

5. Existing and Planned Multi-Modal Transportation System

5.1 Active Transportation

5.1.1 Existing Infrastructure

5.1.1.1 Sidewalks and Streetscape

The intersection of Old Kingston Road and Morrish Road serves as the centre of the Village and is also the focus of the majority of existing pedestrian activity in the area. Beyond the core of the Village, the streetscape is largely uninviting to pedestrian activity with narrow or non-existent sidewalks, road ROW that are in varying degrees of disrepair, and with at-grade uses that are generally incompatible with pedestrian activity (e.g., vacant parcels, automotive uses, etc.). The current pedestrian network in the HCV study area is discontinuous with many gaps where sidewalks do not exist on one or both sides of the street. The locations of the existing gaps in the sidewalk network are illustrated in **Exhibit 5-1**.

Highway 2A is a barrier to pedestrian activity with no crossing options currently located between Military Trail and Morrish Road. The Highland Creek Overpass is the only legal crossing of Highway 2A in the vicinity of the Village; the crossing is 300 to 400 m away from the centre of the Village and the intersection of Highway 2A and Military Trail.

The absence of more than one legal crossing can lead to illegal crossing of Highway 2A, which is a busy and high-speed road. The lack of a convenient crossing option is particularly problematic for users of TTC Route 86 “Scarborough,” which has a stop at Highway 2A and Military Trail in both the eastbound and westbound directions. Users of the eastbound TTC service were observed to illegally cross Highway 2A at Military Trail.

5.1.1.2 Cycling

There are currently no designated on-street cycling facilities in the HCV TMP study area. The nearest on-street bike lanes are located on Conlins Road between Ellesmere Road and Sheppard Avenue to the north of the study area.

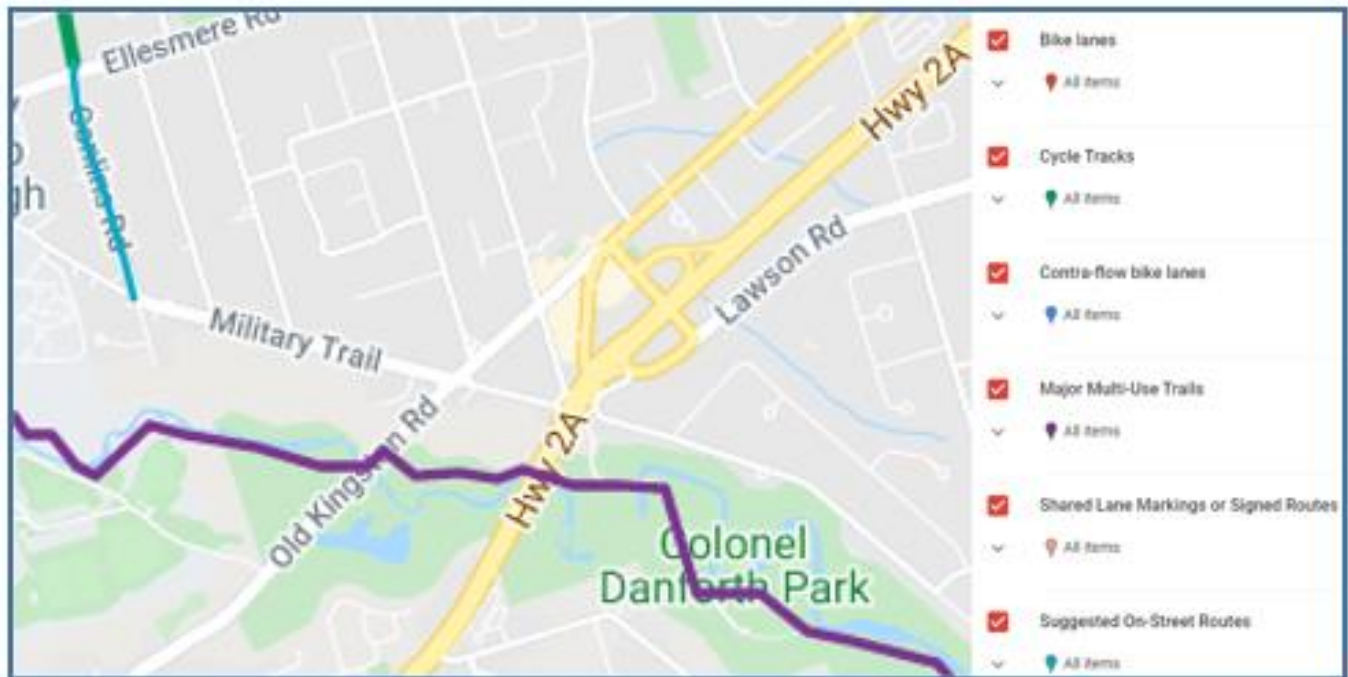
The off-road Highland Creek Trail is located immediately to the west of the study area, connecting to the Waterfront Trail to the south. This trail can be accessed via Highland Creek Drive to the southwest of Colonel Danforth Trail and via Old Kingston Road.

Exhibit 5-1: Existing Gaps in Sidewalk Network



The City of Toronto Cycling Map (**Exhibit 5-2**), illustrates the location and the types of on and off-road cycling facilities that are located in the vicinity of the study area.

Exhibit 5-2: City of Toronto Existing Cycling Map



5.1.2 Planned Infrastructure

5.1.2.1 Sidewalks and Streetscape

Recognizing the need to improve the streetscape and pedestrian environment in the Village, the Highland Creek Urban Design Guidelines and Concept Plan (see **Section 3.2.13** for details) outlined the City’s guidance for enhanced streetscape elements, suggested ROW widths, and cross-sections throughout the study area. The document provides specific guidance for the envisioned streetscape and ROW for the following roadways within the HCV:

- Old Kingston Road:**
 Designated as an “Emerging Main Street” to support the function as a key commercial street of the Village. The streetscape is proposed to include expanded sidewalk, street trees, decorative paving, decorative lighting, and street furniture. The existing angled parking on the north side of the street is proposed to be replaced by the noted streetscape elements and parallel parking.
- Military Trail, Morrish Road, Kingston Road, and Lawson Road:**
 Designated as a “Green Street” / “Intermediate Street” to support the street’s function as a

mostly residential street. The streetscape design proposes to include sidewalks on both sides of the street, street trees, and decorative lighting. Parallel parking is also to be included on at least one side of the street.

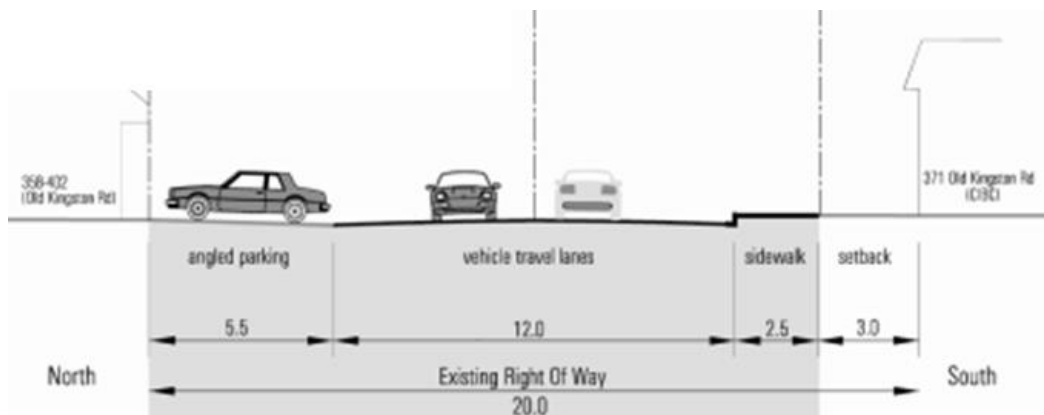
- **Highway 2A:**

To be transformed from a highway to a City street with a planted centre median. The streetscape is proposed to include sidewalks on both sides of the street, street trees, decorative lighting, and bike lanes. A reduced ROW is to be considered.

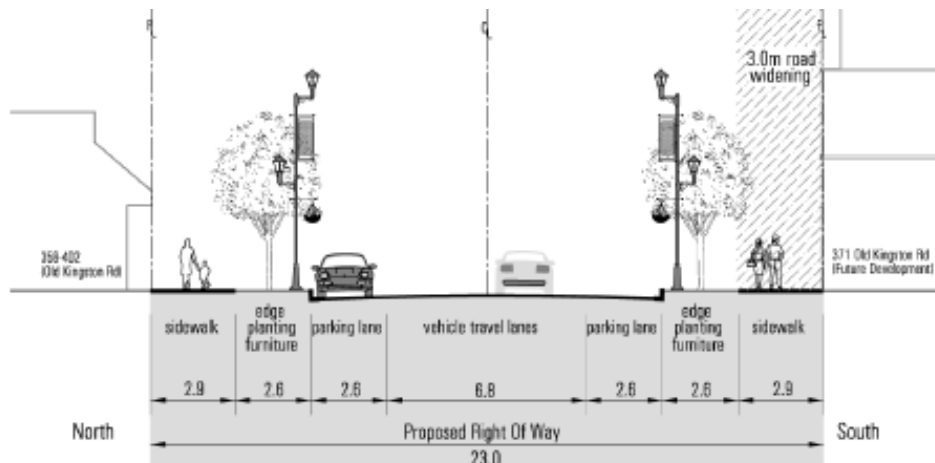
Exhibit 5-3, for example, highlights the existing and proposed cross-section for Old Kingston Road to the east of Morrish Road. These infrastructure designs that have been developed to be consistent with the Urban Design Guidelines, where feasible and applicable.

