9.3	16.7	13.9	15.2	0	-	14.3	19.5	10.2	22.2	0	-	16	18.5	23.2	8.3	0	-	20	13.4
Peds	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	0
% Peds	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

From: 16:15:00
To: 17:15:00

Intersection: Kirby Rd & Jane St
Site ID: 1936100001
Count Date: Nov 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Jane St runs N/S

North Approach

	Out	In	Total
	266	330	596
	7	25	32
Totals	273	355	628

Jane St

	4	3	0	0
	47	209	10	0
Totals	51	212	10	0

← ↓ ↘ ↻

East Approach

	Out	In	Total
	117	150	267
	18	21	39
Totals	135	171	306

Kirby Rd

	Car	Truck	Totals	
	0	0	0	↻
	3	27	30	↑
	10	55	65	→
	1	5	6	↓

Peds: 0

Peds: 0



Peds: 0

Peds: 0

Kirby Rd

Totals	Car	Truck
0	0	0
9	9	0
65	59	6
61	49	12

↻ ↑ ← ↓

West Approach

	Out	In	Total
	87	119	206
	14	12	26
Totals	101	131	232

Totals	15	316	96	0
	13	294	85	0
	2	22	11	0

← ↑ → ↻

Jane St

South Approach

	Out	In	Total
	392	263	655
	35	16	51
Totals	427	279	706

- Cars

- Trucks

Comments



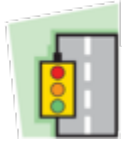
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Jane St
Count Date: Nov 02, 2019
Period: 14:00 - 19:00

Peak Hour Data (16:15 - 17:15)

Start Time	North Approach Jane St						South Approach Jane St						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
16:15	2	46	8	0	0	56	6	76	25	0	0	107	19	17	4	0	0	40	3	17	3	0	0	23	226
16:30	2	55	14	0	0	71	1	67	22	0	0	90	10	14	1	0	0	25	8	13	1	0	0	22	208
16:45	3	52	16	0	0	71	6	90	25	0	0	121	13	15	3	0	0	31	10	15	2	0	0	27	250
17:00	3	59	13	0	0	75	2	83	24	0	0	109	19	19	1	0	0	39	9	20	0	0	0	29	252
Grand Total	10	212	51	0	0	273	15	316	96	0	0	427	61	65	9	0	0	135	30	65	6	0	0	101	936
Approach %	3.7	77.7	18.7	0	-	-	3.5	74	22.5	0	-	-	45.2	48.1	6.7	0	-	-	29.7	64.4	5.9	0	-	-	
Totals %	1.1	22.6	5.4	0	-	29.2	1.6	33.8	10.3	0	-	45.6	6.5	6.9	1	0	-	14.4	3.2	6.9	0.6	0	-	10.8	
PHF	0.83	0.9	0.8	0	-	0.91	0.63	0.88	0.96	0	-	0.88	0.8	0.86	0.56	0	-	0.84	0.75	0.81	0.5	0	-	0.87	0.93
Cars	10	209	47	0	-	266	13	294	85	0	-	392	49	59	9	0	-	117	27	55	5	0	-	87	862
% Cars	100	98.6	92.2	0	-	97.4	86.7	93	88.5	0	-	91.8	80.3	90.8	100	0	-	86.7	90	84.6	83.3	0	-	86.1	92.1
Trucks	0	3	4	0	-	7	2	22	11	0	-	35	12	6	0	0	-	18	3	10	1	0	-	14	74
% Trucks	0	1.4	7.8	0	-	2.6	13.3	7	11.5	0	-	8.2	19.7	9.2	0	0	-	13.3	10	15.4	16.7	0	-	13.9	7.9
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19361 - City of Vaughan

Intersection Count Report

Intersection:	Kirby Rd & Keele St
Municipality:	Vaughan
Count Date:	Nov 02, 2019
Site Code:	1936100002
Count Categories:	Cars, Trucks, Pedestrians
Count Period:	11:00-19:00
Weather:	Clear

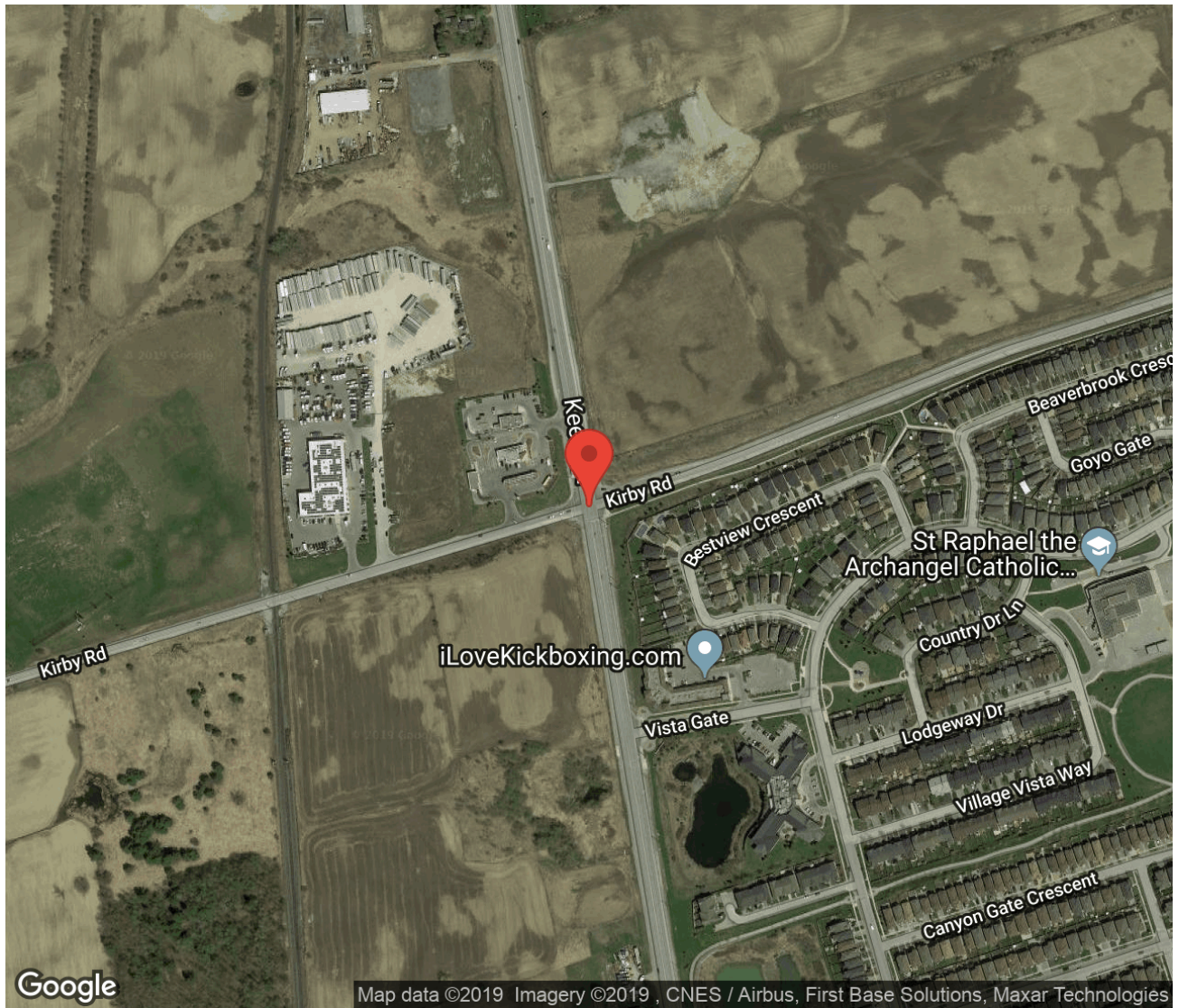


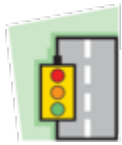
Traffic Count Map

Intersection: Kirby Rd & Keele St

Municipality: Vaughan

Count Date: Nov 02, 2019



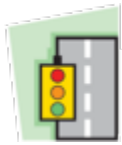


Traffic Count Summary

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Nov 02, 2019

Keele St - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks						Includes Cars, Trucks					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
11:00 - 12:00	29	314	37	0	380	0	30	306	51	0	387	1
12:00 - 13:00	28	292	36	0	356	0	47	324	86	0	457	0
13:00 - 14:00	27	312	30	0	369	0	39	336	75	0	450	0
14:00 - 15:00	20	259	46	0	325	1	37	347	96	0	480	0
15:00 - 16:00	29	229	32	0	290	1	33	323	71	0	427	1
16:00 - 17:00	18	238	30	0	286	1	50	277	62	0	389	0
17:00 - 18:00	17	203	27	0	247	0	24	250	54	0	328	0
18:00 - 19:00	30	199	13	0	242	0	37	218	62	0	317	2
GRAND TOTAL	198	2046	251	0	2495	3	297	2381	557	0	3235	4



Traffic Count Summary

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Nov 02, 2019

Kirby Rd - Traffic Summary

Hour	East Approach Totals						West Approach Totals					
	Includes Cars, Trucks						Includes Cars, Trucks					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
11:00 - 12:00	43	76	32	0	151	3	25	76	38	0	139	1
12:00 - 13:00	42	81	33	0	156	0	26	88	42	1	157	0
13:00 - 14:00	58	97	27	0	182	0	33	106	33	0	172	0
14:00 - 15:00	46	94	20	0	160	1	33	117	37	0	187	0
15:00 - 16:00	33	80	26	0	139	2	28	90	40	0	158	2
16:00 - 17:00	41	83	22	0	146	1	41	111	23	0	175	2
17:00 - 18:00	33	81	23	0	137	0	32	120	36	0	188	4
18:00 - 19:00	34	63	23	0	120	0	27	96	46	0	169	2
GRAND TOTAL	330	655	206	0	1191	7	245	804	295	1	1345	11



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Nov 02, 2019

North Approach - Keele St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	6	65	6	0	77	0	15	2	0	17	0
11:15	4	58	10	0	72	0	9	3	0	12	0
11:30	9	67	6	0	82	1	15	2	0	18	0
11:45	6	77	7	0	90	3	8	1	0	12	0
12:00	7	56	10	0	73	0	10	3	0	13	0
12:15	9	72	6	0	87	1	7	1	0	9	0
12:30	4	61	4	0	69	1	13	1	0	15	0
12:45	3	63	7	0	73	3	10	4	0	17	0
13:00	4	63	3	0	70	0	7	2	0	9	0
13:15	10	64	6	0	80	0	18	0	0	18	0
13:30	5	66	10	0	81	0	8	1	0	9	0
13:45	7	72	8	0	87	1	14	0	0	15	0
14:00	3	69	9	0	81	0	9	4	0	13	0
14:15	6	60	7	0	73	0	4	6	0	10	0
14:30	6	52	6	0	64	0	6	2	0	8	0
14:45	4	51	10	0	65	1	8	2	0	11	1
15:00	6	55	9	0	70	0	3	1	0	4	1
15:15	3	55	5	0	63	1	6	2	0	9	0
15:30	7	59	4	0	70	1	5	3	0	9	0
15:45	10	40	5	0	55	1	6	3	0	10	0
16:00	5	41	6	0	52	1	6	1	0	8	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Nov 02, 2019

North Approach - Keele St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	2	54	8	0	64	1	6	0	0	7	0
16:30	5	60	5	0	70	2	6	3	0	11	1
16:45	2	54	7	0	63	0	11	0	0	11	0
17:00	5	47	6	0	58	0	2	2	0	4	0
17:15	6	51	7	0	64	2	8	0	0	10	0
17:30	1	44	6	0	51	1	3	0	0	4	0
17:45	2	42	4	0	48	0	6	2	0	8	0
18:00	5	51	5	0	61	3	6	1	0	10	0
18:15	10	48	3	0	61	2	7	0	0	9	0
18:30	3	36	2	0	41	1	4	1	0	6	0
18:45	5	43	1	0	49	1	4	0	0	5	0
SUBTOTAL	170	1796	198	0	2164	28	250	53	0	331	3
GRAND TOTAL	170	1796	198	0	2164	28	250	53	0	331	3



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Nov 02, 2019

South Approach - Keele St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	4	59	7	0	70	1	12	2	0	15	1
11:15	6	65	7	0	78	1	11	0	0	12	0
11:30	9	69	21	0	99	2	10	0	0	12	0
11:45	6	67	12	0	85	1	13	2	0	16	0
12:00	9	68	14	0	91	1	10	2	0	13	0
12:15	11	72	22	0	105	3	11	6	0	20	0
12:30	6	68	18	0	92	3	15	5	0	23	0
12:45	11	66	16	0	93	3	14	3	0	20	0
13:00	10	77	25	0	112	3	8	2	0	13	0
13:15	8	70	13	0	91	1	12	1	0	14	0
13:30	5	66	13	0	84	1	19	1	0	21	0
13:45	9	74	18	0	101	2	10	2	0	14	0
14:00	8	66	23	0	97	1	14	0	0	15	0
14:15	6	74	21	0	101	3	13	3	0	19	0
14:30	8	70	24	0	102	2	13	1	0	16	0
14:45	7	88	22	0	117	2	9	2	0	13	0
15:00	5	87	11	0	103	2	8	2	0	12	1
15:15	10	76	18	0	104	2	10	0	0	12	0
15:30	9	70	16	0	95	2	10	1	0	13	0
15:45	3	54	18	0	75	0	8	5	0	13	0
16:00	7	58	10	0	75	1	9	2	0	12	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Nov 02, 2019

South Approach - Keele St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	13	61	17	0	91	0	11	0	0	11	0
16:30	8	59	18	0	85	1	11	1	0	13	0
16:45	20	64	13	0	97	0	4	1	0	5	0
17:00	4	61	14	0	79	2	8	2	0	12	0
17:15	2	62	8	0	72	2	2	0	0	4	0
17:30	6	46	16	0	68	0	3	0	0	3	0
17:45	7	61	13	0	81	1	7	1	0	9	0
18:00	8	50	13	0	71	1	1	1	0	3	0
18:15	10	52	15	0	77	1	3	0	0	4	1
18:30	7	57	17	0	81	0	7	1	0	8	1
18:45	10	44	14	0	68	0	4	1	0	5	0
SUBTOTAL	252	2081	507	0	2840	45	300	50	0	395	4
GRAND TOTAL	252	2081	507	0	2840	45	300	50	0	395	4



Traffic Count Data

Intersection: Kirby Rd & Keele St
 Municipality: Vaughan
 Count Date: Nov 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	11	13	5	0	29	0	0	1	0	1	0
11:15	12	25	1	0	38	0	3	0	0	3	0
11:30	10	12	10	0	32	1	3	3	0	7	1
11:45	9	17	9	0	35	0	3	3	0	6	2
12:00	13	23	9	0	45	1	1	1	0	3	0
12:15	8	13	8	0	29	2	0	1	0	3	0
12:30	9	23	5	0	37	0	1	0	0	1	0
12:45	7	18	8	0	33	2	2	1	0	5	0
13:00	10	22	3	0	35	1	3	1	0	5	0
13:15	9	18	7	0	34	3	2	3	0	8	0
13:30	11	16	6	0	33	1	1	0	0	2	0
13:45	20	35	4	0	59	3	0	3	0	6	0
14:00	8	23	4	0	35	0	2	1	0	3	0
14:15	11	20	3	0	34	0	1	0	0	1	0
14:30	9	20	5	0	34	2	1	1	0	4	0
14:45	14	25	5	0	44	2	2	1	0	5	1
15:00	12	19	8	0	39	1	5	3	0	9	1
15:15	5	17	4	0	26	0	2	2	0	4	0
15:30	7	18	2	0	27	1	2	1	0	4	1
15:45	7	16	6	0	29	0	1	0	0	1	0
16:00	8	20	4	0	32	2	4	0	0	6	0



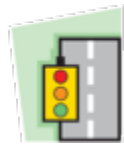
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Nov 02, 2019

East Approach - Kirby Rd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	9	21	3	0	33	0	2	0	0	2	0
16:30	10	12	5	0	27	1	2	1	0	4	1
16:45	10	19	9	0	38	1	3	0	0	4	0
17:00	7	23	5	0	35	0	1	0	0	1	0
17:15	9	19	6	0	34	2	1	1	0	4	0
17:30	11	17	6	0	34	0	0	0	0	0	0
17:45	4	19	5	0	28	0	1	0	0	1	0
18:00	12	14	4	0	30	1	0	0	0	1	0
18:15	6	19	8	0	33	1	1	2	0	4	0
18:30	7	14	8	0	29	0	1	0	0	1	0
18:45	7	12	1	0	20	0	2	0	0	2	0
SUBTOTAL	302	602	176	0	1080	28	53	30	0	111	7
GRAND TOTAL	302	602	176	0	1080	28	53	30	0	111	7



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Nov 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	3	8	3	0	14	0	4	2	0	6	1
11:15	2	15	12	0	29	3	1	1	0	5	0
11:30	10	29	11	0	50	2	1	0	0	3	0
11:45	3	17	8	0	28	2	1	1	0	4	0
12:00	10	23	6	0	39	0	2	2	0	4	0
12:15	3	16	10	0	29	2	1	0	0	3	0
12:30	4	23	10	0	37	2	3	1	0	6	0
12:45	4	19	6	0	29	1	1	7	1	10	0
13:00	5	24	3	0	32	6	1	1	0	8	0
13:15	2	29	5	0	36	3	2	3	0	8	0
13:30	9	20	9	0	38	1	4	1	0	6	0
13:45	5	25	10	0	40	2	1	1	0	4	0
14:00	6	23	7	0	36	1	2	2	0	5	0
14:15	2	33	9	0	44	3	5	2	0	10	0
14:30	10	28	8	0	46	5	2	2	0	9	0
14:45	3	22	7	0	32	3	2	0	0	5	0
15:00	5	15	8	0	28	2	2	1	0	5	1
15:15	4	21	8	0	33	0	2	3	0	5	0
15:30	8	24	7	0	39	1	2	1	0	4	1
15:45	7	23	11	0	41	1	1	1	0	3	0
16:00	6	31	4	0	41	2	3	0	0	5	0



Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Keele St
Municipality: Vaughan
Count Date: Nov 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	11	24	8	0	43	3	1	0	0	4	0
16:30	8	23	4	0	35	2	2	0	0	4	0
16:45	6	26	6	0	38	3	1	1	0	5	2
17:00	10	29	11	0	50	2	4	0	0	6	2
17:15	8	29	9	0	46	2	2	2	0	6	0
17:30	7	25	2	0	34	0	2	1	0	3	0
17:45	3	27	11	0	41	0	2	0	0	2	2
18:00	4	16	15	0	35	1	2	1	0	4	0
18:15	6	30	11	0	47	1	1	0	0	2	2
18:30	5	18	7	0	30	0	2	3	0	5	0
18:45	7	24	9	0	40	3	3	0	0	6	0
SUBTOTAL	186	739	255	0	1180	59	65	40	1	165	11
GRAND TOTAL	186	739	255	0	1180	59	65	40	1	165	11



Peak Hour Diagram

Specified Period

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

One Hour Peak

From: 13:00:00
To: 14:00:00

Intersection: Kirby Rd & Keele St
Site ID: 1936100002
Count Date: Nov 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Keele St runs N/S

North Approach

	Out	In	Total
	318	328	646
	51	68	119
Totals	369	396	765

Keele St

	3	47	1	0
	27	265	26	0
Totals	30	312	27	0

← ↓ ↘ ↻

East Approach

	Out	In	Total
	161	193	354
	21	15	36
Totals	182	208	390

Kirby Rd

	Out	In	Totals
	0	0	0
	12	21	33
	8	98	106
	6	27	33

↻ ↑ → ↓

Peds: 0

Peds: 0



Peds: 0

Peds: 0

Kirby Rd

Totals	Out	In
0	0	0
27	20	7
97	91	6
58	50	8

↻ ↑ ← ↓

West Approach

	Out	In	Total
	146	150	296
	26	16	42
Totals	172	166	338

	39	336	75	0
	32	287	69	0
	7	49	6	0
Totals	39	336	75	0

← ↑ → ↻

Keele St

South Approach

	Out	In	Total
	388	342	730
	62	61	123
Totals	450	403	853

- Cars

- Trucks

Comments



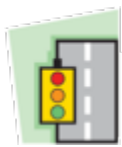
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Keele St
Count Date: Nov 02, 2019
Period: 11:00 - 14:00

Peak Hour Data (13:00 - 14:00)

Start Time	North Approach Keele St						South Approach Keele St						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
13:00	4	70	5	0	0	79	13	85	27	0	0	125	11	25	4	0	0	40	11	25	4	0	0	40	284
13:15	10	82	6	0	0	98	9	82	14	0	0	105	12	20	10	0	0	42	5	31	8	0	0	44	289
13:30	5	74	11	0	0	90	6	85	14	0	0	105	12	17	6	0	0	35	10	24	10	0	0	44	274
13:45	8	86	8	0	0	102	11	84	20	0	0	115	23	35	7	0	0	65	7	26	11	0	0	44	326
Grand Total	27	312	30	0	0	369	39	336	75	0	0	450	58	97	27	0	0	182	33	106	33	0	0	172	1173
Approach %	7.3	84.6	8.1	0	-	-	8.7	74.7	16.7	0	-	-	31.9	53.3	14.8	0	-	-	19.2	61.6	19.2	0	-	-	-
Totals %	2.3	26.6	2.6	0	-	31.5	3.3	28.6	6.4	0	-	38.4	4.9	8.3	2.3	0	-	15.5	2.8	9	2.8	0	-	14.7	-
PHF	0.68	0.91	0.68	0	-	0.9	0.75	0.99	0.69	0	-	0.9	0.63	0.69	0.68	0	-	0.7	0.75	0.85	0.75	0	-	0.98	0.9
Cars	26	265	27	0	-	318	32	287	69	0	-	388	50	91	20	0	-	161	21	98	27	0	-	146	1013
% Cars	96.3	84.9	90	0	-	86.2	82.1	85.4	92	0	-	86.2	86.2	93.8	74.1	0	-	88.5	63.6	92.5	81.8	0	-	84.9	86.4
Trucks	1	47	3	0	-	51	7	49	6	0	-	62	8	6	7	0	-	21	12	8	6	0	-	26	160
% Trucks	3.7	15.1	10	0	-	13.8	17.9	14.6	8	0	-	13.8	13.8	6.2	25.9	0	-	11.5	36.4	7.5	18.2	0	-	15.1	13.6
Peds	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0
% Peds	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

From: 14:00:00
To: 15:00:00

Intersection: Kirby Rd & Keele St
Site ID: 1936100002
Count Date: Nov 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Keele St runs N/S

North Approach

	Out	In	Total
	283	336	619
	42	64	106
Totals	325	400	725

Keele St

	14	27	1	0
	32	232	19	0
Totals	46	259	20	0

← ↓ ↘ ↻

East Approach

	Out	In	Total
	147	215	362
	13	18	31
Totals	160	233	393

Kirby Rd

	Out	In	Totals	
	0	0	0	↻
	12	21	33	↑
	11	106	117	→
	6	31	37	↓

Peds: 1

Peds: 0



Peds: 1

Peds: 0

Kirby Rd

Totals	Out	In	Total
0	0	0	0
20	17	3	3
94	88	6	6
46	42	4	4

West Approach

	Out	In	Total
	158	149	307
	29	28	57
Totals	187	177	364

Totals	37	347	96	0
	29	298	90	0
	8	49	6	0

Keele St

South Approach

	Out	In	Total
	417	305	722
	63	37	100
Totals	480	342	822

- Cars

- Trucks

Comments



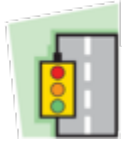
Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Keele St
Count Date: Nov 02, 2019
Period: 14:00 - 19:00

Peak Hour Data (14:00 - 15:00)

Start Time	North Approach Keele St						South Approach Keele St						East Approach Kirby Rd						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
14:00	3	78	13	0	0	94	9	80	23	0	0	112	8	25	5	0	0	38	7	25	9	0	0	41	285
14:15	6	64	13	0	0	83	9	87	24	0	0	120	11	21	3	0	0	35	5	38	11	0	0	54	292
14:30	6	58	8	0	0	72	10	83	25	0	0	118	11	21	6	0	0	38	15	30	10	0	0	55	283
14:45	5	59	12	0	1	76	9	97	24	0	0	130	16	27	6	0	1	49	6	24	7	0	0	37	292
Grand Total	20	259	46	0	1	325	37	347	96	0	0	480	46	94	20	0	1	160	33	117	37	0	0	187	1152
Approach %	6.2	79.7	14.2	0	-	-	7.7	72.3	20	0	-	-	28.8	58.8	12.5	0	-	-	17.6	62.6	19.8	0	-	-	-
Totals %	1.7	22.5	4	0	-	28.2	3.2	30.1	8.3	0	-	41.7	4	8.2	1.7	0	-	13.9	2.9	10.2	3.2	0	-	16.2	-
PHF	0.83	0.83	0.88	0	-	0.86	0.93	0.89	0.96	0	-	0.92	0.72	0.87	0.83	0	-	0.82	0.55	0.77	0.84	0	-	0.85	0.99
Cars	19	232	32	0	-	283	29	298	90	0	-	417	42	88	17	0	-	147	21	106	31	0	-	158	1005
% Cars	95	89.6	69.6	0	-	87.1	78.4	85.9	93.8	0	-	86.9	91.3	93.6	85	0	-	91.9	63.6	90.6	83.8	0	-	84.5	87.2
Trucks	1	27	14	0	-	42	8	49	6	0	-	63	4	6	3	0	-	13	12	11	6	0	-	29	147
% Trucks	5	10.4	30.4	0	-	12.9	21.6	14.1	6.3	0	-	13.1	8.7	6.4	15	0	-	8.1	36.4	9.4	16.2	0	-	15.5	12.8
Peds	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	2
% Peds	-	-	-	-	50	-	-	-	-	-	0	-	-	-	-	-	50	-	-	-	-	-	0	-	-



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Project #19361 - City of Vaughan

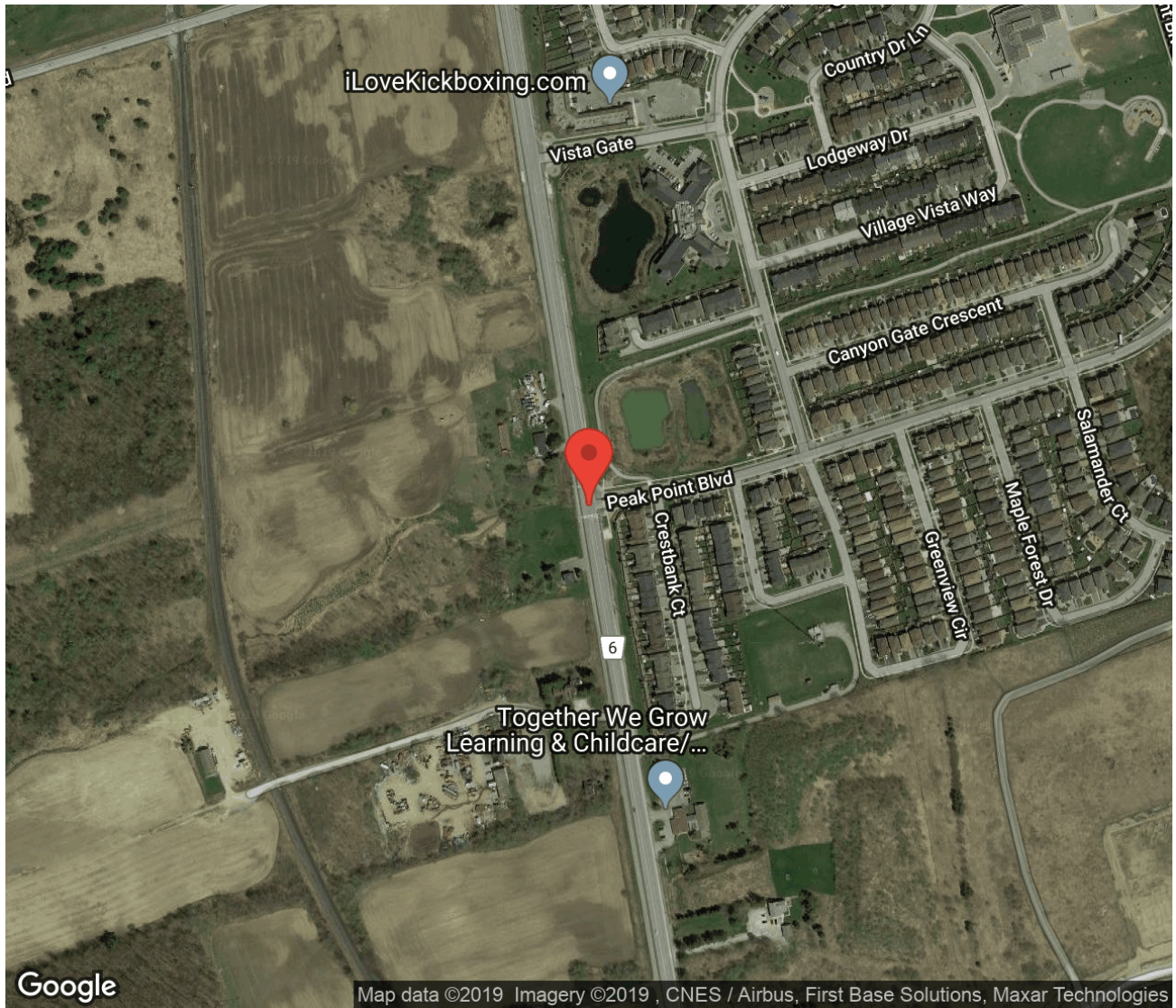
Intersection Count Report

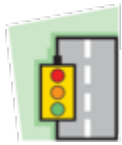
Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Nov 02, 2019
Site Code: 1936100003
Count Categories: Cars, Trucks, Pedestrians
Count Period: 11:00-19:00
Weather: Clear



Traffic Count Map

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Nov 02, 2019



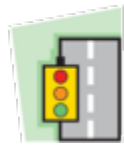


Traffic Count Summary

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Nov 02, 2019

Keele St - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks						Includes Cars, Trucks					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
11:00 - 12:00	13	398	0	0	411	1	0	392	89	0	481	0
12:00 - 13:00	17	367	0	0	384	0	0	441	124	0	565	0
13:00 - 14:00	9	400	0	0	409	0	0	447	117	0	564	0
14:00 - 15:00	17	340	0	1	358	0	0	463	133	0	596	0
15:00 - 16:00	12	303	0	0	315	0	0	444	145	0	589	0
16:00 - 17:00	10	302	0	0	312	0	0	379	147	0	526	0
17:00 - 18:00	7	287	0	0	294	0	0	341	133	0	474	0
18:00 - 19:00	9	263	0	0	272	0	0	321	144	0	465	0
GRAND TOTAL	94	2660	0	1	2755	1	0	3228	1032	0	4260	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Nov 02, 2019

North Approach - Keele St

Start Time	Cars				Total	Trucks				Total	Total Peds
	←	↑	→	↻		←	↑	→	↻		
11:00	1	89	0	0	90	2	13	0	0	15	1
11:15	4	79	0	0	83	0	9	0	0	9	0
11:30	3	80	0	0	83	0	13	0	0	13	0
11:45	3	102	0	0	105	0	13	0	0	13	0
12:00	5	77	0	0	82	1	7	0	0	8	0
12:15	6	82	0	0	88	0	14	0	0	14	0
12:30	0	81	0	0	81	0	9	0	0	9	0
12:45	5	81	0	0	86	0	16	0	0	16	0
13:00	2	88	0	0	90	1	10	0	0	11	0
13:15	1	77	0	0	78	0	22	0	0	22	0
13:30	1	82	0	0	83	0	13	0	0	13	0
13:45	3	95	0	0	98	1	13	0	0	14	0
14:00	5	83	0	0	88	1	12	0	0	13	0
14:15	4	75	0	0	79	0	5	0	0	5	0
14:30	2	73	0	1	76	0	9	0	0	9	0
14:45	4	76	0	0	80	1	7	0	0	8	0
15:00	1	82	0	0	83	0	5	0	0	5	0
15:15	2	70	0	0	72	0	4	0	0	4	0
15:30	3	71	0	0	74	0	6	0	0	6	0
15:45	5	59	0	0	64	1	6	0	0	7	0
16:00	0	58	0	0	58	0	7	0	0	7	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Nov 02, 2019

North Approach - Keele St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	5	70	0	0	75	0	3	0	0	3	0
16:30	1	79	0	0	80	0	7	0	0	7	0
16:45	4	71	0	0	75	0	7	0	0	7	0
17:00	2	68	0	0	70	0	3	0	0	3	0
17:15	1	65	0	0	66	0	8	0	0	8	0
17:30	3	62	0	0	65	0	3	0	0	3	0
17:45	1	75	0	0	76	0	3	0	0	3	0
18:00	5	64	0	0	69	0	3	0	0	3	0
18:15	1	70	0	0	71	0	5	0	0	5	0
18:30	1	54	0	0	55	0	1	0	0	1	0
18:45	2	64	0	0	66	0	2	0	0	2	0
SUBTOTAL	86	2402	0	1	2489	8	258	0	0	266	1
GRAND TOTAL	86	2402	0	1	2489	8	258	0	0	266	1



