

Chapter **Two**

Roads and Traffic Management



Rapidway on Highway 7 in the Town of Richmond Hill

Road System in York Region

The road system supports the local, Regional and Provincial economies by carrying people, cyclists, cars, buses and commercial vehicles.

Roads are an integral part of the public transit system and are important for the goods movement network linking the rail and air transport systems.

The road system is also extremely important to land use planning. The road system in York Region is structured in the following way:

- Local municipalities own and maintain the local road network which includes residential, commercial and industrial local and collector roads.
- York Region owns and maintains the majority of the arterial roads in the Region, as well as some former Provincial highways. The alignment of the arterial roads generally follows a two-kilometre concession road grid system.
- The Province of Ontario owns and maintains the 400-series highways in York Region. The exception is Highway 407 ETR, which is currently under the jurisdiction of a private consortium. The Province also owns and operates some rural highways, including parts of Highway 7, 9 and 48.

York Region sets a high standard for planning and maintaining this important asset. A ten-year capital plan is used to program and prioritize major Regional road improvement projects.



quickfacts

At the end of 2012, within York Region there were:

- **4,095** linear kilometres of local roads
- **1,090** linear kilometres of Regional roads
- **77** linear kilometres of Provincial highways
- **207** linear kilometres of Provincial 400 series highways

Road Functional Classes

The system of local roads, arterial roads and highways in York Region are owned and operated by the local municipalities, the Regional municipality of York and the Province of Ontario. **Figure 2** illustrates road jurisdiction in York Region.

York Region's multi-jurisdictional road network performs efficiently and safely because the roads are designed and operated to serve their intended purposes. These purposes include provisions for all modes of transportation and goods movement.

Local roads primarily provide access to individual properties and developments. Consequently, traffic volumes and speeds on these roads are generally lower. Collector roads provide connections for shorter trips in local neighbourhoods.

Arterial roads provide connections for trips made within York Region and across municipal boundaries.

The provincial expressway system provides major corridors for all traffic, including transit and trucks, over medium to longer distance trips.

In 2013, York Region's Ten-Year Roads Capital Plan consisted of \$1.36 billion for road related capital improvements. In addition, an annual budget amount of \$43.6 million is allocated for operations and maintenance of the Regional road network in 2013.

Contact Information

To report a problem on a Regional road, contact:

Roads Dispatch, Road Maintenance Section

Phone: 905-895-1200, ext. 75200 or Toll-free 1-877-464-9675

Email: dispatch@york.ca



Rural section of McCowan Road in the City of Markham

Figure 2

Road Jurisdiction

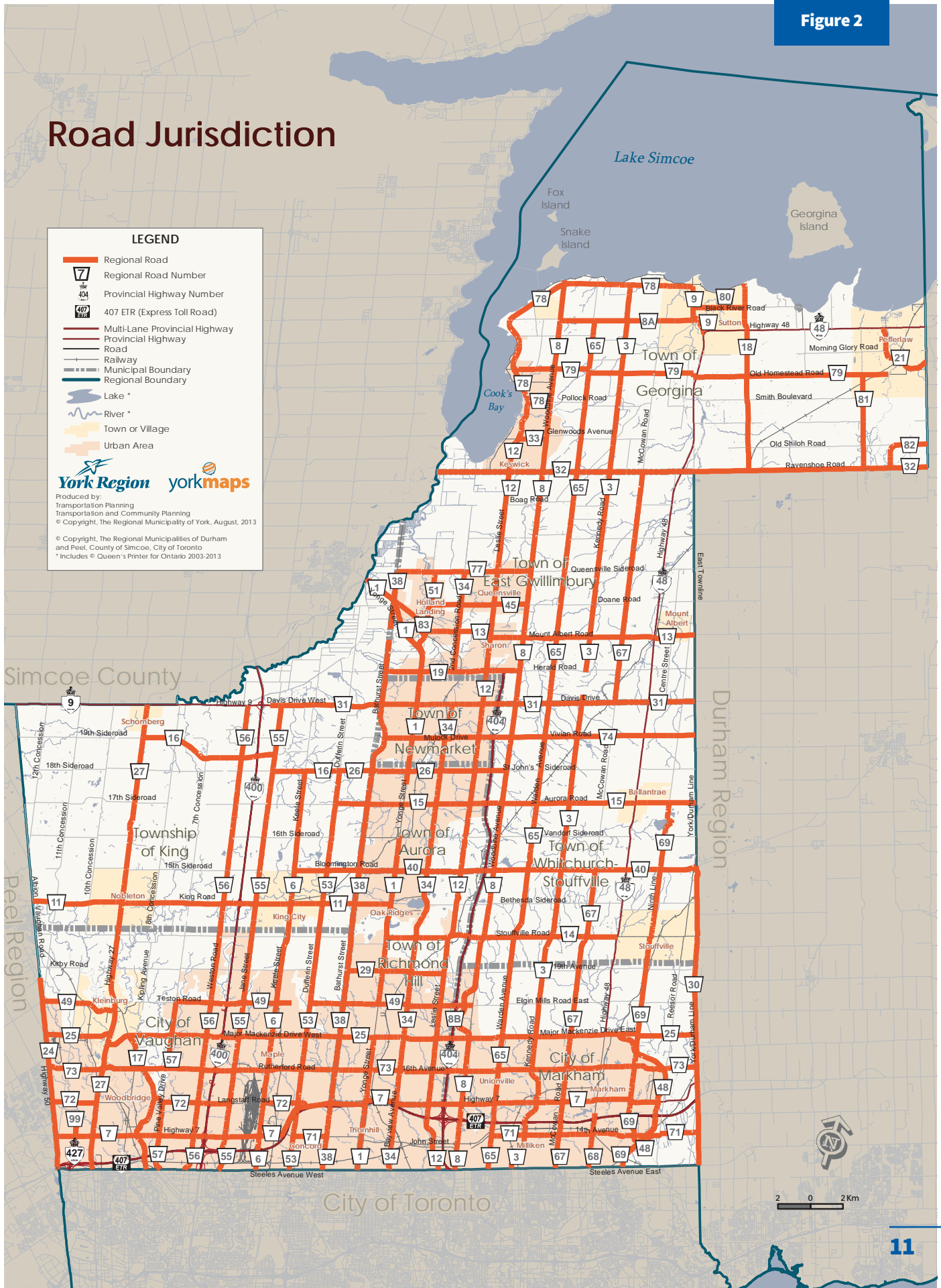
LEGEND

- Regional Road
- Regional Road Number
- Provincial Highway Number
- 407 ETR (Express Toll Road)
- Multi-Lane Provincial Highway
- Provincial Highway
- Road
- Railway
- Municipal Boundary
- Regional Boundary
- Lake *
- River *
- Town or Village
- Urban Area

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quickfacts

York Region is responsible for most of the arterial roads in the Region, including former Provincial Highways 7, 11, 27, 47 and parts of Highways 9, 48 and 50. In total, the Region is responsible for over 3,500 lane-kilometres of arterial roadways.

Regional Road Network

The basic road allowance width of Regional roads is currently 36 metres. Right-of-way widths of 43 metres or greater are planned along a number of roads, such as Highway 7, Yonge Street, Dufferin Street (Steeles Avenue to Clark Avenue), Rutherford Road, Jane Street and former Provincial Highway 27, to support High Occupancy Vehicle (HOV) lanes, cycling facilities, rapid transit and additional traffic lanes. The Regional road system is co-ordinated with the Provincial and local municipal road systems to protect rights-of-way for future system improvements and to recognize that these rights-of-way will include pedestrian and bicycle movements as well as above and below ground utilities. **Figure 3** illustrates number of lanes on Regional roads.

The boundary arterial roads are generally under shared jurisdiction. Peel Region and York Region share jurisdiction of Highway 50 up to the Bolton boundary. Peel Region maintains the road under contract with York Region. York Region and Durham Region share responsibilities for the boundary roads between them. York Region is responsible for maintaining York-Durham Line from Steeles Avenue to Bloomington Road and all of Ravenshoe Road. Durham Region is responsible for the rest of York-Durham Line and all of Lake Ridge Road.