Exhibit 5-3: HCV Urban Design Guidelines – Existing and Proposed Cross-section for Old Kingston Road (east of Morrish Road)

Old Kingston Road – Existing Cross Section



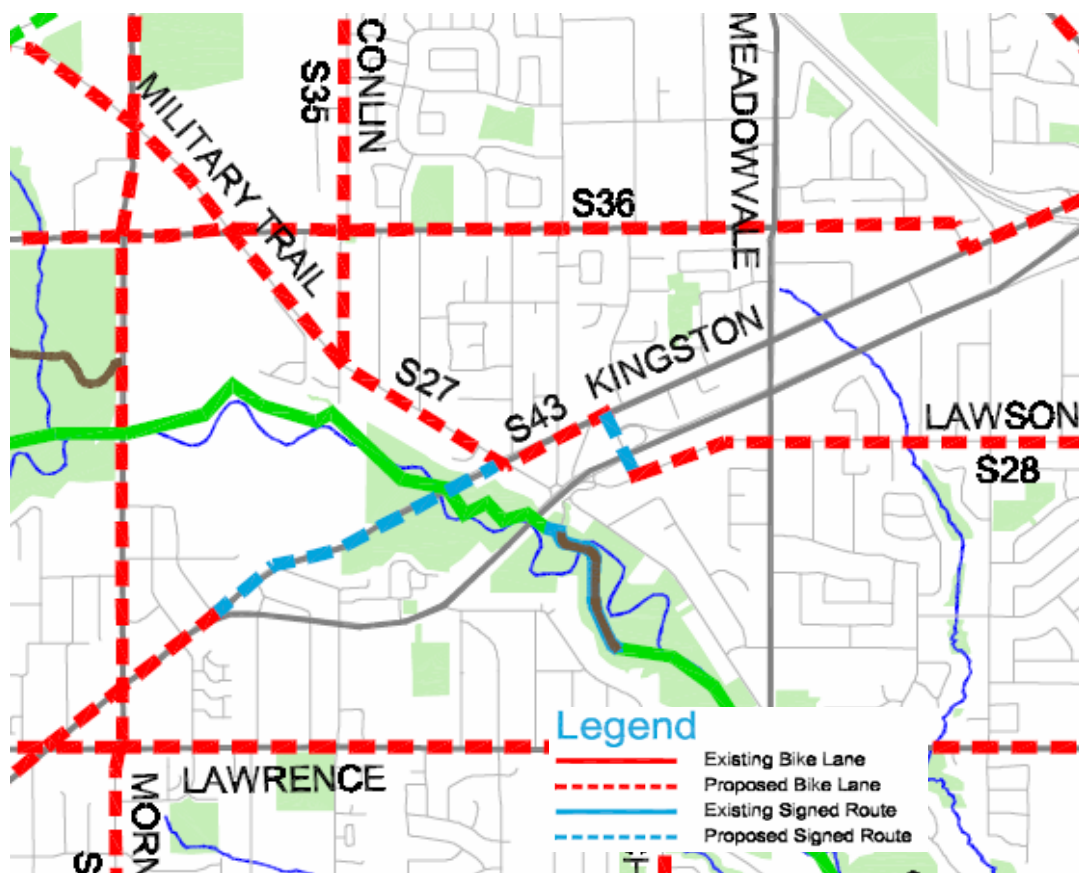
Old Kingston Road – Proposed Cross Section



5.1.2.2 Cycling

At the time of writing, the proposed bicycle network from the City of Toronto Bike Plan as discussed in **Section 3.2.6** was applicable (as illustrated in **Exhibit 5-4**). This plan included bike lanes along Old Kingston Road through the Village (Route S43), along Military Trail (Route S27) connecting to UTSC to the northwest and beyond, and along Lawson Road (Route S28) connecting to future bike lanes along Port Union Road and Rouge Hill GO Station and the Waterfront Trail.

Exhibit 5-4: Existing and Planned Cycling Network (Toronto Bike Plan)



The HCV Urban Design Guidelines propose roadway cross-sections which include the provision of cycling lanes on Military Trail and Highway 2A. Bike lanes and signed / shared routes are also proposed along Old Kingston Road between Military Trail and Kingston Road to the west and along the Highland Creek Overpass between Lawson Road and Kingston Road.

It should be noted that the City of Toronto Bike Plan was developed on the basis of the existing constraints and highway centric roadway layout in the HCV area. Road re-alignments and network changes that are assessed and evaluated as part of this study may allow for opportunities to refine and improve upon the proposed cycling network through and around HCV.

As discussed in **Section 3.2.7**, the City of Toronto Cycling Network Plan (CNP) and the 2019 CNP Update replace the Toronto Bike Plan. The 2019 CNP examines further improvements to the existing network, including new routes and enhancements to existing routes. In particular, the proposed on-street bike lanes and multi-use trail within the study area serve to provide a direct connection between planned facilities on Military Trail (to the north of Old Kingston Road) and on Lawson Road (to the east of the Highland Creek Overpass). Where the Toronto Bike Plan included planned bike lanes, the CNP identified facilities as bike routes on quiet streets. Once fully realized, this route will provide an important direct connection to UTSC (via Military Trail) and the Rouge Hill GO Station and the existing Waterfront Trail along Lake Ontario (via Lawson Road and Port Union Road).

5.2 Transit

5.2.1 Existing Services

The study area is serviced by two TTC Bus Routes, #38 Highland Creek, and #86 Scarborough. The travel paths of the two TTC routes in the study area are illustrated in **Exhibit 5-5** and **Exhibit 5-6**; the exhibits also show the AM and PM Peak Period ridership data both at and in between the transit stops.

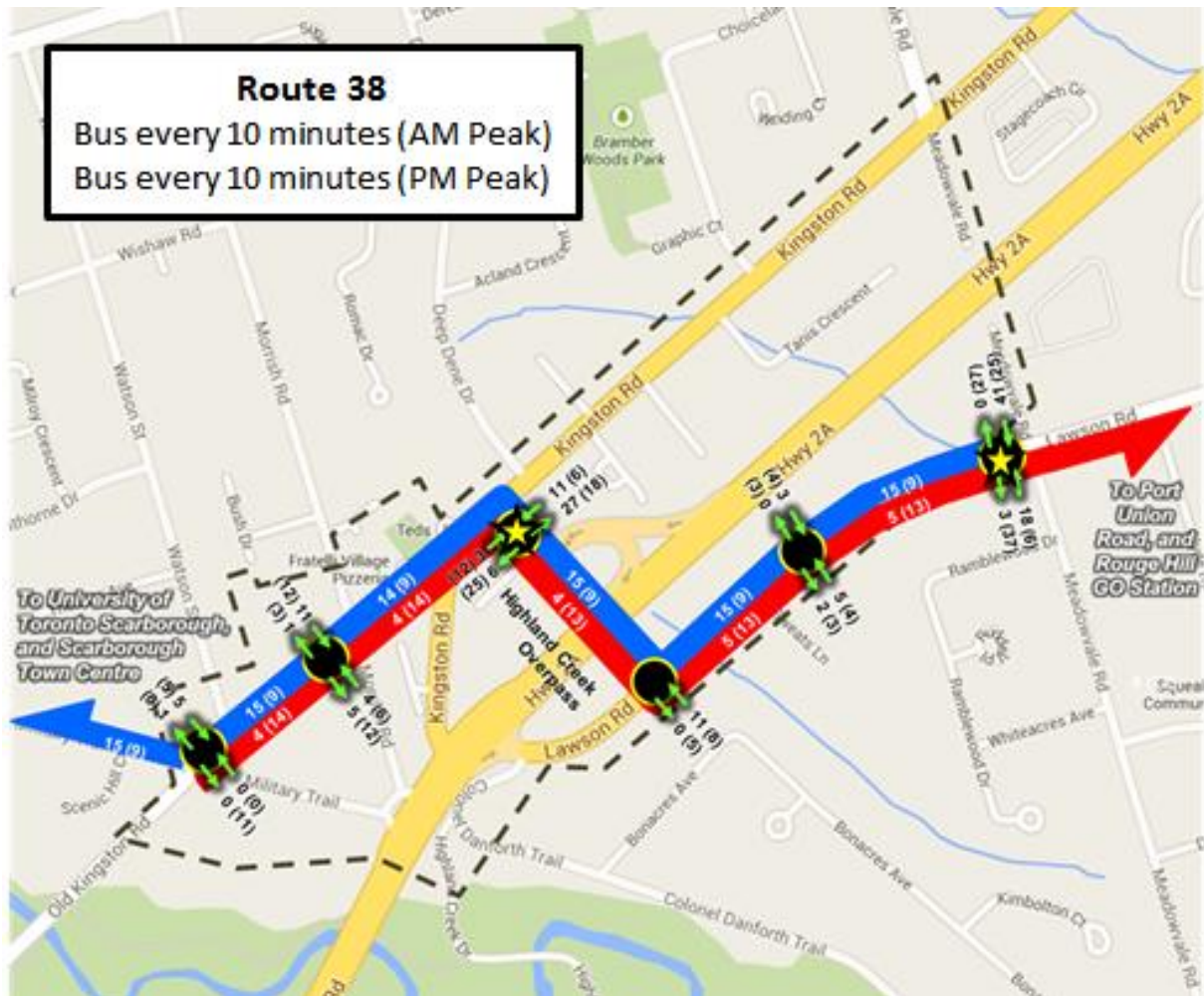
The study area is also serviced by GO Transit bus route #51, the Pickering - York University route, which travels through the Village and has a stop at UTSC. In addition, the two closest GO Transit Rail stations are the Rouge Hill and Guildwood stations, each located approximately 4 km from the centre of HCV.