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Nov 02, 2019

South Approach - Keele St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	0	68	23	0	91	0	15	1	0	16	0
11:15	0	83	22	0	105	0	11	0	0	11	0
11:30	0	97	19	0	116	0	12	1	0	13	0
11:45	0	90	22	0	112	0	16	1	0	17	0
12:00	0	88	34	0	122	0	11	4	0	15	0
12:15	0	103	27	0	130	0	17	0	0	17	0
12:30	0	85	30	0	115	0	23	3	0	26	0
12:45	0	97	24	0	121	0	17	2	0	19	0
13:00	0	107	26	0	133	0	12	1	0	13	0
13:15	0	95	30	0	125	0	16	1	0	17	0
13:30	0	90	27	0	117	0	18	1	0	19	0
13:45	0	94	29	0	123	0	15	2	0	17	0
14:00	0	94	30	0	124	0	12	1	0	13	0
14:15	0	101	36	0	137	0	23	2	0	25	0
14:30	0	99	33	0	132	0	14	4	0	18	0
14:45	0	108	27	0	135	0	12	0	0	12	0
15:00	0	110	35	0	145	0	13	3	0	16	0
15:15	0	114	39	0	153	0	6	2	0	8	0
15:30	0	96	28	0	124	0	15	3	0	18	0
15:45	0	76	34	0	110	0	14	1	0	15	0
16:00	0	74	39	0	113	0	10	3	0	13	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Nov 02, 2019

South Approach - Keele St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	0	98	32	0	130	0	7	0	0	7	0
16:30	0	89	31	0	120	0	11	1	0	12	0
16:45	0	83	40	0	123	0	7	1	0	8	0
17:00	0	81	35	0	116	0	6	2	0	8	0
17:15	0	90	28	0	118	0	4	3	0	7	0
17:30	0	60	29	0	89	0	5	2	0	7	0
17:45	0	87	34	0	121	0	8	0	0	8	0
18:00	0	82	31	0	113	0	2	2	0	4	0
18:15	0	78	46	0	124	0	1	2	0	3	0
18:30	0	81	30	0	111	0	9	3	0	12	0
18:45	0	64	29	0	93	0	4	1	0	5	0
SUBTOTAL	0	2862	979	0	3841	0	366	53	0	419	0
GRAND TOTAL	0	2862	979	0	3841	0	366	53	0	419	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Nov 02, 2019

East Approach - Peak Point Blvd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	37	0	8	0	45	2	0	1	0	3	0
11:15	29	0	3	0	32	1	0	1	0	2	1
11:30	28	0	4	0	32	0	0	0	0	0	0
11:45	28	0	2	0	30	1	0	0	0	1	0
12:00	31	0	4	0	35	2	0	1	0	3	0
12:15	19	0	4	0	23	2	0	0	0	2	0
12:30	30	0	9	0	39	3	0	1	0	4	0
12:45	30	0	4	0	34	3	0	0	0	3	0
13:00	20	0	5	0	25	0	0	0	0	0	0
13:15	19	0	6	0	25	2	0	0	0	2	0
13:30	23	0	4	0	27	2	0	0	0	2	0
13:45	31	0	5	0	36	2	0	0	0	2	0
14:00	17	0	4	0	21	1	0	0	0	1	2
14:15	12	0	4	0	16	0	0	1	0	1	0
14:30	36	0	5	0	41	0	0	0	0	0	0
14:45	24	0	5	0	29	0	0	1	0	1	0
15:00	28	0	3	0	31	3	0	0	0	3	0
15:15	27	0	0	0	27	0	0	1	0	1	0
15:30	29	0	5	0	34	4	0	0	0	4	0
15:45	24	0	2	0	26	0	0	0	0	0	0
16:00	29	0	5	0	34	1	0	1	0	2	0



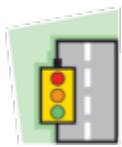
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TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Keele St & Peak Point Blvd
Municipality: Vaughan
Count Date: Nov 02, 2019

East Approach - Peak Point Blvd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	23	0	4	0	27	0	0	1	0	1	0
16:30	30	0	2	0	32	3	0	0	0	3	0
16:45	29	0	1	0	30	2	0	1	0	3	0
17:00	37	0	0	0	37	1	0	0	0	1	0
17:15	19	0	5	0	24	1	0	1	0	2	0
17:30	26	0	5	0	31	3	0	0	0	3	0
17:45	24	0	1	0	25	0	0	0	0	0	0
18:00	20	0	6	0	26	0	0	1	0	1	0
18:15	24	0	3	0	27	1	0	0	0	1	0
18:30	24	0	4	0	28	0	0	1	0	1	0
18:45	20	0	8	0	28	2	0	0	0	2	0
SUBTOTAL	827	0	130	0	957	42	0	13	0	55	3
GRAND TOTAL	827	0	130	0	957	42	0	13	0	55	3



Peak Hour Diagram

Specified Period

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

One Hour Peak

From: 12:15:00
To: 13:15:00

Intersection: Keele St & Peak Point Blvd
Site ID: 1936100003
Count Date: Nov 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Keele St runs N/S

North Approach

	Out	In	Total
	345	414	759
	50	70	120
Totals	395	484	879

Keele St

	49	1	0
	332	13	0
Totals	381	14	0

East Approach

	Out	In	Total
	121	120	241
	9	7	16
Totals	130	127	257

Peds: 0



Peak Point Blvd

Totals		
	0	0
	23	1
	107	8

Peds: 0

Totals	461	113	0
	392	107	0
	69	6	0

South Approach

Out	In	Total	
	499	431	930
	75	57	132
Totals	574	488	1062

Keele St

- Cars

- Trucks

Comments



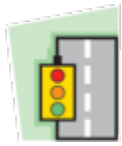
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Peak Hour Summary

Intersection: Keele St & Peak Point Blvd
Count Date: Nov 02, 2019
Period: 11:00 - 14:00

Peak Hour Data (12:15 - 13:15)

Start Time	North Approach Keele St						South Approach Keele St						East Approach Peak Point Blvd						West Approach						Total Vehicles	
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total		
12:15	6	96		0	0	102		120	27	0	0	147	21		4	0	0	25					0		274	
12:30	0	90		0	0	90		108	33	0	0	141	33		10	0	0	43					0		274	
12:45	5	97		0	0	102		114	26	0	0	140	33		4	0	0	37					0		279	
13:00	3	98		0	0	101		119	27	0	0	146	20		5	0	0	25					0		272	
Grand Total	14	381		0	0	395		461	113	0	0	574	107		23	0	0	130					0	0	1099	
Approach %	3.5	96.5		0		-		80.3	19.7	0		-	82.3		17.7	0		-							-	
Totals %	1.3	34.7		0		35.9		41.9	10.3	0		52.2	9.7		2.1	0		11.8							0	
PHF	0.58	0.97		0		0.97		0.96	0.86	0		0.98	0.81		0.58	0		0.76					0		0.98	
Cars	13	332		0		345		392	107	0		499	99		22	0		121					0		965	
% Cars	92.9	87.1		0		87.3		85	94.7	0		86.9	92.5		95.7	0		93.1					0		87.8	
Trucks	1	49		0		50		69	6	0		75	8		1	0		9					0		134	
% Trucks	7.1	12.9		0		12.7		15	5.3	0		13.1	7.5		4.3	0		6.9					0		12.2	
Peds					0	-					0	-					0	-					0	-	0	
% Peds					0	-					0	-					0	-					0	-	0	



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

From: 14:30:00
To: 15:30:00

Intersection: Keele St & Peak Point Blvd
Site ID: 1936100003
Count Date: Nov 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Keele St runs N/S

North Approach

	Out	In	Total
	311	445	756
	26	47	73
Totals	337	492	829

Keele St

	25	1	0
	301	9	1
Totals	326	10	1

East Approach

	Out	In	Total
	128	143	271
	5	10	15
Totals	133	153	286

Peds: 0

Peds: 0



Peds: 0

Peds: 0

Peak Point Blvd

Totals		
	0	0
	15	2
	118	3

South Approach

	Out	In	Total
	565	416	981
	54	28	82
Totals	619	444	1063

Totals	476	143	0
	431	134	0
	45	9	0

Keele St

- Cars

- Trucks

Comments



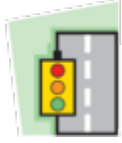
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TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Keele St & Peak Point Blvd
 Count Date: Nov 02, 2019
 Period: 14:00 - 19:00

Peak Hour Data (14:30 - 15:30)

Start Time	North Approach Keele St						South Approach Keele St						East Approach Peak Point Blvd						West Approach						Total Vehicles	
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total		
14:30	2	82		1	0	85		113	37	0	0	150	36		5	0	0	41					0		276	
14:45	5	83		0	0	88		120	27	0	0	147	24		6	0	0	30					0		265	
15:00	1	87		0	0	88		123	38	0	0	161	31		3	0	0	34					0		283	
15:15	2	74		0	0	76		120	41	0	0	161	27		1	0	0	28					0		265	
Grand Total	10	326		1	0	337		476	143	0	0	619	118		15	0	0	133					0	0	1089	
Approach %	3	96.7		0.3		-		76.9	23.1	0		-	88.7		11.3	0		-							-	
Totals %	0.9	29.9		0.1		30.9		43.7	13.1	0		56.8	10.8		1.4	0		12.2							0	
PHF	0.5	0.94		0.25		0.96		0.97	0.87	0		0.96	0.82		0.63	0		0.81						0	0.96	
Cars	9	301		1		311		431	134	0		565	115		13	0		128					0		1004	
% Cars	90	92.3		100		92.3		90.5	93.7	0		91.3	97.5		86.7	0		96.2					0		92.2	
Trucks	1	25		0		26		45	9	0		54	3		2	0		5					0		85	
% Trucks	10	7.7		0		7.7		9.5	6.3	0		8.7	2.5		13.3	0		3.8					0		7.8	
Peds					0	-					0	-					0	-					0	-	0	
% Peds					0	-					0	-					0	-					0	-		



Ontario Traffic Inc.
TRAFFIC MONITORING  SERVICES & PRODUCTS

Project #19361 - City of Vaughan

Intersection Count Report

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Nov 02, 2019
Site Code: 1936100004
Count Categories: Cars, Trucks, Pedestrians
Count Period: 11:00-19:00
Weather: Clear

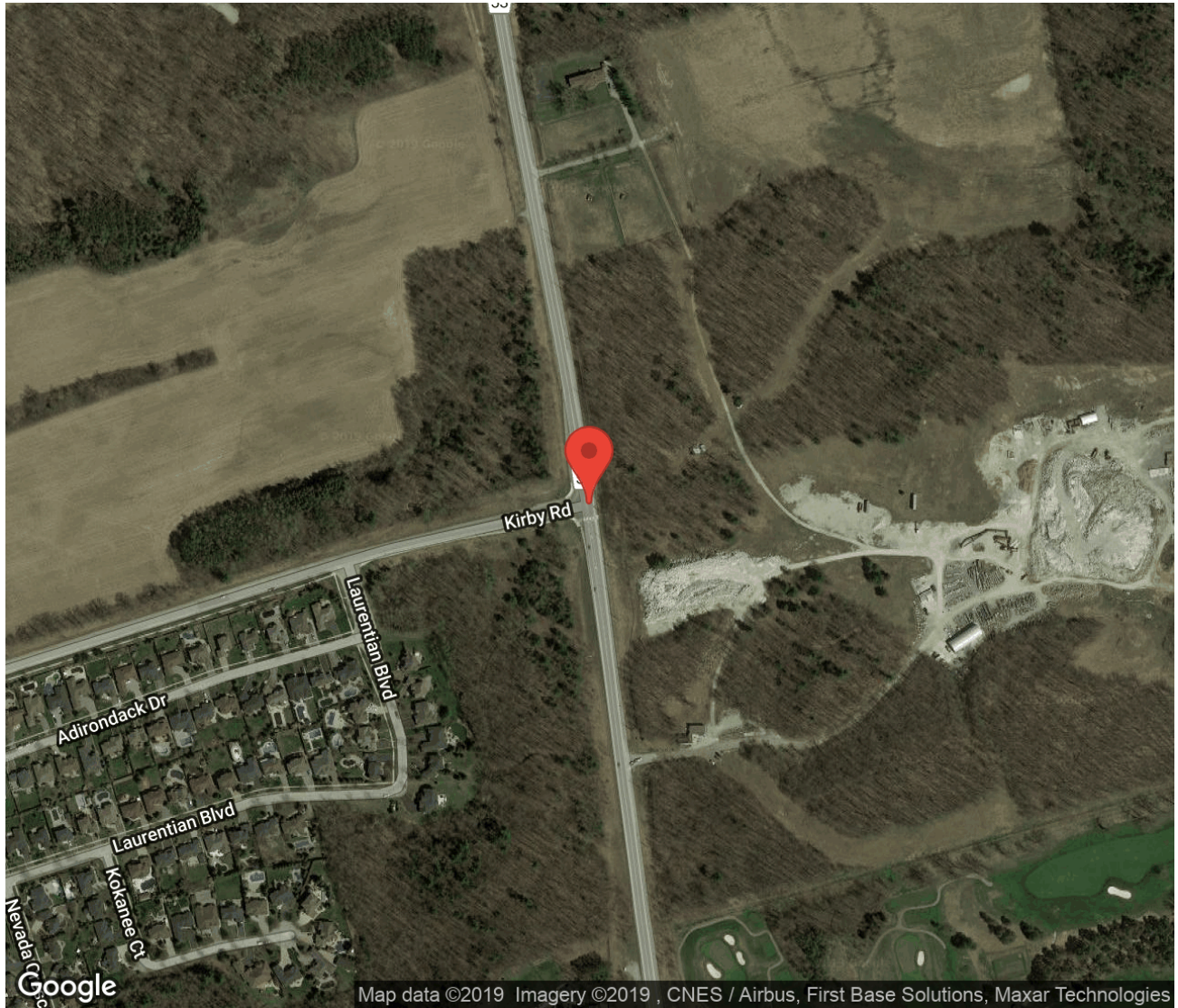


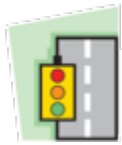
Traffic Count Map

Intersection: Kirby Rd & Dufferin St

Municipality: Vaughan

Count Date: Nov 02, 2019





Ontario Traffic Inc.
TRAFFIC MONITORING + SERVICES & PRODUCTS

Traffic Count Summary

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Nov 02, 2019

Dufferin St - Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks						Includes Cars, Trucks					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
11:00 - 12:00	0	275	25	0	300	0	139	253	0	0	392	0
12:00 - 13:00	0	268	37	0	305	0	158	286	0	0	444	0
13:00 - 14:00	0	280	36	1	317	0	197	350	0	0	547	0
14:00 - 15:00	0	246	37	0	283	0	165	314	0	0	479	0
15:00 - 16:00	0	253	22	0	275	0	155	328	0	0	483	0
16:00 - 17:00	0	225	38	0	263	0	156	302	0	0	458	0
17:00 - 18:00	0	221	36	0	257	0	144	304	0	0	448	0
18:00 - 19:00	0	216	24	0	240	0	141	299	0	0	440	0
GRAND TOTAL	0	1984	255	1	2240	0	1255	2436	0	0	3691	0



Traffic Count Summary

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Nov 02, 2019

Kirby Rd - Traffic Summary

Hour	East Approach Totals						West Approach Totals					
	Includes Cars, Trucks						Includes Cars, Trucks					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
11:00 - 12:00	0	0	0	0	0	0	32	0	165	0	197	0
12:00 - 13:00	0	0	0	0	0	0	47	0	197	0	244	0
13:00 - 14:00	0	0	0	0	0	0	42	0	165	0	207	0
14:00 - 15:00	0	0	0	0	0	0	49	0	191	0	240	0
15:00 - 16:00	0	0	0	0	0	0	63	0	154	0	217	0
16:00 - 17:00	0	0	0	0	0	0	48	0	171	0	219	0
17:00 - 18:00	0	0	0	0	0	0	49	0	173	0	222	0
18:00 - 19:00	0	0	0	0	0	0	48	0	165	0	213	0
GRAND TOTAL	0	0	0	0	0	0	378	0	1381	0	1759	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Nov 02, 2019

North Approach - Dufferin St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	0	53	6	0	59	0	5	0	0	5	0
11:15	0	68	6	0	74	0	7	0	0	7	0
11:30	0	67	4	0	71	0	6	2	0	8	0
11:45	0	64	5	0	69	0	5	2	0	7	0
12:00	0	62	7	0	69	0	6	2	0	8	0
12:15	0	70	5	0	75	0	3	0	0	3	0
12:30	0	69	11	0	80	0	5	0	0	5	0
12:45	0	51	11	0	62	0	2	1	0	3	0
13:00	0	57	11	0	68	0	2	2	0	4	0
13:15	0	70	7	1	78	0	5	1	0	6	0
13:30	0	75	8	0	83	0	6	0	0	6	0
13:45	0	59	7	0	66	0	6	0	0	6	0
14:00	0	58	7	0	65	0	8	2	0	10	0
14:15	0	42	11	0	53	0	3	1	0	4	0
14:30	0	68	4	0	72	0	5	2	0	7	0
14:45	0	60	9	0	69	0	2	1	0	3	0
15:00	0	44	3	0	47	0	3	1	0	4	0
15:15	0	77	5	0	82	0	5	2	0	7	0
15:30	0	70	6	0	76	0	2	0	0	2	0
15:45	0	47	5	0	52	0	5	0	0	5	0
16:00	0	52	12	0	64	0	2	1	0	3	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Nov 02, 2019

North Approach - Dufferin St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	0	45	6	0	51	0	5	0	0	5	0
16:30	0	64	7	0	71	0	4	0	0	4	0
16:45	0	50	10	0	60	0	3	2	0	5	0
17:00	0	49	13	0	62	0	3	0	0	3	0
17:15	0	49	6	0	55	0	4	1	0	5	0
17:30	0	55	10	0	65	0	3	0	0	3	0
17:45	0	56	6	0	62	0	2	0	0	2	0
18:00	0	48	7	0	55	0	3	0	0	3	0
18:15	0	68	5	0	73	0	2	0	0	2	0
18:30	0	47	3	0	50	0	1	1	0	2	0
18:45	0	47	8	0	55	0	0	0	0	0	0
SUBTOTAL	0	1861	231	1	2093	0	123	24	0	147	0
GRAND TOTAL	0	1861	231	1	2093	0	123	24	0	147	0



Traffic Count Data

Intersection: Kirby Rd & Dufferin St
 Municipality: Vaughan
 Count Date: Nov 02, 2019

South Approach - Dufferin St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	29	55	0	0	84	1	4	0	0	5	0
11:15	33	54	0	0	87	4	12	0	0	16	0
11:30	22	63	0	0	85	7	3	0	0	10	0
11:45	37	55	0	0	92	6	7	0	0	13	0
12:00	46	56	0	0	102	3	4	0	0	7	0
12:15	27	59	0	0	86	3	3	0	0	6	0
12:30	37	80	0	0	117	1	9	0	0	10	0
12:45	35	61	0	0	96	6	14	0	0	20	0
13:00	42	76	0	0	118	7	8	0	0	15	0
13:15	37	85	0	0	122	5	8	0	0	13	0
13:30	43	70	0	0	113	6	10	0	0	16	0
13:45	56	90	0	0	146	1	3	0	0	4	0
14:00	39	68	0	0	107	2	10	0	0	12	0
14:15	33	69	0	0	102	0	2	0	0	2	0
14:30	34	78	0	0	112	2	5	0	0	7	0
14:45	49	79	0	0	128	6	3	0	0	9	0
15:00	43	80	0	0	123	10	10	0	0	20	0
15:15	30	74	0	0	104	3	8	0	0	11	0
15:30	24	65	0	0	89	4	8	0	0	12	0
15:45	40	78	0	0	118	1	5	0	0	6	0
16:00	34	61	0	0	95	5	2	0	0	7	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Nov 02, 2019

South Approach - Dufferin St

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	36	88	0	0	124	4	6	0	0	10	0
16:30	39	61	0	0	100	4	4	0	0	8	0
16:45	31	71	0	0	102	3	9	0	0	12	0
17:00	33	76	0	0	109	1	6	0	0	7	0
17:15	43	74	0	0	117	5	3	0	0	8	0
17:30	35	79	0	0	114	0	7	0	0	7	0
17:45	25	57	0	0	82	2	2	0	0	4	0
18:00	40	76	0	0	116	3	5	0	0	8	0
18:15	34	78	0	0	112	3	2	0	0	5	0
18:30	29	70	0	0	99	0	2	0	0	2	0
18:45	29	65	0	0	94	3	1	0	0	4	0
SUBTOTAL	1144	2251	0	0	3395	111	185	0	0	296	0
GRAND TOTAL	1144	2251	0	0	3395	111	185	0	0	296	0



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Nov 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
11:00	9	0	32	0	41	1	0	5	0	6	0
11:15	8	0	32	0	40	2	0	2	0	4	0
11:30	10	0	57	0	67	0	0	0	0	0	0
11:45	1	0	33	0	34	1	0	4	0	5	0
12:00	13	0	35	0	48	1	0	4	0	5	0
12:15	9	0	57	0	66	1	0	5	0	6	0
12:30	8	0	44	0	52	3	0	6	0	9	0
12:45	10	0	39	0	49	2	0	7	0	9	0
13:00	14	0	45	0	59	2	0	2	0	4	0
13:15	7	0	46	0	53	0	0	3	0	3	0
13:30	8	0	34	0	42	2	0	1	0	3	0
13:45	7	0	33	0	40	2	0	1	0	3	0
14:00	6	0	39	0	45	0	0	0	0	0	0
14:15	12	0	55	0	67	3	0	6	0	9	0
14:30	18	0	46	0	64	1	0	4	0	5	0
14:45	9	0	35	0	44	0	0	6	0	6	0
15:00	14	0	29	0	43	1	0	3	0	4	0
15:15	18	0	36	0	54	2	0	2	0	4	0
15:30	17	0	35	0	52	1	0	1	0	2	0
15:45	7	0	43	0	50	3	0	5	0	8	0
16:00	9	0	31	0	40	2	0	4	0	6	0



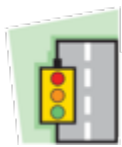
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Traffic Count Data

Intersection: Kirby Rd & Dufferin St
Municipality: Vaughan
Count Date: Nov 02, 2019

West Approach - Kirby Rd

Start Time	Cars					Trucks					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:15	10	0	37	0	47	2	0	1	0	3	0
16:30	7	0	45	0	52	1	0	4	0	5	0
16:45	14	0	48	0	62	3	0	1	0	4	0
17:00	12	0	33	0	45	0	0	3	0	3	0
17:15	10	0	41	0	51	8	0	1	0	9	0
17:30	8	0	47	0	55	2	0	1	0	3	0
17:45	9	0	45	0	54	0	0	2	0	2	0
18:00	14	0	36	0	50	0	0	6	0	6	0
18:15	9	0	43	0	52	0	0	1	0	1	0
18:30	9	0	33	0	42	3	0	3	0	6	0
18:45	13	0	41	0	54	0	0	2	0	2	0
SUBTOTAL	329	0	1285	0	1614	49	0	96	0	145	0
GRAND TOTAL	329	0	1285	0	1614	49	0	96	0	145	0



Peak Hour Diagram

Specified Period

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

One Hour Peak

From: 13:00:00
To: 14:00:00

Intersection: Kirby Rd & Dufferin St
Site ID: 1936100004
Count Date: Nov 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Dufferin St runs N/S

North Approach

	Out	In	Total
	295	358	653
	22	35	57
Totals	317	393	710

Dufferin St

	3	19	0
	33	261	1
Totals	36	280	1



Peds: 0

Kirby Rd

		Totals	
0	0	0	
6	36	42	
7	158	165	

Peds: 0



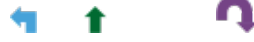
Peds: 0

Peds: 0

West Approach

	Out	In	Total
	194	211	405
	13	22	35
Totals	207	233	440

Totals	197	350	0
	178	321	0
	19	29	0



Dufferin St

South Approach

	Out	In	Total
	499	419	918
	48	26	74
Totals	547	445	992

- Cars

- Trucks

Comments



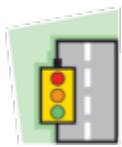
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Peak Hour Summary

Intersection: Kirby Rd & Dufferin St
Count Date: Nov 02, 2019
Period: 11:00 - 14:00

Peak Hour Data (13:00 - 14:00)

Start Time	North Approach Dufferin St						South Approach Dufferin St						East Approach						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
13:00		59	13	0	0	72	49	84		0	0	133					0		16		47	0	0	63	268
13:15		75	8	1	0	84	42	93		0	0	135					0		7		49	0	0	56	275
13:30		81	8	0	0	89	49	80		0	0	129					0		10		35	0	0	45	263
13:45		65	7	0	0	72	57	93		0	0	150					0		9		34	0	0	43	265
Grand Total		280	36	1	0	317	197	350		0	0	547					0	0	42		165	0	0	207	1071
Approach %		88.3	11.4	0.3	-	-	36	64		0	-	-					-	-	20.3		79.7	0	-	-	
Totals %		26.1	3.4	0.1		29.6	18.4	32.7		0		51.1						0	3.9		15.4	0		19.3	
PHF		0.86	0.69	0.25		0.89	0.86	0.94		0		0.91					0		0.66		0.84	0		0.82	0.97
Cars		261	33	1		295	178	321		0		499					0		36		158	0		194	988
% Cars		93.2	91.7	100		93.1	90.4	91.7		0		91.2					0		85.7		95.8	0		93.7	92.3
Trucks		19	3	0		22	19	29		0		48					0		6		7	0		13	83
% Trucks		6.8	8.3	0		6.9	9.6	8.3		0		8.8					0		14.3		4.2	0		6.3	7.7
Peds					0	-				0	-	-					0	-				0	-	-	0
% Peds					0	-				0	-	-					0	-				0	-	-	0



Peak Hour Diagram

Specified Period

From: 14:00:00
To: 19:00:00

One Hour Peak

From: 14:30:00
To: 15:30:00

Intersection: Kirby Rd & Dufferin St
Site ID: 1936100004
Count Date: Nov 02, 2019

Weather conditions:

**** Signalized Intersection ****

Major Road: Dufferin St runs N/S

North Approach

	Out	In	Total
	270	370	640
	21	30	51
Totals	291	400	691

Dufferin St

	6	15	0
	21	249	0
Totals	27	264	0



Peds: 0

Kirby Rd

			Totals	
	0	0	0	
	4	59	63	
	15	146	161	

Peds: 0



Peds: 0

Peds: 0

West Approach

	Out	In	Total
	205	177	382
	19	27	46
Totals	224	204	428

Totals	177	337	0
	156	311	0
	21	26	0

Dufferin St

South Approach

	Out	In	Total
	467	395	862
	47	30	77
Totals	514	425	939

- Cars

- Trucks

Comments



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: Kirby Rd & Dufferin St
Count Date: Nov 02, 2019
Period: 14:00 - 19:00

Peak Hour Data (14:30 - 15:30)

Start Time	North Approach Dufferin St						South Approach Dufferin St						East Approach						West Approach Kirby Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
14:30		73	6	0	0	79	36	83		0	0	119					0		19		50	0	0	69	267
14:45		62	10	0	0	72	55	82		0	0	137					0		9		41	0	0	50	259
15:00		47	4	0	0	51	53	90		0	0	143					0		15		32	0	0	47	241
15:15		82	7	0	0	89	33	82		0	0	115					0		20		38	0	0	58	262
Grand Total		264	27	0	0	291	177	337		0	0	514					0	0	63		161	0	0	224	1029
Approach %		90.7	9.3	0	-	-	34.4	65.6		0	-	-					-	-	28.1		71.9	0	-	-	
Totals %		25.7	2.6	0	-	28.3	17.2	32.8		0	-	50					0	-	6.1		15.6	0	-	21.8	
PHF		0.8	0.68	0	-	0.82	0.8	0.94		0	-	0.9					0	-	0.79		0.81	0	-	0.81	0.96
Cars		249	21	0	-	270	156	311		0	-	467					0	-	59		146	0	-	205	942
% Cars		94.3	77.8	0	-	92.8	88.1	92.3		0	-	90.9					0	-	93.7		90.7	0	-	91.5	91.5
Trucks		15	6	0	-	21	21	26		0	-	47					0	-	4		15	0	-	19	87
% Trucks		5.7	22.2	0	-	7.2	11.9	7.7		0	-	9.1					0	-	6.3		9.3	0	-	8.5	8.5
Peds					0	-				0	-	-					0	-				0	-	-	0
% Peds					0	-				0	-	-					0	-				0	-	-	

Regional Municipality of York
 Centralized Traffic Control System
 Timing Pattern Summary Report - Intersection



Intersection Name : Dufferin st. - Kirby Rd.

<u>Pattern Name</u>	<u>Mode</u>	<u>Cycle</u>	<u>Splits (sec)</u>	<u>offset</u>	<u>Max Green</u>	<u>Omits</u>	<u>Veh. Recall</u>	<u>Ped.Omits</u>	<u>Ped. Recalls</u>	<u>Spec. O/P</u>
AM Peak	TBC	140	00100 00 40 00100 00 40	0	111111111	NNNNNNNN	XXXXXXXXXX	NNNN	NNNN	*****
Free Plan	Free	0	00 00 00 00 00 00 00	0	111111111	NNNNNNNN	XXXXXXXXXX	NNNN	NNNN	*****
PM Peak	TBC	140	00 90 00 50 00 90 00 50	0	111111111	NNNNNNNN	XXXXXXXXXX	NNNN	NNNN	*****

09-Oct-2013

**Regional Municipality of York
Centralized Traffic Control System
Controller Scheduler Summary - Intersection**



Intersection Name : Dufferin st. - Kirby Rd.

Weekly Plan : Dufferin at Kirby

Time of Day	Timing Pattern	MON	TUE	WED	THU	FRI	SAT	SUN
07:00	AM Peak	X	X	X	X	X	-	-
10:00	Free Plan	X	X	X	X	X	-	-
16:00	PM Peak	X	X	X	X	X	-	-
20:00	Free Plan	X	X	X	X	X	-	-

Annual Calendar: Dufferin at Kirby

Default Weekly Schedule : Dufferin at Kirby

Date _____ **Schedule (If blank, use the default weekly schedule)** _____



INTERSECTION NAME: **Dufferin Street (YR 53) @ Kirby Road**

PROGRAMMED BY: MW

CONTROLLER SERIAL #: _____

CTCS #:

ADDRESS: _____

SECURITY CODE: **1000**

PROGRAM DATE: **Sept20/17**

INSTALLATION DATE: _____

MEMORY/RECALL/CNA (MM-2-2-1)

	1	2	3	4	5	6	7	8
MEMORY	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
EXT RECALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MAX RECALL	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
PED RECALL	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
CNA I	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
CNA II	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
FL WALK	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SOFT RECALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
WALK REST	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
COND PED	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
FWTPCL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

1 - NBLT	5 - Not Used
2 - Southbound	6 - Northbound
3 - Northbound	7 - Not Used
4 - Eastbound	8 - N/A (Ghost Timings)

PHASE TIMINGS (MM-2-2-2)

	1	2	3	4	5	6	7	8
MIN GREEN	7	30	0	10	0	30	0	10
PASSAGE	3.0	0.0	0	3.0	0	0.0	0	3.0
YELLOW	3.0	5.0	0	4.5	0	5.0	0	4.5
RED	1.0	3.0	0	2.0	0	3.0	0	2.0
MAX I	7	30	0	30	0	30	0	30
MAX II	50	50	0	50	0	50	0	50
WALK	0	7	0	7	0	7	0	7
PED CLEAR	0	15	0	15	0	15	0	15
S/A	0	0	0	0	0	0	0	0
TBR	0	0	0	0	0	0	0	0
TTR	0	0	0	0	0	0	0	0
MIN GAP	0	0	0	0	0	0	0	0
MAX VI	0	0	0	0	0	0	0	0
MAX EXT	0	0	0	0	0	0	0	0
AUTO MAX	0	0	0	0	0	0	0	0
AMR	0	0	0	0	0	0	0	0

Range: 0-9.9 or 127 except max times and auto max which are 0 -255 secs.