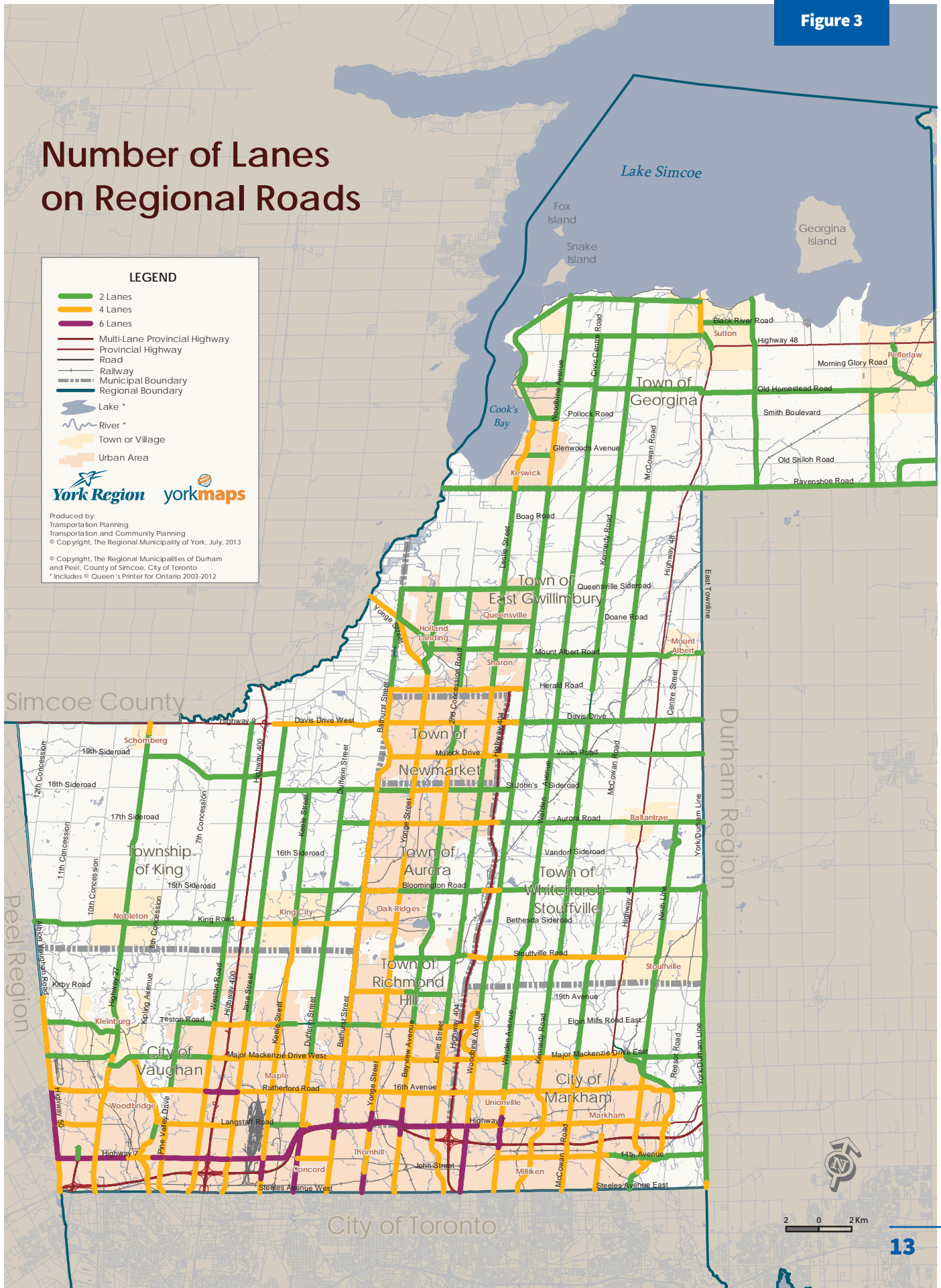
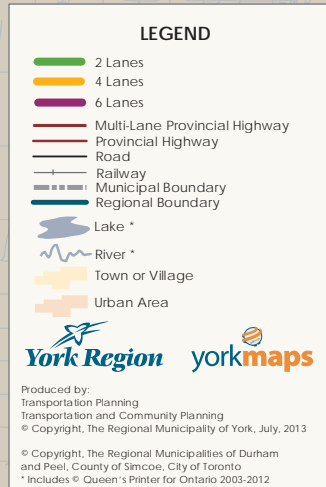
Steeles Avenue at the southern edge of York Region is under the jurisdiction of the City of Toronto.



Traffic waiting at signal on 16th Avenue in the City of Markham

Figure 3

Number of Lanes on Regional Roads



2 0 2 Km

Ten-Year Roads Construction Program

The *Transportation Master Plan (TMP)* provides the framework for developing the current ten-year roads construction program. The TMP supports the Regional goal of sustainability, which is measured through three themes: sustainable natural environment, economic vitality and healthy communities.

The Roads Construction Program, also known as the Ten-Year Roads Capital Plan, is a program of planned road and transit improvements to accommodate growth in population and employment in the Region and to upgrade existing roads to meet Regional design standards. Major projects include road widenings, grade separations, road re-constructions, jog eliminations and major intersection improvements.

It is also geared towards meeting the Region's 2011-2015 Strategic Priority Area of "Continue to Deliver and Sustain Critical Infrastructure" with the focus on moving people. It includes a number of ongoing programs designed to optimize the efficiency and effectiveness of the Regional road network. This includes a series of projects as part of the Intelligent Transportation System (ITS) Strategy first adopted as part of the 2008 Roads Capital Plan. The goal of these projects is to provide more accurate and timely data to commuters so more informed travel choices can be made. It also allows York Region to be more responsive to incidents on our roads. **Figure 4** illustrates the 2013 Ten-Year Roads Construction Program.

2013 Ten-Year Roads Construction Program includes:

- Building approximately 266 new lane-kilometres of arterial roads
- Resurfacing approximately 700 lane-kilometres of Regional roads
- Rehabilitating approximately 100 bridges and culverts
- Replacing three bridges
- Completing 17 intersection improvements
- Purchasing 140 additional and 250 replacement fleet vehicles

Contact Information

For more information about projects in the Ten-Year Capital Plan, please contact:

Road Capital Delivery

Phone: 905-830-4444 , ext. 75148 or Toll-free 1-877-464-9675

Email: transportationservices@york.ca



Road construction on Warden Avenue in the City of Markham

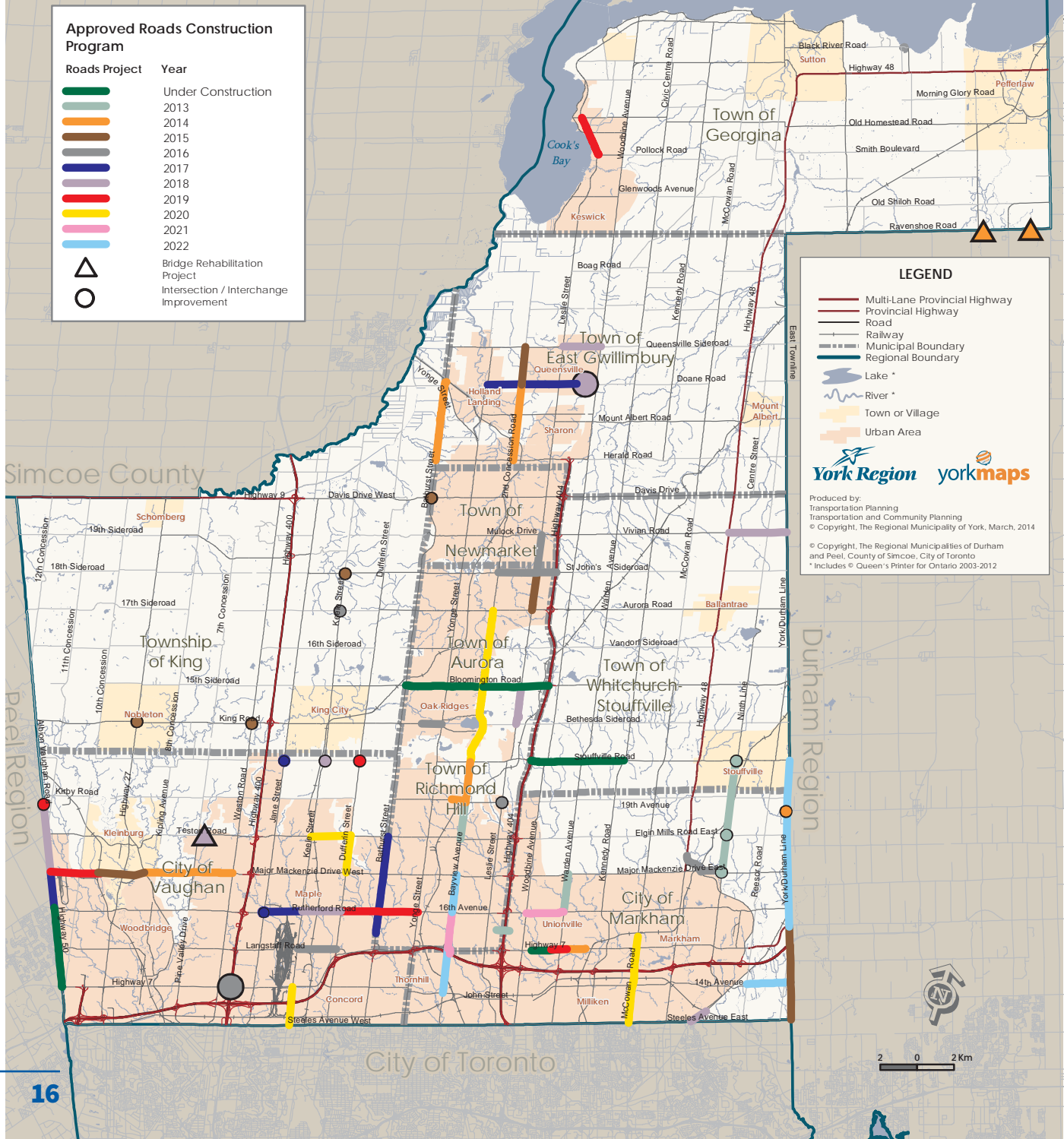


Road and bridge construction on Warden Avenue in the City of Markham

Figure 4

2013 - 10 Year Roads Construction Program

Approved by Regional Council January 24, 2013



Road Widening and Resurfacing between 2003 and 2012

York Region is committed to maintaining and improving the Regional road system through road widening and reconstruction to meet the needs of population and employment growth.

To optimize the delivery of different Regional infrastructure, road projects are coordinated with water, wastewater, utilities, rapid transit, development construction and maintenance work projects wherever they coincide by location and have similar

construction timing. This will reduce costs and minimize interruptions to the public.

Road widening helps ease congestion on York Region's heavily travelled roads, while resurfacing projects ensure that the road infrastructure will continue to be in a state of good repair. **Table 1** and **Figure 5** outline the number of linear kilometres of roads that have been improved between 2003 and 2012.

quickfacts

Over the past five years, York Region has:

- Widened 53 linear-kilometres of arterial roads
- Resurfaced 267 linear-kilometres of arterial roads
- Constructed Teston Road interchange and Mount Albert Road grade Separated crossing over Highway 404 extension
- Reconstructed and improved seven Regional intersections

Table 1 - Construction Projects Completed Between 2003 and 2012

Year	Linear Kilometres of Regional Road Widening	Linear Kilometres of Regional Road Resurfacing & Reconstruction
2003	14	11
2004	9	29
2005	6	80
2006	27	38
2007	13	31
2008	10	72
2009	10	89
2010	3	32
2011	18	27
2012	11	46
Total	121	455



Figure 5

Completed Road Projects 2003-2012

WIDENING, RESURFACING & RECONSTRUCTION

Year	Widening	Resurface & Reconstruction
2003		
2004		
2005		
2006		
2007		
2008		
2009		
2010		
2011		
2012		
Highway Interchange		
Intersection Improvement		
Bridge / Culvert		