The TTC Route #38 provides connections between Scarborough Town Centre Station on the Scarborough Rapid Transit (SRT) line, UTSC and Rouge Hill GO Station via Ellesmere Road, Military Trail, Lawson Road, and Port Union Road.

The TTC Route #86 uses a different path through HCV in the eastbound and westbound direction due to the existing controlled access highway environment along Highway 2A. As a result, the bus does not travel through the centre of the Village in the eastbound direction since it must use the Highland Creek Overpass to travel between Highway 2A and Kingston Road. The TTC Route #86 connects to the Kennedy Subway Station in the west, via Eglinton Avenue East, and to the Sheppard Avenue area in the east. Road re-alignments and network changes that are assessed and evaluated as part of this study may allow for opportunities to re-route the TTC Route #86 as a result of new at-grade intersections in the Village.

The ridership data in **Exhibit 5-5** and **Exhibit 5-6** shows that in the AM Peak Period more passengers on both bus routes are travelling westbound, while more passengers travel eastbound in the PM Peak Period. Major stops with the highest boarding and alighting passenger volumes include Kingston Road at Highland Creek Overpass, Lawson Road at Meadowvale Road, Kingston Road at Deep Dene Drive, and Kingston Road at Meadowvale Road.

Exhibit 5-5: TTC Bus Route #38 – Scarborough Route Map and Ridership Data



service in the city. This plan also outlines goals to make transit more accessible to people of all ages and status.

The TTC's Five-Year Corporate Plan Update (2018-2022) has the following objectives:

- Create a 5-year plan that is strategic, realistic, specific, and ambitious in meeting the needs of our customers, employees, organization, and city;
- Engage more stakeholders, including customers, in the development of the plan;
- Make efficient use of management time and resources (don't take eyes off the business);
- Empower and drive accountability further down in organization; and
- Create a plan that meets with Board approval and garners greater public and political support

Exhibit 5-7 identifies the 5-year outlook for the TTC Corporate Plan.

Exhibit 5-7: 5-Year Outlook for the TTC Corporate Plan

Year	Tasks
2018	<ul style="list-style-type: none"> • TTC-GO Transit discount introduced • PRESTO implementation substantially complete • Subway radio & PA upgrade • Year one of the Line 1 Subway Extension • Two-hour transfers introduced
2019	<ul style="list-style-type: none"> • VISION implemented • Customer Service Agents in subway stations • Introduction of zero emission buses
2020	<ul style="list-style-type: none"> • Automatic Train Control fully operational on Line 1 • One Person Train Operation on Line 1 • McNicoll Bus Garage opens
2021	<ul style="list-style-type: none"> • Line 5 Eglinton opens • Expanded express bus network
2022	<ul style="list-style-type: none"> • Line 6 Finch West opens

In March 2018, the Metrolinx Board of Directors adopted the 2041 Regional Transportation Plan (2041 RTP) for the Greater Toronto and Hamilton Area (GTHA). The 2041 RTP proposes the

development of a Frequent Rapid Transit Network to connect the GTHA⁹. The Plan proposes several new transit projects across the region (see **Exhibit 5-8**).

Exhibit 5-8: Regional Transportation Plan Map 5: 2041 Frequent Rapid Transit Network



Metrolinx is currently working towards delivering the GO Expansion plan across the GO Transit network. The vision for GO Expansion (also Regional Express Rail, or RER) is to provide new 15-minute service in core areas and two-way, all-day service on weekdays, during the evening and on weekends with a mix of all-stop and limited-stop service on GO Transit's seven rail corridors. For the Lakeshore corridor in particular, the Lakeshore Express Rail Study is developing options for the long-term evolution of GO Rail on the Lakeshore corridor, particularly the exploration of new markets for rail service and faster, more frequent service. With its proximity to the Lakeshore East corridor and the two existing GO Stations at Guildwood and

⁹ 2041 Regional Transportation Plan (Metrolinx) - <http://www.metrolinx.com/en/regionalplanning/rtp/Metrolinx%20-%202041%20Regional%20Transportation%20Plan%20%E2%80%93%20Final.pdf>

Rouge Hill, the HCV area is in a position to significantly benefit from these planned investments in RER.

The 2019 Ontario Budget committed funds to construct four provincial priority transit projects. The most relevant of these to HCV is the Scarborough Subway Extension (3 stop). Other projects include the Ontario line, Yonge Subway Extension and Eglinton Crosstown West Extension. The City and TTC are currently working with the Province and its agencies to finalize an agreement governing the delivery of these projects and other transit projects of City interest, such as the Bloor-Yonge Capacity Enhancement Project and SmartTrack.

The Scarborough Subway Extension is a 7.8-kilometre extension of Line 2 from Kennedy Station to McCowan Road and Sheppard Avenue East. The Scarborough Subway Extension will replace TTC's Line 3 (the Scarborough RT) and will add three more stops onto the Line 2 subway. They will be at Lawrence Avenue East and McCowan Road, Scarborough Centre, and Sheppard Avenue East and McCowan Road, which will be the new terminal station for Line 2. Opening day is expected in 2029 or 2030.

5.3 Roads

5.3.1 Existing Network

There are seven main City streets in the study area:

- Old Kingston Road
- Military Trail
- Morrish Road
- Kingston Road
- Lawson Road
- Meadowvale Road
- Highway 2A.

Old Kingston Road, which is classified as a Minor Arterial, serves as the Village's "Main Street" and functions as the key commercial thoroughfare. The intersection of Old Kingston Road and Morrish Road is considered to be the historic center of the Village.

The high-speed highway cross-section of Highway 2A dominates the southern part of the study area; this road serves as a key connecting route between Scarborough, Downtown Toronto, and

points further east in Durham Region via Highway 401. Highway 2A transitions to an Urban Major Arterial cross-section (Kingston Road) to the west of the Study Area (at the crossing of Highland Creek). The existing signalized intersection of Kingston Road and Beechgrove Drive lies approximately 600 m to the west of the study area.

The Highland Creek Overpass, which is classified as a Minor Arterial, is the only crossing of Highway 2A between the Highland Creek to the west side of the Village and Highway 401 to the east.

Lawson Road, which is classified as a Collector Road, provides connectivity to the residential areas located to the south of the Village and to Port Union Road in the east. Within the study area Meadowvale Road is classified as a Collector road and primarily serves a residential access function. To the north of Ellesmere Road, Meadowvale Road serves as a Minor Arterial including an interchange with Highway 401. Morrish Road and Military Trail are also classified as Collector roads within the study area.

The road network in the study area is illustrated in **Exhibit 5-9**. The surrounding area roadway network and roadway classifications are shown in **Exhibit 5-10**.