PHASES USED (MM-2-2-3-1)

PHASE	1	2	3	4	5	6	7	8
ON/OFF	ON	ON	OFF	ON	OFF	ON	OFF	ON

SEQUENCE (MM-2-2-3-2)

2	1=Sequential, 2= Dual Ring, 3-7= Spec, 8=Lead/Lag							
----------	---	--	--	--	--	--	--	--

LEAD/LAG MODES (MM-2-2-3-2-PGDN....only if Seq = Lead/Lag)

PAIRS	1 AND 2	3 AND 4	5 AND 6	7 AND 8
CODE				

Codes: 1 = No Reversal, 2 = Always Reverse, 3 = Rev. by CSO or Clock

LEAD/LAG BARRIERS (MM-2-2-3-2-PGDN-PGDN...only if lead/lag)

LEAD/LAG BARRIERS ARE:	ON/OFF
------------------------	--------

On = Barriers after each ring 1 and 2 phase pair in a vertical column

SPECIAL INCOMPATIBILITIES (MM-2-2-3-3)

PHASE	1	2	3	4	5	6	7	8
INCOMPAT PH 1-8								
INCOMPAT PH 1-8								

INITIALIZE / FLASH (MM-2-2-4) 1=RED, 2 = YEL., 3 = GRN

	INITIALIZE	ENTER FL	EXIT FL
RING 1 PHASE	2	2	2
RING 2 PHASE	6	6	6
INTERVAL	1	1	1

NOTE: Enter flash interval is permanently set to 1 (RED)



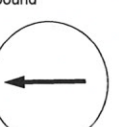
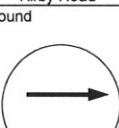


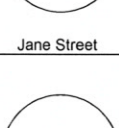
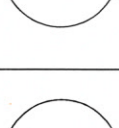
POWER-UP RESTART TIMINGS (MM-2-2-4-PGDN)

MINIMUM FLASH	(0-9.9 or 127 SECONDS)
1ST ALL RED AFTER FLASH	5.0 (0-9.9 or 127 SECONDS)

NOTE: Blanks = 0, OFF, or controller default values

LOCATION: Jane Street (YR 55) & Kirby Road
CTCS: 887
MODE/COMMENT: SA
PREPARED/CHECKED BY: M.L.
IMPLEMENTATION DATE: June 27, 2019

MUNICIPALITY: Vaughan
COMPUTER SOFTWARE: Centrac
CONTROLLER/CABINETS: Econolite Cobalt / TS2T1
CONFLICT: Red & Red
DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing at 1.2 m/s)
CHANNEL/DROP:

NEMA Phase (York)	Local Plan System Plan	AM	PM	Free	Phase Mode (Fixed/Demanded/Callable)	Remarks
		6:30-10:00 M-F	15:00-19:00 M-F	10:00-15:00; 19:00-6:30 M-F FREE Sat & Sun		
1. N/B Left Turn Arrow 	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT	Pattern 98 Plan 1	Pattern 98 Plan 2	Pattern 99 Plan 99	NOT USED	Emergency vehicle pre-emption 3: Serve NSG/NSDW min 20 secs and up to 100 secs if there are continuous emergency calls in NS direction.
2. Southbound 	WLK 0 FDW 0 MIN 40 EXT 0 MAX1 40 MAX2 120 AMB 5.0 ALR 3.5 SPLIT		MAX 2		Fixed	EB and WB phases are callable and skippable but not switchable. If EB and WB detectors are both active at the end of the NS phase, the WB phase is served first followed by the EB phase. If only the EB detector is active at the end of the NS phase, only the EB phase is served (and any late WB demand will only be served the following cycle). EB and WB phases are only permitted once per cycle.
3. Westbound 	WLK 0 FDW 0 MIN 10 EXT 3 MAX1 40 MAX2 40 AMB 4.5 ALR 2 SPLIT		MAX 2			During free plan, signal rests in NSWK and does not cycle through NSFDF unless there is side street vehicle or pedestrian demand.
4. Eastbound 	WLK 0 FDW 0 MIN 10 EXT 3 MAX1 40 MAX2 40 AMB 4.5 ALR 2.0 SPLIT		MAX 2		Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.	NSFD reverts to NSWK if there is no side street demand at the end of the NSFDF.
5. S/B Left Turn Arrow 	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT				NOT USED	
6. Northbound 	WLK 0 FDW 0 MIN 40 EXT 0 MAX1 40 MAX2 120 AMB 5.0 ALR 3.5 SPLIT		MAX 2		Fixed	
	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT				Not Used	LEGEND: SA - Semi-Actuated signal WLK - Walk time FDW - Flashing Don't Walk time MIN - Minimum green time EXT - Extension time MAX1 - Maximum green time 1 MAX2 - Maximum green time 2 AMB - Amber ALR - All Red CL - Cycle Length OF - Offset VP - Vehicle Permissive NSWK - North/South Walk EWWK - East/West Walk NSG - North/South Green EWG - East/West Green NSFD - North/South Flashing Don't Walk EWFDF - East/West Flashing Don't Walk TSP - Transit Priority APS - Audible Pedestrian Signal RLC - Red Light Camera
	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT				Not Used	
	CL OF VP	0 0 0	0 0 0	0 (FREE) 0 (FREE) 0 (FREE)		

NOTES:

Regional Municipality of York
Centralized Traffic Control System
Controller Scheduler Summary - Intersection



Intersection Name : Keele St. - Kirby S/R

Weekly Plan : Keele St. at Kirby

Time of Day	Timing Pattern	MON	TUE	WED	THU	FRI	SAT	SUN
06:30	AM/PM Peak	X	X	X	X	X	-	-
09:30	Free Plan	X	X	X	X	X	-	-
16:00	AM/PM Peak	X	X	X	X	X	-	-
19:00	Free Plan	X	X	X	X	X	-	-

Annual Calendar: Keele St. at Kirby

Default Weekly Schedule : Keele St. at Kirby
Date _____ Schedule (If blank, use the default weekly schedule)

Regional Municipality of York
 Centralized Traffic Control System
 Timing Pattern Summary Report - Intersection



Intersection Name : Keele St. - Kirby S/R

<u>Pattern Name</u>	<u>Mode</u>	<u>Cycle</u>	<u>Splits (sec)</u>	<u>offset</u>	<u>Max Green</u>	<u>Omits</u>	<u>Veh. Recall</u>	<u>Ped.Omits</u>	<u>Ped. Recalls</u>	<u>Spec. O/P</u>
AM/PM Peak	TBC	120	00 80 00 40 00 80 00 40	0	11111111	NNNNNNNN	XXXXXXXXXX	NNNN	NNNN	*****
Free Plan	Free	0	00 00 00 00 00 00 00	0	11111111	NNNNNNNN	XXXXXXXXXX	NNNN	NNNN	*****

**EPAC M40
PROGRAM
LOG**

Installation Date: March 22, 2005 CTCS # _____

Program Date: April 28, 2015 Address _____

Programmed by: T. Hanrahan

INTERSECTION NAME: Keele St. (YR 6) @ Kirby Rd.

Phasing:

- 1. Not Used
- 2. Southbound
- 3. Not Used
- 4. Eastbound

- 5. Not Used
- 6. Northbound
- 7. Not Used
- 8. Westbound

UTILITIES ACCESS

CODE = **9999**

CODES: Four Digits (0000 - 9999)

PHASE DATA - VEHICLE TIMINGS

	PHASE	1	2	3	4	5	6	7	8
Basic Times	Minimum Green	0	30	0	10	0	30	0	10
	Passage	0	0	0	3.0	0	0	0	3.0
	Maximum No. 1	0	30	0	19	0	30	0	19
	Maximum No. 2	0	30	0	19	0	30	0	19
	Yellow Change	0	5.0	0	4.5	0	5.0	0	4.5
	Red Clearance	0	2.5	0	2.5	0	2.5	0	2.5

Density Times	Seconds/Actuation	0	0	0	0	0	0	0	0
	Maximum Initial	0	0	0	0	0	0	0	0
	Time Before Reduction	0	0	0	0	0	0	0	0
	Cars Before Reduction	0	0	0	0	0	0	0	0
	Time To Reduce	0	0	0	0	0	0	0	0
	Minimum Gap	0	0	0	0	0	0	0	0

PHASE DATA - PEDESTRIAN & VEHICLE CONTROL

	PHASE	1	2	3	4	5	6	7	8
Pedestrian Times	Walk	0	7	0	7	0	7	0	7
	Pedestrian Clearance	0	18	0	21	0	18	0	21

Pedestrian Control	Flashing Walk	0	0	0	0	0	0	0	0
	Extended Ped Clear	0	0	0	0	0	0	0	0
	Actuated Rest In Walk	0	1	0	0	0	1	0	0

Vehicle Control	Non Lock Memory	0	0	0	1	0	0	0	1
	Dual Entry	0	1	0	1	0	1	0	1
	Last Car Passage	0	0	0	0	0	0	0	0
	Conditional Service	0	0	0	0	0	0	0	0
	No Simultaneous Gap	0	0	0	0	0	0	0	0

Pedestrian & Vehicle Control Entry: "1" = Yes & "0" = No

Regional Municipality of York
 Centralized Traffic Control System
 Timing Pattern Summary Report - Intersection



Intersection Name : Keele St. - Peak Point Blvd.

<u>Pattern Name</u>	<u>Mode</u>	<u>Cycle</u>	<u>Splits (sec)</u>	<u>offset</u>	<u>Max Green</u>	<u>Omits</u>	<u>Veh. Recall</u>	<u>Ped.Omits</u>	<u>Ped. Recalls</u>	<u>Spec. O/P</u>
AM Peak	TBC	120	00 80 00 40 00 80 00 40	0	111111111	NNNNNNNN	XXXXXXXXXX	NNNN	NNNN	*****
Free Plan	Free	0	00 00 00 00 00 00 00	0	111111111	NNNNNNNN	XXXXXXXXXX	NNNN	NNNN	*****

**Regional Municipality of York
Centralized Traffic Control System
Controller Scheduler Summary - Intersection**



Intersection Name : Keele St. - Peak Point Blvd.

Weekly Plan : Keele At Peak Point

Time of Day	Timing Pattern	MON	TUE	WED	THU	FRI	SAT	SUN
07:00	AM Peak	X	X	X	X	X	-	-
09:00	Free Plan	X	X	X	X	X	-	-
16:00	AM Peak	X	X	X	X	X	-	-
19:00	Free Plan	X	X	X	X	X	-	-

Annual Calendar: Keele -Peak Point

Default Weekly Schedule : Keele At Peak Point

Date _____ **Schedule (If blank, use the default weekly schedule)** _____



INTERSECTION NAME: Keele St. (YR 6) and Peak Point Boulevard

PROGRAMMED BY: _____ ADDRESS: _____
 CONTROLLER SERIAL #: _____ SECURITY CODE: **1000**
 PROGRAM DATE: October 24/16
 INSTALLATION DATE: _____

CTCS #:

MEMORY/RECALL/CNA (MM-2-2-1)

	1	2	3	4	5	6	7	8
MEMORY	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
EXT RECALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MAX RECALL	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
PED RECALL	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
CNA I	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
CNA II	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
FL WALK	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SOFT RECALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
WALK REST	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
COND PED	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
FWTPCL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

	5 -	6 -	7 -	8 -
1 - Not Used	Not Used	Northbound	Not Used	Westbound
2 - Southbound				
3 - Not Used				
4 - Peds Only				

PHASE TIMINGS (MM-2-2-2)

	1	2	3	4	5	6	7	8
MIN GREEN	0	30	0	10	0	30	0	10
PASSAGE	0	0	0	3.0	0	0	0	3.0
YELLOW	0	5.0	0	4.0	0	5.0	0	4.0
RED	0	2.5	0	2.5	0	2.5	0	2.5
MAX I	0	30	0	19	0	30	0	19
MAX II	0	50	0	30	0	50	0	30
WALK	0	0	0	7	0	7	0	7
PED CLEAR	0	0	0	20	0	20	0	20
S/A	0	0	0	0	0	0	0	0
TBR	0	0	0	0	0	0	0	0
TTR	0	0	0	0	0	0	0	0
MIN GAP	0	0	0	0	0	0	0	0
MAX VI	0	0	0	0	0	0	0	0
MAX EXT	0	0	0	0	0	0	0	0
AUTO MAX	0	0	0	0	0	0	0	0
AMR	0	0	0	0	0	0	0	0

Range: 0-9.9 or 127 except max times and auto max which are 0 -255 secs.

PHASES USED (MM-2-2-3-1)

PHASE	1	2	3	4	5	6	7	8
ON/OFF	off	ON	off	ON	off	ON	off	ON

SEQUENCE (MM-2-2-3-2)

2	1=Sequential, 2= Dual Ring, 3-7= Spec, 8=Lead/Lag							

LEAD/LAG MODES (MM-2-2-3-2-PGDN...only if Seq = Lead/Lag)

PAIRS	1 AND 2	3 AND 4	5 AND 6	7 AND 8
CODE				

Codes: 1 = No Reversal, 2 = Always Reverse, 3 = Rev. by CSO or Clock

LEAD/LAG BARRIERS (MM-2-2-3-2-PGDN...only if lead/lag)

LEAD/LAG BARRIERS ARE:	ON/OFF

On = Barriers after each ring 1 and 2 phase pair in a vertical column

SPECIAL INCOMPATIBILITIES (MM-2-2-3-3)

PHASE	1	2	3	4	5	6	7	8
INCOMPAT PH 1-8								
INCOMPAT PH 1-8								

INITIALIZE / FLASH (MM-2-2-4) 1 = RED, 2 = YEL., 3 = GRN

	INITIALIZE	ENTER FL	EXIT FL
RING 1 PHASE	2	2	2
RING 2 PHASE	6	6	6
INTERVAL	1	1	1

NOTE: Enter flash interval is permanently set to 1 (RED)

POWER-UP RESTART TIMINGS (MM-2-2-4-PGDN)

















MINIMUM FLASH	(0-9.9 or 127 SECONDS)
1ST ALL RED AFTER FLASH	5.0 (0-9.9 or 127 SECONDS)

NOTE: Blanks = 0, OFF, or controller default values

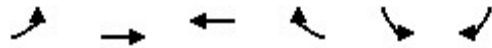
Appendix B. Existing (2019) Synchro Reports

HCM Signalized Intersection Capacity Analysis

1: Jane Street & Kirby Road

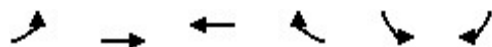
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	187	34	163	200	11	14	205	51	10	737	144
Future Volume (vph)	69	187	34	163	200	11	14	205	51	10	737	144
Ideal Flow (vphpl)	1900	1900	1900	1900	2300	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			4.5			8.5			8.5	
Lane Util. Factor		1.00			*1.00			1.00			1.00	
Frt		0.98			1.00			0.97			0.98	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1699			2038			1567			1722	
Flt Permitted		0.99			0.98			0.93			0.99	
Satd. Flow (perm)		1699			2038			1459			1713	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	197	36	172	211	12	15	216	54	11	776	152
RTOR Reduction (vph)	0	2	0	0	1	0	0	4	0	0	4	0
Lane Group Flow (vph)	0	304	0	0	394	0	0	281	0	0	935	0
Heavy Vehicles (%)	16%	9%	3%	11%	11%	18%	14%	16%	33%	30%	9%	8%
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		3	3			6			2	
Permitted Phases								6			2	
Actuated Green, G (s)		33.5			33.5			111.5			111.5	
Effective Green, g (s)		33.5			35.5			111.5			111.5	
Actuated g/C Ratio		0.17			0.18			0.56			0.56	
Clearance Time (s)		6.5			6.5			8.5			8.5	
Vehicle Extension (s)		0.2			3.0			3.0			0.2	
Lane Grp Cap (vph)		284			361			813			954	
v/s Ratio Prot		c0.18			c0.19							
v/s Ratio Perm								0.19			c0.55	
v/c Ratio		1.07			1.09			0.35			0.98	
Uniform Delay, d1		83.2			82.2			24.2			43.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		72.8			74.3			1.2			24.8	
Delay (s)		156.0			156.6			25.4			68.0	
Level of Service		F			F			C			E	
Approach Delay (s)		156.0			156.6			25.4			68.0	
Approach LOS		F			F			C			E	
Intersection Summary												
HCM 2000 Control Delay			93.9				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			200.0				Sum of lost time (s)		21.5			
Intersection Capacity Utilization			91.2%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis 2: Kirby Road & Mid Ontario Truck Center Access



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	234	352	19	7	6
Future Volume (Veh/h)	12	234	352	19	7	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	14	269	405	22	8	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			232			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	427				713	416
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	343				652	331
tC, single (s)	4.3				6.7	6.5
tC, 2 stage (s)						
tF (s)	2.4				3.8	3.6
p0 queue free %	99				98	99
cM capacity (veh/h)	1019				360	598
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	283	427	15			
Volume Left	14	0	8			
Volume Right	0	22	7			
cSH	1019	1700	442			
Volume to Capacity	0.01	0.25	0.03			
Queue Length 95th (m)	0.3	0.0	0.8			
Control Delay (s)	0.6	0.0	13.4			
Lane LOS	A		B			
Approach Delay (s)	0.6	0.0	13.4			
Approach LOS			B			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			32.1%	ICU Level of Service		A
Analysis Period (min)			15			





















HCM Unsignalized Intersection Capacity Analysis 3: Kirby Road & Petro Canada Access



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	196	338	39	92	57
Future Volume (Veh/h)	23	196	338	39	92	57
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	213	367	42	100	62
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			70			
pX, platoon unblocked	0.89				0.89	0.89
vC, conflicting volume	409				651	388
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	271				544	248
tC, single (s)	4.4				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.5				3.6	3.4
p0 queue free %	98				76	91
cM capacity (veh/h)	1010				417	683
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	238	409	162			
Volume Left	25	0	100			
Volume Right	0	42	62			
cSH	1010	1700	490			
Volume to Capacity	0.02	0.24	0.33			
Queue Length 95th (m)	0.6	0.0	10.9			
Control Delay (s)	1.1	0.0	15.9			
Lane LOS	A		C			
Approach Delay (s)	1.1	0.0	15.9			
Approach LOS			C			
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization		44.8%		ICU Level of Service		A
Analysis Period (min)			15			

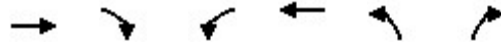
HCM Signalized Intersection Capacity Analysis

4: Keele Street & Kirby Road

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	56	114	118	339	200	42	48	351	84	17	1607	129	
Future Volume (vph)	56	114	118	339	200	42	48	351	84	17	1607	129	
Ideal Flow (vphpl)	1900	2000	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0	7.0	4.0	7.0			7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00	1.00	1.00	1.00			0.95	1.00		0.95	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85		1.00	0.85	
Flt Protected		0.98	1.00	0.95	1.00			0.99	1.00		1.00	1.00	
Satd. Flow (prot)		1725	1445	1746	1697			3055	1247		3311	1458	
Flt Permitted		0.76	1.00	0.58	1.00			0.60	1.00		0.95	1.00	
Satd. Flow (perm)		1327	1445	1058	1697			1849	1247		3140	1458	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	57	116	120	346	204	43	49	358	86	17	1640	132	
RTOR Reduction (vph)	0	0	30	0	7	0	0	0	34	0	0	52	
Lane Group Flow (vph)	0	173	90	346	240	0	0	407	52	0	1657	80	
Heavy Vehicles (%)	18%	14%	13%	10%	8%	21%	17%	19%	31%	29%	10%	12%	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases		4			8			6			2		
Permitted Phases	4		4	8			6		6	2		2	
Actuated Green, G (s)		33.0	33.0	33.0	33.0			72.5	72.5		72.5	72.5	
Effective Green, g (s)		35.0	33.0	36.0	33.0			72.5	72.5		72.5	72.5	
Actuated g/C Ratio		0.29	0.28	0.30	0.28			0.60	0.60		0.60	0.60	
Clearance Time (s)		7.0	7.0	7.0	7.0			7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		387	397	317	466			1117	753		1897	880	
v/s Ratio Prot					0.14								
v/s Ratio Perm		0.13	0.06	c0.33				0.22	0.04		c0.53	0.05	
v/c Ratio		0.45	0.23	1.09	0.52			0.36	0.07		0.87	0.09	
Uniform Delay, d1		34.6	33.6	42.0	36.8			12.1	9.8		19.9	9.9	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.3	77.3	1.0			0.9	0.2		5.9	0.2	
Delay (s)		35.4	33.9	119.3	37.7			13.0	10.0		25.8	10.1	
Level of Service		D	C	F	D			B	A		C	B	
Approach Delay (s)		34.8			85.3			12.5			24.7		
Approach LOS		C			F			B			C		
Intersection Summary													
HCM 2000 Control Delay			35.1									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.97										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	14.5
Intersection Capacity Utilization			99.1%									ICU Level of Service	F
Analysis Period (min)			15										
c Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis

5: Ravineview Drive & Kirby Road



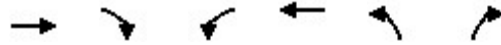
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	➔			➔	➔	
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	193	22	59	563	18	105
Future Volume (vph)	193	22	59	563	18	105
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	205	23	63	599	19	112

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	228	662	131
Volume Left (vph)	0	63	19
Volume Right (vph)	23	0	112
Hadj (s)	0.31	0.19	-0.31
Departure Headway (s)	5.4	4.8	5.7
Degree Utilization, x	0.34	0.88	0.21
Capacity (veh/h)	631	662	593
Control Delay (s)	11.2	32.7	10.3
Approach Delay (s)	11.2	32.7	10.3
Approach LOS	B	D	B

Intersection Summary			
Delay		25.0	
Level of Service		D	
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

6: Foot Hills Road & Kirby Road



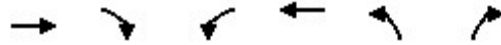
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	➡			↩	↩	
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	285	12	6	560	53	10
Future Volume (vph)	285	12	6	560	53	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	303	13	6	596	56	11

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	316	602	67
Volume Left (vph)	0	6	56
Volume Right (vph)	13	0	11
Hadj (s)	0.25	0.16	0.28
Departure Headway (s)	5.1	4.7	6.3
Degree Utilization, x	0.44	0.78	0.12
Capacity (veh/h)	683	760	523
Control Delay (s)	12.0	22.2	10.1
Approach Delay (s)	12.0	22.2	10.1
Approach LOS	B	C	B

Intersection Summary			
Delay		18.1	
Level of Service		C	
Intersection Capacity Utilization	44.5%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

7: Laurentian Boulevard & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	293	2	8	562	4	39
Future Volume (Veh/h)	293	2	8	562	4	39
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	312	2	9	598	4	41
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	232					
pX, platoon unblocked						
vC, conflicting volume			314	929		313
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			314	929		313
tC, single (s)			4.5	6.4		6.4
tC, 2 stage (s)						
tF (s)			2.5	3.5		3.4
p0 queue free %			99	99		94
cM capacity (veh/h)			1068	297		698
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	314	607	45			
Volume Left	0	9	4			
Volume Right	2	0	41			
cSH	1700	1068	623			
Volume to Capacity	0.18	0.01	0.07			
Queue Length 95th (m)	0.0	0.2	1.8			
Control Delay (s)	0.0	0.2	11.2			
Lane LOS			A	B		
Approach Delay (s)	0.0	0.2	11.2			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			46.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

8: Dufferin Street & Kirby Road



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	107	225	255	329	552	315
Future Volume (vph)	107	225	255	329	552	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	3.0	8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1674	1384	1560	1715	1746	1585
Flt Permitted	0.95	1.00	0.38	1.00	1.00	1.00
Satd. Flow (perm)	1674	1384	623	1715	1746	1585
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	111	234	266	343	575	328
RTOR Reduction (vph)	0	209	0	0	0	61
Lane Group Flow (vph)	111	25	266	343	575	267
Heavy Vehicles (%)	9%	18%	17%	12%	10%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	14.8	14.8	110.7	110.7	96.9	96.9
Effective Green, g (s)	14.8	14.8	110.7	110.7	96.9	96.9
Actuated g/C Ratio	0.11	0.11	0.79	0.79	0.69	0.69
Clearance Time (s)	6.5	6.5	3.0	8.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	176	146	564	1356	1208	1097
v/s Ratio Prot	c0.07		c0.04	0.20	0.33	
v/s Ratio Perm		0.02	c0.34			0.17
v/c Ratio	0.63	0.17	0.47	0.25	0.48	0.24
Uniform Delay, d1	60.0	57.0	5.0	3.8	9.9	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2	0.6	0.6	0.4	1.3	0.5
Delay (s)	67.1	57.6	5.6	4.3	11.2	8.5
Level of Service	E	E	A	A	B	A
Approach Delay (s)	60.6			4.9	10.2	
Approach LOS	E			A	B	

Intersection Summary

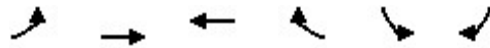
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

1: Jane Street & Kirby Road

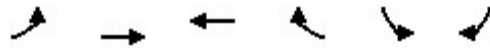
													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	83	148	3	70	141	30	13	720	150	19	245	110	
Future Volume (vph)	83	148	3	70	141	30	13	720	150	19	245	110	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.5			6.5			8.5			8.5		
Lane Util. Factor		1.00			*1.00			1.00			1.00		
Frbp, ped/bikes		1.00			1.00			1.00			1.00		
Flpb, ped/bikes		1.00			1.00			1.00			1.00		
Frt		1.00			0.98			0.98			0.96		
Flt Protected		0.98			0.99			1.00			1.00		
Satd. Flow (prot)		1662			1643			1702			1651		
Flt Permitted		0.98			0.99			0.99			0.92		
Satd. Flow (perm)		1662			1643			1687			1530		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	88	157	3	74	150	32	14	766	160	20	261	117	
RTOR Reduction (vph)	0	0	0	0	3	0	0	3	0	0	7	0	
Lane Group Flow (vph)	0	248	0	0	253	0	0	937	0	0	391	0	
Confl. Bikes (#/hr)						1							
Heavy Vehicles (%)	8%	16%	33%	21%	9%	13%	23%	9%	15%	26%	11%	10%	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA		
Protected Phases	4	4		3	3			6			2		
Permitted Phases							6			2			
Actuated Green, G (s)		30.7			32.2			111.6			111.6		
Effective Green, g (s)		30.7			32.2			111.6			111.6		
Actuated g/C Ratio		0.16			0.16			0.57			0.57		
Clearance Time (s)		6.5			6.5			8.5			8.5		
Vehicle Extension (s)		0.2			3.0			3.0			0.2		
Lane Grp Cap (vph)		260			269			960			871		
v/s Ratio Prot		c0.15			c0.15								
v/s Ratio Perm								c0.56			0.26		
v/c Ratio		0.95			0.94			0.98			0.45		
Uniform Delay, d1		81.9			81.0			40.9			24.4		
Progression Factor		1.00			1.00			1.00			1.00		
Incremental Delay, d2		42.6			39.3			23.7			1.7		
Delay (s)		124.6			120.3			64.6			26.1		
Level of Service		F			F			E			C		
Approach Delay (s)		124.6			120.3			64.6			26.1		
Approach LOS		F			F			E			C		
Intersection Summary													
HCM 2000 Control Delay			72.1									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.96										
Actuated Cycle Length (s)			196.0									Sum of lost time (s)	21.5
Intersection Capacity Utilization			81.8%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis 2: Kirby Road & Mid Ontario Truck Center Access



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	6	298	266	13	24	14
Future Volume (Veh/h)	6	298	266	13	24	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	8	373	333	16	30	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			232			
pX, platoon unblocked	0.99				0.99	0.99
vC, conflicting volume	349				730	341
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	337				722	329
tC, single (s)	4.8				6.6	6.6
tC, 2 stage (s)						
tF (s)	2.8				3.7	3.6
p0 queue free %	99				92	97
cM capacity (veh/h)	925				364	634
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	381	349	48			
Volume Left	8	0	30			
Volume Right	0	16	18			
cSH	925	1700	433			
Volume to Capacity	0.01	0.21	0.11			
Queue Length 95th (m)	0.2	0.0	2.8			
Control Delay (s)	0.3	0.0	14.3			
Lane LOS	A		B			
Approach Delay (s)	0.3	0.0	14.3			
Approach LOS			B			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			30.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 3: Kirby Road & Petro Canada Access



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	284	208	63	40	45
Future Volume (Veh/h)	36	284	208	63	40	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	44	346	254	77	49	55
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			70			
pX, platoon unblocked	0.92				0.92	0.92
vC, conflicting volume	331				726	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	232				661	190
tC, single (s)	4.3				6.6	6.3
tC, 2 stage (s)						
tF (s)	2.4				3.7	3.4
p0 queue free %	96				86	93
cM capacity (veh/h)	1154				358	764
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	390	331	104			
Volume Left	44	0	49			
Volume Right	0	77	55			
cSH	1154	1700	498			
Volume to Capacity	0.04	0.19	0.21			
Queue Length 95th (m)	0.9	0.0	5.9			
Control Delay (s)	1.3	0.0	14.1			
Lane LOS	A		B			
Approach Delay (s)	1.3	0.0	14.1			
Approach LOS			B			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			46.7%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

4: Keele Street & Kirby Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗			↖	↗		↖	↗
Traffic Volume (vph)	55	223	46	100	142	23	90	961	288	35	344	39
Future Volume (vph)	55	223	46	100	142	23	90	961	288	35	344	39
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0	7.0	6.0			7.5	7.5		7.5	7.5
Lane Util. Factor		1.00	1.00	1.00	1.00			0.95	1.00		0.95	1.00
Frt		1.00	0.85	1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00	0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)		1776	1396	1587	1725			3269	1526		3202	1328
Flt Permitted		0.77	1.00	0.34	1.00			0.85	1.00		0.77	1.00
Satd. Flow (perm)		1384	1396	568	1725			2788	1526		2473	1328
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	59	240	49	108	153	25	97	1033	310	38	370	42
RTOR Reduction (vph)	0	0	32	0	5	0	0	0	105	0	0	15
Lane Group Flow (vph)	0	299	17	108	173	0	0	1130	205	0	408	27
Heavy Vehicles (%)	20%	11%	17%	15%	9%	9%	13%	11%	7%	18%	13%	23%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8			6		6	2		2
Actuated Green, G (s)		27.7	27.7	27.7	27.7			77.8	77.8		77.8	77.8
Effective Green, g (s)		27.7	27.7	27.7	28.7			77.8	77.8		77.8	77.8
Actuated g/C Ratio		0.23	0.23	0.23	0.24			0.65	0.65		0.65	0.65
Clearance Time (s)		7.0	7.0	7.0	7.0			7.5	7.5		7.5	7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		319	322	131	412			1807	989		1603	860
v/s Ratio Prot					0.10							
v/s Ratio Perm		c0.22	0.01	0.19				c0.41	0.13		0.16	0.02
v/c Ratio		0.94	0.05	0.82	0.42			0.63	0.21		0.25	0.03
Uniform Delay, d1		45.3	35.9	43.8	38.6			12.5	8.6		8.9	7.6
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		34.0	0.1	32.5	0.7			1.6	0.5		0.4	0.1
Delay (s)		79.3	36.0	76.4	39.3			14.1	9.0		9.3	7.6
Level of Service		E	D	E	D			B	A		A	A
Approach Delay (s)		73.2			53.3			13.0			9.1	
Approach LOS		E			D			B			A	

Intersection Summary

HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis 5: Ravineview Drive & Kirby Road

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	↗
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	509	36	97	257	8	67
Future Volume (vph)	509	36	97	257	8	67
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	585	41	111	295	9	77
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total (vph)	626	406	86			
Volume Left (vph)	0	111	9			
Volume Right (vph)	41	0	77			
Hadj (s)	0.12	0.21	-0.46			
Departure Headway (s)	4.8	5.1	5.8			
Degree Utilization, x	0.84	0.58	0.14			
Capacity (veh/h)	735	685	567			
Control Delay (s)	27.2	14.9	9.8			
Approach Delay (s)	27.2	14.9	9.8			
Approach LOS	D	B	A			
Intersection Summary						
Delay			21.4			
Level of Service			C			
Intersection Capacity Utilization			62.5%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

6: Foot Hills Road & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	520	49	8	328	32	7
Future Volume (vph)	520	49	8	328	32	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	571	54	9	360	35	8

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	625	369	43
Volume Left (vph)	0	9	35
Volume Right (vph)	54	0	8
Hadj (s)	0.08	0.14	0.23
Departure Headway (s)	4.6	4.9	6.3
Degree Utilization, x	0.79	0.50	0.08
Capacity (veh/h)	773	722	518
Control Delay (s)	22.4	12.6	9.9
Approach Delay (s)	22.4	12.6	9.9
Approach LOS	C	B	A

Intersection Summary			
Delay		18.4	
Level of Service		C	
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

7: Laurentian Boulevard & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	524	3	25	333	3	9
Future Volume (Veh/h)	524	3	25	333	3	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	589	3	28	374	3	10
Pedestrians					1	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	232					
pX, platoon unblocked						
vC, conflicting volume			593	1022		592
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			593	1022		592
tC, single (s)			4.1	6.4	6.4	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.5	
p0 queue free %			97	99	98	
cM capacity (veh/h)			972	256	471	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	592	402	13			
Volume Left	0	28	3			
Volume Right	3	0	10			
cSH	1700	972	394			
Volume to Capacity	0.35	0.03	0.03			
Queue Length 95th (m)	0.0	0.7	0.8			
Control Delay (s)	0.0	0.9	14.4			
Lane LOS	A		B			
Approach Delay (s)	0.0	0.9	14.4			
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			48.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