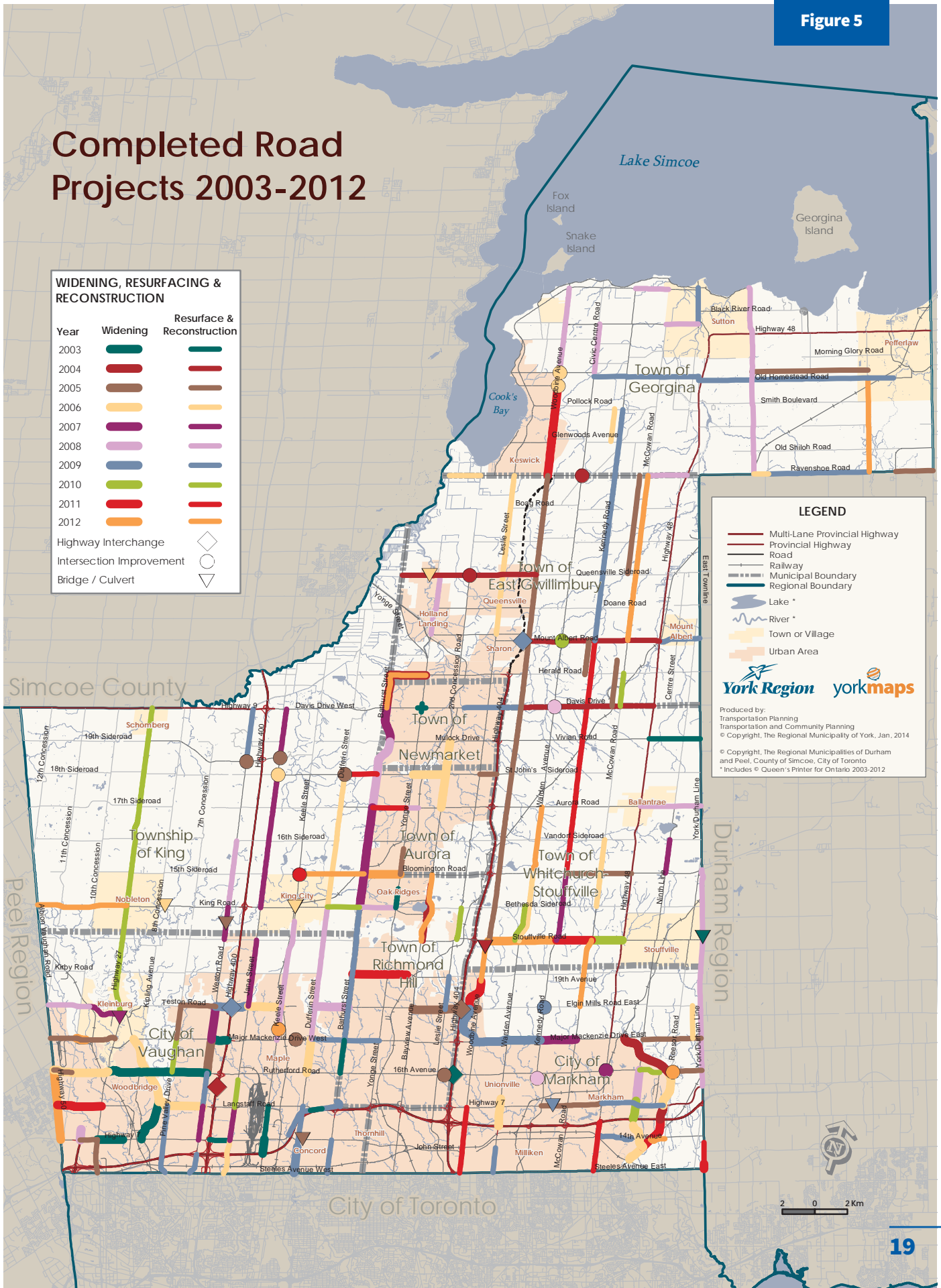
LEGEND

- Multi-Lane Provincial Highway
- Provincial Highway
- Road
- Railway
- Municipal Boundary
- Regional Boundary
- Lake *
- River *
- Town or Village
- Urban Area

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2 0 2 Km

Railway Crossings in York Region

York Region is intersected by six railway corridors: CN York subdivision, CP MacTier subdivision, GO Barrie, CN Bala subdivision, GO Uxbridge and CP Havelock subdivision. CN York, CP MacTier and CN Bala subdivisions are major freight routes. The GO Barrie and GO Uxbridge lines and the CN Bala subdivision are important regional urban passenger rail corridors with GO Transit rail services operating during peak periods.

Rail-rail and rail-road intersections are considered for grade separation as a way to improve train, goods and passenger movements. Grade separations improve rail service reliability and train safety.