Exhibit 5-9: Study Area Road Network

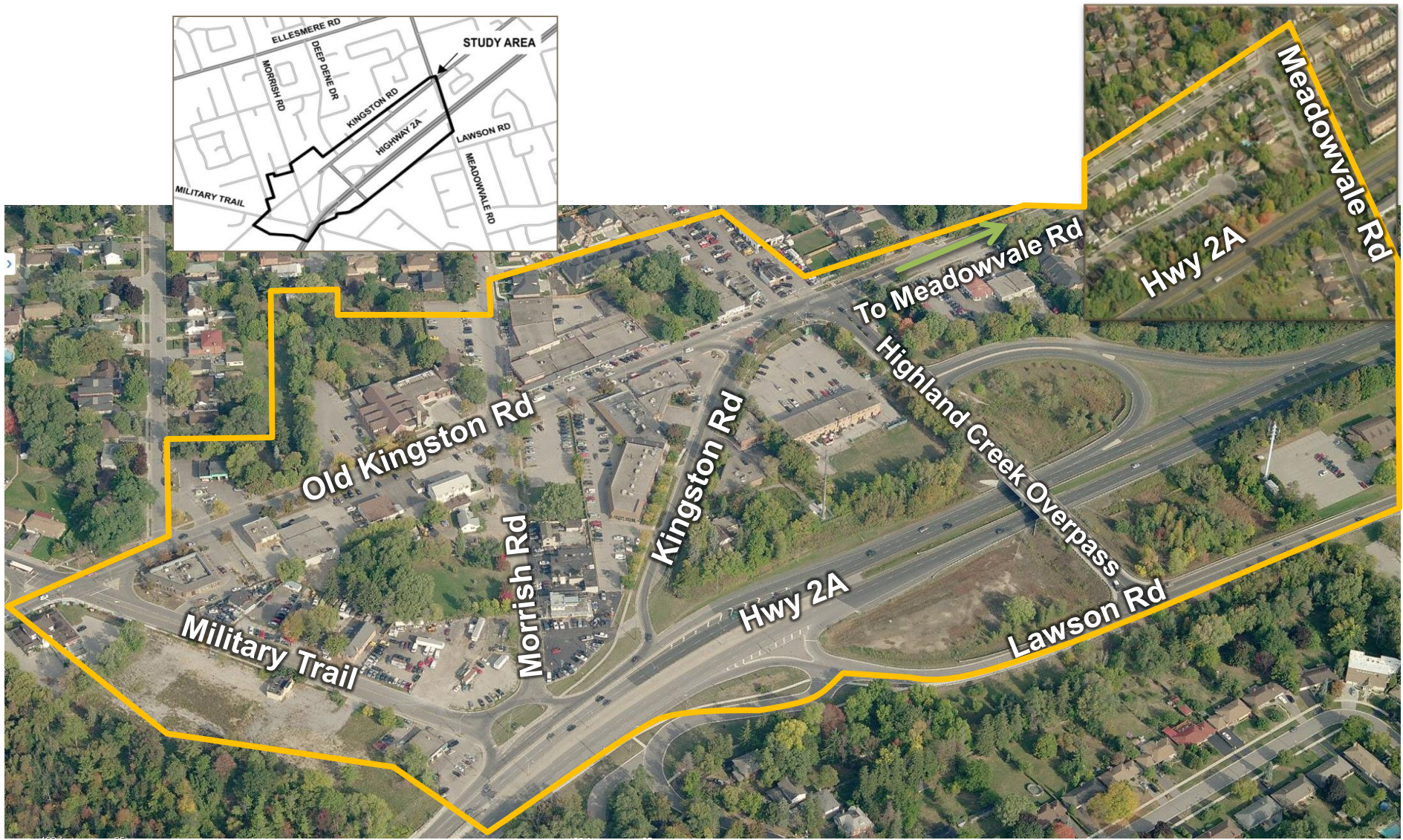
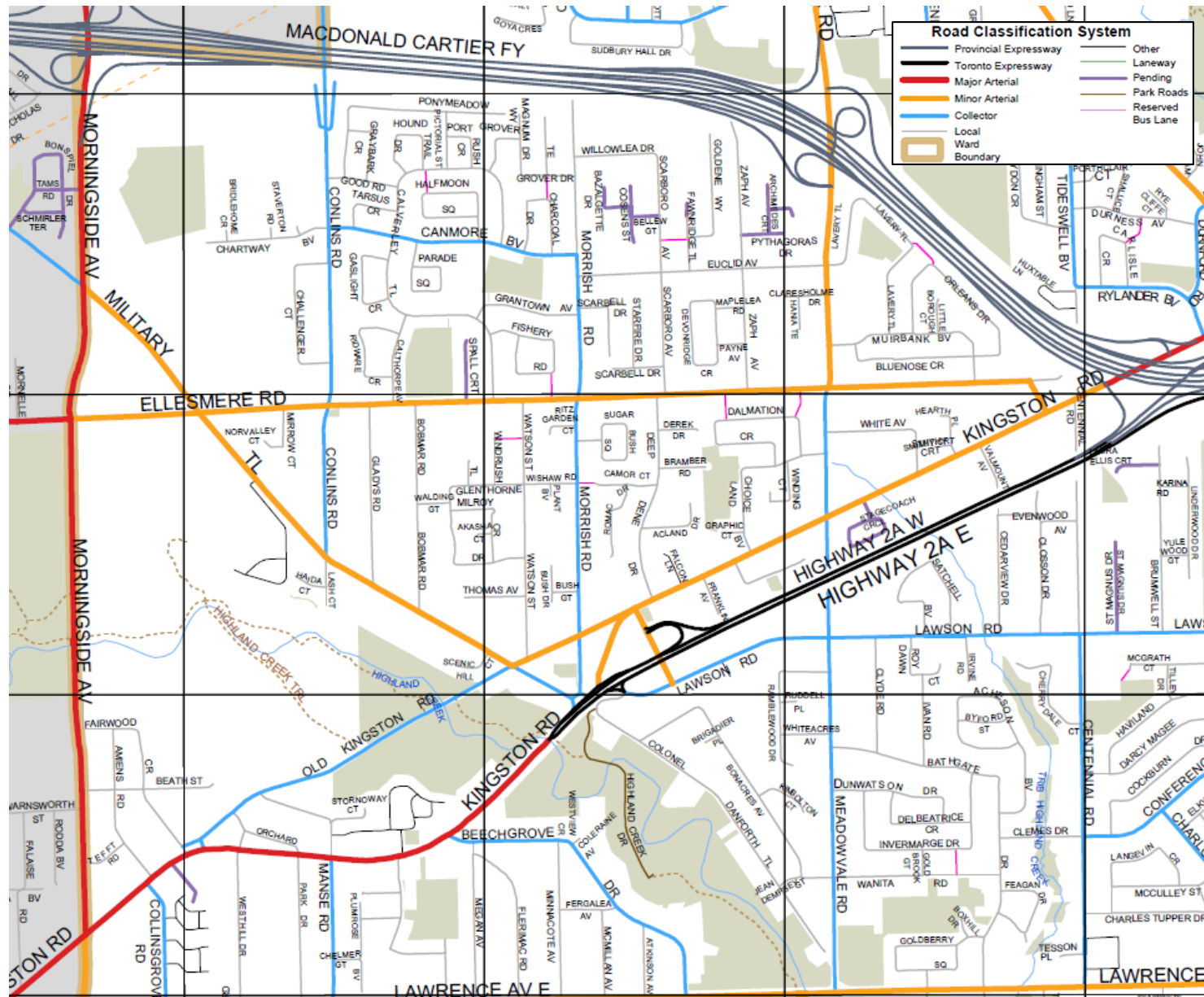


Exhibit 5-10: Surrounding Road Network and Roadway Classifications

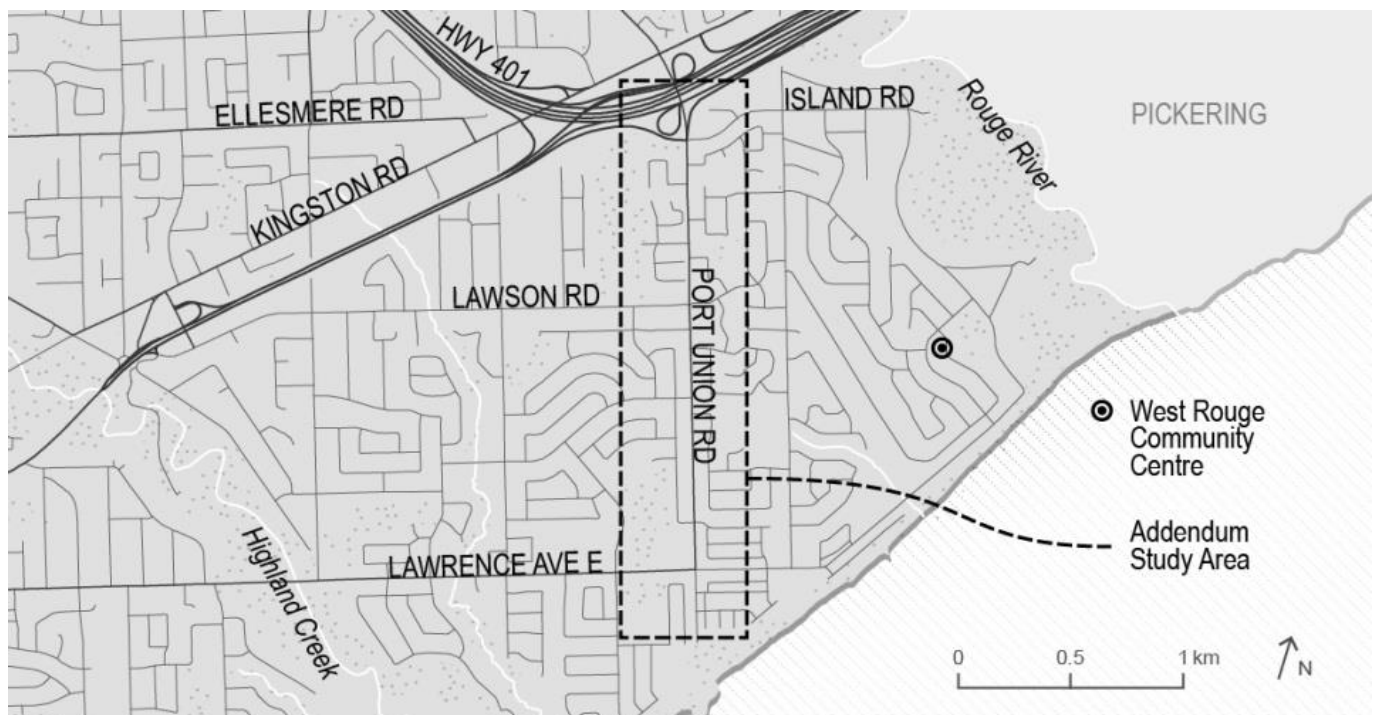


5.3.2 Planned Network

5.3.2.1 Port Union Road EA

The City has studied various options for addressing traffic concerns on Port Union Road between Lawrence Avenue East and Island Road. An EA was completed in 2004, followed by an EA Addendum completed in 2014. Both EA and EA Addendum recommended the widening of Port Union Road between Lawrence Avenue East and Island Road (to the south of Highway 401) to address local transportation needs. The preferred design included the widening of Port Union Road, with the addition of a second northbound travel lane, continuous center left-turn lanes (where feasible), and sidewalks and bike lanes on both sides of Port Union Road. The study area for this EA is shown in **Exhibit 5-11**.

Exhibit 5-11: Port Union Road EA Study Area (2004)



Since the filing of the ESR, in consultation with the community changes have been made to the original study design as part of an EA Addendum to reduce property and community impacts. The length of the landscaped median was reduced to extend between Lawrence Avenue East and Clappison Boulevard, a section of centre left-turn lane was removed south of Josaly Drive, and bike lanes were widened from 1.5 m to 1.8 m. With the proposed modifications private

property is no longer required for this project. The public review period for the EA Addendum Report, documenting the modification to the original EA study, ended on September 15, 2014.