8: Dufferin Street & Kirby Road



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	222	311	299	715	333	59
Future Volume (vph)	222	311	299	715	333	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	3.0	8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1690	1512	1674	1715	1731	1585
Flt Permitted	0.95	1.00	0.50	1.00	1.00	1.00
Satd. Flow (perm)	1690	1512	882	1715	1731	1585
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	231	324	311	745	347	61
RTOR Reduction (vph)	0	267	0	0	0	21
Lane Group Flow (vph)	231	57	311	745	347	40
Heavy Vehicles (%)	8%	8%	9%	12%	11%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	24.8	24.8	100.7	100.7	84.5	84.5
Effective Green, g (s)	24.8	24.8	100.7	100.7	84.5	84.5
Actuated g/C Ratio	0.18	0.18	0.72	0.72	0.60	0.60
Clearance Time (s)	6.5	6.5	3.0	8.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	299	267	709	1233	1044	956
v/s Ratio Prot	c0.14		0.04	c0.43	0.20	
v/s Ratio Perm		0.04	0.27			0.03
v/c Ratio	0.77	0.21	0.44	0.60	0.33	0.04
Uniform Delay, d1	54.9	49.3	7.1	9.8	13.8	11.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	0.4	0.4	2.2	0.9	0.1
Delay (s)	66.6	49.7	7.6	12.0	14.6	11.4
Level of Service	E	D	A	B	B	B
Approach Delay (s)	56.7			10.7	14.1	
Approach LOS	E			B	B	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Appendix B. Existing (2019) Synchro Reports

HCM Signalized Intersection Capacity Analysis

1: Jane Street & Kirby Road

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	154	418	76	163	375	11	26	374	93	10	737	144	
Future Volume (vph)	154	418	76	163	375	11	26	374	93	10	737	144	
Ideal Flow (vphpl)	1900	1900	1900	1900	2300	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.5			4.5			8.5			8.5		
Lane Util. Factor		1.00			*1.00			1.00			1.00		
Frt		0.98			1.00			0.97			0.98		
Flt Protected		0.99			0.99			1.00			1.00		
Satd. Flow (prot)		1699			2056			1568			1722		
Flt Permitted		0.99			0.99			0.83			0.99		
Satd. Flow (perm)		1699			2056			1308			1708		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	162	440	80	172	395	12	27	394	98	11	776	152	
RTOR Reduction (vph)	0	2	0	0	0	0	0	4	0	0	3	0	
Lane Group Flow (vph)	0	680	0	0	579	0	0	515	0	0	936	0	
Heavy Vehicles (%)	16%	9%	3%	11%	11%	18%	14%	16%	33%	30%	9%	8%	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA		
Protected Phases	4	4		3	3			6			2		
Permitted Phases								6			2		
Actuated Green, G (s)		54.5			37.5			86.5			86.5		
Effective Green, g (s)		54.5			39.5			86.5			86.5		
Actuated g/C Ratio		0.27			0.20			0.43			0.43		
Clearance Time (s)		6.5			6.5			8.5			8.5		
Vehicle Extension (s)		0.2			3.0			3.0			0.2		
Lane Grp Cap (vph)		462			406			565			738		
v/s Ratio Prot		c0.40			c0.28								
v/s Ratio Perm								0.39			c0.55		
v/c Ratio		1.47			1.43			0.91			1.27		
Uniform Delay, d1		72.8			80.2			53.2			56.8		
Progression Factor		1.00			1.00			1.00			1.00		
Incremental Delay, d2		223.7			205.6			21.4			131.1		
Delay (s)		296.4			285.8			74.5			187.8		
Level of Service		F			F			E			F		
Approach Delay (s)		296.4			285.8			74.5			187.8		
Approach LOS		F			F			E			F		
Intersection Summary													
HCM 2000 Control Delay			214.3									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.38										
Actuated Cycle Length (s)			200.0									Sum of lost time (s)	21.5
Intersection Capacity Utilization			106.6%									ICU Level of Service	G
Analysis Period (min)			15										
c	Critical Lane Group												





















HCM Unsignalized Intersection Capacity Analysis

2: Street 4 & Kirby Road

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	↗
Traffic Volume (veh/h)	501	20	36	539	10	59
Future Volume (Veh/h)	501	20	36	539	10	59
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	545	22	39	586	11	64
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	372					
pX, platoon unblocked			0.74		0.74	0.74
vC, conflicting volume			567		1220	556
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			246		1124	232
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		93	89
cM capacity (veh/h)			982		162	601
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	567	625	75			
Volume Left	0	39	11			
Volume Right	22	0	64			
cSH	1700	982	431			
Volume to Capacity	0.33	0.04	0.17			
Queue Length 95th (m)	0.0	0.9	4.7			
Control Delay (s)	0.0	1.1	15.1			
Lane LOS		A	C			
Approach Delay (s)	0.0	1.1	15.1			
Approach LOS			C			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			68.8%	ICU Level of Service		C
Analysis Period (min)			15			

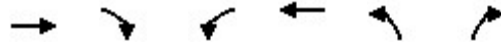
HCM Signalized Intersection Capacity Analysis

4: Keele Street & Kirby Road

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	73	241	153	271	440	34	150	397	95	215	1423	115		
Future Volume (vph)	73	241	153	271	440	34	150	397	95	215	1423	115		
Ideal Flow (vphpl)	1900	2000	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		5.0	7.0	4.0	7.0			7.5	7.5		7.5	7.5		
Lane Util. Factor		1.00	1.00	1.00	1.00			0.95	1.00		0.95	1.00		
Frt		1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85		
Flt Protected		0.99	1.00	0.95	1.00			0.99	1.00		0.99	1.00		
Satd. Flow (prot)		1739	1445	1746	1744			3040	1247		3224	1458		
Flt Permitted		0.43	1.00	0.40	1.00			0.51	1.00		0.75	1.00		
Satd. Flow (perm)		757	1445	742	1744			1578	1247		2422	1458		
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98		
Adj. Flow (vph)	74	246	156	277	449	35	153	405	97	219	1452	117		
RTOR Reduction (vph)	0	0	28	0	2	0	0	0	43	0	0	52		
Lane Group Flow (vph)	0	320	128	277	482	0	0	558	54	0	1671	65		
Heavy Vehicles (%)	18%	14%	13%	10%	8%	21%	17%	19%	31%	29%	10%	12%		
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm		
Protected Phases		4			8			6			2			
Permitted Phases	4		4	8			6		6	2		2		
Actuated Green, G (s)		39.0	39.0	39.0	39.0			66.5	66.5		66.5	66.5		
Effective Green, g (s)		41.0	39.0	42.0	39.0			66.5	66.5		66.5	66.5		
Actuated g/C Ratio		0.34	0.32	0.35	0.32			0.55	0.55		0.55	0.55		
Clearance Time (s)		7.0	7.0	7.0	7.0			7.5	7.5		7.5	7.5		
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		258	469	259	566			874	691		1342	807		
v/s Ratio Prot					0.28									
v/s Ratio Perm		c0.42	0.09	0.37				0.35	0.04		c0.69	0.04		
v/c Ratio		1.24	0.27	1.07	0.85			2.83dl	0.08		1.25	0.08		
Uniform Delay, d1		39.5	30.0	39.0	37.8			18.5	12.5		26.8	12.5		
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00		
Incremental Delay, d2		136.6	0.3	75.5	11.8			3.6	0.2		116.8	0.2		
Delay (s)		176.1	30.3	114.5	49.6			22.0	12.7		143.5	12.7		
Level of Service		F	C	F	D			C	B		F	B		
Approach Delay (s)		128.4			73.2			20.6			134.9			
Approach LOS		F			E			C			F			
Intersection Summary														
HCM 2000 Control Delay			101.0									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			1.27											
Actuated Cycle Length (s)			120.0								14.5			
Intersection Capacity Utilization			134.2%										ICU Level of Service	H
Analysis Period (min)			15											
dl Defacto Left Lane. Recode with 1 though lane as a left lane.														
c Critical Lane Group														

HCM Unsignalized Intersection Capacity Analysis

5: Ravineview Drive & Kirby Road



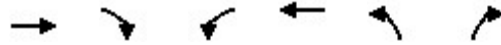
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↶	↷
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	485	66	59	722	23	105
Future Volume (vph)	485	66	59	722	23	105
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	516	70	63	768	24	112

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	586	831	136
Volume Left (vph)	0	63	24
Volume Right (vph)	70	0	112
Hadj (s)	0.30	0.18	-0.29
Departure Headway (s)	5.6	5.4	6.6
Degree Utilization, x	0.91	1.25	0.25
Capacity (veh/h)	639	673	532
Control Delay (s)	39.4	143.9	11.8
Approach Delay (s)	39.4	143.9	11.8
Approach LOS	E	F	B

Intersection Summary			
Delay		92.9	
Level of Service		F	
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

6: Foot Hills Road & Kirby Road



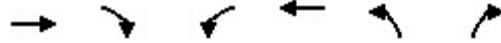
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	565	25	23	727	54	11
Future Volume (vph)	565	25	23	727	54	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	601	27	24	773	57	12

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	628	797	69
Volume Left (vph)	0	24	57
Volume Right (vph)	27	0	12
Hadj (s)	0.25	0.16	0.27
Departure Headway (s)	5.3	5.1	7.2
Degree Utilization, x	0.92	1.14	0.14
Capacity (veh/h)	675	705	490
Control Delay (s)	39.7	99.1	11.3
Approach Delay (s)	39.7	99.1	11.3
Approach LOS	E	F	B

Intersection Summary			
Delay		70.1	
Level of Service		F	
Intersection Capacity Utilization		67.2%	ICU Level of Service
Analysis Period (min)		15	C

HCM Unsignalized Intersection Capacity Analysis























7: Laurentian Boulevard & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	572	4	8	745	5	109
Future Volume (Veh/h)	572	4	8	745	5	109
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	609	4	9	793	5	116
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	232					
pX, platoon unblocked					0.70	
vC, conflicting volume	613			1422	611	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	613			1388	611	
tC, single (s)	4.5			6.4	6.4	
tC, 2 stage (s)						
tF (s)	2.5			3.5	3.4	
p0 queue free %	99			95	75	
cM capacity (veh/h)	814			110	471	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	613	802	121			
Volume Left	0	9	5			
Volume Right	4	0	116			
cSH	1700	814	414			
Volume to Capacity	0.36	0.01	0.29			
Queue Length 95th (m)	0.0	0.3	9.1			
Control Delay (s)	0.0	0.3	17.2			
Lane LOS	A		C			
Approach Delay (s)	0.0	0.3	17.2			
Approach LOS	C					
Intersection Summary						
Average Delay	1.5					
Intersection Capacity Utilization	59.3%			ICU Level of Service	B	
Analysis Period (min)	15					

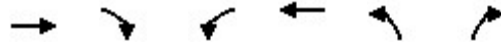
HCM Signalized Intersection Capacity Analysis

8: Dufferin Street & Kirby Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	581	67	284	643	343	28	133	69	263	581	81
Future Volume (vph)	33	581	67	284	643	343	28	133	69	263	581	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		4.5	4.5	4.5	3.0	8.0		4.5	8.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1674	1827		1789	1883	1601	1560	1678		1789	1728	
Flt Permitted	0.18	1.00		0.19	1.00	1.00	0.12	1.00		0.45	1.00	
Satd. Flow (perm)	321	1827		358	1883	1601	194	1678		843	1728	
Peak-hour factor, PHF	0.96	0.92	0.96	0.92	0.92	0.92	0.96	0.96	0.92	0.92	0.96	0.96
Adj. Flow (vph)	34	632	70	309	699	373	29	139	75	286	605	84
RTOR Reduction (vph)	0	3	0	0	0	151	0	14	0	0	3	0
Lane Group Flow (vph)	34	699	0	309	699	222	29	200	0	286	686	0
Heavy Vehicles (%)	9%	2%	18%	2%	2%	2%	17%	12%	2%	2%	10%	3%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	70.5	70.5		72.5	72.5	72.5	38.0	33.8		55.0	47.8	
Effective Green, g (s)	70.5	70.5		72.5	72.5	72.5	38.0	33.8		55.0	47.8	
Actuated g/C Ratio	0.50	0.50		0.52	0.52	0.52	0.27	0.24		0.39	0.34	
Clearance Time (s)	6.5	6.5		4.5	4.5	4.5	3.0	8.0		4.5	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	161	920		185	975	829	93	405		444	589	
v/s Ratio Prot		0.38			0.37		0.01	0.12		c0.08	c0.40	
v/s Ratio Perm	0.11			c0.86		0.14	0.07			0.18		
v/c Ratio	0.21	0.76		1.67	0.72	0.27	0.31	0.49		0.64	1.16	
Uniform Delay, d1	19.3	27.9		33.8	25.9	18.9	41.1	45.7		31.3	46.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	3.7		324.2	2.5	0.2	1.9	4.3		3.2	91.4	
Delay (s)	20.0	31.6		357.9	28.4	19.1	43.0	50.0		34.5	137.5	
Level of Service	B	C		F	C	B	D	D		C	F	
Approach Delay (s)		31.1			99.6			49.2			107.3	
Approach LOS		C			F			D			F	
Intersection Summary												
HCM 2000 Control Delay			83.1	HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			1.48									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				19.0				
Intersection Capacity Utilization			110.9%	ICU Level of Service				H				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

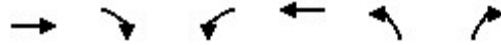
13: Street 5 & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	356	204	8	430	145	100
Future Volume (Veh/h)	356	204	8	430	145	100
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	387	222	9	467	158	109
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			609		983	498
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			609		983	498
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		42	81
cM capacity (veh/h)			970		273	572
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	609	476	267			
Volume Left	0	9	158			
Volume Right	222	0	109			
cSH	1700	970	347			
Volume to Capacity	0.36	0.01	0.77			
Queue Length 95th (m)	0.0	0.2	46.9			
Control Delay (s)	0.0	0.3	42.6			
Lane LOS		A	E			
Approach Delay (s)	0.0	0.3	42.6			
Approach LOS			E			
Intersection Summary						
Average Delay			8.5			
Intersection Capacity Utilization			52.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

21: Street 6 & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↙	↘
Traffic Volume (veh/h)	360	204	38	433	145	100
Future Volume (Veh/h)	360	204	38	433	145	100
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	391	222	41	471	158	109
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			613			502
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			613			502
tC, single (s)			4.1			6.2
tC, 2 stage (s)						
tF (s)			2.2			3.3
p0 queue free %			96			81
cM capacity (veh/h)			966			569
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	613	512	267			
Volume Left	0	41	158			
Volume Right	222	0	109			
cSH	1700	966	313			
Volume to Capacity	0.36	0.04	0.85			
Queue Length 95th (m)	0.0	1.0	57.1			
Control Delay (s)	0.0	1.2	57.4			
Lane LOS			A			F
Approach Delay (s)	0.0	1.2	57.4			
Approach LOS			F			
Intersection Summary						
Average Delay			11.4			
Intersection Capacity Utilization			75.1%	ICU Level of Service	D	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

23: Kirby GO Access & Kirby Road

























Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	294	194	388	316	155	173
Future Volume (Veh/h)	294	194	388	316	155	173
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	320	211	422	343	168	188
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	172					
pX, platoon unblocked					0.75	
vC, conflicting volume			531	1612 426		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			531	1651 426		
tC, single (s)			4.1	6.4 6.2		
tC, 2 stage (s)						
tF (s)			2.2	3.5 3.3		
p0 queue free %			59	0 70		
cM capacity (veh/h)			1036	48 629		
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	531	765	356			
Volume Left	0	422	168			
Volume Right	211	0	188			
cSH	1700	1036	94			
Volume to Capacity	0.31	0.41	3.79			
Queue Length 95th (m)	0.0	15.3	Err			
Control Delay (s)	0.0	8.5	Err			
Lane LOS			A	F		
Approach Delay (s)	0.0	8.5	Err			
Approach LOS			F			
Intersection Summary						
Average Delay			2158.7			
Intersection Capacity Utilization			94.6%	ICU Level of Service	F	
Analysis Period (min)			15			

Appendix C. Future (2031) Synchro Reports

HCM Signalized Intersection Capacity Analysis

1: Jane Street & Kirby Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	420	153	160	863	11	26	274	193	138	537	144
Future Volume (vph)	52	420	153	160	863	11	26	274	193	138	537	144
Ideal Flow (vphp)	1900	1900	1900	1900	2300	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.5		4.5	4.5		8.5	8.5	8.5	4.5	8.5	8.5
Lane Util. Factor	1.00	1.00		1.00	*1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1659	1717		1659	2110		1659	1746	1484	1659	1762	1512
Flt Permitted	0.07	1.00		0.17	1.00		0.20	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	119	1717		292	2110		358	1746	1484	680	1762	1512
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	442	161	168	908	12	27	288	203	145	565	152
RTOR Reduction (vph)	0	9	0	0	1	0	0	0	144	0	0	62
Lane Group Flow (vph)	55	594	0	168	919	0	27	288	59	145	565	90
Heavy Vehicles (%)	10%	9%	3%	10%	10%	10%	10%	10%	10%	10%	9%	8%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8			6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)	62.8	58.7		74.3	65.7		40.5	40.5	40.5	50.7	50.7	50.7
Effective Green, g (s)	62.8	58.7		74.3	67.7		40.5	40.5	40.5	50.7	50.7	50.7
Actuated g/C Ratio	0.45	0.42		0.53	0.48		0.29	0.29	0.29	0.36	0.36	0.36
Clearance Time (s)	4.5	6.5		4.5	6.5		8.5	8.5	8.5	4.5	8.5	8.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2		3.0	3.0	3.0	3.0	0.2	0.2
Lane Grp Cap (vph)	98	719		263	1020		103	505	429	286	638	547
v/s Ratio Prot	0.02	0.35		c0.05	c0.44			0.16		0.02	c0.32	
v/s Ratio Perm	0.23			0.29			0.08		0.04	0.16		0.06
v/c Ratio	0.56	0.83		0.64	0.90		0.26	0.57	0.14	0.51	0.89	0.16
Uniform Delay, d1	33.0	36.1		24.1	33.1		38.3	42.3	36.8	36.1	41.9	30.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2	10.5		5.0	12.6		6.1	4.6	0.7	1.4	16.5	0.6
Delay (s)	40.2	46.6		29.1	45.7		44.4	47.0	37.5	37.5	58.5	30.9
Level of Service	D	D		C	D		D	D	D	D	E	C
Approach Delay (s)		46.0			43.1			43.1			50.1	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			45.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			130.6%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Street 4 & Kirby Road

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↖	↗
Traffic Volume (veh/h)	731	20	36	879	155	59
Future Volume (Veh/h)	731	20	36	879	155	59
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	795	22	39	955	168	64
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						13
Median type	None		None			
Median storage veh						
Upstream signal (m)	372					
pX, platoon unblocked						
vC, conflicting volume			817	1362		408
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			817	1362		408
tC, single (s)			4.1	6.8		6.9
tC, 2 stage (s)						
tF (s)			2.2	3.5		3.3
p0 queue free %			95	0		89
cM capacity (veh/h)			807	133		592
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	530	287	357	637	232	
Volume Left	0	0	39	0	168	
Volume Right	0	22	0	0	64	
cSH	1700	1700	807	1700	183	
Volume to Capacity	0.31	0.17	0.05	0.37	1.27	
Queue Length 95th (m)	0.0	0.0	1.2	0.0	97.9	
Control Delay (s)	0.0	0.0	1.6	0.0	170.3	
Lane LOS			A	F		
Approach Delay (s)	0.0	0.6		170.3		
Approach LOS					F	
Intersection Summary						
Average Delay			19.6			
Intersection Capacity Utilization			64.8%	ICU Level of Service		C
Analysis Period (min)	15					

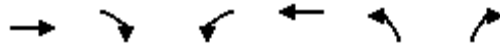
HCM Signalized Intersection Capacity Analysis

4: Keele Street & Kirby Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	391	153	234	775	54	50	497	94	215	1423	115
Future Volume (vph)	73	391	153	234	775	54	50	497	94	215	1423	115
Ideal Flow (vphpl)	1900	2000	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0	7.0	1.5	7.0		4.5	7.5	7.5	4.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1659	3493	1484	1746	3343		1659	3318	1484	1659	3318	1484
Flt Permitted	0.14	1.00	1.00	0.39	1.00		0.08	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	243	3493	1484	713	3343		142	3318	1484	672	3318	1484
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	74	399	156	239	791	55	51	507	96	219	1452	117
RTOR Reduction (vph)	0	0	119	0	4	0	0	0	57	0	0	61
Lane Group Flow (vph)	74	399	37	239	842	0	51	507	39	219	1452	56
Heavy Vehicles (%)	10%	10%	10%	10%	8%	10%	10%	10%	10%	10%	10%	10%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8			6		6	2		2
Actuated Green, G (s)	32.8	28.7	28.7	37.6	31.1		53.3	49.3	49.3	65.8	57.3	57.3
Effective Green, g (s)	32.8	30.7	28.7	42.7	31.1		53.3	49.3	49.3	65.8	57.3	57.3
Actuated g/C Ratio	0.27	0.26	0.24	0.36	0.26		0.44	0.41	0.41	0.55	0.48	0.48
Clearance Time (s)	4.5	7.0	7.0	4.5	7.0		4.5	7.5	7.5	4.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	893	354	335	866		113	1363	609	467	1584	708
v/s Ratio Prot	0.02	0.11		c0.06	c0.25		0.01	0.15		c0.05	c0.44	
v/s Ratio Perm	0.15		0.03	0.20			0.18		0.03	0.21		0.04
v/c Ratio	0.65	0.45	0.11	0.71	0.97		0.45	0.37	0.06	0.47	0.92	0.08
Uniform Delay, d1	35.0	37.5	35.6	31.1	44.0		23.7	24.6	21.4	14.6	29.1	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.0	0.4	0.1	7.0	23.7		2.8	0.8	0.2	0.7	9.9	0.2
Delay (s)	47.0	37.9	35.8	38.1	67.8		26.5	25.4	21.6	15.3	39.0	17.2
Level of Service	D	D	D	D	E		C	C	C	B	D	B
Approach Delay (s)		38.4			61.2			24.9			34.7	
Approach LOS		D			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			40.6			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			23.5			
Intersection Capacity Utilization			90.4%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

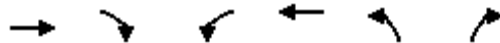
5: Ravineview Drive & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	634	66	59	1040	23	105
Future Volume (Veh/h)	634	66	59	1040	23	105
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	674	70	63	1106	24	112
Pedestrians						2
Lane Width (m)						3.7
Walking Speed (m/s)						1.1
Percent Blockage						0
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			746		1390	374
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			746		1390	374
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		81	82
cM capacity (veh/h)			870		126	628
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	449	295	432	737	136	
Volume Left	0	0	63	0	24	
Volume Right	0	70	0	0	112	
cSH	1700	1700	870	1700	368	
Volume to Capacity	0.26	0.17	0.07	0.43	0.37	
Queue Length 95th (m)	0.0	0.0	1.8	0.0	12.6	
Control Delay (s)	0.0	0.0	2.1	0.0	20.4	
Lane LOS			A			C
Approach Delay (s)	0.0		0.8		20.4	
Approach LOS					C	
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			67.9%	ICU Level of Service	C	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

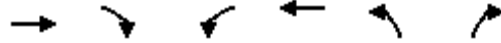
6: Foot Hills Road & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (veh/h)	714	25	23	1045	54	12
Future Volume (Veh/h)	714	25	23	1045	54	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	760	27	24	1112	57	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			787		1378	394
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			787		1378	394
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		58	98
cM capacity (veh/h)			841		134	611
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	507	280	395	741	70	
Volume Left	0	0	24	0	57	
Volume Right	0	27	0	0	13	
cSH	1700	1700	841	1700	165	
Volume to Capacity	0.30	0.16	0.03	0.44	0.42	
Queue Length 95th (m)	0.0	0.0	0.7	0.0	14.5	
Control Delay (s)	0.0	0.0	0.9	0.0	42.9	
Lane LOS			A	E		
Approach Delay (s)	0.0		0.3	42.9		
Approach LOS				E		
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			55.3%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: Laurentian Boulevard & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	
Traffic Volume (veh/h)	721	5	12	1063	5	109
Future Volume (Veh/h)	721	5	12	1063	5	109
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	767	5	13	1131	5	116
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	232					
pX, platoon unblocked					0.71	
vC, conflicting volume			772		1361	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			772		682	386
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	81
cM capacity (veh/h)			852		270	618
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	511	261	390	754	121	
Volume Left	0	0	13	0	5	
Volume Right	0	5	0	0	116	
cSH	1700	1700	852	1700	587	
Volume to Capacity	0.30	0.15	0.02	0.44	0.21	
Queue Length 95th (m)	0.0	0.0	0.4	0.0	5.8	
Control Delay (s)	0.0	0.0	0.5	0.0	12.7	
Lane LOS	A			B		
Approach Delay (s)	0.0		0.2		12.7	
Approach LOS	B					
Intersection Summary						
Average Delay	0.8					
Intersection Capacity Utilization	51.5%		ICU Level of Service			A
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

8: Dufferin Street & Kirby Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	751	66	184	1014	43	31	144	75	108	766	30
Future Volume (vph)	13	751	66	184	1014	43	31	144	75	108	766	30
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	4.5		8.0	8.0	8.0	4.5	8.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1674	3579	1484	1789	3557		1659	1746	1601	1789	1741	
Flt Permitted	0.12	1.00	1.00	0.10	1.00		0.14	1.00	1.00	0.62	1.00	
Satd. Flow (perm)	207	3579	1484	186	3557		242	1746	1601	1163	1741	
Peak-hour factor, PHF	0.96	0.92	0.96	0.92	0.92	0.92	0.96	0.96	0.92	0.92	0.96	0.96
Adj. Flow (vph)	14	816	69	200	1102	47	32	150	82	117	798	31
RTOR Reduction (vph)	0	0	52	0	2	0	0	0	45	0	1	0
Lane Group Flow (vph)	14	816	17	200	1147	0	32	150	37	117	828	0
Heavy Vehicles (%)	9%	2%	10%	2%	2%	2%	10%	10%	2%	2%	10%	3%
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4		3	8			6		5	2	
Permitted Phases	4		4	8			6		6	2		
Actuated Green, G (s)	34.0	34.0	34.0	54.0	54.0		63.2	63.2	63.2	73.5	73.5	
Effective Green, g (s)	34.0	34.0	34.0	54.0	54.0		63.2	63.2	63.2	73.5	73.5	
Actuated g/C Ratio	0.24	0.24	0.24	0.39	0.39		0.45	0.45	0.45	0.52	0.52	
Clearance Time (s)	6.5	6.5	6.5	4.5	4.5		8.0	8.0	8.0	4.5	8.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	50	869	360	226	1371		109	788	722	636	914	
v/s Ratio Prot		0.23		0.09	c0.32			0.09		0.01	c0.48	
v/s Ratio Perm	0.07		0.01	c0.26			0.13		0.02	0.09		
v/c Ratio	0.28	0.94	0.05	0.88	0.84		0.29	0.19	0.05	0.18	0.91	
Uniform Delay, d1	43.1	52.0	40.6	36.3	39.0		24.3	23.0	21.6	17.0	30.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	17.4	0.1	31.0	4.6		6.7	0.5	0.1	0.1	14.2	
Delay (s)	46.1	69.3	40.6	67.3	43.6		31.0	23.6	21.7	17.1	44.3	
Level of Service	D	E	D	E	D		C	C	C	B	D	
Approach Delay (s)		66.8			47.1			23.9			41.0	
Approach LOS		E			D			C			D	

Intersection Summary		
HCM 2000 Control Delay	48.8	HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio	0.97	
Actuated Cycle Length (s)	140.0	Sum of lost time (s) 23.5
Intersection Capacity Utilization	108.2%	ICU Level of Service G
Analysis Period (min)	15	
c Critical Lane Group		

HCM Unsignalized Intersection Capacity Analysis

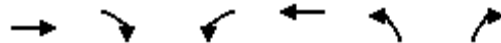
13: Street 5 & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↘
Traffic Volume (veh/h)	586	204	8	770	145	100
Future Volume (Veh/h)	586	204	8	770	145	100
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	637	222	9	837	158	109
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						9
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			859		1184	430
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			859		1184	430
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		12	81
cM capacity (veh/h)			778		180	574
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	425	434	288	558	267	
Volume Left	0	0	9	0	158	
Volume Right	0	222	0	0	109	
cSH	1700	1700	778	1700	304	
Volume to Capacity	0.25	0.26	0.01	0.33	0.88	
Queue Length 95th (m)	0.0	0.0	0.3	0.0	60.5	
Control Delay (s)	0.0	0.0	0.4	0.0	58.9	
Lane LOS			A	F		
Approach Delay (s)	0.0		0.1		58.9	
Approach LOS					F	
Intersection Summary						
Average Delay			8.0			
Intersection Capacity Utilization			41.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

21: Street 6 & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↘
Traffic Volume (veh/h)	590	96	38	623	155	128
Future Volume (Veh/h)	590	96	38	623	155	128
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	641	104	41	677	168	139
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						9
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			745		1114	372
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			745		1114	372
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		13	78
cM capacity (veh/h)			859		193	625
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	427	318	267	451	307	
Volume Left	0	0	41	0	168	
Volume Right	0	104	0	0	139	
cSH	1700	1700	859	1700	352	
Volume to Capacity	0.25	0.19	0.05	0.27	0.87	
Queue Length 95th (m)	0.0	0.0	1.1	0.0	62.9	
Control Delay (s)	0.0	0.0	1.9	0.0	52.2	
Lane LOS			A	F		
Approach Delay (s)	0.0		0.7		52.2	
Approach LOS					F	
Intersection Summary						
Average Delay			9.3			
Intersection Capacity Utilization			56.3%	ICU Level of Service	B	
Analysis Period (min)			15			























HCM Unsignalized Intersection Capacity Analysis
 23: Kirby GO Access & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (veh/h)	444	274	334	606	55	173
Future Volume (Veh/h)	444	274	334	606	55	173
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	483	298	363	659	60	188
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						8
Median type	None		None			
Median storage veh						
Upstream signal (m)	172					
pX, platoon unblocked					0.76	
vC, conflicting volume			781	1688	390	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			781	1277	390	
tC, single (s)			4.1	6.8	6.9	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			56	12	69	
cM capacity (veh/h)			832	68	608	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	322	459	583	439	248	
Volume Left	0	0	363	0	60	
Volume Right	0	298	0	0	188	
cSH	1700	1700	832	1700	281	
Volume to Capacity	0.19	0.27	0.44	0.26	0.88	
Queue Length 95th (m)	0.0	0.0	17.0	0.0	59.3	
Control Delay (s)	0.0	0.0	10.3	0.0	53.6	
Lane LOS			B	F		
Approach Delay (s)	0.0		5.8	53.6		
Approach LOS					F	
Intersection Summary						
Average Delay			9.4			
Intersection Capacity Utilization			60.8%	ICU Level of Service	B	
Analysis Period (min)			15			











HCM Signalized Intersection Capacity Analysis

1: Jane Street & Kirby Road

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	203	742	7	95	192	41	10	581	121	28	356	160	
Future Volume (vph)	203	742	7	95	192	41	10	581	121	28	356	160	
Ideal Flow (vphp)	1900	1900	1900	1900	2300	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.5	6.5		3.5	4.5		8.5	8.5	8.5	8.5	8.5	8.5	
Lane Util. Factor	1.00	1.00		1.00	*1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1690	1744		1659	2073		1659	1762	1484	1659	1746	1484	
Flt Permitted	0.50	1.00		0.08	1.00		0.37	1.00	1.00	0.10	1.00	1.00	
Satd. Flow (perm)	883	1744		135	2073		648	1762	1484	174	1746	1484	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	216	789	7	101	204	44	11	618	129	30	379	170	
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	59	0	0	72	
Lane Group Flow (vph)	216	796	0	101	242	0	11	618	70	30	379	98	
Heavy Vehicles (%)	8%	10%	10%	10%	9%	10%	10%	9%	10%	10%	10%	10%	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	7	4		3	8			6			2		
Permitted Phases	4			8			6		6	2		2	
Actuated Green, G (s)	74.9	65.4		66.2	60.2		50.1	50.1	50.1	50.1	50.1	50.1	
Effective Green, g (s)	74.9	65.4		66.2	62.2		50.1	50.1	50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.54	0.47		0.47	0.44		0.36	0.36	0.36	0.36	0.36	0.36	
Clearance Time (s)	3.5	6.5		3.5	6.5		8.5	8.5	8.5	8.5	8.5	8.5	
Vehicle Extension (s)	3.0	0.2		3.0	0.2		3.0	3.0	3.0	0.2	0.2	0.2	
Lane Grp Cap (vph)	536	814		129	921		231	630	531	62	624	531	
v/s Ratio Prot	0.03	c0.46		c0.03	0.12			c0.35			0.22		
v/s Ratio Perm	0.18			0.34			0.02		0.05	0.17		0.07	
v/c Ratio	0.40	0.98		0.78	0.26		0.05	0.98	0.13	0.48	0.61	0.18	
Uniform Delay, d1	17.9	36.6		30.3	24.5		29.4	44.5	30.3	34.9	36.9	30.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	26.6		25.9	0.7		0.4	31.5	0.5	24.6	4.4	0.8	
Delay (s)	18.4	63.2		56.2	25.2		29.8	76.0	30.8	59.5	41.2	31.7	
Level of Service	B	E		E	C		C	E	C	E	D	C	
Approach Delay (s)		53.6			34.2			67.6			39.4		
Approach LOS		D			C			E			D		
Intersection Summary													
HCM 2000 Control Delay			52.0									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.97										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	18.5
Intersection Capacity Utilization			125.7%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis

2: Street 4 & Kirby Road

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	741	150	55	310	18	2
Future Volume (Veh/h)	741	150	55	310	18	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	805	163	60	337	20	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						13
Median type	None		None			
Median storage veh						
Upstream signal (m)	372					
pX, platoon unblocked						
vC, conflicting volume			968		1175	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			968		1175	484
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		88	100
cM capacity (veh/h)			707		169	529
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	537	431	172	225	22	
Volume Left	0	0	60	0	20	
Volume Right	0	163	0	0	2	
cSH	1700	1700	707	1700	186	
Volume to Capacity	0.32	0.25	0.08	0.13	0.12	
Queue Length 95th (m)	0.0	0.0	2.1	0.0	3.0	
Control Delay (s)	0.0	0.0	4.3	0.0	27.6	
Lane LOS			A	D		
Approach Delay (s)	0.0		1.9		27.6	
Approach LOS					D	
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			48.8%	ICU Level of Service	A	
Analysis Period (min)			15			

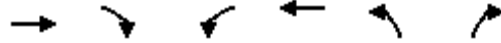
HCM Signalized Intersection Capacity Analysis

4: Keele Street & Kirby Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	792	75	130	342	153	120	1176	353	53	540	81
Future Volume (vph)	117	792	75	130	342	153	120	1176	353	53	540	81
Ideal Flow (vphp)	1900	2000	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0	7.0	1.5	7.0		4.5	7.5	7.5	4.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1659	3493	1484	1746	3193		1659	3318	1526	1659	3318	1484
Flt Permitted	0.28	1.00	1.00	0.13	1.00		0.36	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	497	3493	1484	231	3193		627	3318	1526	185	3318	1484
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	126	852	81	140	368	165	129	1265	380	57	581	87
RTOR Reduction (vph)	0	0	60	0	43	0	0	0	127	0	0	49
Lane Group Flow (vph)	126	852	21	140	490	0	129	1265	253	57	581	38
Heavy Vehicles (%)	10%	10%	10%	10%	9%	9%	10%	10%	7%	10%	10%	10%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8			6		6	2		2
Actuated Green, G (s)	38.4	30.4	30.4	35.4	28.9		62.8	55.6	55.6	56.4	52.4	52.4
Effective Green, g (s)	38.4	32.4	30.4	41.4	28.9		62.8	55.6	55.6	56.4	52.4	52.4
Actuated g/C Ratio	0.32	0.27	0.25	0.34	0.24		0.52	0.46	0.46	0.47	0.44	0.44
Clearance Time (s)	4.5	7.0	7.0	4.5	7.0		4.5	7.5	7.5	4.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	943	375	199	768		390	1537	707	136	1448	648
v/s Ratio Prot	0.04	c0.24		c0.06	0.15		c0.02	c0.38		0.01	0.18	
v/s Ratio Perm	0.13		0.01	0.19			0.15		0.17	0.18		0.03
v/c Ratio	0.53	0.90	0.05	0.70	0.64		0.33	0.82	0.36	0.42	0.40	0.06
Uniform Delay, d1	30.7	42.3	33.9	30.6	40.9		15.2	27.9	20.7	21.0	23.1	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	11.8	0.1	10.7	1.7		0.5	5.1	1.4	2.1	0.8	0.2
Delay (s)	33.0	54.1	34.0	41.3	42.6		15.7	33.0	22.1	23.1	23.9	19.7
Level of Service	C	D	C	D	D		B	C	C	C	C	B
Approach Delay (s)		50.0			42.3			29.5			23.4	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			35.6			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			23.5			
Intersection Capacity Utilization			81.8%			ICU Level of Service				D		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis

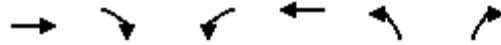
5: Ravineview Drive & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↘	
Traffic Volume (veh/h)	1147	51	114	609	16	67
Future Volume (Veh/h)	1147	51	114	609	16	67
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1318	59	131	700	18	77
Pedestrians						2
Lane Width (m)						3.7
Walking Speed (m/s)						1.1
Percent Blockage						0
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			1379		1962	690
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1379		1962	690
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			74		57	80
cM capacity (veh/h)			503		42	391
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	879	498	364	467	95	
Volume Left	0	0	131	0	18	
Volume Right	0	59	0	0	77	
cSH	1700	1700	503	1700	151	
Volume to Capacity	0.52	0.29	0.26	0.27	0.63	
Queue Length 95th (m)	0.0	0.0	7.9	0.0	25.9	
Control Delay (s)	0.0	0.0	8.1	0.0	62.1	
Lane LOS	A			F		
Approach Delay (s)	0.0		3.6		62.1	
Approach LOS						F
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			68.5%	ICU Level of Service	C	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

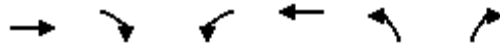
6: Foot Hills Road & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (veh/h)	1117	98	60	669	54	7
Future Volume (Veh/h)	1117	98	60	669	54	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1227	108	66	735	59	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	None		None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			1335		1780	668
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1335		1780	668
tC, single (s)			4.3		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			86		9	98
cM capacity (veh/h)			482		65	406
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	818	517	311	490	67	
Volume Left	0	0	66	0	59	
Volume Right	0	108	0	0	8	
cSH	1700	1700	482	1700	73	
Volume to Capacity	0.48	0.30	0.14	0.29	0.91	
Queue Length 95th (m)	0.0	0.0	3.6	0.0	35.2	
Control Delay (s)	0.0	0.0	4.6	0.0	172.0	
Lane LOS	A			F		
Approach Delay (s)	0.0		1.8		172.0	
Approach LOS					F	
Intersection Summary						
Average Delay			5.9			
Intersection Capacity Utilization			67.6%	ICU Level of Service	C	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: Laurentian Boulevard & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	1070	54	30	724	5	9
Future Volume (Veh/h)	1070	54	30	724	5	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	1202	61	34	813	6	10
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	232					
pX, platoon unblocked					0.84	
vC, conflicting volume	1263			1707	632	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1263			1455	632	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	94			94	98	
cM capacity (veh/h)	557			97	428	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	801	462	305	542	16	
Volume Left	0	0	34	0	6	
Volume Right	0	61	0	0	10	
cSH	1700	1700	557	1700	187	
Volume to Capacity	0.47	0.27	0.06	0.32	0.09	
Queue Length 95th (m)	0.0	0.0	1.5	0.0	2.1	
Control Delay (s)	0.0	0.0	2.1	0.0	26.0	
Lane LOS	A			D		
Approach Delay (s)	0.0	0.8		26.0		
Approach LOS					D	
Intersection Summary						
Average Delay	0.5					
Intersection Capacity Utilization	52.0%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

8: Dufferin Street & Kirby Road



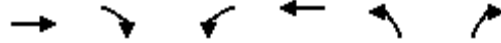
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	1019	35	50	691	115	57	767	134	45	117	6
Future Volume (vph)	25	1019	35	50	691	115	57	767	134	45	117	6
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.5	4.5		8.0	8.0	8.0	8.0	8.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1690	3380	1512	1789	3502		1674	1746	1601	1789	1739	
Flt Permitted	0.25	1.00	1.00	0.09	1.00		0.67	1.00	1.00	0.09	1.00	
Satd. Flow (perm)	446	3380	1512	165	3502		1190	1746	1601	166	1739	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	26	1061	36	52	720	120	59	799	140	47	122	6
RTOR Reduction (vph)	0	0	23	0	10	0	0	0	32	0	1	0
Lane Group Flow (vph)	26	1061	13	52	830	0	59	799	108	47	127	0
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	9%	10%	2%	2%	10%	3%
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			6			2	
Permitted Phases	4		4	8			6		6	2		
Actuated Green, G (s)	50.3	50.3	50.3	60.8	60.8		66.7	66.7	66.7	66.7	66.7	
Effective Green, g (s)	50.3	50.3	50.3	60.8	60.8		66.7	66.7	66.7	66.7	66.7	
Actuated g/C Ratio	0.36	0.36	0.36	0.43	0.43		0.48	0.48	0.48	0.48	0.48	
Clearance Time (s)	6.5	6.5	6.5	4.5	4.5		8.0	8.0	8.0	8.0	8.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	160	1214	543	118	1520		566	831	762	79	828	
v/s Ratio Prot		c0.31		0.01	c0.24			c0.46			0.07	
v/s Ratio Perm	0.06		0.01	0.18			0.05		0.07	0.28		
v/c Ratio	0.16	0.87	0.02	0.44	0.55		0.10	0.96	0.14	0.59	0.15	
Uniform Delay, d1	30.5	41.9	29.0	28.9	29.4		20.2	35.4	20.6	26.8	20.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	8.9	0.1	2.6	1.4		0.1	22.2	0.1	11.5	0.1	
Delay (s)	32.7	50.8	29.1	31.5	30.8		20.3	57.6	20.7	38.2	20.8	
Level of Service	C	D	C	C	C		C	E	C	D	C	
Approach Delay (s)		49.7			30.8			50.2			25.5	
Approach LOS		D			C			D			C	

Intersection Summary

HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

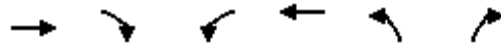
13: Street 5 & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (veh/h)	663	80	63	360	5	21
Future Volume (Veh/h)	663	80	63	360	5	21
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	721	87	68	391	5	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						9
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			808	1096	404	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			808	1096	404	
tC, single (s)			4.1	6.8	6.9	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			92	97	96	
cM capacity (veh/h)			813	190	596	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	481	327	198	261	28	
Volume Left	0	0	68	0	5	
Volume Right	0	87	0	0	23	
cSH	1700	1700	813	1700	726	
Volume to Capacity	0.28	0.19	0.08	0.15	0.04	
Queue Length 95th (m)	0.0	0.0	2.1	0.0	0.9	
Control Delay (s)	0.0	0.0	4.0	0.0	13.6	
Lane LOS			A	B		
Approach Delay (s)	0.0		1.7	13.6		
Approach LOS					B	
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			46.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

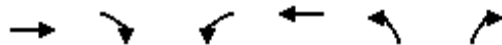
21: Street 6 & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (veh/h)	628	56	165	418	5	26
Future Volume (Veh/h)	628	56	165	418	5	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	683	61	179	454	5	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						9
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			744		1298	372
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			744		1298	372
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			79		96	96
cM capacity (veh/h)			859		121	625
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	455	289	330	303	33	
Volume Left	0	0	179	0	5	
Volume Right	0	61	0	0	28	
cSH	1700	1700	859	1700	737	
Volume to Capacity	0.27	0.17	0.21	0.18	0.04	
Queue Length 95th (m)	0.0	0.0	5.9	0.0	1.1	
Control Delay (s)	0.0	0.0	6.7	0.0	14.8	
Lane LOS	A			B		
Approach Delay (s)	0.0		3.5		14.8	
Approach LOS					B	
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			48.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

23: Kirby GO Access & Kirby Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (veh/h)	652	2	34	510	73	332
Future Volume (Veh/h)	652	2	34	510	73	332
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	709	2	37	554	79	361
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						8
Median type	None		None			
Median storage veh						
Upstream signal (m)					172	
pX, platoon unblocked					0.91	
vC, conflicting volume			711		1061 356	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			711		862 356	
tC, single (s)			4.1		6.8 6.9	
tC, 2 stage (s)						
tF (s)			2.2		3.5 3.3	
p0 queue free %			96		69 44	
cM capacity (veh/h)			884		256 641	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	473	238	222	369	440	
Volume Left	0	0	37	0	79	
Volume Right	0	2	0	0	361	
cSH	1700	1700	884	1700	781	
Volume to Capacity	0.28	0.14	0.04	0.22	0.56	
Queue Length 95th (m)	0.0	0.0	1.0	0.0	27.1	
Control Delay (s)	0.0	0.0	1.9	0.0	19.0	
Lane LOS			A		C	
Approach Delay (s)	0.0		0.7		19.0	
Approach LOS					C	
Intersection Summary						
Average Delay			5.0			
Intersection Capacity Utilization			47.2%		ICU Level of Service A	
Analysis Period (min)			15			



Memo

Date: Friday, April 17, 2020

Project: City of Vaughan – Kirby Road Widening (Jane Street to Dufferin Street) EA

To: Hilda Esedebe, P.Eng.

From: Jonathan Chai, P.Eng. Azadeh Heydari, P.Eng.

Subject: Transportation and Traffic Analysis - Preferred Alternative

HDR has been retained by the City of Vaughan to undertake a Schedule ‘C’ Class Environmental Assessment (EA) study for the Kirby Road corridor between Jane Street and Dufferin Street. Prior to this study, the North Vaughan and New Communities Transportation Master Plan (NVNCTMP) study identified the need for infrastructure improvements to Kirby Road between Jane Street and Dufferin Street including roadway widening, road-rail grade separation and intersection jog elimination at Jane Street. While the NVNCTMP satisfies Phases 1 and 2 of the Municipal Class EA process from the infrastructure improvements from a broad network perspective, further more detailed analysis was required to reconfirm the specific needs for the corridor.

To this end, a separate Transportation and Traffic Report (dated January 10, 2020) was completed to reconfirm the NVNCTMP findings through additional more detailed analysis of intersection operations, pedestrian and cyclist level of service, collisions, and review of the Metrolinx Traffic Impact Study for Kirby GO station. This report confirmed the NVNCTMP recommendations for roadway widening, road-rail grade separation and intersection jog elimination at Jane Street. In addition, the need for improved active transportation facilities for pedestrians and cyclists was also identified.

Based on the above, the purpose of this memorandum is to document further analysis required to identify a preferred alternative to be carried forward to inform Alternative Designs (Phase 3) and Preliminary Design of the preferred design (Phase 4) in of the EA process. This will include recommendations for intersection lane configurations as well as continuous active transportation facilities. Active transportation treatments at intersections will be confirmed during the preliminary design phase of the study.

Preferred Alternative Traffic Analysis

The preferred alternative analysis and findings presented in this section reflects a 4-lane widening scenario between Jane Street and Dufferin Street for the 2031 horizon year, as recommended in the NVNCTMP and as confirmed in the Transportation and Traffic Report.

Intersection Volumes

Future traffic volume growth to 2031 is derived from the York Region EMME model version used for the NVNCTMP. The methodology and the results in developing 2031 peak hour traffic within the study area were carried out during the previous phase of the study and are documented in

the Section 5.2 of Transportation and Traffic Report (January 10, 2020). Key improvements and assumptions in the model include:

- No GTA West Corridor Freeway
- No new freeway interchange at Kirby Road at Highway 400
- No new freeway interchange at 19th Avenue at Highway 404
- Kirby GO station
- Kirby Road extension
- Teston Road missing link
- Jane Street widening (Teston Road to Kirby Road)

A screenline capacity analysis was completed for Kirby Road (inclusive of the recommended widening to four lanes) and the two parallel arterial roads, King-Vaughan Road and Teston Road. **Table 1** summarizes the 2031 screenline traffic growth (east-west), across four traffic screenlines – east of Jane Street, west and east of Keele Street, and west of Dufferin Street. The purposes of this screenline analysis is to identify growth rates to be applied to intersection turning movement volumes.

Once the model was refined, 2011 to 2031 growth (AM peak hour) were extracted from the refined model and applied to observed turning movement counts (TMCs) along Kirby Road. The 2031 PM peak hour turning volumes were then developed using the patterns observed in existing travel and the future EMME model. Manual adjustments were then made to the projected volumes, accounting for the redistribution of traffic due to new improvements and development and to appropriately balance the volumes along Kirby Road.

The percentage of trucks on the roadways were assumed to be 10% as per York Region's direction. This percentage was identified based on a review of goods movement corridors in Peel Region and York Region in order to avoid over-estimation of truck volumes with increases in total traffic.

Figure 1 and **Figure 2** illustrate projected traffic volumes at key study area intersections. The location of Streets 4, 5 and 6 refer to the Block 27 Secondary Plan, which is illustrated in **Figure 3**.



Table 1: Screenline Analysis

Screenline:	AM Peak Hour Volumes		Capacity		V/C Ratio	
	Existing	2031 Model	Existing	2031 Model	Existing	2031 Model
East of Jane Street						
King-Vaughan Road	400	700	700	700	0.57	1.00
Kirby Road	300	1300	700	1400	0.43	0.93
Teston Road	1,190	1,750	1,800	1,800	0.66	0.97
Total	1,890	3,100	3,200	3,200	0.59	0.96
West of Keele Street						
King-Vaughan Road	410	700	700	700	0.59	1.00
Kirby Road	310	1300	700	1400	0.44	0.93
Teston Road	820	1,500	1,800	1,800	0.46	0.83
Total	1,540	3,500	3,200	3,200	0.48	0.90
East of Keele Street						
King-Vaughan Road	610	750	700	700	0.87	1.07
Kirby Road	470	1200	700	1400	0.67	0.86
Teston Road	80	1,600	400	1,800	0.20	0.89
Total	1,160	3,550	1,800	3,200	0.64	0.91
West of Dufferin Street						
King-Vaughan Road	620	750	700	700	0.89	1.07
Kirby Road	400	1200	700	1400	0.57	0.86
Teston Road	20	1,600	400	1,800	0.05	0.89
Total	1,040	3,550	1,800	3,200	0.58	0.91

Figure 1: 2031 Future Turning Movement Volumes – AM Peak Hour

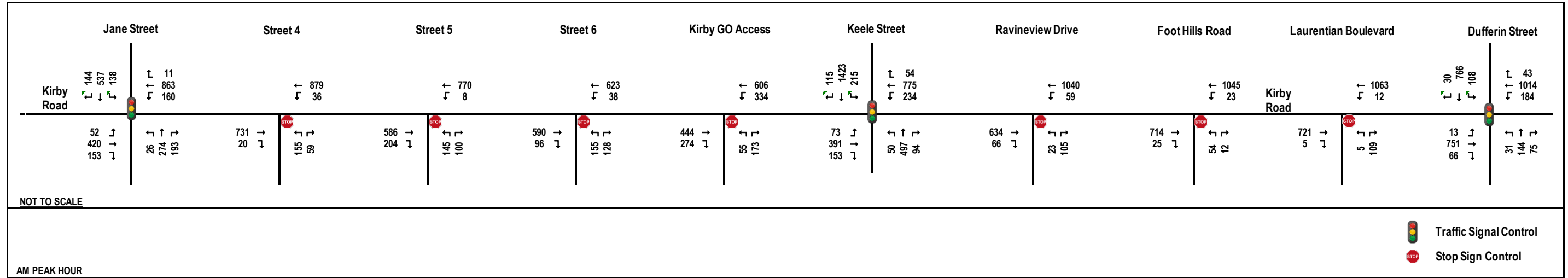
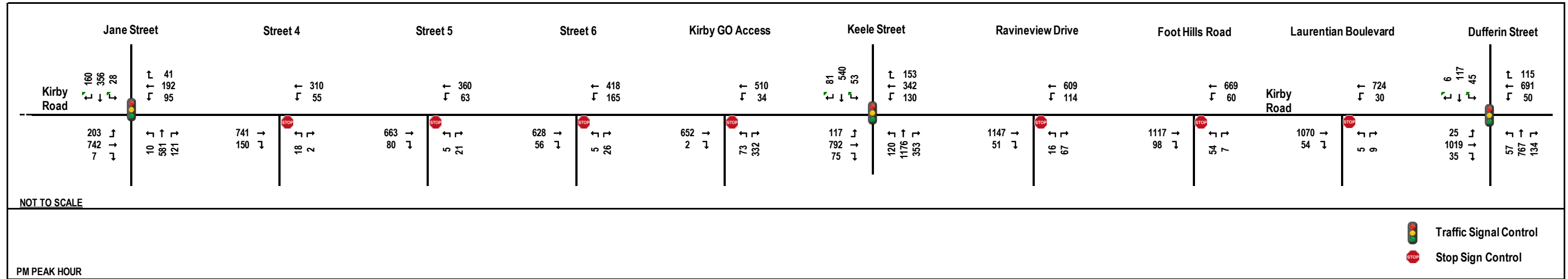


Figure 2: 2031 Future Turning Movement Volumes – PM Peak Hour



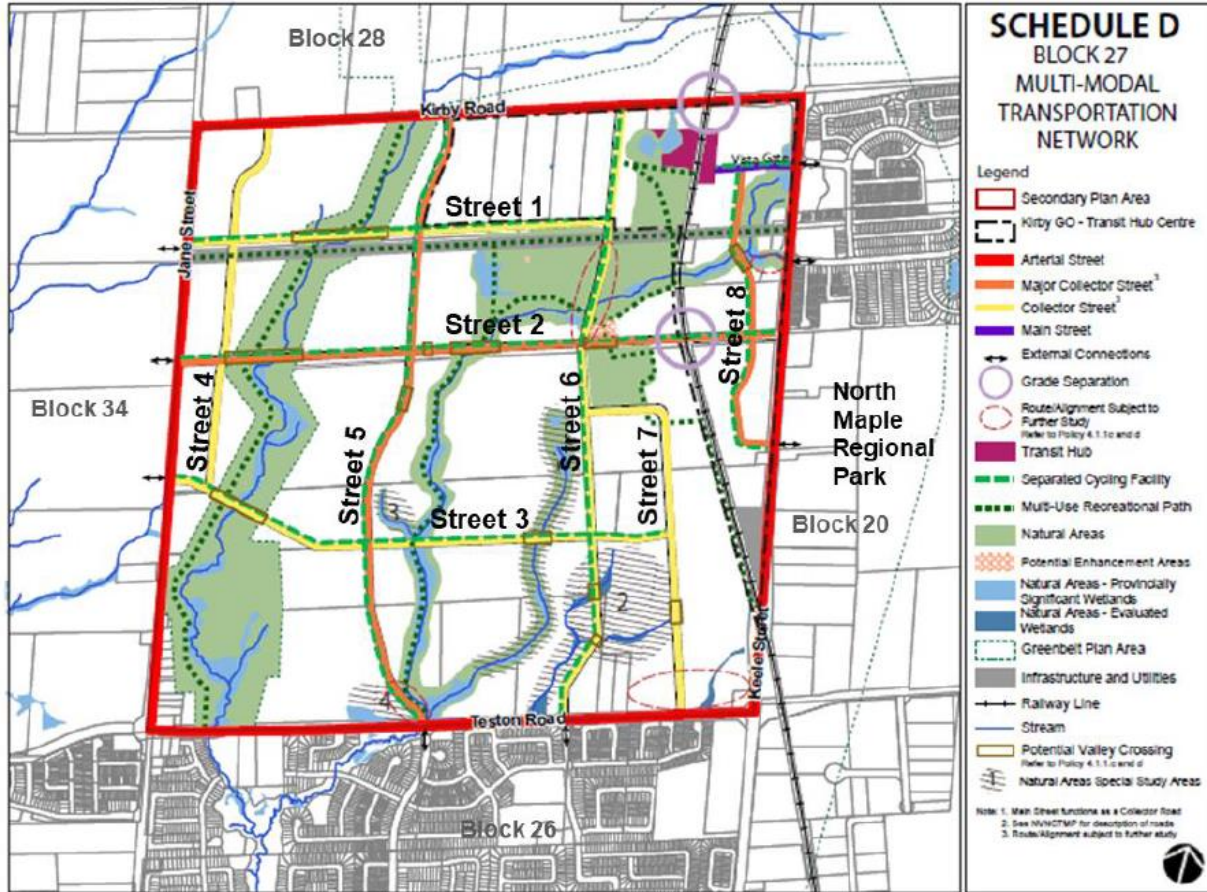


Figure 3: Block 27 Secondary Plan

Traffic Operations and Intersection Capacity

Synchro/SimTraffic 9 was utilized to conduct a Highway Capacity Manual (HCM) level of service (LOS) and queue analysis at each intersection. A detailed assessment including LOS, delay, volume to capacity ratios (V/C), and 95th percentile queue length analysis to inform storage requirements was conducted at each intersection for AM and PM peak hours. The traffic operational analysis results for the intersections along Kirby Road are summarized in **Table 2**. Critical delays (LOS F) and v/c ratios greater than 1.00 are highlighted. It should be noted that signal timing splits were optimized to reflect future traffic volume projections. Detailed Synchro reports are provided in **Appendix A**.

Table 2: Synchro Results – Preferred Alternative

Intersection	Approach/Movement	AM Peak Hour			PM Peak Hour			
		Delay (s)	LOS	v/c	Delay (s)	LOS	v/c	
Kirby Road at Jane Street (Signalized with Jog Elimination)	EB	EBL	40.2	D	0.56	18.4	B	0.40
		EBTR	46.6	D	0.83	63.2	E	0.98
	WB	WBL	29.1	C	0.64	56.2	E	0.78
		WBTR	45.7	D	0.90	25.2	C	0.26
	NB	NBL	44.4	D	0.26	29.8	C	0.05
		NBT	47.0	D	0.57	79.0	E	0.98
		NBR	37.5	D	0.14	30.8	C	0.13
	SB	SBL	37.5	D	0.51	59.5	E	0.48
		SBT	58.5	E	0.89	41.2	D	0.61
		SBR	30.9	C	0.16	31.7	C	0.18
Overall Intersection		45.7	D	0.95	52.0	D	0.97	
Kirby Road at Street 4 (Unsignalized)	EB	EBTR	0	-	0.31	0	-	0.32
	WB	WBLT	1.6	A	0.37	4.3	A	0.13
	NB	NBL	170.3	F	1.27	27.6	D	0.12
		NBR	-	-	-	-	-	-
	Overall Intersection		19.6	C	0.65	1.0	A	0.49
Kirby Road at Street 5 (Unsignalized)	EB	EBTR	0	-	0.26	0	-	0.28
	WB	WBLT	0.3	A	0.33	4.0	A	0.15
	NB	NBL	60.5	F	0.88	13.6	B	0.04
		NBR	-	-	-	-	-	-
	Overall Intersection		8.0	A	0.42	0.9	A	0.46
	EB	EBTR	0	-	0.25	0	-	0.27



Intersection	Approach/Movement		AM Peak Hour			PM Peak Hour		
			Delay (s)	LOS	v/c	Delay (s)	LOS	v/c
Kirby Road at Street 6 (Unsignalized)	WB	WBLT	1.9	A	0.27	6.7	A	0.21
	NB	NBL	52.2	F	0.87	14.8	B	0.04
		NBR	-	-	-	-	-	-
	Overall Intersection		9.3	A	0.56	1.9	A	0.49
Kirby Road at Kirby GO Access (Unsignalized)	EB	EBTR	0	-	0.27	0	-	0.28
	WB	WBLT	10.3	B	0.44	1.9	A	0.22
	NB	NBL	53.6	F	0.88	19.0	C	0.56
		NBR	-	-	-	-	-	-
	Overall Intersection		9.4	A	0.61	5.0	A	0.47
Kirby Road at Keele Street (Signalized)	EB	EBL	47.0	D	0.65	33.0	C	0.53
		EBT	37.9	D	0.45	54.1	D	0.90
		EBR	35.8	D	0.11	34.0	C	0.05
	WB	WBL	38.1	D	0.71	41.3	D	0.70
		WBTR	67.8	E	0.97	42.6	D	0.64
	NB	NBL	26.5	C	0.45	15.7	B	0.33
		NBT	25.4	C	0.37	33.0	C	0.82
		NBR	21.6	C	0.06	22.1	C	0.36
	SB	SBL	15.3	B	0.47	23.1	C	0.42
		SBT	39.0	D	0.92	23.9	C	0.40
		SBR	17.2	B	0.08	19.7	B	0.06
	Overall Intersection		40.6	D	0.95	35.6	D	0.86
	EB	EBTR	0	-	0.26	0	-	0.52



Intersection	Approach/Movement		AM Peak Hour			PM Peak Hour		
			Delay (s)	LOS	v/c	Delay (s)	LOS	v/c
Kirby Road at Ravineview Drive (Unsignalized)	WB	WBTL	2.1	A	0.43	8.1	A	0.27
	NB	SBLR	20.4	C	0.37	62.1	F	0.63
	Overall Intersection		1.8	A	0.68	3.8	A	0.69
Kirby Road at Foot Hills Road (Unsignalized)	EB	EBTR	0	-	0.30	0	-	0.48
	WB	WBLT	0.9	A	0.44	4.6	A	0.29
	NB	NBL	42.9	E	0.42	172.0	F	0.91
		NBR	-	-	-	-	-	-
	Overall Intersection		1.7	A	0.55	5.9	A	0.68
Kirby Road at Laurentian Boulevard (Unsignalized)	EB	EBTR	0	-	0.30	0	-	0.47
	WB	WBLT	0.5	A	0.44	2.1	A	0.32
	NB	NBLR	12.7	B	0.21	26.0	D	0.09
	Overall Intersection		0.8	A	0.52	0.5	A	0.52
Kirby Road at Dufferin Street (Signalized)	EB	EBL	46.1	D	0.28	32.7	C	0.17
		EBT	69.3	E	0.94	50.8	D	0.89
		EBR	40.6	D	0.05	29.1	C	0.02
	WB	WBL	67.3	E	0.88	31.5	C	0.46
		WBTR	43.6	D	0.84	30.8	C	0.56
	NB	NBL	31.0	C	0.29	20.3	C	0.10
		NBT	23.6	C	0.19	57.6	E	0.96
		NBR	21.7	C	0.05	20.7	C	0.14
	SB	SBL	17.1	B	0.18	38.2	D	0.53
		SBTR	44.3	D	0.91	20.8	C	0.15

Intersection	Approach/Movement	AM Peak Hour			PM Peak Hour		
		Delay (s)	LOS	v/c	Delay (s)	LOS	v/c
	Overall Intersection	48.8	D	0.97	43.2	D	0.92

Based on the intersection capacity analyses presented in **Table 2**, the majority of signalized and unsignalized intersections within the study area are operating at overall LOS D or better with some unsignalized intersections experiencing delay in the northbound direction during the AM peak hour. The unsignalized intersections were tested using Ontario Traffic Manual (OTM) traffic signal warrant methodology but are not warranted as the turning volumes on the major road are not significantly high. Despite the findings of the signal warrant analysis however, it is recommended that a traffic signal be considered at unsignalized intersection(s) with Kirby Road to minimize the crossing distance for pedestrians, cyclists and transit users and to provide a protected crossing in between the 2km spacing of the signalized Regional intersections. This recommendation will be carried forward into the Alternative Design development for further consideration. National Association of City Transportation Officials (NACTO)¹ recommends that signalized crosswalks be permitted at a minimum of 200 foot (approximately 60 m) spacing. The presence of active transportation facilities or other potential destinations should therefore also be considered for warranting a traffic signal. **Figure 4** and **Figure 5** illustrate the intersection LOS at each of the intersections.