Factors such as traffic volume on both rail and road facilities, location, terrain and roadway surface will determine the type of rail crossing implemented to protect public safety.

quickfacts

- There are total of 179 railway crossings accross York Region
- About 83 of these railway crossings are on Regional roads
- Of the 87 level or at-grade crossings, 42 are on Regional roads
- Of the 92 grade separated crossings, 41 are on Regional roads
- There are four rail-to-rail grade separations

*As of December 31, 2013

Grade separation of existing at-grade rail crossing provides for increased traffic capacity and improved traffic safety on road and rail corridors.

Existing and forecast traffic and train volumes are used in a formula to calculate a Rail Exposure Index. This Index is used to determine the warrant for various forms of crossing protection including the need to grade separate existing at-grade rail crossings. The warrant analysis also forms the basis for inclusion of rail-road grade separation in York Region's Roads Construction Program. **Figure 6** illustrates railway crossing locations in York Region.



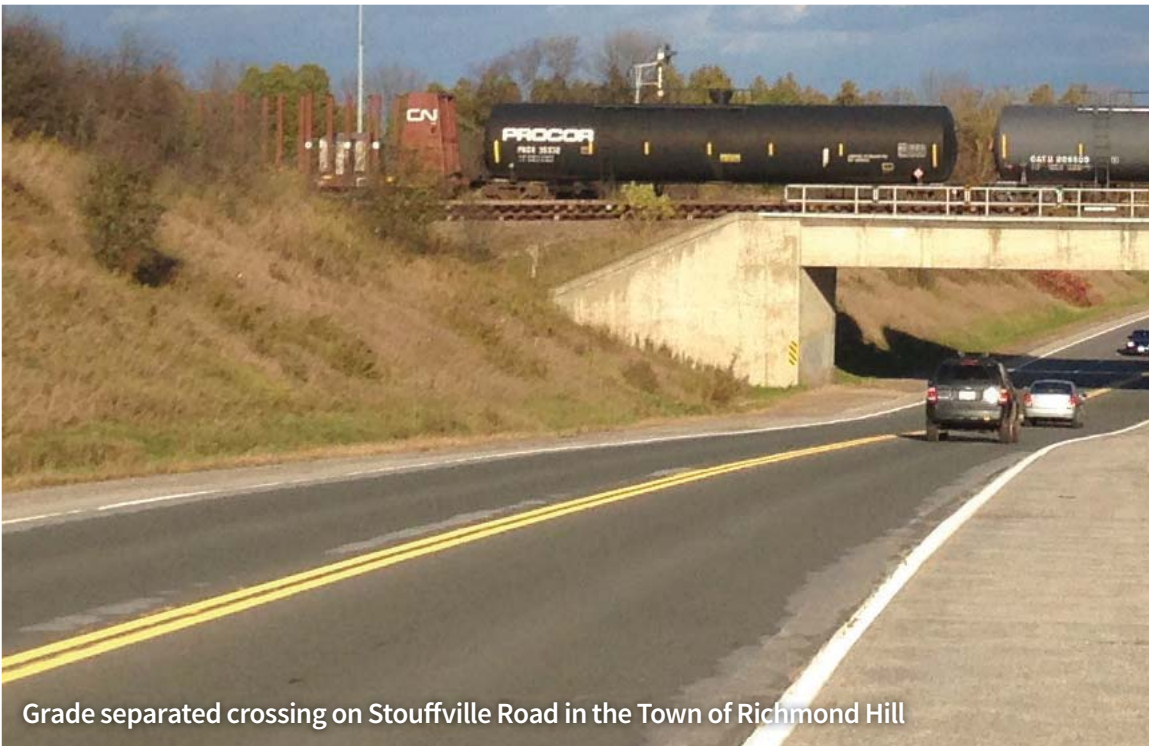
Grade separated pedestrian walkway at the Town of Richmond Hill Centre



At grade crossing on Davis Drive East in the Town of Newmarket



At grade crossing lights on Davis Drive east in the Town of Newmarket



Grade separated crossing on Stouffville Road in the Town of Richmond Hill

Figure 6

Railway Crossings

LEGEND

- Grade Separated
- At Grade
- Multi-Lane Provincial Highway
- Provincial Highway
- Road
- Railway
- Municipal Boundary
- Regional Boundary
- Lake *
- River *
- Town or Village
- Urban Area