The detailed design and utility relocates for this project were completed as of May 2021. The detailed design was subsequently updated in late 2021 to include a cycle track. A tentative construction plan included an early 2022 start; however, as of April 2022 the construction schedule¹⁰ was updated to identify additional geotechnical investigations are required. Site work is now planned for Summer 2022. The relocation of Toronto Hydro infrastructure is anticipated to start in Fall 2022 and road reconstruction is planned to begin in Spring 2023.

5.4 Parking

On-street parking within the study area is currently permitted within designated areas along Old Kingston Road, Morrish Road, and Kingston Road. The on-street parking is provided within the City of Toronto road ROW and is under City jurisdiction. As shown in **Exhibit 5-12**, the on-street parking supply consists of parallel, perpendicular, and angled parking.

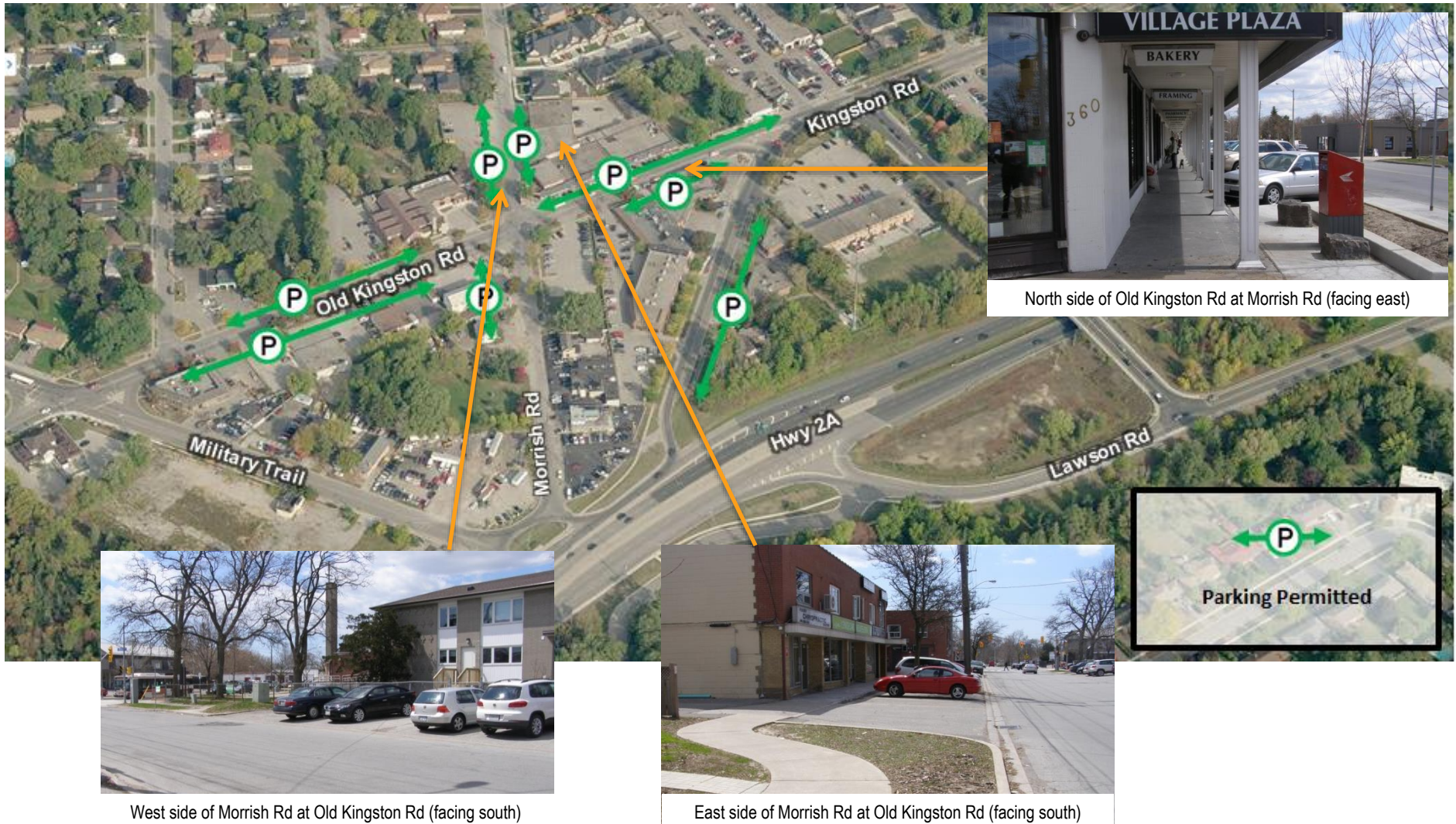
Angled parking is provided in front of the Morrish Plaza on the north side of Old Kingston Road to the east of Morrish Road. Perpendicular parking is provided on Morrish Road to the north of Old Kingston Road. Parallel parking is provided along the south side of Old Kingston Road and on parts of Morrish Road and Kingston Road. Two accessible parking spaces are located in the perpendicular parking area on the east side of Morrish Road (adjacent to the Morrish Plaza).

Private parking is also provided by most of the commercial businesses located within the study area, including the large surface lots at the Highland Centre (southeast corner of Old Kingston Road at Morrish Road) and the Woodland Court plaza (southeast corner of Kingston Road at the Highland Creek Overpass).

Private off-street parking is governed by City by-laws (minimum parking standards), and any new development must provide adequate parking within the development site in accordance with prescribed rates (on a per unit / dwelling basis or per unit area basis depending on the type of use). On-street public parking is not subject to these by-laws and is provided at the discretion of the City based on local needs and traffic operations and space considerations. Consequently, this TMP reviews and provides recommendations only for public-on-street parking, as discussed further in **Section 10.4**.

¹⁰ [Port Union Road Improvements – City of Toronto](#)

Exhibit 5-12: Existing On-Street Parking



Lack of convenient parking was noted as a concern during the public consultation of this study and the 2012 Area Study. In particular, businesses located in the Morrish Plaza have expressed their desire to keep both the angled and perpendicular parking in its current form and have noted that there are currently not enough parking spots immediately adjacent to the Morrish Plaza to accommodate demand during specific time periods and events, including:

- Challenges during weekend events,
- Church events and every Sunday morning,
- Longer stay parking by restaurant customers during evenings,
- Film permits to use this parking areas with no notice to the plaza tenants,
- Mid-day use of the angled parking spaces by customers of the plaza on the south side of Old Kingston Road.

Businesses in the Morrish Plaza have expressed that convenient parking is essential and that any loss of parking will negatively impact their business.

The Toronto Parking Authority (TPA) completed a parking study of the Village area in 2002 and 2011 and did not find a notable shortage of parking or a market for installing parking meters or acquiring lands for a pay parking lot.

5.5 Existing Travel Patterns / Trends

5.5.1 Travel Choices (Mode Share)

The Transportation Tomorrow Survey (TTS) is a household-based telephone survey consisting of interviews of a randomly selected sample of households in the GTHA and surrounding areas. The purpose of the survey is to collect information on the travel habits of residents and provide a database for long-range transportation planning. The survey is conducted every 5 years; the most recent of which was carried out in 2011.

The information collected in the TTS assists transportation planners in understanding the trip choices, purposes, and daily origins and destinations of travelers. TTS data collected for the years 2006 and 2011 is summarized in **Exhibit 5-14** for “HCV and Surroundings” (refer to **Exhibit 5-13**)¹¹, Scarborough, and the City of Toronto as a whole. The presented data

11. Defined as the region bordered by Morningside Avenue, Highway 401, and the Pickering Town Line (see **Exhibit 5-13**). This area, which is slightly larger than the TMP study area, has been selected to provide a representative sample of travel patterns within and

summarizes observed choices of the following travel modes during the AM Peak Period (i.e., trips starting between 6:00 a.m. and 9:00 a.m.):

- Auto (i.e., Auto Driver and Auto Passengers);
- Transit (Local Transit and GO Transit);
- Walk/Cycle; and
- Other (School bus, Motorcycle, and other modes)

Exhibit 5-13: HCV and Surroundings



Exhibit 5-14: AM Peak Period Mode Choices by Trip Start Location

Travel Mode	HCV and Surroundings		Scarborough		City of Toronto	
	2006	2011	2006	2011	2006	2011
Automobile	72%	68%	66%	63%	60%	59%
Local Transit (TTC Only)	15%	17%	23%	25%	27%	28%
GO Transit	7%	6%	2%	2%	1%	1%
Walk or Cycle	6%	7%	8%	8%	11%	11%
Other (school bus, taxi)	1%	2%	2%	2%	1%	2%

The TTS data confirms that the automobile is the dominant mode of travel in the HCV area, accounting for more than two-thirds of all trips. The auto usage in the HCV area is also high in

in the vicinity of the study area. The defined area was also selected to match the zone geography of the TTS survey. It is anticipated that the trends and patterns of this larger area are generally expected to be representative of the HCV study area.

comparison to Scarborough and the City of Toronto as a whole. However, the automobile mode share in HCV and Surroundings declined from 72% to 68% between 2006 and 2011; transit usage increased from 15% to 17% during the same five-year period.

The TTS data also suggests that GO Transit is used more in HCV and Surroundings than in Scarborough and the City of Toronto as a whole. This is due to the proximity of HCV to the Rouge Hill and Guildwood GO Stations (i.e., approximately 4 km from HCV center to each station).

Finally, walking and cycling travel modes are used less overall in HCV and Surroundings (7%) than in Scarborough (8%) and the City of Toronto as a whole (11%). However, for school trips (including elementary, high school, and post-secondary), the use of transit and walk / cycle modes is much higher than that shown in **Exhibit 5-14**, which summarizes data for all trip purposes. For school trips only, transit and walk / cycle trips account for 38% and 26%, respectively, in 2011 for HCV and Surroundings.