¹ NACTO, Urban Street Design Guide: <https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/crosswalks-and-crossings/>

Figure 4: Future Intersection LOS Results - AM Peak Hour

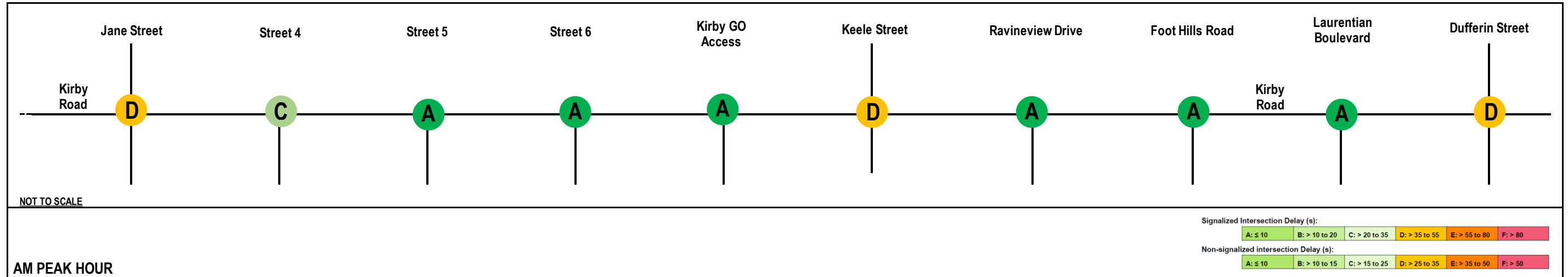
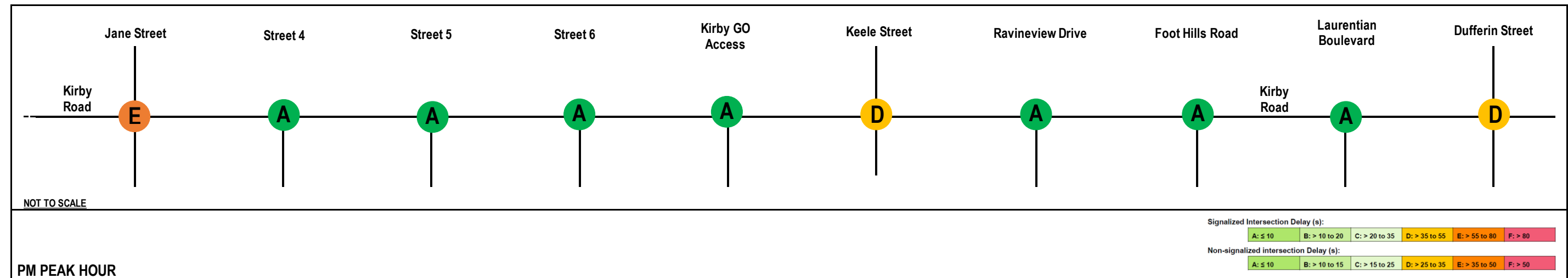


Figure 5: Future Intersection LOS Results - PM Peak Hour



Storage Lengths and Queuing

Table 3 summarizes the 2031 95th percentile queues from Synchro and recommended storage lengths at all intersections between Jane Street and Dufferin Street.

Table 3: 2031 Peak Hour 95th Percentile Queues

Intersection	Approach/Movement	Queue Length		Storage Length	
		AM	PM	Preferred Alternative	
Kirby Road at Jane Street (Signalized)	EB	EBL	15.0	43.6	50
		EBTR	200.0	308.8	-
	WB	WBL	35.5	40.9	-
		WBTR	319.9	58.7	-
	NB	NBL	15.3	6.6	20
		NBT	99.7	247.9	-
		NBR	18.4	21.7	-
	SB	SBL	43.1	23.3	50
		SBT	212.1	121.0	-
		SBR	26.2	28.2	40
Kirby Road at Street 4 (Unsignalized)	EB	EBTR	0	0	-
	WB	WBLT	1.2	2.1	-
	NB	NBL	97.9	3.0	-
		NBR	97.9	3.0	100
Kirby Road at Street 5 (Unsignalized)	EB	EBTR	0	0	-
	WB	WBLT	0.3	2.1	-



Intersection	Approach/Movement		Queue Length		Storage Length
			AM	PM	Preferred Alternative
	NB	NBL	60.5	0.9	-
		NBR	60.5	0.9	65
Kirby Road at Street 6 (Unsignalized)	EB	EBTR	0	0	-
	WB	WBLT	1.1	5.9	-
	NB	NBL	62.9	1.1	-
		NBR	62.9	1.1	65
Kirby Road at Kirby GO Access (Unsignalized)	EB	EBTR	0	0	-
	WB	WBLT	17.0	1.0	-
	NB	NBL	58.7	27.1	-
		NBR	58.7	27.1	60
Kirby Road at Keele Street (Signalized)	EB	EBL	25.2	34.2	40
		EBT	57.1	136.2	-
		EBR	14.9	4.1	20
	WB	WBL	61.5	43.3	65
		WBTR	149.2	71.9	-
	NB	NBL	10.6	24.2	30
		NBT	59.3	169.2	-
		NBR	1.0	46.1	50
	SB	SBL	37.7	12.3	50



Intersection	Approach/Movement	Queue Length		Storage Length	
		AM	PM	Preferred Alternative	
	SBT	215.6	64.7	-	
	SBR	9.6	4.9	20	
Kirby Road at Ravineview Drive (Unsignalized)	EB	EBTR	0	0	-
	WB	WBTL	1.8	7.9	-
	NB	SBLR	12.6	25.9	-
Kirby Road at Foot Hills Road (Unsignalized)	EB	EBTR	0	0	-
	WB	WBLT	0.7	3.6	-
	NB	NBL	14.5	35.2	-
		NBR	14.5	35.2	45
Kirby Road at Laurentian Boulevard (Unsignalized)	EB	EBTR	0	0	-
	WB	WBLT	0.4	1.5	-
	NB	NBLR	5.8	2.1	-
Kirby Road at Dufferin Street (Signalized)	EB	EBL	10.7	13.3	25
		EBT	153.5	191.2	-
		EBR	3.2	0.6	15
	WB	WBL	83.5	17.0	95
		WBTR	178.0	111.1	-
	NB	NBL	15.4	16.8	25

Intersection	Approach/Movement	Queue Length		Storage Length	
		AM	PM	Preferred Alternative	
	NBT	39.2	292.6	-	
		6.9	23.4	35	
	SB	SBL	25.2	28.1	40
		SBTR	291.9	30.7	-

As shown in **Table 3**, addition and/or extension of storage lanes are recommended at the following intersections:

- Kirby Road at Jane Street: eastbound left, northbound left, southbound left, and southbound right
- Kirby Road at Street 4: northbound right
- Kirby Road at Street 5: northbound right
- Kirby Road at Street 6: northbound right
- Kirby Road at GO Station Access: northbound right
- Kirby Road at Keele Street: eastbound left, eastbound right, westbound left, northbound left, northbound right, southbound left and southbound right
- Kirby Road at Foot Hills Road: northbound right
- Kirby Road at Dufferin Street: eastbound left, eastbound right, westbound left, northbound left, northbound right, and southbound left

York Region’s Designing Great Streets (2019) and Access Guideline for Regional Roads (2007), states that the minimum spacing recommended between signalized intersections for a commuter road such as Kirby Road is 215 m. It should be noted that the spacing between Keele Street and GO Station Access on Kirby Road does not meet this requirement, however traffic signals are not warranted at this location.

Roundabout Screening

A roundabout is an alternative traffic control measure that can be considered that are proven to be safer than traditional intersection controls due to lower operating speeds, the elimination of the “Beating the Light” mentality, the reduction of angle collision, and one-way travel.

² https://www.york.ca/wps/wcm/connect/yorkpublic/60a9e25c-506f-4362-a924-f4c77935ea92/DGS_3.3_ConnectorTypology.pdf?MOD=AJPERES&CVID=mYuSqOc (Page 11, Table 2)

The following criteria are used to assess the feasibility of implementing roundabouts at intersections in the study corridor. An intersection must fulfill all three requirements in order for a roundabout design to be carried forward at the location:

- **Number of lanes required based on intersection volumes:** Roundabouts are not recommended if the candidate intersection requires more than 2 lanes in any direction;
- **Proximity to nearest intersection, access or rail crossing:** Roundabouts are not recommended if the nearest intersection is less than 215m away, as queuing can adversely affect operations; and,
- **The need for a signalized pedestrian crossing:** Roundabouts are not recommended if there is high demand for pedestrian or a need for a pedestrian crossing at the candidate intersection.

At all the intersections along the study corridor, roundabouts will not be carried forward as treatment for intersection improvements due to spacing consideration, anticipation of future pedestrian demand as a result of future Kirby GO station, and future grade separation at the Barrie GO Rail crossing of Kirby Road.

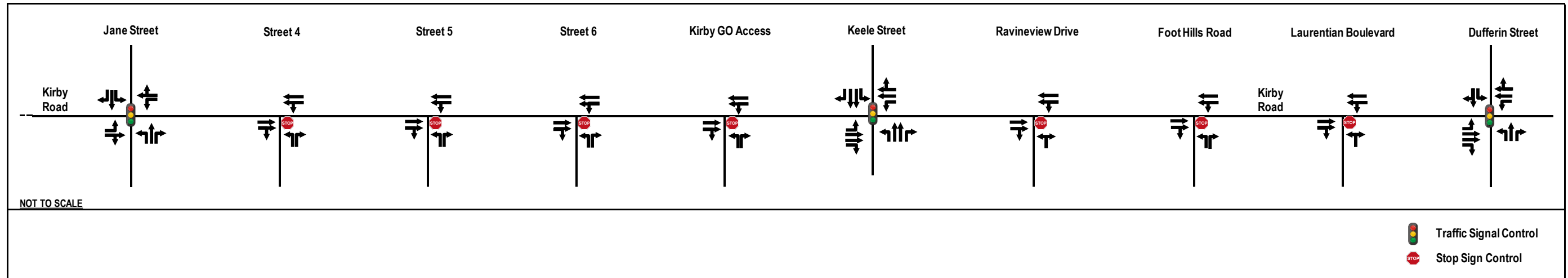
Recommended Lane Configuration and Traffic Control

Figure 6 illustrates the recommended lane configuration for the preferred alternative. As shown in the figure, the all-way stop signs at both Ravineview Drive and Foot Hills Road are recommended to be modified to side-street stops. Furthermore, dedicated right and left turn lanes have been added at the Regional intersections of Kirby Road at Jane Street, Keele Street, and Dufferin Street.

It is also noted that prior to a road-rail grade separation of Kirby Road, this analysis finds that a side-street stop condition for the Kirby GO station access at Kirby Road will operate acceptably. As identified in the NVNCTMP however, an alternate configuration may need to be considered to provide adequate spacing between Keele Street, the Kirby GO station access and the proposed road-rail grade separation.

As noted previously it is recommended to consider a traffic signal at unsignalized intersection(s) with Kirby Road to minimize the crossing distance for pedestrians, cyclists and transit users and to provide a protected crossing in between the 2km spacing of the signalized Regional intersections.

Figure 6: 2031 Future Lane Configuration



Active Transportation Alternatives

As identified in the Transportation and Traffic Report, the preferred alternative considers continuous active transportation facilities across Kirby Road. The alternatives depicted in **Figure 7** show typical cross-sections which consider pedestrian and cycling facilities to be considered and evaluated in Phase 3 – Alternative Designs.

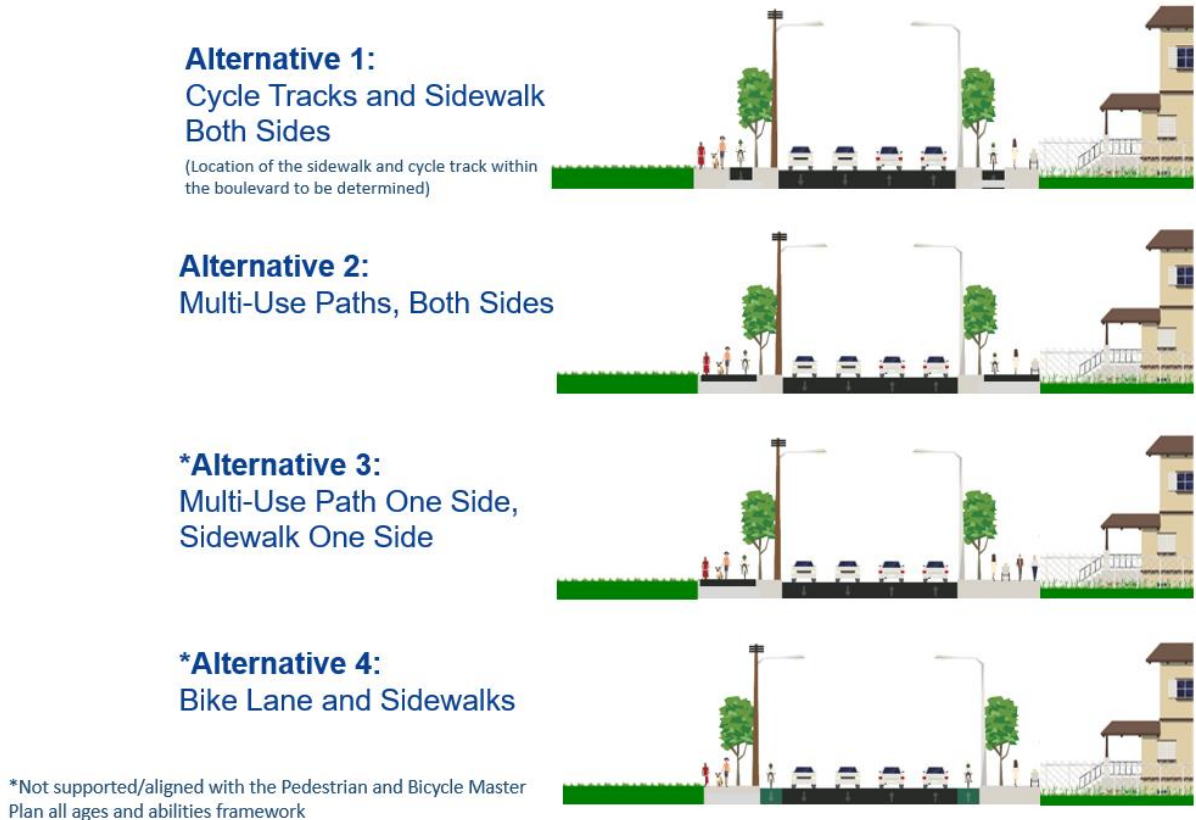


Figure 7: Active Transportation Alternatives

Generally, pedestrian and cyclist level of service (LOS) is improved with greater separation from vehicular travel lanes and provision of dedicated facilities for each mode. Thus pedestrian and cyclist LOS is generally highest in Alternative 1, is slightly lower in Alternatives 2 and 3 and lowest in Alternative 4 particularly for cyclists. Further consideration of these alternatives and how they might change throughout the corridor will be documented in a separated evaluation during Phase of the EA study subject to input and comments public, stakeholders and review agencies. The recommended AT facility type will be carried forward to the preliminary design. As shown on **Figure 7**, Alternative 3 and Alternative 4 are not supported by City of Vaughan’s Pedestrian and Bicycle Master Plan, however, as part of the EA study all alternatives are being considered and eliminated at later stages. It should also be noted that the planned Multi-Use paths considered for Kirby Road Extension (Dufferin Street to Bathurst Street) and Keele Street, south of Kirby Street, will be taken into consideration during the alternative evaluation stage of the study.



Summary of Recommendations

The following recommendations are carried forward for consideration in the alternative designs (Phase 3) and preferred design (Phase 4) for Kirby Road between Jane Street and Dufferin Street to accommodate the widening to four lanes and continuous active transportation improvements. Implementation of these improvements are subject to review of design constraints and geometric feasibility:

- Exclusive left-turn and right-turn storage bays at Regional arterial intersections to accommodate adequate storage where geometrically feasible;
- All-way stop signs at the Kirby Road intersections with both Ravineview Drive and Foot Hills Road are recommended to be modified to side-street stops.
- Review and adjust signal timings and optimization throughout the corridor regularly and when Kirby Road improvements are implemented.
- Active transportation facility alternatives have been identified but will require further consideration through public and stakeholder consultation as well as preliminary design.
- Prior to a road-rail grade separation of Kirby Road, this analysis finds that a side-street stop condition for the Kirby GO station access at Kirby Road will operate acceptably. As identified in the NVNCTMP however, an alternate configuration may need to be considered to provide adequate spacing between Keele Street, the Kirby GO station access and the proposed road-rail grade separation.
- Consideration of a traffic signal at unsignalized intersection(s) with Kirby Road to minimize the crossing distance for pedestrians, cyclists and transit users and to provide a protected crossing in between the 2km spacing of the signalized Regional intersections.

In preparing this memorandum, HDR relied, in whole or in part, on data and information provided by the Client and third parties that was current at the time of such usage, which information has not been independently verified by HDR and which HDR has assumed to be accurate, complete, reliable, and current. Therefore, while HDR has utilized its best efforts in preparing this memorandum, HDR does not warrant or guarantee the conclusions set forth in this memorandum which are dependent or based upon data, information or statements supplied by third parties or the client, or that the data and information have not changed since being provided in the memorandum. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that HDR shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party resulting from decisions made or actions taken based on this document.

Appendix D. Socio-Economic Report



Kirby Road Widening Environmental Assessment Study

Jane Street to Dufferin Street

City of Vaughan

Socio-Economic Environment

Existing Conditions Report

September 11, 2020

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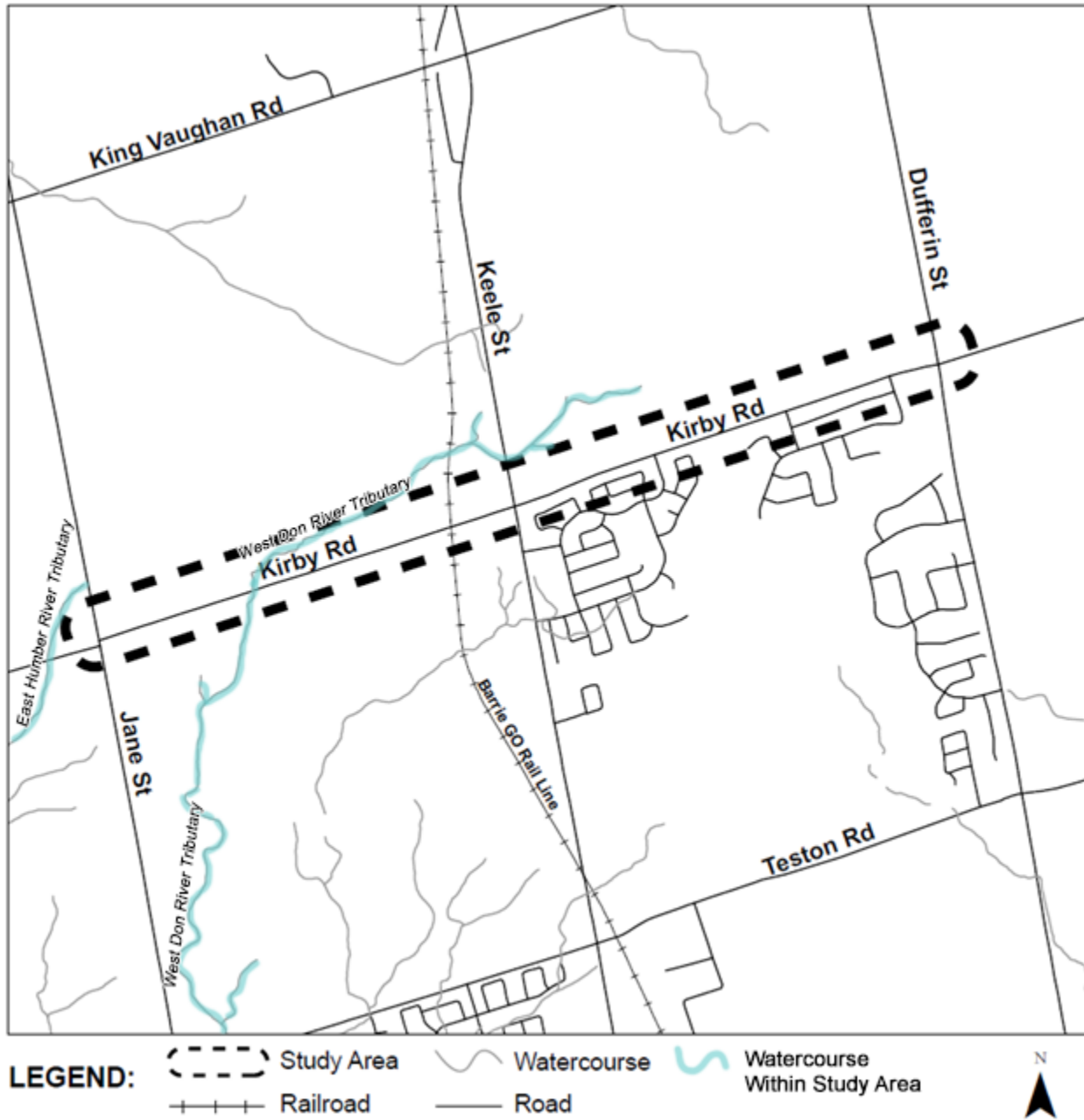
1 Introduction and Background

The City of Vaughan's Transportation Master Plan (2012) and the York Region Transportation Master Plan (2016) identified the need for Kirby Road improvements. Following completion of those studies the North Vaughan and New Communities Transportation Master Plan (NVNCTMP, 2019) undertook additional transportation planning analysis to support the development of two new community areas in the northern part of Vaughan and the proposed Kirby GO Station. The NVNCTMP identified the need for widening Kirby Road from Jane Street to Dufferin Street, jog elimination of the Kirby Road intersection at Jane Street, and grade separation of Kirby Road at the Barrie GO rail line.

To build on the Kirby Road recommendations from the NVNCTMP, the City of Vaughan retained HDR to conduct a Municipal Class Environmental Assessment study for Kirby Road between Jane Street and Dufferin Street. This EA study is referred to as the Kirby Road Widening EA (Jane to Dufferin) and will reconfirm the recommendations from the NVNCTMP and complete Phases 3 and 4 of the Municipal Class EA process for Schedule 'C' projects as outlined in the MEA guidelines (October 2000, as amended in 2007, 2011 and 2015). Specifically, the Kirby Road Widening EA Study will reconfirm the need to widen Kirby Road from two to four lanes between Jane Street and Dufferin Street, grade separate the Barrie Go Rail line at Kirby Road and eliminate the jog at the intersection of Kirby Road and Jane Street. The study area is shown in **Figure 1-1**.

The purpose of the Socio-Economic Environment Report is to review previous studies, existing legislative documents, Provincial, Regional, and Municipal standards, By-laws, Official Plans, Secondary Plans, and other related documents including recommendations, conduct an inventory of local businesses within the study area, conduct a land use assessment within the study area, and review future land development.

Figure 1-1: Study Area



2 Planning and Policy Context

A summary of the Provincial, Regional, and Municipal planning and policy context is provided in this section as they related to the Kirby Road Widening EA.

2.1 Provincial Planning Context

Provincial planning policies, summarized in **Table 2-1**, were reviewed to identify their relevance to the Kirby Road Widening EA.

Table 2-1: Summary of Provincial Planning Policies

Provincial Planning Document	Directions	Impact to Kirby Road Widening EA
Provincial Policy Statement, Ontario, 2020	<p><u>Description:</u> Provides direction on land use planning and development, and the transportation system.</p> <p><u>Directions:</u> The most relevant land use and transportation policies) include:</p> <ul style="list-style-type: none"> • 1.6.7.1 Safe, energy efficient, transportation systems that move people and goods and address projected needs • 1.6.7.2 Use of travel demand management (TDM) strategies to maximize efficiency • 1.6.7.3 A multimodal transportation system that provides connections within and among transportation systems and modes including across jurisdictional boundaries • 1.6.7.4 Land use patterns that minimize length and number of vehicle trips to support transit and active transportation • 1.6.8.2 Protect for major goods movement facilities and corridors • 1.6.8.3 New development should be compatible with the long-term purposes of the corridor 	<p>The Kirby Road Widening EA will consider projected needs for both people and goods, encourage travel demand management, and consider all travel modes.</p>

Provincial Planning Document	Directions	Impact to Kirby Road Widening EA
<p>Growth Plan for the Greater Golden Horseshoe (GGH), Ministry of Municipal Affairs, 2006, 2013, 2017, 2019 Update</p>	<p><u>Description:</u> The Growth Plan for the GGH was released on June 16, 2006, and is a long-term plan that aims to:</p> <ul style="list-style-type: none"> • Revitalize downtowns • Create complete communities • Provide housing options to meet the needs of people at any age • Curb urban sprawl and protect farmland and green spaces • Reduce traffic gridlock by improving access to a greater range of transportation options <p>The June 2013 amendment extended the growth planning horizon to 2041 while the 2016 update identified new intensification targets.</p> <p><u>Directions:</u> The Growth Plan defines specific policies for where and how to grow, including the identification of defined urbanized areas versus a protected Greenbelt Area. The plan also identifies Urban Growth Centres across the Greater Toronto Area (GTA), Major Transit Station Areas and Intensification Corridors.</p> <p>There has been a 2019 update to the Growth Plan which replaces the 2017 Growth Plan for the Greater Golden Horseshoe.</p>	<p>The study area is at the northern boundary of the urbanized area. The future Kirby GO station, located near the intersection of Kirby Road and Keele Street, is dedicated as a Transit Hub under Block 27 Secondary Plan and transit connections to the greater regional rapid transit network will be considered in the study.</p>

Provincial Planning Document	Directions	Impact to Kirby Road Widening EA
<p>2041 Regional Transportation Plan updated in 2018 from The Big Move, Metrolinx, 2008</p>	<p><u>Description:</u> The Big Move is the Greater Toronto and Hamilton Area’s (GTHA’s) multi-modal long-range regional transportation plan. Since 2008 this plan has been providing strategic direction for planning, designing and building a regional transportation network that enhances quality of life, environment, and prosperity.</p> <p><u>Directions:</u> The Big Move sets the context for the GO Expansion project [formerly known as Regional Express Rail (RER)], a frequent all-day, two-way express rail service on existing GO Rail lines with 15 minute frequencies using future electrification infrastructure.</p> <p>In order to support the expanded services, improvement to infrastructure is needed:</p> <ul style="list-style-type: none"> • Track expansion, including upgrade of existing structures within corridor such as culverts, bridges • Grade separations • Maintenance and storage facilities • Electrification infrastructure • Station Expansion (parking, building, pedestrian access, etc) • New station(s) along corridor that will optimize ridership and minimize delay <p>As of 2018, the 2008 Big Move has been updated to the 2041 Regional Transportation Plan (RTP)</p>	<p>The Kirby GO Station is included as a new station along the Barrie GO Corridor as part of the GO Expansion project with direct access to Kirby Road within the Kirby Road Widening EA study limits (in the vicinity of Kirby Road and Keele Street intersection). The City will work with Metrolinx to implement transit supportive planning around the station, develop sustainable station access solutions, and support the works required for GO Expansion, including planning for grade separation of rail crossings.</p>

Provincial Planning Document	Directions	Impact to Kirby Road Widening EA
<p>Transit-Supportive Guidelines, Ministry of Transportation, 2012</p>	<p><u>Description:</u> Identifies best practices in Ontario, North America and abroad for transit-friendly land-use planning, urban design, and operations.</p> <p><u>Directions:</u> Key directions relevant to the Kirby Road Widening EA include layout and spacing of arterial and collector streets:</p> <ul style="list-style-type: none"> • Street networks are fine-grained and interconnected to provide efficient transit services and connections to transit stops • Eliminate unnecessary jogs or breaks in the network • Spacing of arterial and collector roads should support a maximum 400 m walk from the interior of a block to a transit stop, and facilitate higher levels of walking and cycling • Access routes to transit stops, such as pedestrian pathways or local roads, should be spaced no greater than 200 m apart. <p>Key directions for planning around major transit station areas include:</p> <ul style="list-style-type: none"> • A rational progression of facilities from passenger pick up and drop off / bus transfer / parking areas to ticketing and wayfinding, safe and comfortable waiting areas, and finally to transit loading areas • Organize surface parking areas into smaller modules to facilitate defined walking and cycling paths to the stations and also establish future development parcels over time • Prioritize pedestrian access • Limit free surface parking where frequent feeder transit service is available 	<p>The Kirby Road widening shall be planned in consideration of the Transit Supportive Guidelines.</p>
<p>#CycleON: Ontario's Cycling Strategy, Ministry of Transportation, 2013</p>	<p><u>Description:</u> Identifies a vision for cycling in the province over the next 20 years where cycling is valued as a core mode of transportation.</p> <p><u>Directions:</u> Key directions relevant to the Kirby Road Widening EA include:</p> <ul style="list-style-type: none"> • Partner with municipalities to implement Complete Streets policies and develop active transportation plans • Partner with municipalities / transit agencies to integrate cycling and transit • Develop a funding partnership to build provincial and municipal cycling routes, including pilot program funding to gather data and test new ideas • Create communities that have a built form that supports and promotes cycling for all trips under 5 km 	<p>The Kirby Road Widening EA strives to plan for cycling infrastructure and complete communities in accordance with this plan.</p>

Provincial Planning Document	Directions	Impact to Kirby Road Widening EA
<p>Ontario's Climate Change Action Plan</p>	<p><u>Description:</u> Identifies a five-year plan to fight climate change, reduce greenhouse gas pollution, and transition to a low-carbon economy.</p> <p><u>Directions:</u> Specific action areas are identified to meet specific greenhouse gas emission reduction targets:</p> <ul style="list-style-type: none"> • Transportation: Becoming a North American leader in low-carbon and zero-emission transportation <ul style="list-style-type: none"> ○ Increase the use of electric vehicles ○ Support cycling and walking ○ Support the accelerated construction of GO Expansion project (formerly known as Regional Express Rail) • Land use planning: Support low-carbon communities <ul style="list-style-type: none"> ○ Strengthen climate change policies in the municipal land use planning process ○ Eliminate minimum parking requirements 	<p>The implementation of Active Transportation and Travel Demand Management (TDM) to promote sustainable mode of transportation to increase the number of active transportation trips and reduce the number of single-occupancy vehicles will be considered during the alternative analysis.</p>
<p>Greenbelt Plan (2005 updated in 2017)</p>	<p><u>Description:</u> In concert with the Growth Plan, Niagara Escarpment Plan (NEP) and Oak Ridges Moraine Conservation Plan (ORCMP), and further to the PPS, the Greenbelt Plan establishes land use planning framework for the GGH to support a clean and healthy environment, a thriving economy and social equity.</p> <p><u>Directions:</u> Identifies areas where urbanization should not occur in order to protect the ecological, agricultural, and hydrological land use. Lands identified in the NEP and ORCMP are also included in the Greenbelt Plan.</p>	<p>Kirby Road Widening EA strives to support the achievement of complete communities and community hubs that are conveniently accessible by active transportation and transit. Infrastructure will integrate with land use planning while minimizing environmental impacts in the Protected Countryside of the Greenbelt Area.</p> <p>There is a watercourse crossing east of Jane Street. If this watercourse falls within private land ownership then the Urban River Valley designation and therefore policies set out in Section 6 of the Greenbelt Plan apply.</p> <p>The goals of the Urban River Valley System include:</p> <ul style="list-style-type: none"> • Protection of natural and open space lands along river valleys in urban areas which will assist in ecologically connecting the rest of the Greenbelt Area to the Great Lakes and other inland lakes

Provincial Planning Document	Directions	Impact to Kirby Road Widening EA
		<ul style="list-style-type: none"> • Protection of natural heritage and hydrologic features and functions along urban river valleys, including coastal wetlands • Conservation of cultural heritage resources • Provision of a gateway to the rural landscape of the Greenbelt • Provision of a range of natural settings on publicly owned lands for recreational, cultural and tourism uses, including parkland, open space land and trails
<p>Oak Ridges Moraine Conservation Plan (2002), Updated in May 2017</p>	<p><u>Description:</u> Identifies policy and plans to provide land use and resource management direction for the 190,000 hectares of land and water within the Moraine. The subject area is also accounted for in the Greenbelt Plan.</p> <p><u>Directions:</u> Protect the ecological and hydrological integrity of the Oak Ridges Moraine Area and provide land and resource uses and development that are compatible with other objectives of the Plan. Transportation infrastructure development is permitted in key natural heritage features and hydrological sensitive features if it will not adversely affect these features.</p>	<p>The Oak Ridges Moraine Area is part of the lands designated under the Greenbelt Plan and is a significant portion of the study area between east of Keele Street and Dufferin Street. Similar to the Greenbelt Plan, the Kirby Road Widening EA will strive to minimize disturbance and respect the land and its key natural heritage features.</p>
<p>A Made-in-Ontario Environment Plan (2018)</p>	<p><u>Description:</u> Outlines effective and affordable actions to protect air, land and water, and reduce litter and waste, while lowering greenhouse gas emissions and help communities prepare for climate change.</p> <p><u>Directions:</u> Supports conservation and environmental planning such as:</p> <ul style="list-style-type: none"> • Working in collaboration with municipalities and stakeholders to ensure that conservation authorities focus and deliver on their core mandate of protecting people and property from flooding and other natural hazards, and conserving natural resources; • Protecting vulnerable or sensitive natural areas such as wetlands and other important habitats through good policy, strong science, stewardship and partnerships; and • Improving coordination of land use planning and environmental approval processes by updating ministry guidelines to help municipalities avoid the impacts of conflicting land uses. 	<p>There are environmental resources within the Kirby Road Widening EA study area including:</p> <ul style="list-style-type: none"> • Oak Ridges Moraine • Greenbelt Protected Countryside • Crossing of the West Don River Tributary <p>The Kirby Road Widening EA will aim to protect and minimize adverse impacts to sensitive natural resources/areas and work collaboratively with the conservation authority and review agencies.</p>

2.2 Regional Planning Context

The York Region Official Plan and York Region Transportation Master Plan build upon provincial planning guidance and provide more specific direction on the need for transportation improvements to support growth in the Region, and these documents are summarized in the following.

2.2.1 Regional Official Plan (April 2019)

The Regional Official Plan (“The Plan”) represents the Region’s vision and plan for the way communities are designed, serviced, and supported. The objectives of the Plan include: Sustainable Natural Environment, Healthy Communities, and Economic vitality.