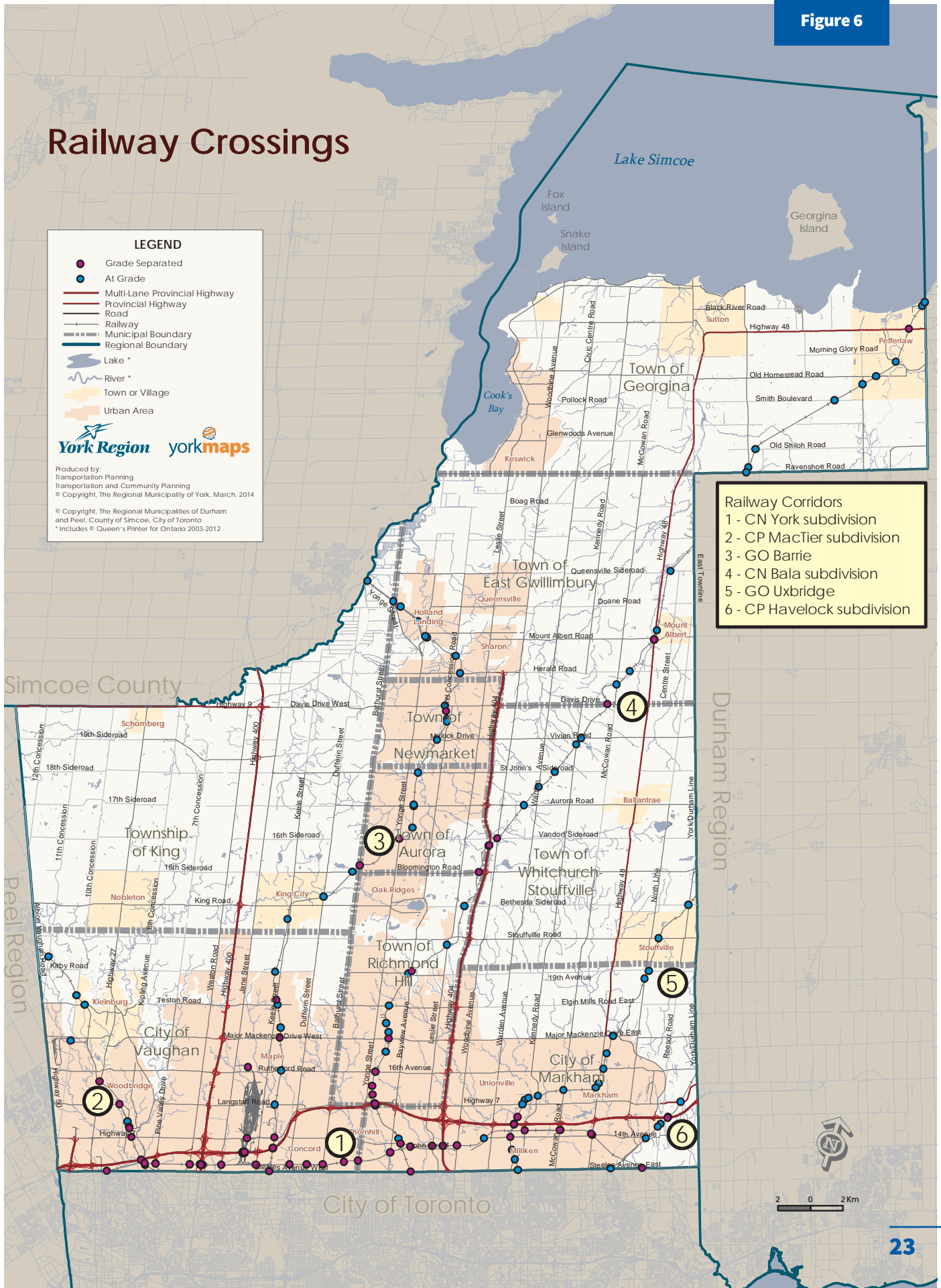
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Railway Corridors

- 1 - CN York subdivision
- 2 - CP MacTier subdivision
- 3 - GO Barrie
- 4 - CN Bala subdivision
- 5 - GO Uxbridge
- 6 - CP Havelock subdivision



Speed Limits on Regional Roads

In April 2011, York Region approved the new speed limit policy for Regional roads. This policy superseded the speed limit policy that was adopted in September 2004.

The new speed limit policy is based on three basic principles:

1. Speed limits should be set as low as reasonably possible to reduce the likelihood of serious injury or death in the event of a collision.
2. Speed limits should ideally be self-enforcing. The design of the roadway should create conditions that encourage compliance with the posted speed limit.
3. Urban areas, towns and villages with higher volumes of pedestrians, cyclists and children playing require special attention.

These principles reflect the injury minimization approach to setting speed limits which suggests that speed limits be

set according to the types of crashes that are likely to occur and the tolerance that the human body can withstand in such crashes. This practice is commonly used in Europe; however, it is a new approach for North American jurisdictions. Using an injury minimization approach to set speed limits is based on the fact that road users are safer when motor vehicles are travelling more slowly.

The mobility impacts of the new speed limit policy on road users and goods movement are expected to be minimal during peak periods when operating speeds are often less than the posted speed limit. The new policy will result in lower speed limits on Regional roads in urban areas and reduce the likelihood of serious injury or death in the event of a motor vehicle collision. The change in policy is necessary to reflect the changing nature of our road system and to reflect the needs of our most vulnerable road users.

When hit by a vehicle travelling at:



Speed Limits on Regional Roads (continued)

The new speed limit policy recommended speed limits of 60 km/h for urban areas, towns and villages and 80 km/h for rural areas. The roadway characteristics that would justify each posted speed limit are summarized in **Table 2**. **Figure 7** illustrates the speed zones in York Region.