Therefore, based on a comparison of the HCV and Surroundings travel mode use to the rest of Scarborough and the City of Toronto as a whole, there appear to be opportunities to decrease the dependency on the private automobile by increasing transit and walking and cycling mode splits. This could occur through the development of a more pedestrian and cyclist friendly transportation network and providing more convenient connections to transit.

5.5.1.1 Travel Patterns (Origins and Destinations)

TTS data was also used to examine the origin-destination patterns of auto trips that start or end in the HCV and Surroundings in the AM and PM peak periods. **Exhibit 5-15** and **Exhibit 5-16** illustrate the distribution of AM peak period auto trips that originate from the HCV and Surroundings and the PM peak period trips that are destined to the HCV Area, respectively.

Exhibit 5-15: 2011 AM Peak Period Auto Trips Originating from HCV and Surroundings

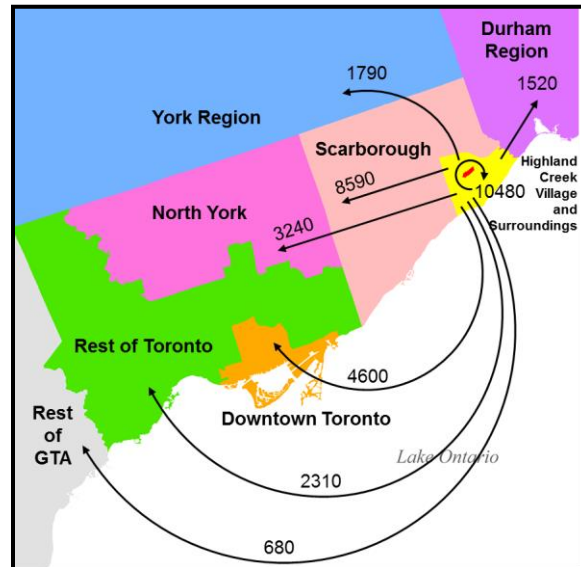
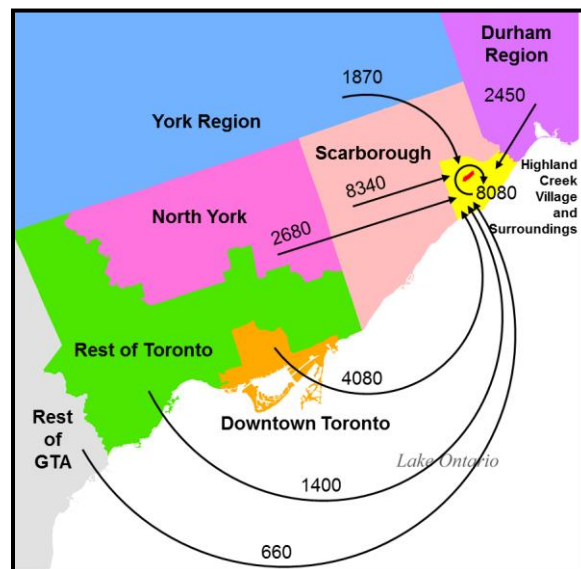


Exhibit 5-16: 2011 PM Peak Period Auto Trips Destined to HCV and Surroundings



According to the TTS data, internal trip making within the HCV and Surroundings is significant; over 30% of the trips that start or end in the HCV and Surroundings during the AM and PM peak periods stay within this area. The rest of Scarborough and Downtown Toronto are the next most significant trip locations for HCV and Surroundings trip makers. Overall, local area trip makers are primarily observed to stay within the City of Toronto with relatively few trips going to/from York Region and Durham Region to the north and east. HCV and Surroundings trip makers

primarily travel to and from points within Scarborough and points to the west within the City of Toronto.

Exhibit 5-17 and **Exhibit 5-18** illustrate the observed 2011 TTS AM peak period transit mode share for TTC and GO Transit, respectively, by area of destination for trips starting in HCV and Surroundings. As shown by **Exhibit 5-17**, TTC mode splits are highest for trips destined for Downtown Toronto (almost 40%), followed by trips destined for the Rest of Toronto (between 18% and 24%), North York, and the Rest of Scarborough. **Exhibit 5-18**, on the other hand, reveals that GO Transit is primarily used by trip makers destined for Downtown Toronto (40% mode split).

**Exhibit 5-17: TTC AM Peak Period Mode Share by Destination
(Trip Start in HCV and Surroundings)**

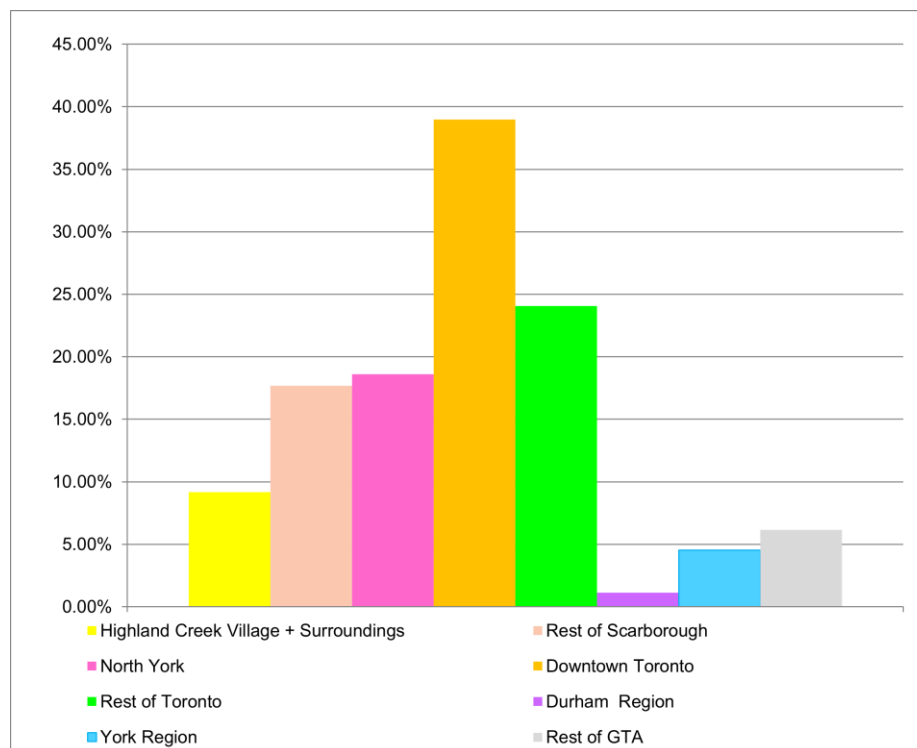
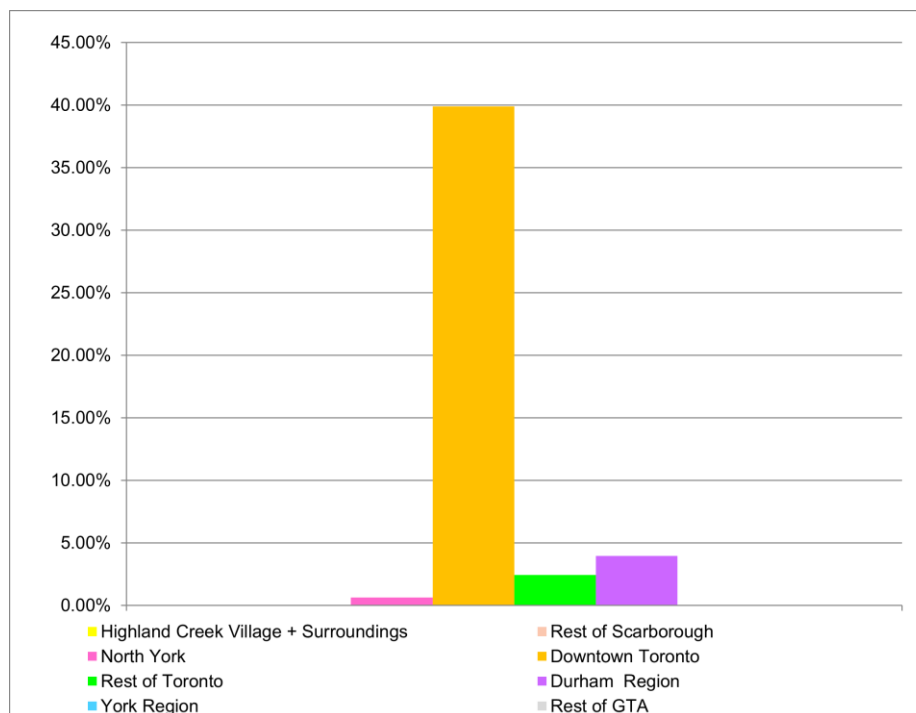