The Plan emphasizes interconnected and accessible mobility systems, with a priority on pedestrian movement, and on transit use and access. Some of objectives related to the widening of Kirby Road include: create an active transportation system and programs that encourage walking, cycling and the use of public transit, provide transit service that is convenient and accessible to all residents and workers of York Region, ensure streets support all modes of transportation including walking, cycling, transit, automobile use, and the efficient movement of goods, plan and protect future urban and rural streets to accommodate transportation demands, and promote a linked and efficient network for goods movement that supports economic vitality and minimizes conflicts with sensitive land uses.

The Plan also developed policies to identify, protect, and enhance the Regional Greenlands System (“The Systems”) to ensure a healthy system rich in native biodiversity. York Region’s Greenlands are connected to a larger landscape system that stretches across the GTHA, Ontario, and North America. Some of these policies include: achieve ecological gains for the Systems by recommending that enhancements to the Systems as a responsibility to all stakeholders and may include Regional and local greening initiatives, public and private sector partnerships, infrastructure projects and urban development; ensure that infrastructure design and construction be sensitive to the features and functions of the Systems, and include context sensitive design and innovative technologies to minimize impacts and enhance the system. Infrastructure within the system should avoid key natural heritage features and key hydrologic features where possible and shall be subject to the policies of applicable Provincial Plans; and ensure that the planning, design and construction of infrastructure projects within the Systems shall enhance the Systems, including providing passive recreational amenities and environmental restoration where appropriate.

2.2.2. Regional Transportation Master Plan (November 2016)

York Region’s Transportation Master Plan (YRTMP) Update, 2016 addresses the Region’s mobility needs to 2041. It provides a 25 year outlook to:

Create an advanced interconnected system of mobility in the Greater Toronto and Hamilton Area (GTHA) in order to give York Region residents and businesses a competitive advantage, making York Region the best place to live, work and play in the GTHA.

The YRTMP has five objectives:

1. Create a world class transit system
2. Develop a road network fit for the future
3. Integrate active transportation in Urban Areas
4. Maximize the potential of employment areas
5. Make the last mile work

Kirby Road, while currently a City Road, forms part of the Regional concession road grid network. The YRTMP identifies Kirby Road from Highway 27 to Bathurst Street as a candidate to be added to the Regional Road network. In addition, the YRTMP makes specific recommendations for Kirby Road (which extends from Albion Vaughan Road to Dufferin Street in the City of Vaughan) to provide regional east-west connectivity and transportation capacity through or adjacent to the study area including:

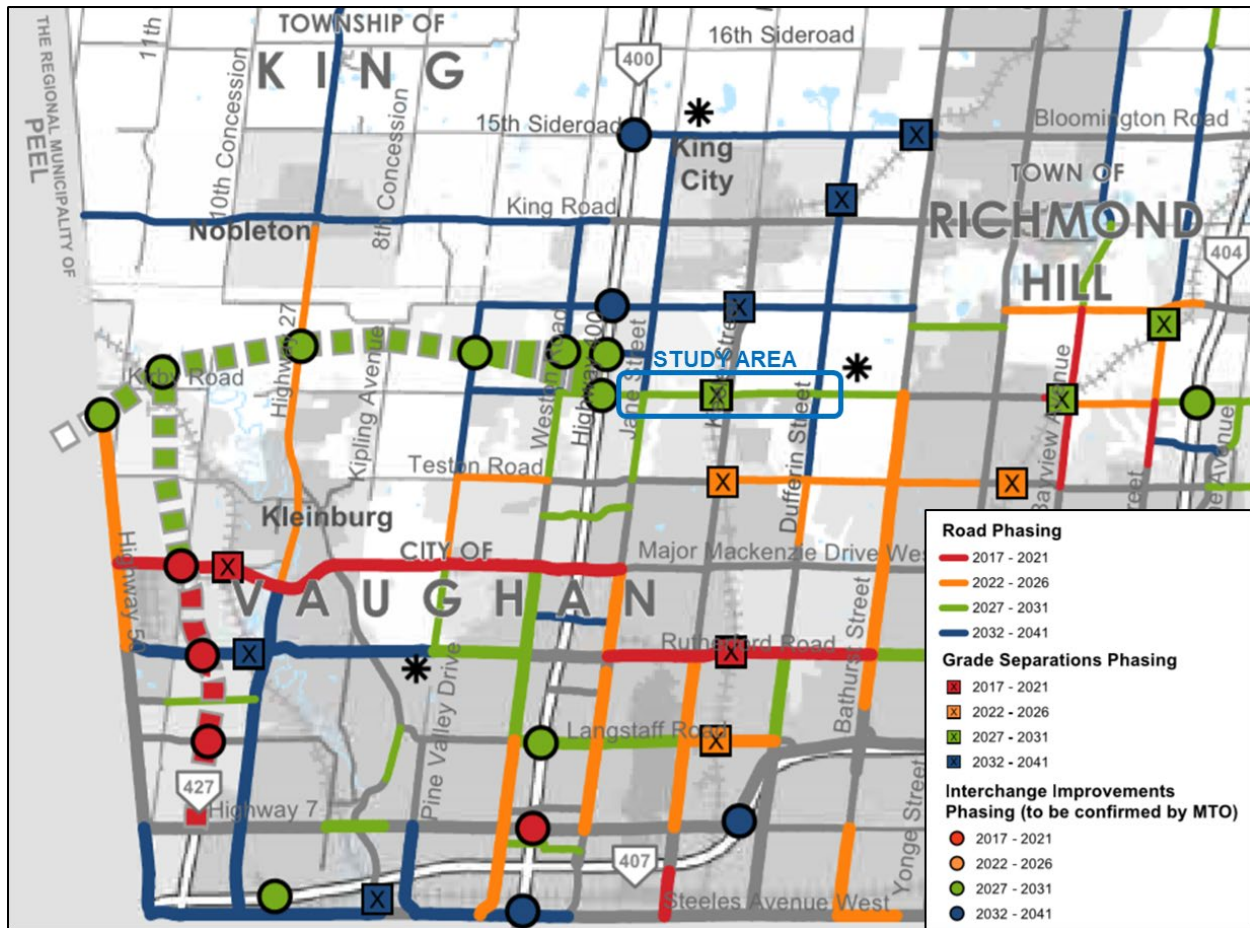
- Widening of Kirby Road plus the completion of the Kirby Road missing link
- Designation as a Frequent Transit Network corridor
- Cycling Facilities as a local cycling route of regional significance
- Designation as a strategic goods movement corridor
- Construction of an interchange at Highway 400 and Kirby Road
- Grade Separation at the Barrie GO rail line at Kirby Road

Additional mode-specific details on YRTMP recommendations are provided in the following sections.

ROAD NETWORK RECOMMENDATIONS

The 2016 York Region TMP update has identified the Regional significance of Kirby Road (currently under jurisdiction of the City of Vaughan) as a frequent transit, vehicular traffic, pedestrian/ cycling, and strategic goods movement corridor. The road phasing and grade separation phasing are scheduled for 2027-2031 as shown in **Figure 2-1**.

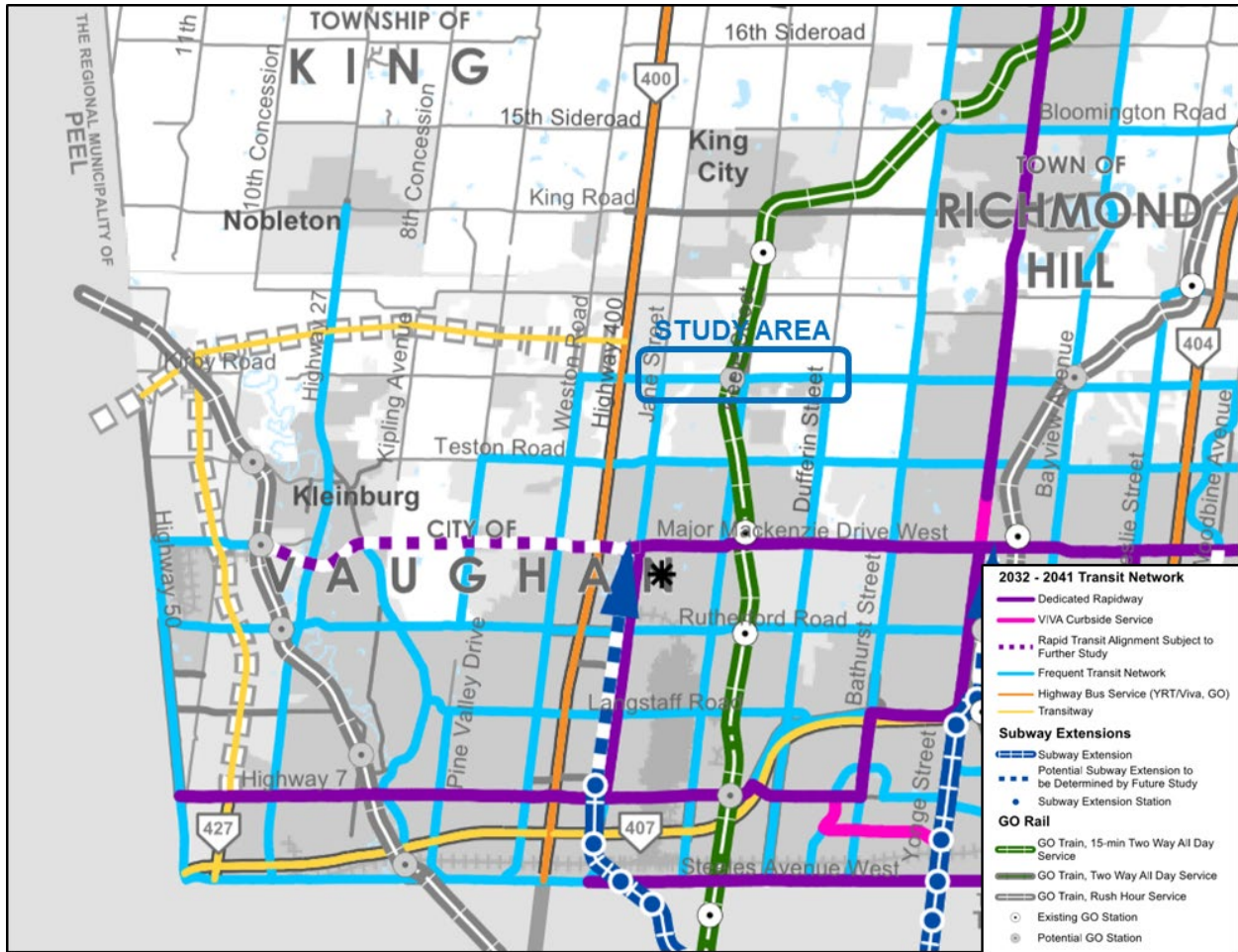
Figure 2-1: 2031 YRTMP Road Network (Source: York Region Transportation Master Plan)



TRANSIT NETWORK RECOMMENDATIONS

As identified in **Figure 2-2**, York Region is planning for frequent transit service on Kirby Road east of Weston Road within the Kirby Road Widening EA study area. This frequent transit service will connect the development of the New Communities and Highway 400 North Employment Lands to the proposed Kirby GO Station, Vaughan Metropolitan Centre, the rest of Vaughan and the City of Toronto. Frequent Transit Network service is defined as bus service every 15 minutes or less between 6AM and 10PM, seven days a week.

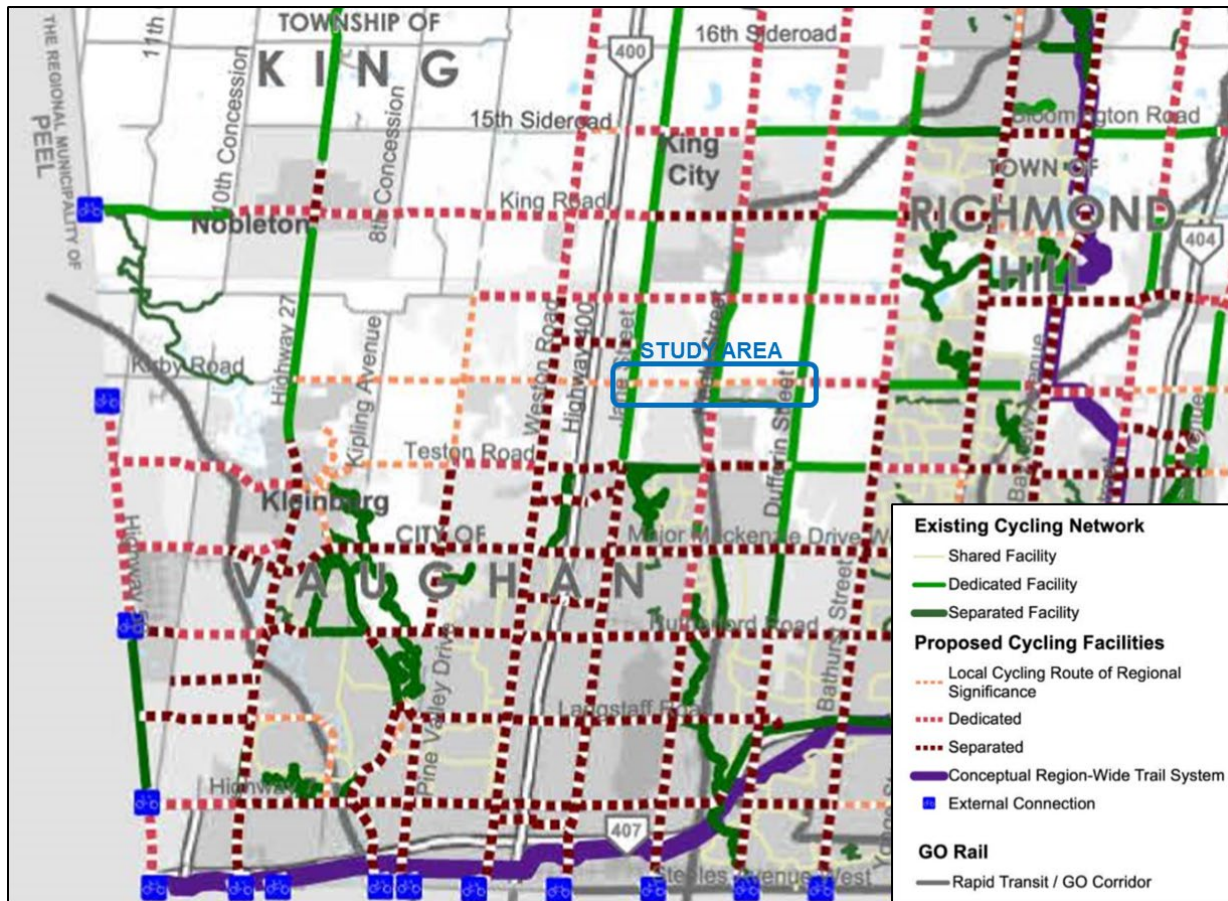
Figure 2-2: 2041 YRTMP Transit Network



CYCLING NETWORK RECOMMENDATIONS

The York Region TMP 2016 recommends cycling infrastructure for a 10-year horizon and for a 25-year horizon. Within the study area and for the 10-year horizon the TMP recommends a Local Cycling Route of Regional Significance (shown in **Figure 2-3**).

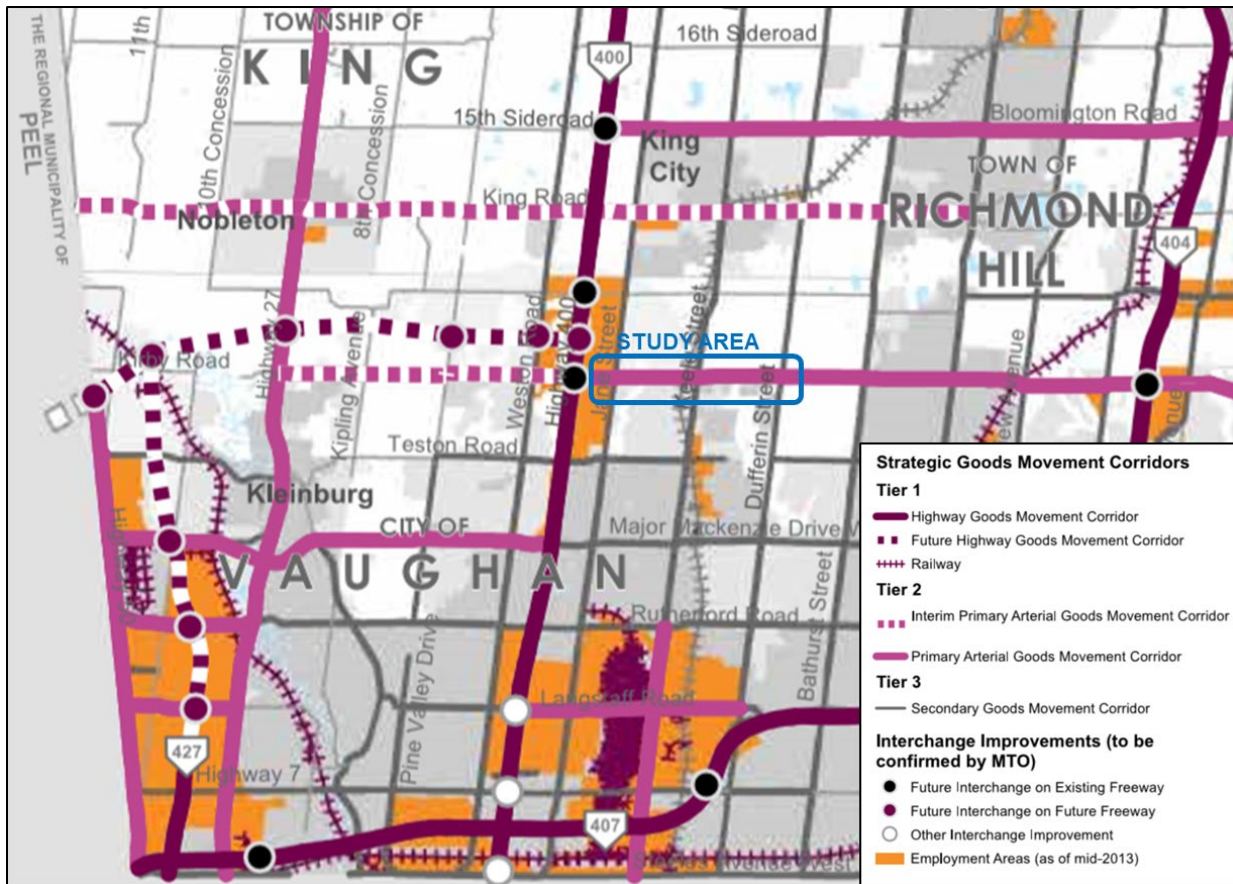
Figure 2-3: Proposed 2041 YRTMP Cycling Network



GOODS MOVEMENT NETWORK RECOMMENDATIONS

York Region’s Strategic Goods Movement Network provides a framework for future goods movement within the Study Area. It consists of a hierarchy of corridors, identifying all freeways as Tier 1 (Highway Good Movement Corridors), strategic arterial roads as Tier 2 (Primary Arterial Goods Movement Corridor), such as Kirby Road through the Study Area, and all other roadways as Tier 3 (Secondary Goods Movement Corridors). The Region’s Proposed Strategic Goods Movement Network is illustrated for the Study Area in **Figure 2-4**.

Figure 2-4: YRTMP Strategic Goods Movement Network



2.2.3 Kirby Road Widening Project Sheet

Further to the York Region TMP’s mode specific recommendations for Kirby Road, a project sheet in Appendix E to the York Region TMP outlines the problem and opportunity, alternatives considered, and recommendations. It identified the need and opportunity for transportation network improvements to accommodate expansion of the Designated Urban Area. Following the assessment of alternatives the recommendations are to widen the corridor to 4 lanes and construct to an urban arterial standard and realign jogged intersection at Jane Street. These improvements will serve growth in designated built up areas in North Vaughan and elimination of the jogged intersection at Jane Street will improve traffic flow. The corridor is also designated as an Interim Primary Arterial for Goods Movement. Widening provides for continuous 4-lane east-west corridor tying into 19th Avenue to the east with the planned connection of the missing link east of Dufferin Street. There is also an opportunity to improve walking and cycling facilities.

2.2.4 Kirby GO Station – Market Driven Approach

On November 29, 2018, the City of Vaughan and York Region received a letter from Metrolinx stating that the Minister of Transportation had asked to assess the status of transit projects and the feasibility of utilizing a Market Drive Approach (Public Private Partnership) to deliver new GO stations. This resulted in a halt on new station work on all new GO stations in the GTHA, including the proposed Kirby GO station in the City of Vaughan. On January 31, 2019, Regional Council made the decision in delivering Kirby GO station by a Market Driven Approach and that

opportunities to pursue this approach will be investigated in conjunction with the Transit Hub Special Study and related Environmental Assessments.

2.3 Municipal Planning Context

2.3.1 City of Vaughan Official Plan

The Vaughan Official Plan (VOP) 2010 is the result of an extensive consultation and review process. The Plan was adopted by City Council on September 7, 2010, and was subsequently modified by City Council on September 27, 2011, March 20, 2012 and April 17, 2012. The Plan was endorsed by Regional Council on June 28, 2012. VOP 2010 is part of a Growth Management Strategy “that will shape the future of the City and guide its continued transformation into a vibrant, beautiful and sustainable City.”

The following policies, with VOP 2010 references in brackets, are of relevance to the study area:

- To establish a comprehensive transportation network that allows a full range of mobility options, including walking, cycling and transit (4.1.1.1).
- That the street network will be the basis for enhanced transportation opportunities, including transit, walking, cycling, and place making initiatives. Existing rights-of way should be designed to optimize the efficient movement for a variety of modes, potentially resulting in reduced capacity for cars where overall capacity increases can be achieved (4.1.1.5).
- To support the development of a comprehensive network of on-street and off-street pedestrian and bicycle routes, through the implementation of the City’s Pedestrian and Cycling Master Plan and York Region’s Pedestrian and Cycling Master Plan; and to facilitate walking and cycling and to promote convenience and connectivity (4.1.1.6).
- To plan for a street network that prioritizes safe and efficient pedestrian travel while effectively accommodating cyclists, transit and other vehicles, and to create more pedestrian and transit-friendly street cross-sections (4.2.1.2).
- To provide a minimum of 2 north / south and 2 east / west collector streets in new development where feasible, including grade-separated crossings of 400-series highways and rail corridors. The purpose of these streets will be to provide for local travel between and within concession blocks without the necessity of traveling on arterial streets and to provide effective routing for transit vehicles. (4.2.1.23)

The majority of the Volume 1 and 2 policies were approved by LPAT Orders (PL111184) on the following dates: August 8, 2013, December 24, 2013, February 21, 2014, October 17, 2014, and March 25, 2015.

Schedule 9 and Schedule 10 in the VOP 2010 identify the City’s Future Transportation Network and Major Transportation Network, respectively. It is noted that these schedules were developed prior to the completion of the 2016 York Region TMP, and as such, incorporate Regional plans based upon the previous version of the York Region TMP. Kirby Road is under the jurisdiction of the City and is identified as a 36 m wide minor arterial road, as shown on

Schedule 9 “Future Transportation Network” of VOP 2010. Some of the key transportation improvements related to the study area or adjacent to it include:

- Completion of the Kirby Road missing link between Dufferin Street and Bathurst Street.
- Jog elimination at Jane Street and Kirby Road,
- Grade separation along the GO Rail Barrie Corridor at Kirby Road subject to coordinated studies by Metrolinx, York Region and the City
- Kirby GO Station

2.3.2 Green Directions Vaughan 2009

Green Directions Vaughan is the City’s community sustainability and environmental master plan. It identifies actions to ensure the health, well-being and vitality of the community. In relation to the Kirby Road Widening EA, this plan provides direction to ensure that getting around Vaughan is easy and has a low environmental impact as identified in the following two key objectives:

- Objective 3.2 To develop and sustain a network of roads that supports efficient and accessible public and private transit
- Objective 3.3 Reduce Single Occupant Vehicle trips by supporting active transportation, car pooling and public transit

The Kirby Road Widening EA will look to promote sustainable and active transportation in accordance with Green Directions Vaughan.

2.3.3 City of Vaughan Transportation Master Plan 2013: A New Path

The Vaughan Transportation Master Plan (VTMP) identifies City-wide transportation needs to the year 2031, including local improvements, strong Regional investments in transit service, and arterial road improvements, sidewalks, on-street and off-street bicycle facilities, and a mix of land uses. Within the study area the timing of recommended improvements identified in the VTMP varies from the YRTMP recommendations given more up-to-date information on timing of development. As an example, the timing for the Kirby Road widening (from 2 to 4 lanes) and the missing link between Keele Street and Bathurst Street is 2021 as per the VTMP versus 2031 as per the YRTMP. It should be noted that the VTMP is currently being updated.

2.3.4 City of Vaughan Pedestrian and Bicycle Master Plan

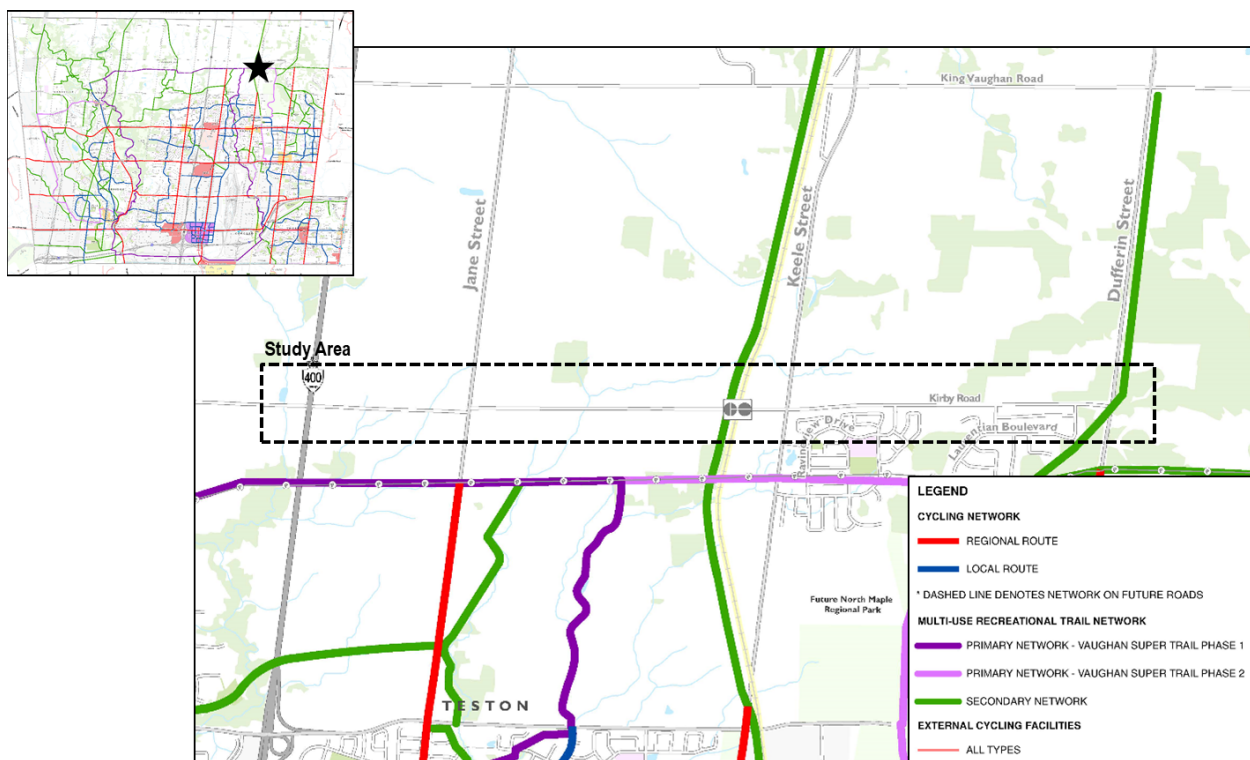
The City of Vaughan adopted the Pedestrian and Bicycle Master Plan in January 2007 and is currently being updated. The Plan has a 20-year horizon. The central intent is to guide improvements to existing and proposed pedestrian and cycling infrastructure in order to create a friendlier environment for residents. The two central goals of the plan are:

- To create new environments and enhance existing ones for both pedestrians and cyclists in the City of Vaughan. These environments should be supported by developing a visible and connected pedestrian and cycling network in Vaughan that integrates, enhances and expands the existing on- and off-road pedestrian and cycling facilities.
- To facilitate an increase in walking and cycling for leisure and utilitarian purposes.

Cycling facilities in the study area were initially identified in the City’s Pedestrian and Bicycle Master Plan and more recently updated for the City-wide TMP.

The Pedestrian and Bicycle Master Plan update endorses the Vaughan Super Trail, a signature active transportation facility that links communities to one another, and increases accessibility for residents and visitors alike to important cultural, natural, heritage, and public space destinations. The Vaughan Super Trail is proposed to run east-west direction located south of the Kirby Road Widening EA corridor. No cycling facilities are, however, identified on Kirby Road Widening EA corridor as shown in **Figure 2-5**. However, the City of Vaughan policy is to explore active transportation facilities on all arterial roads and this study will explore the need for cycling facilities on Kirby Road.

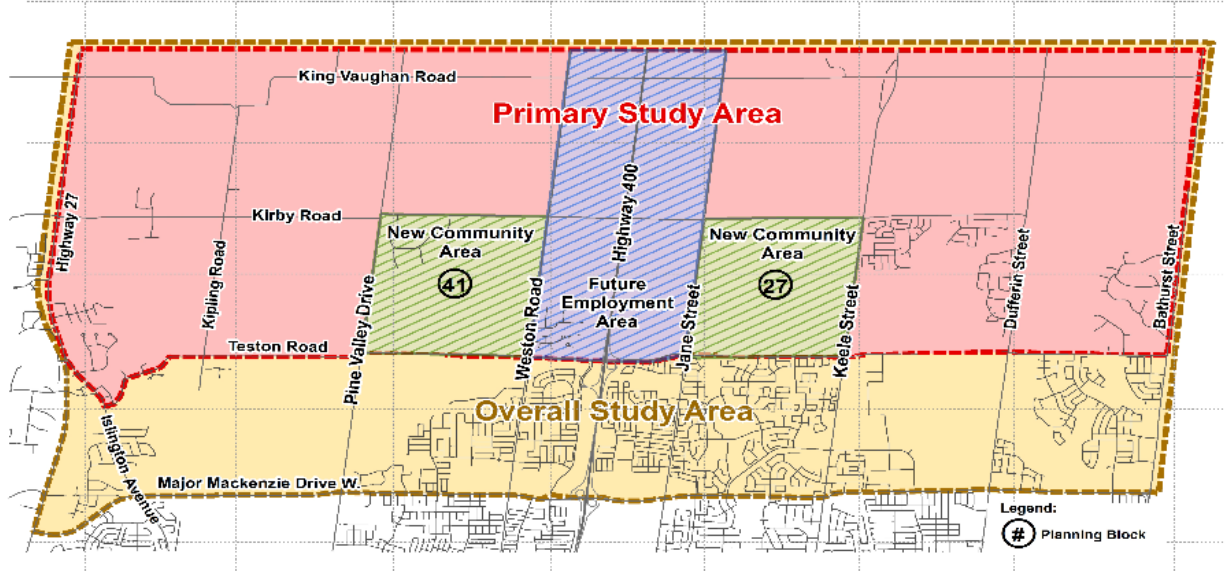
Figure 2-5: Pedestrian and Cycling Master Plan Update



2.3.5 North Vaughan and New Communities Transportation Master Plan (NVNCTMP)

The North Vaughan and New Communities Transportation Master Plan (NVNCTMP) is a long-range plan that supports policies, programs and infrastructure required to meet existing and future mobility needs and provide context for transportation decisions within North Vaughan. The primary and overall study areas are shown in **Figure 2-6**.