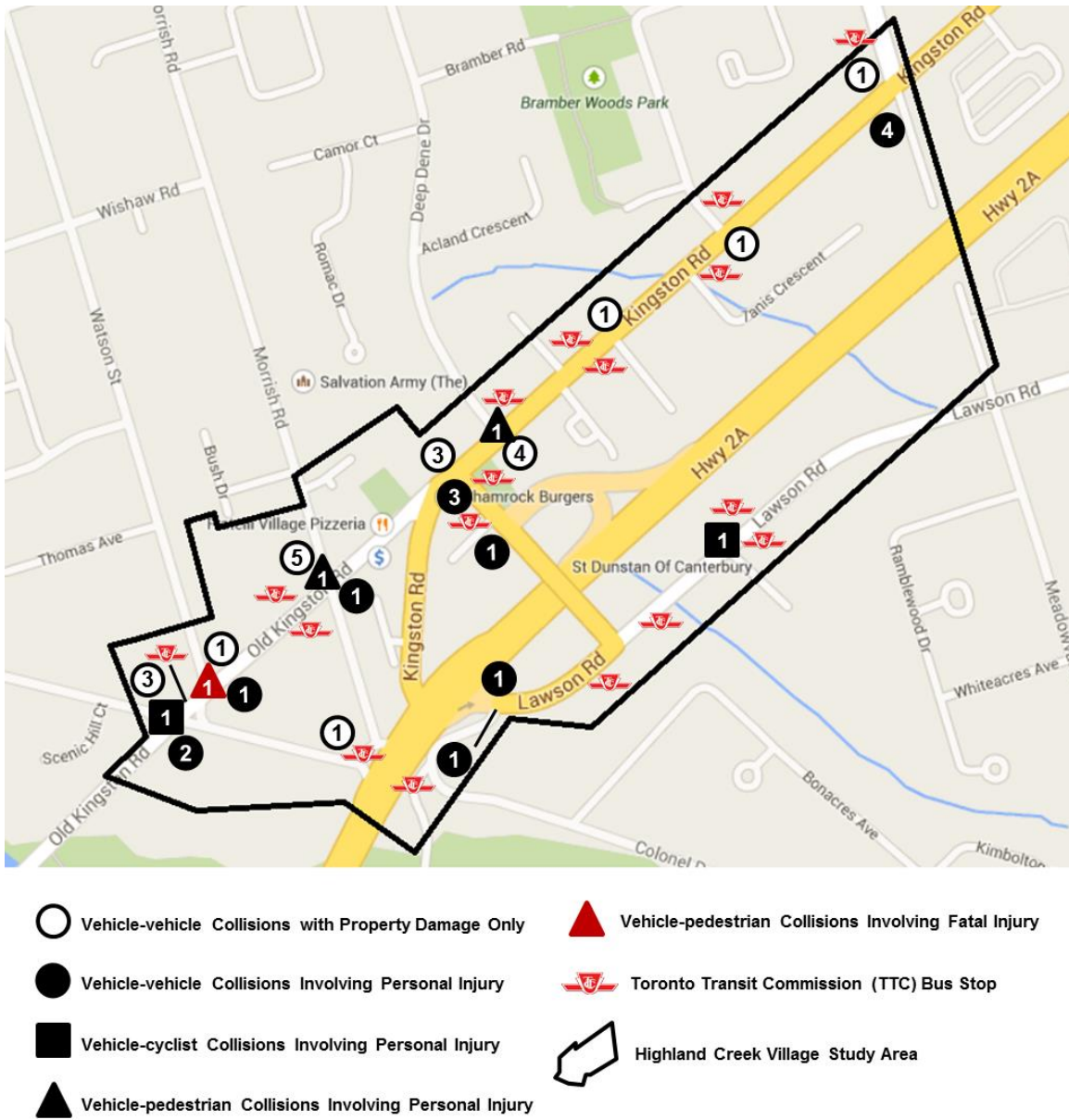
Exhibit 5-18: GO Transit AM Peak Period Mode Share by Destination (Trip Start in HCV and Surroundings)



5.6 Collision Assessment

According to data provided from the City of Toronto's Motor Vehicle Collision Database, in the three-year period from November 5th, 2010, to November 4th, 2013, a total of 39 collisions occurred at intersections in the HCV TMP study area. **Exhibit 5-19** displays the distribution of these collisions, categorized by collision type. Most recorded collisions (40%) were classified as "rear-end" collisions and the vast majority of these collisions (90%) were reported to have occurred in "clear" environment conditions.

Exhibit 5-19: Reported Collisions in HCV TMP Study Area (at Intersections) between November 5th, 2010 and November 4th, 2013



Of the total 39 collisions, five involved pedestrians / cyclists and all of these collisions were reported to occur between a turning vehicle (either to the right or left) and a pedestrian / cyclist. The circumstances associated with the observed pedestrian and cyclist collisions are described in more detailed below:

- The only fatal collision was at the intersection of Watson Street and Old Kingston Road between an eastbound vehicle turning left onto Watson Street and a pedestrian at 10:25 p.m. (at “dark”). The environmental conditions were “clear”, and the road surface conditions were reported as “dry”. The sidewalk located on the north side of Old Kingston

Road between Watson Street and Military Trail curves away from the travelled portion of the Old Kingston Road. This fairly wide separation between the sidewalk and the travel lanes, coupled with some vegetation (i.e., two large trees are seen in Google street view between the sidewalk and the travel lanes), potentially creates some sightline obstructions for motorists to the pedestrians / cyclists on the north sidewalk. In this incident, the driver was reported to fail to give the ROW to the pedestrian, and as being inattentive.

- There is record of a non-fatal injury collision at the intersection of Old Kingston Road and Military Trail between a westbound vehicle turning right onto Military Trail and a cyclist at 11:25 a.m. (“daylight” condition). The conditions were “clear” sky with a “dry” road surface. The collision could potentially be attributed to visibility, with the generally wide lateral distance between the sidewalk and the edge of the pavement at this location resulting in pedestrians and cyclists on the north sidewalk being outside of the driver’s cone of vision. In this type of situation, wide separation between turning vehicles and cyclists riding on a sidewalk can create a potential risk for collisions because turning motorists do not look for fast traffic approaching from the sidewalk.
- A minor personal injury collision occurred at the intersection of Old Kingston Road and Morrish Road between a pedestrian and a southbound vehicle turning left onto Old Kingston Road at 8:40 a.m. It was raining and the road surface conditions were “wet”. For this collision, based on the information available from the City’s database, it is difficult to speculate the cause of the collision. The driver was reported to fail to give the ROW and as being inattentive. However, other unknown contributing issues could include low-visibility driving conditions or slippery road surface conditions at the time of the collision, or even an obstructed visibility triangle at the northeast corner of the intersection.
- There is a record of a minimal personal injury collision reported to occur at the intersection of Kingston Road and Deep Dene Drive between a southbound vehicle making a right-turn onto Kingston Road and a pedestrian at 1:25 p.m. during ideal driving conditions (i.e., “clear” sky and “dry” road surface conditions). Although not noted in the collision report, there is potential that an obstructed visibility triangle at the northwest corner could have contributed to this collision.
- There was a collision at Old Sweats Lane at Lawson Road between an eastbound vehicle turning right onto Old Sweats Lane and a 72-year old pedestrian at 2:04 p.m. The driving conditions were ideal: “clear” sky and “dry” road surface conditions. The driver was reported to fail to give the ROW and as being inattentive.

In addition to the intersection-based collision data listed above, a historical (2009-2013) collision review and analysis was undertaken by City of Toronto staff for the section of Old Kingston Road from Morrish Road to the Highland Creek Overpass. Based on the collected data, it was determined that there have been 18 collisions along this segment of Old Kingston Road, 10 of which involve people backing out of the angled parking provided adjacent to the Morrish Plaza.

During the same period, no collisions were reported on the south side of this segment of Old Kingston Road where parallel parking is presently provided. These data are consistent with some research that suggests that on-street angled parking is potentially more hazardous than parallel parking due to the amount of space required for manoeuvring and the inadequate sight lines that are provided to drivers (particularly when upstream spots are blocked by parked cars) when backing out of the parking space into traffic.

5.7 Traffic Operations Assessment

5.7.1 Data Collection

Turning Movement Counts (TMC), Automatic Traffic Recorder (ATR), and signal timing plans for the study area were provided by the City of Toronto. Traffic counts from the area surrounding the study area were also provided by the City of Toronto to assist with the calibration of the “sub-area” transportation demand model (see **Section 6.2.2** for more details).

Although traffic count data was available for the majority of the study area (generally collected between 2010 and 2013), specific key intersections only had out-dated 1996 TMC data. For these specific key intersections, listed below, additional TMC data was collected at the following intersections during the AM and PM peak periods as part of this study on June 4, 2014:

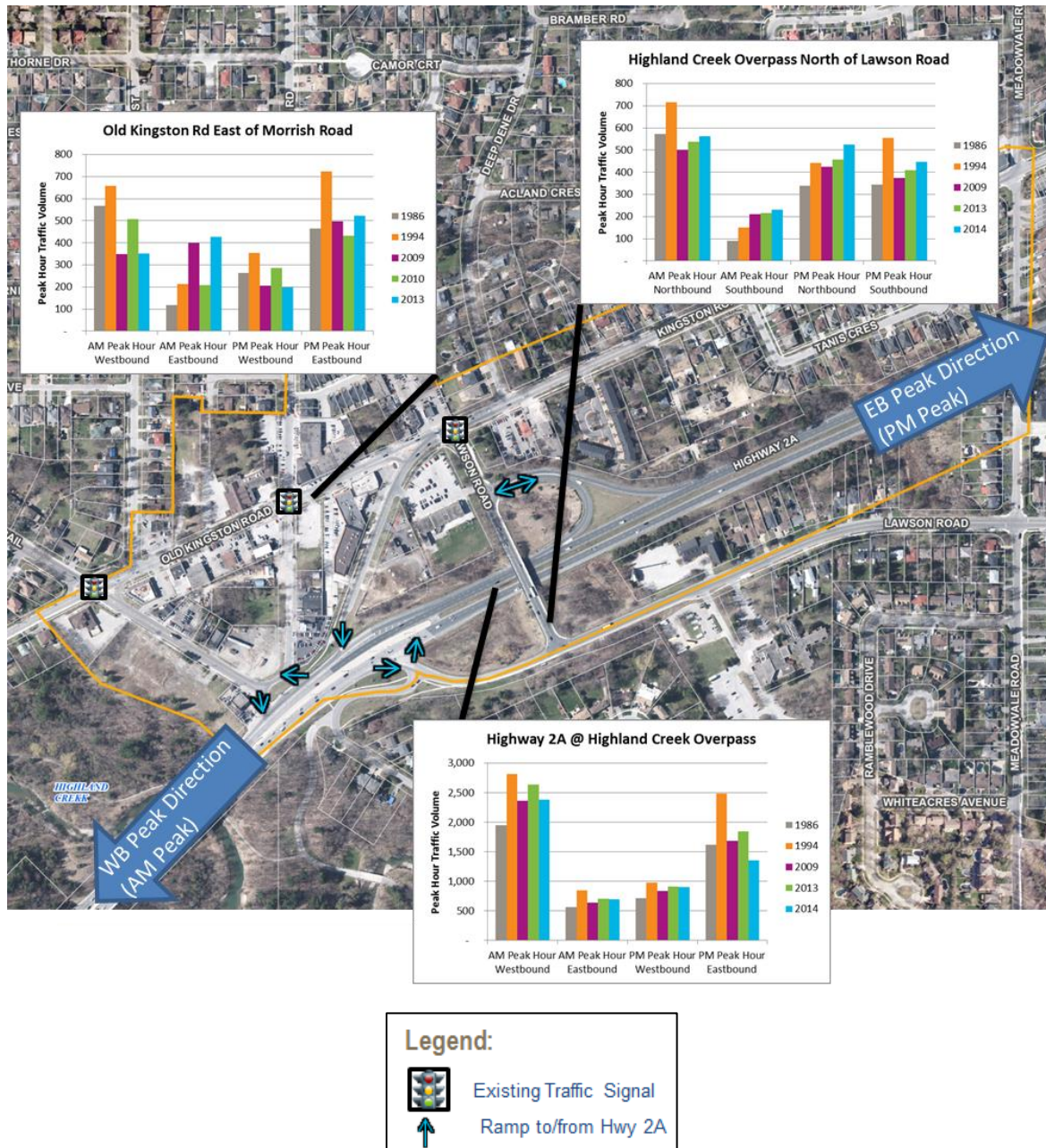
- Highland Creek Overpass and Highway 2A Ramps
- Highland Creek Overpass and Lawson Road
- Lawson Road and Meadowvale Road
- Kingston Road and Meadowvale Road

ATR data was also collected at nine locations in the vicinity of Kingston Road and Highway 2A to capture the traffic volume using the ramps and approach roads to the highway in both the east and westbound directions. An exhibit of the ATR data collection locations is included in **Appendix G**, along with the detailed TMC’s and ATR traffic volumes that were collected.

5.7.2 Historical Traffic Data Analysis

As shown in **Exhibit 5-20**, AM and PM peak hour traffic count data collected between the years 1986 and 2014 along Old Kingston Road, the Highland Creek Overpass, and Highway 2A reveal that traffic volume levels throughout the study area have stabilized relative to the peaks observed in the mid-1990s. Generally, there has not been a great amount of traffic growth either for traffic within the Village or for traffic travelling through the Village.

Exhibit 5-20: Historical AM and PM Peak Hour Traffic Data (1986-2014)



The count data also confirms that the peak direction of travel in the AM is westbound, and eastbound is the peak direction of travel in the PM. Although congestion-related delays exist during the peak AM and PM commuting periods (primarily in the peak directions of travel), traffic has been relieved in the past decades for the peak travel directions primarily as a result of the widening of Highway 401 to 12 lanes through to Durham Region, which was complete by 2000. In addition, the majority of the surrounding area has been fully built out according to the 2011 National Household Survey which identifies that over 92% of the dwellings in the area were

constructed by 2000. With full-build out of the area there is less growth in traffic volumes within the area, although some through traffic volumes would continue to increase over time.

5.7.3 Traffic Operations Analysis

Traffic analysis was conducted to examine existing conditions at the following signalized intersections in the study area:

- Kingston Road and Highland Creek Overpass
- Old Kingston Road and Morrish Road
- Old Kingston Road and Military Trail

Intersection delays, volume to capacity (v/c) ratios, and Level of Service (LOS) for the above noted intersections were assessed using Synchro. Synchro applies Highway Capacity Manual (HCM 2000) methodologies and provides a detailed assessment of traffic operations for overall, approaches and 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. In general, LOS A describes the best free-flow conditions, while LOS F relates to long traffic delays and congested travel conditions.

The v/c ratio represents how close a given road or intersection movement is to capacity (i.e., the theoretical maximum number of vehicles that can be served). A v/c ratio of between 0.00 and 0.49 means that less than half the capacity of the travel lane is being used by vehicles; this is generally associated with good operating conditions. As the v/c ratio approaches 1.00, traffic conditions progressively worsen and at 1.00, capacity is reached, resulting in poor operations including severe recurring queueing and congestion.

To obtain the existing traffic volumes for use in the assessment, the TMC data for each intersection was balanced with adjacent intersections based on engineering judgment. As no growth factor was applied to the older data, the newest count data was accepted to include any growth in traffic in the Village, and adjacent intersection volumes were increased where necessary to accommodate any traffic volume differences. This method does not account for “lost vehicles” to driveways that are located between intersections. Please refer to **Appendix G** for the balanced volumes that were used for the existing conditions traffic analysis.

The existing traffic volumes were analyzed using existing lane configurations and signal timings provided by the City of Toronto. The traffic operations analysis results for the study area

intersections are summarized in **Exhibit 5-21** and **Exhibit 5-22**, for the AM and PM peak hours, respectively. Detailed Synchro outputs are provided in **Appendix H**.

Exhibit 5-21: Existing Conditions Traffic Analysis - AM Peak Hour

Intersection	Approach / Movement		Delay(s)	LOS	v/c
Kingston Road & Highland Creek Overpass	EB	Thru/Right	9.9	A	0.21
	WB	Left	9.5	A	0.15
		Thru/Right	12.5	B	0.46
	NB ¹²	Thru/Left	56.6	E	0.97
		Right	17.3	B	0.14
	SB	Left/Thru/Right	15.2	B	0.02
Overall Intersection			27.4	C	0.68
Old Kingston Road & Morrish Road	EB	Left/Thru/Right	3.5	A	0.21
	WB	Left/Thru/Right	6.9	A	0.55
	NB	Left/Thru/Right	26.6	C	0.03
	SB	Left/Thru/Right	28.6	C	0.33
	Overall Intersection			8.8	A
Old Kingston Road & Military Trail	EB	Left/Thru/Right	13.2	B	0.33
	WB	Left/Thru/Right	19.4	B	0.74
	NB	Left	15.3	B	0.02
		Thru/Right	17.7	B	0.27
	SB	Left	18.5	B	0.28
		Thru/Right	16.1	B	0.11
Overall Intersection			17.8	B	0.54

Note: ****Bold** text in the two far right columns denotes critical movements (LOS E or F and/or v/c ratio greater or equal to 0.85)

Exhibit 5-22: Existing Conditions Traffic Analysis - PM Peak Hour

Intersection	Approach / Movement		Delay (s)	LOS	v/c
Kingston Road & Highland Creek Overpass	EB	Thru/Right	12.2	B	0.44
	WB	Left	11.8	B	0.31
		Thru/Right	10.1	B	0.25

12. Modelled as a Thru/Left and Exclusive Right lane in Synchro with width of 3.0 m each, as per City of Toronto Synchro Guidelines)

Intersection	Approach / Movement	Delay (s)	LOS	v/c
	NB ¹³ Thru/Left	24.0	C	0.57
	Right	18.3	B	0.23
	SB Left/Thru/Right	15.2	B	0.01
	Overall Intersection	15.4	B	0.49
Old Kingston Road & Morrish Road	EB Left/Thru/Right	11.4	B	0.44
	WB Left/Thru/Right	7.5	A	0.28
	NB Left/Thru/Right	20.8	C	0.02
	SB Left/Thru/Right	22.5	C	0.27
	Overall Intersection	11.5	B	0.39
Old Kingston Road & Military Trail	EB Left/Thru/Right	13.4	B	0.38
	WB Left/Thru/Right	28.9	C	0.23
	NB Left	15.2	B	0.01
	Thru/Right	15.7	B	0.07
	SB Left	21.6	C	0.48
	Thru/Right	17.1	B	0.22
	Overall Intersection	19.9	B	0.42

Note: ****Bold** text in the two far right columns denotes critical movements (LOS E or F and/or v/c ratio greater or equal to 0.85)

Based on the intersection capacity analyses results presented in **Exhibit 5-21** and **Exhibit 5-22**, the intersections within the study area are operating at overall good LOS C or better with available capacity during both the AM and PM peak hours. The only intersection with a “critical movement”, which is a LOS E or F and/or a v/c ratio of 0.85 or greater for a single through or turning lane, is the Kingston Road and the Highland Creek Overpass intersection; the northbound shared left/right movement at this intersection operates at LOS E with a V/C ratio of 0.97 in the AM peak hour (shown in bold text in **Exhibit 5-21**). As the other movements at this intersection operate at LOS A and B, this may indicate a need to revise the intersection signal timing.

13. Modelled as a Thru/Left and Exclusive Right lane in Synchro with width of 3.0 m each, as per City of Toronto Synchro Guidelines)