Figure 2-6: NVNCTMP Primary and Overall Study Area

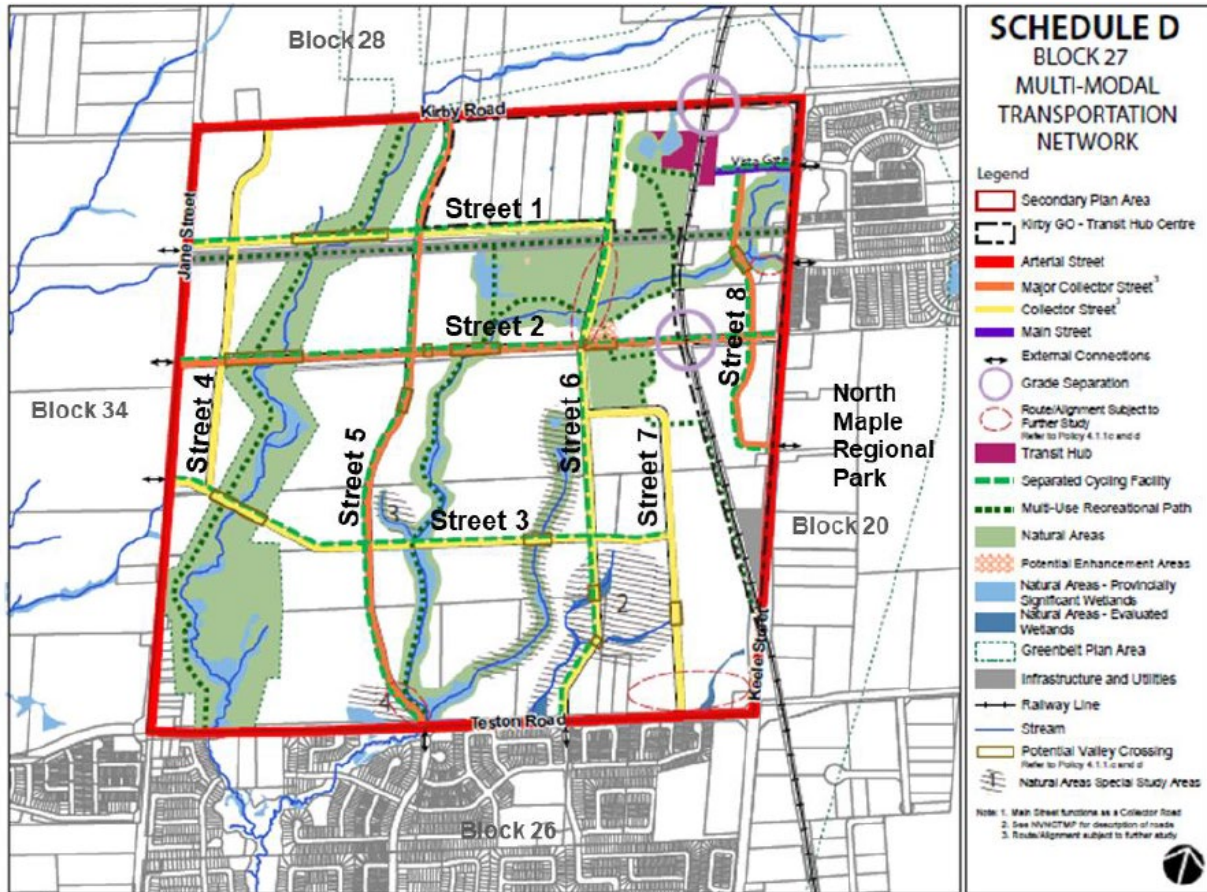


The objective of the plan is to look at both internal and external factors that contribute to achieving sustainable transportation for residents and businesses while ensuring recommendations of the plan address the transportation network needs from immediate to future growth. The NVNCTMP has satisfied the Phases 1 and 2 of the Municipal Class EA process and recommended completion of an Environmental Assessment Study for Kirby Road from Jane Street to Dufferin Street to satisfy Phase 3 and 4 of the Class EA to address the NVNCTMP recommendations for grade separation at Barrie GO railway, jog elimination at Kirby Road intersection at Jane Street, active transportation improvements, and widening Kirby Road from two to four lanes within a 36m right-of-way to support Block 27 development and the future Kirby GO station.

2.3.6 Block 27 Secondary Plan

The NVNCTMP was conducted in parallel and in close coordination with the secondary plan study for the New Community Area of Block 27, bound by Teston Road to the south, Keele Street to the east, Kirby Road to the north and Jane Street to the west. The Secondary plan was adopted by City Council in September 2018. This secondary plan study, subject to modifications, was approved by York Region Council in April 2019.

Figure 2-7: Block 27 Study Area



Source: City of Vaughan – North Vaughan and New Communities Transportation Master Plan

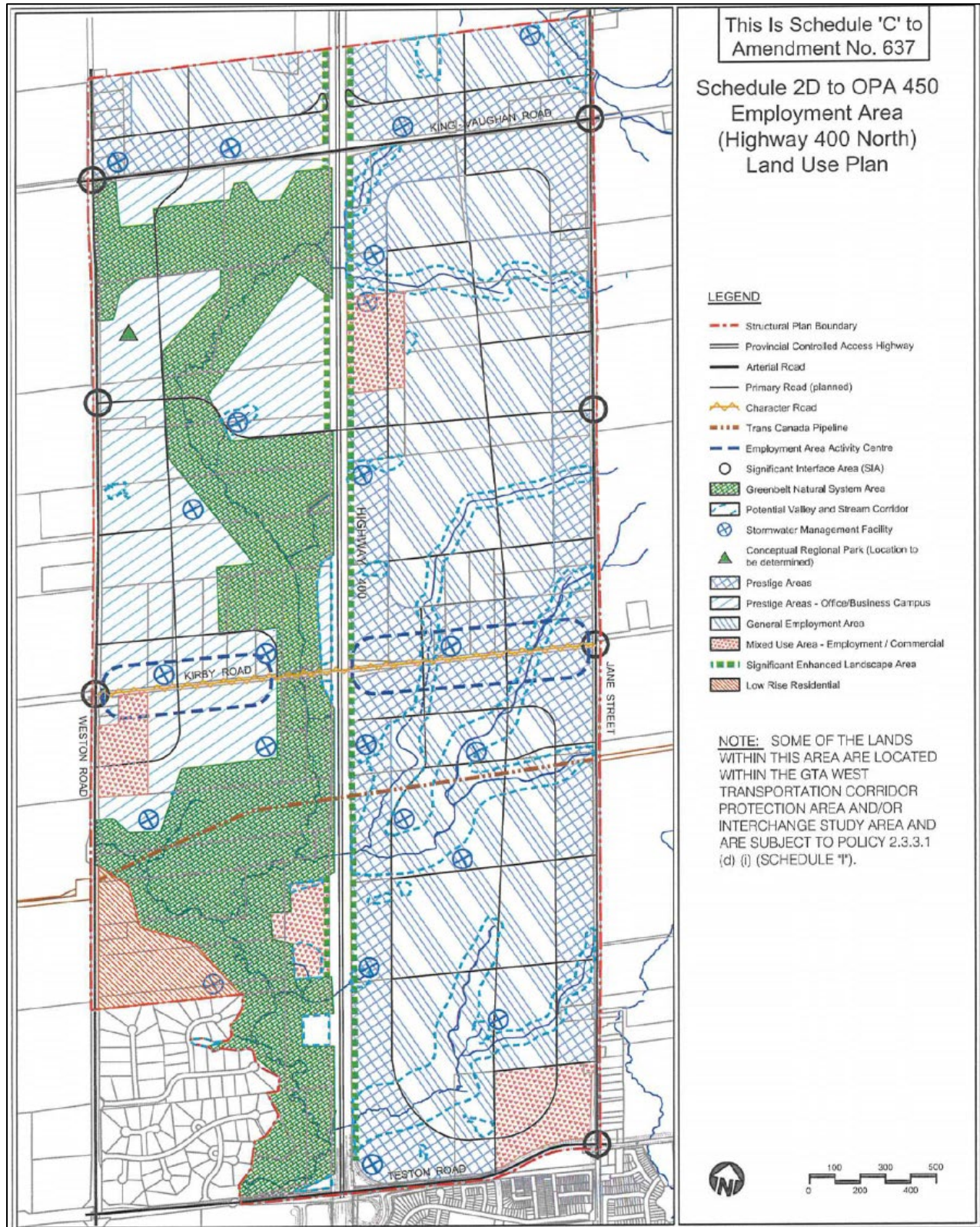
Block 27 is planned to have a mix of low and mid-rise buildings with a blend of residential, commercial and institutional uses. It will be anchored by Kirby GO – Transit Hub Centre that has schools, community facilities, and a transit hub with the future Kirby GO station in the north-east quadrant, as proposed by Metrolinx’s GO Expansion project (formerly known as Regional Express Rail) 2025 and as planned through the Block 27 Secondary Plan by the City.

In addition to the projected growth from the Secondary Plan and the demand generated by the GO Station, this Kirby Road Widening EA study will also need to consider the proposed street connections identified in **Figure 2-7**, including Street 4, Street 5, Street 6, and a potential access for the Kirby GO Station between the Barrie GO Line and Keele Street.

2.3.7 Highway 400 North Employment Lands Secondary Plan

The Highway 400 North Employment Lands Secondary Plan area (**Figure 2-8**) is bound by Teston Road on the south, Weston Road on the west, King-Vaughan Road on the north and Jane Street on the east. It is just west of the study limits of Kirby Road Widening EA.

Figure 2-8: Block 34 and 35 Plan (Schedule 2D to OPA 450)



The Secondary Plan area has many environmental features and shows future employment areas, mid-block linkages, the Region’s widening of Weston Road and Jane Street for transit and active transportation facilities, interchanges at Kirby/Hwy 400 and King- Vaughan/Hwy 400 and potential GTA West Highway Corridor. The plan identifies lands primarily for prestige areas, prestige office and business campuses and general employment areas, with some lands designated as low rise residential and Employment / Commercial mixed use areas.

2.3.8 Kirby Road Extension Municipal Class Environmental Assessment

The City of Vaughan completed a Schedule ‘C’ Municipal Class EA study for the extension of Kirby Road between Dufferin Street to Bathurst Street. The study is referred to as the Kirby Road Extension EA and the Environmental Study Report (September 2019) prepared for the project documents the analyses of the various alignments for the extension. The new roadway (**Figure 2-9**) is recommended to include a four-lane roadway, a crossing over the significant environmental features within the Oak Ridges Moraine Conservation Plan area and active transportation facilities.

Figure 2-9: Kirby Road Extension EA - Refined Preferred Alternative

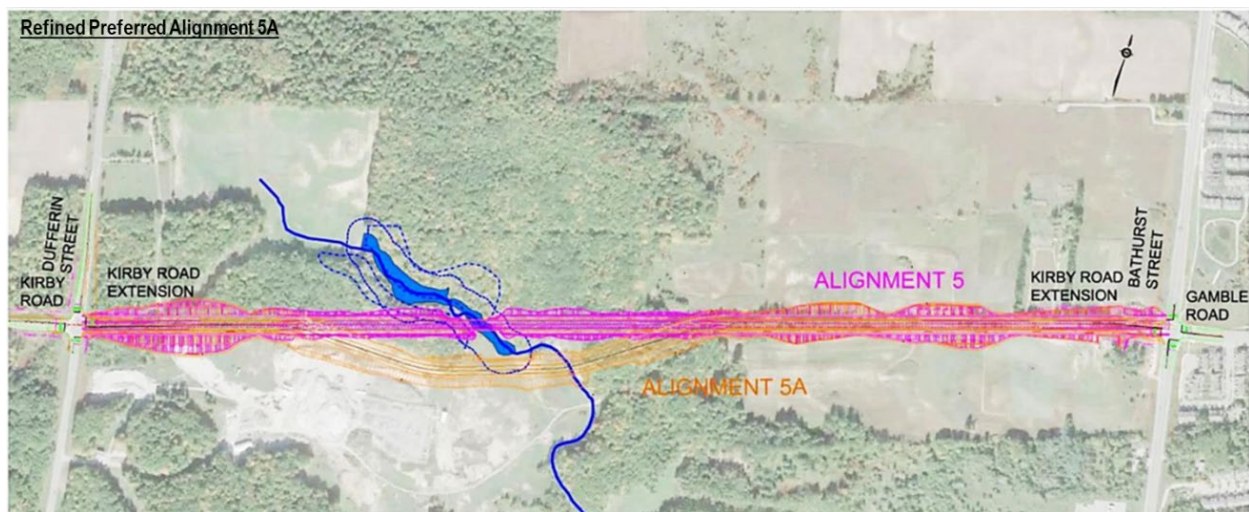
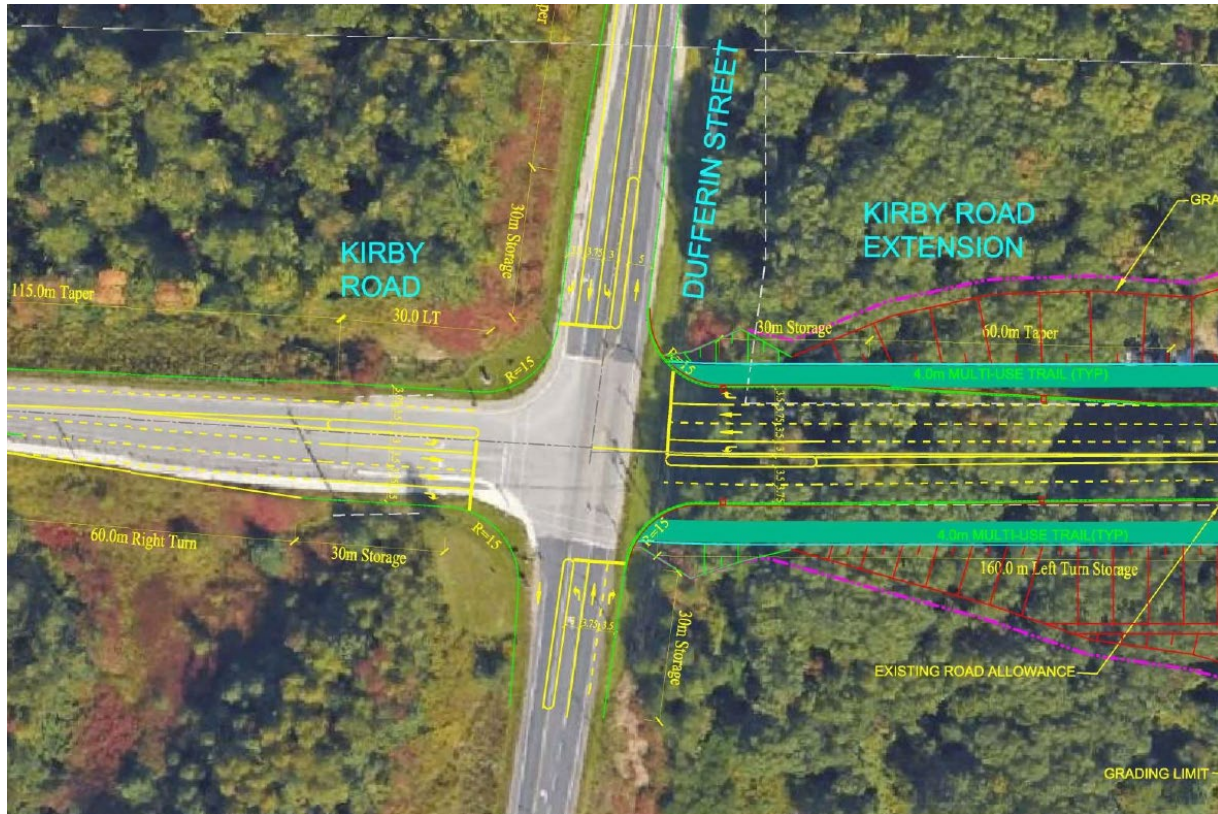


Figure 2-10 illustrates the lane configuration for the preferred alternative for the intersection of Kirby Road at Dufferin Street (the eastern study limits of this Kirby Road Widening EA) which will inform the baseline future conditions to be assessed in this Kirby Road Widening EA study.

Figure 2-10: Kirby Road at Dufferin Street Lane Configuration



2.3.9 Kirby GO Transit Hub Sub-Study

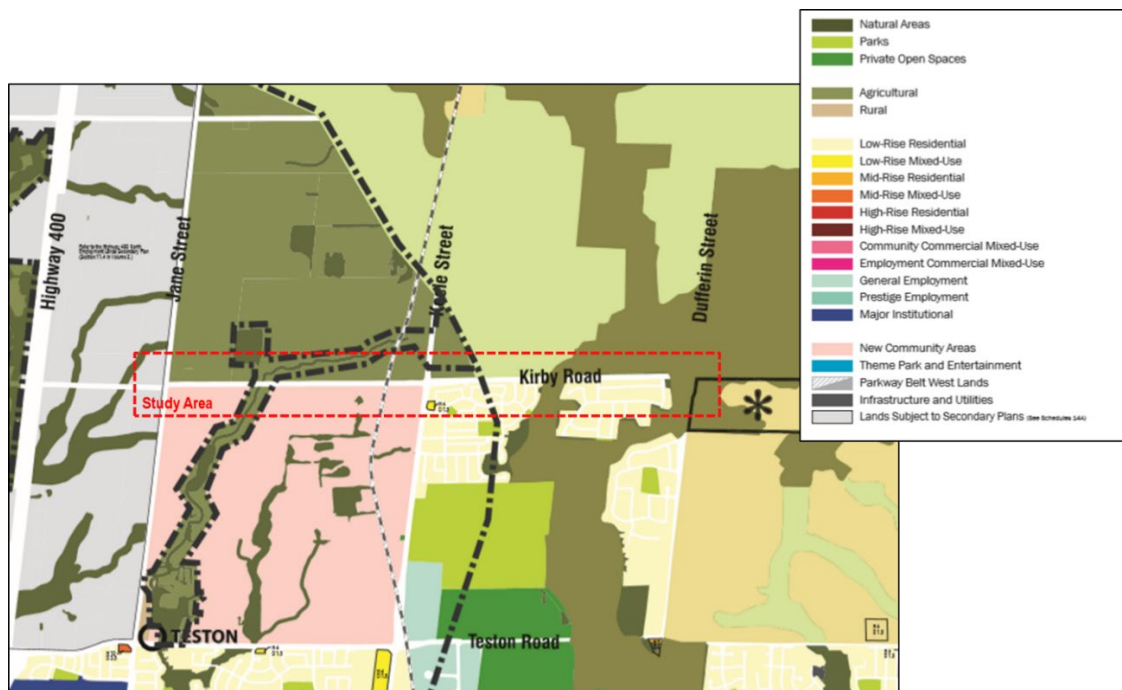
In early 2016, the City initiated the Kirby GO Transit Hub Sub-Study as an extension of NVNCTMP and the Block 27 Secondary Plan. The purpose of the Kirby GO Transit Hub Sub-Study was to develop a vision, based on a robust planning rationale, which will direct future development of the transit hub and integration with the rest of Block 27 and surrounding areas. Key findings from this study were carried forward to the recommendations for the Kirby GO Station documented in NVNCTMP Appendix F. This includes the grade separation of Kirby Road at the Barrie GO Rail line and preliminary recommendations to accommodate a GO Station access at Kirby Road.

3 Land Use Assessment

Land uses adjacent to Kirby Road through the study limits are currently rural with residential properties. East of Jane Street there are two residences located north and south of Kirby Road that each have two direct access points to Kirby Road. The residential properties between Keele Street and Dufferin Street have access to Kirby Road through the local street network. Properties on the south have access at Ravineview Drive, Foot Hills Road and Laurentian Boulevard, and the property on the north through Radha Drive. There are no residential properties that directly front onto Kirby Road between Keele Street and Dufferin Street.

Figure 3-1 shows the land use designation along the corridor and surrounding area as listed in the Vaughan Official Plan. Please refer to Schedule B of the New Community Area - Block 27 Secondary Plan for more detailed land use designation south of Kirby Road, between Jane Street and Keele Street.

Figure 3-1: Land Use – Schedule 13 Official Plan (2019)



A land use survey was also undertaken by the study team in December 2019. During the survey both agricultural and other land uses were identified. The survey indicated that the Study Area land use comprises of built up/disturbed areas, common field crop production, forage/pasture lands, recreational areas (Golf Course – Carrickmacross West), linear corridors (roads/rail) and woodlands. The south-eastern portion of the Study Area (south of Kirby Road and east of Keele Street) is predominantly urban land use with some woodland areas. The western portion of the Study Area (west of Keele Street) comprises agricultural lands, a golf course, scrub lands, woodlands and commercial/industrial areas. The commercial/industrial lands are limited to the area located north of Kirby Road, west of Keele Street and east of the rail line. These lands

include a car dealership, restaurants (Tim Horton’s and A&W), gas station with car wash and a transportation/trucking company (Grant Global Logistics). The lands east of Keele Street and north of Kirby Road comprise a mix of agricultural lands, woodlands and scrub lands. The predominant agricultural land use on the Study Area lands is the production of common field crops (corn and soybean). **Figure 3-2** illustrates the land use designations and land use definitions within the study area.

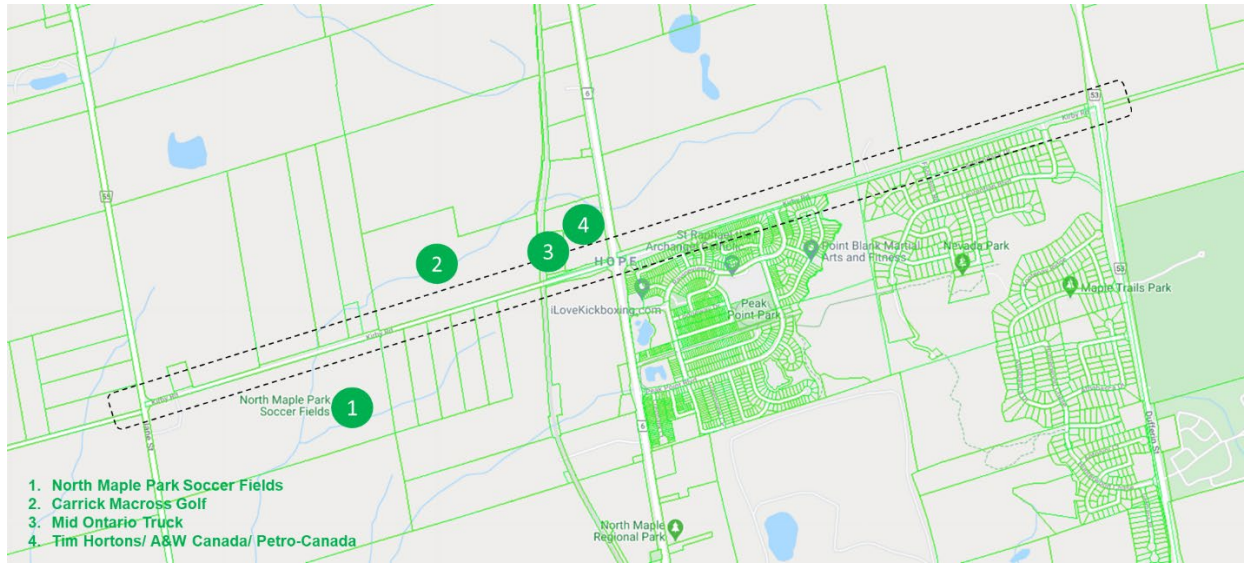
Figure 3-2: Land Use within the Study Area



3.1 Inventory of Local Businesses

Local businesses directly abutting the Kirby Road right-of-way were identified as shown in **Figure 3-3**. There are four local businesses on Kirby Road including North Maple Park Soccer Fields, Carrick Macross Golf, Mid Ontario Truck, and a lot including Tim Hortons/ A&W Canada/ Petro-Canada. All businesses have direct access from Kirby Road with Tim Hortons having a secondary access on Keele Street.

Figure 3-3: Local Businesses within the Study Area



3.2 Future Development

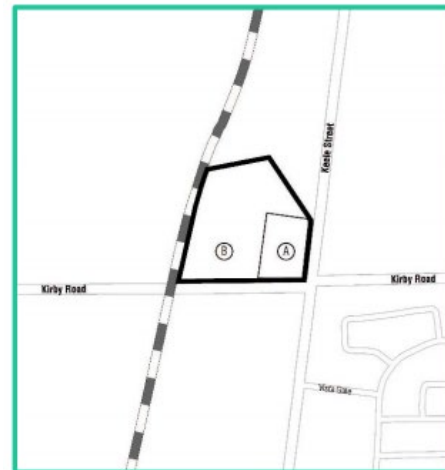
This section includes all the planned future developments within and on the boundary of the study area as of February 2019.

3.2.1 Areas Subject to Site Specific Plans

As approved by the Ontario Municipal Board on October 3, 2013, specific uses are permitted on Area A and Area B shown for Site 17 (see **Figure 3-4** and **Figure 3-5**).

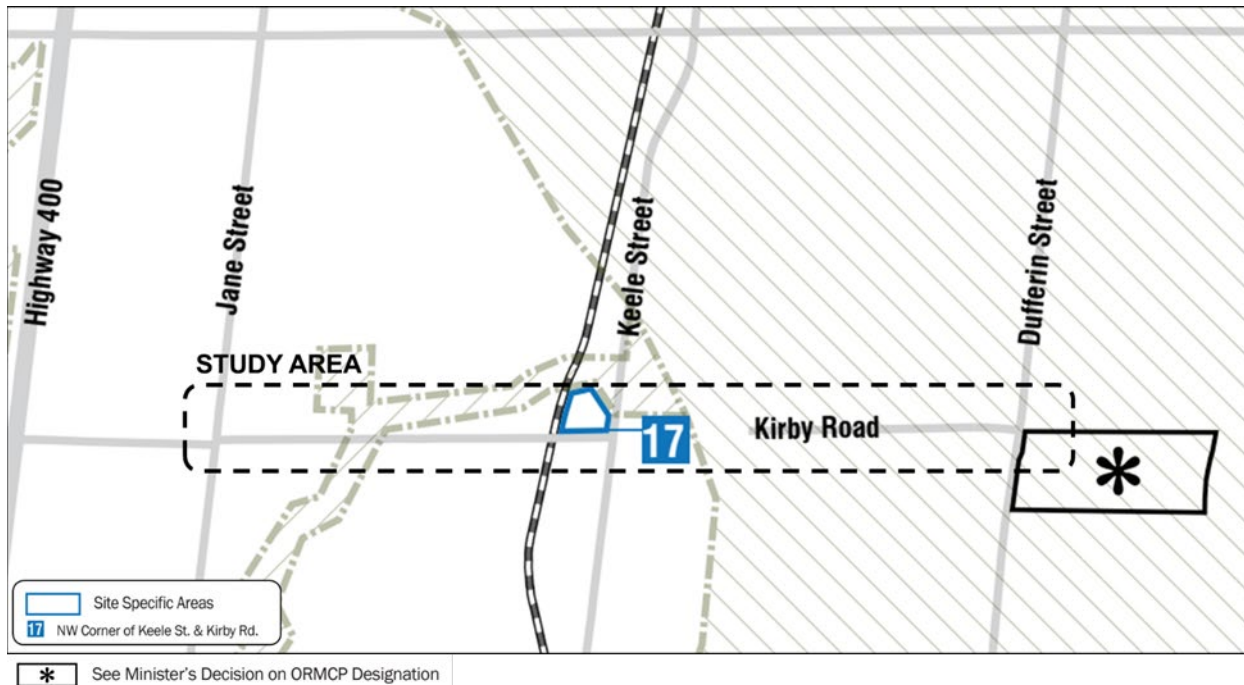
These uses include an Automobile Gas Bar, an Automobile Service Station, and Eating Establishment – Convenience for Area A and Places of worship, Institutional uses, and Transportation and Industrial Uses for Area B. Area A is constructed occupied as noted previously. Area B lands are partially occupied with Transportation and Industrial uses.

Figure 3-4: Site 17



Source: City of Vaughan – Official Plan (2019)
https://www.vaughan.ca/projects/policy_planning_projects/General%20Documents/Official%20Plan%20Vol%202/Volume%202%20November%202019/VOP%202010%20Volume%202_Cha%20pter%2013%20Sept.%2025%202019.pdf

Figure 3-5: Schedule 14-C - Areas Subject to Site Specific Plans



Source: City of Vaughan – Official Plan (2019)

https://www.vaughan.ca/projects/policy_planning_projects/General%20Documents/Official%20Plan%20Vol%201/Current%20VOP%202010%20Schedules/VOP%202010%20Consolidated%20Schedules%20Nov%2021%2019.pdf

3.2.2 Highway 400 North Employment Lands

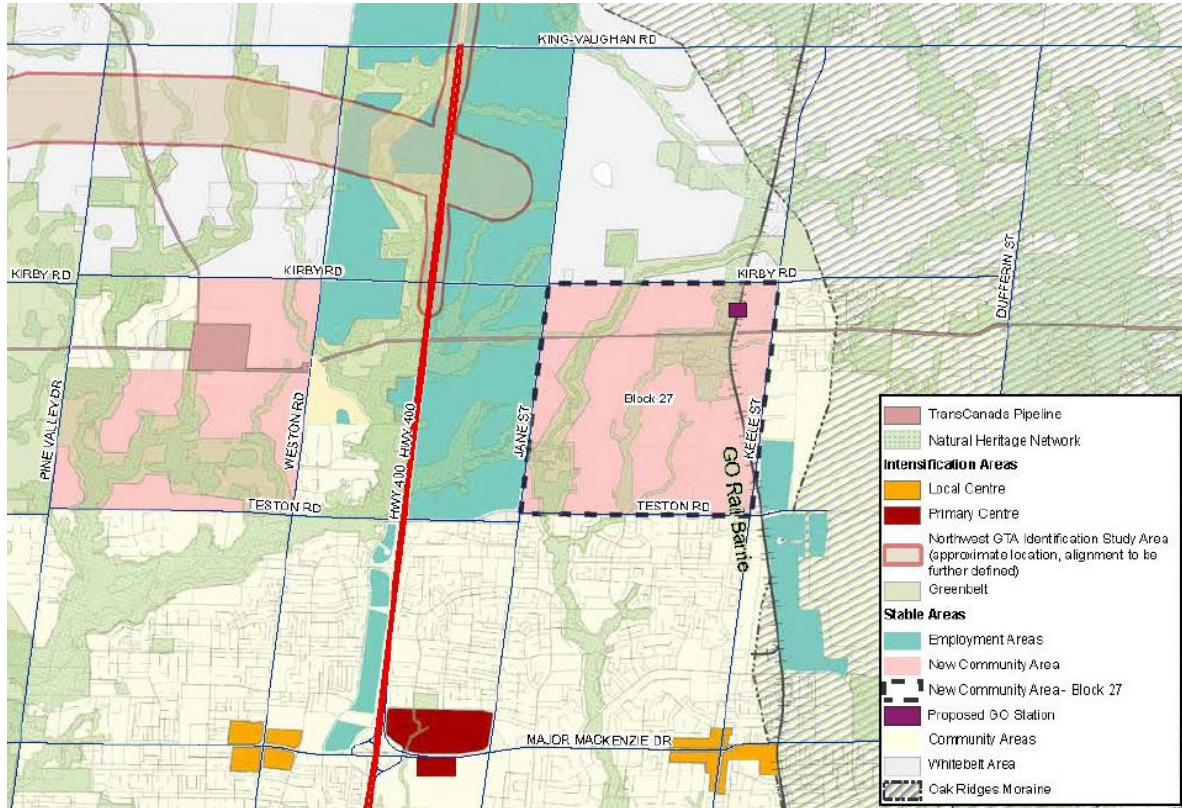
The Highway 400 North Employment Lands Secondary Plan area is bound by Teston Road on the south, Weston Road on the west, King-Vaughan Road on the north and Jane Street on the east. It is just west of the study limits of Kirby Road Widening EA. Refer to **Section 2.3.7** for more information.

3.2.3 Block 27 Community Area

The City of Vaughan adopted the Block 27 Secondary Plan to provide for the development of a new residential community (**Section 2.3.6**). At the time of writing of this report the Block 27 Landowners Group is currently in Phase 1 of initiating the application process and draft block plan development to revise and finalize Terms of References for this block plan based on City of Vaughan comments. Formal development application to follow once the Terms of Reference is finalized. New Community Area - Block 27 is located between Kirby Road to the north, Keele Street to the east, Teston Road to the south and Jane Street to the west (shown in **Figure 3-6**). It has an area of approximately 400 hectares (990 acres) made up almost entirely of rural lands. The Block includes a reach of the West Don River and an additional central tributary of the West Don which is included in the Provincial Greenbelt Plan. The TransCanada Pipeline Canadian Mainline also crosses the north portion of the block in an east-west direction, while the GO Rail Line runs north/south west of Keele Street. As well, the hamlet of Teston is located at the northeast corner of Jane Street and Teston Road. Block 27 community area will include a mix of

uses, such as commercial, low- and mid-rise residential housing, and community facilities such as schools and parks¹.

Figure 3-6: Block 27 Study Area



Source: City of Vaughan – New Community Area – Block 27 https://www.vaughan.ca/projects/policy_planning_projects/Pages/New-Community-Area---Block-27.aspx

¹ Source: https://www.vaughan.ca/projects/policy_planning_projects/Pages/New-Community-Area---Block-27.aspx

4 Summary

This report includes a review of previous studies, existing legislative documents, Provincial, Regional, and Municipal standards, By-laws, Official Plans, Secondary Plans, and other related documents including recommendations, an inventory of local businesses within the study area, a land use assessment within the study area, and review future land development within the study area. The next phase of the study will include streetscape designs that promote active transportation and address the needs of all users with priority to non-auto-based modes of travel and attention to the pedestrian realm. During the evaluation of alternatives a review of emergency access, property requirements, quality of life (health and safety), travel time impacts, as well as impacts of heavy truck traffic will also be conducted. Considerations will also be given to community cohesiveness and aesthetics.