Contact Information

For more information please contact:

Traffic Management and ITS Branch

Phone: 905-830-4444, ext. 75201 or

Toll-free 1-877-464-9675

Email: transportationservices@york.ca

Table 2 - Posted Speed Limit for Types of Roadways in York Region

Posted Speed Limit (km/h)	Conditions
40	School Zones – 40km/h speed limit enabled by flashing beacons during school hours
50	Special conditions only
60	Basic speed limit for urban areas, towns and villages.* Adjusted upwards or downwards based on roadway characteristics
70	Special conditions only
80	Basic speed limit for rural areas. Adjusted downwards based on roadway characteristics

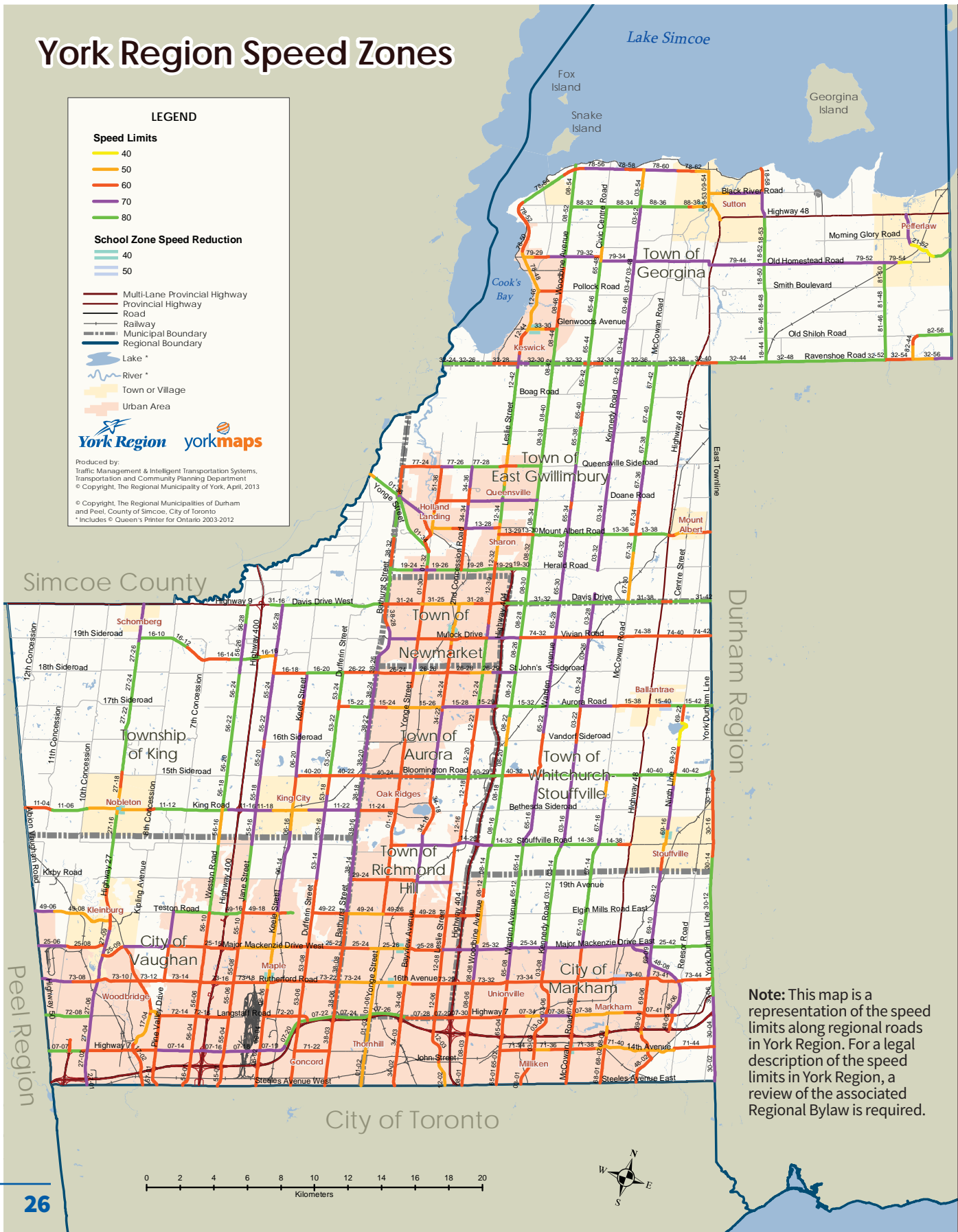
*Urban areas, towns and villages are defined as those areas identified as such on Map 5 of the *Regional Official Plan*



New reduced speed limit sign on a Regional road

Figure 7

York Region Speed Zones



Road Traffic Monitoring Program

York Region conducts yearly traffic monitoring programs in order to evaluate changes in traffic patterns on the Regional road system. This assists in setting the priorities for various road rehabilitation and construction projects, determining warrants for traffic signals, calibrating traffic models and assessing the impact of new development on the Regional road system. Two traffic volume measures used in traffic analysis are: annual average daily traffic (AADT) and turning movement counts (TMC). For AADT, the traffic monitoring program consists of a permanent (continuous) count program and a short duration count program. For TMCs, manual counts at intersections must be conducted. **Figure 8** illustrates various traffic count locations in York Region.

Permanent Count Station (PCS)

PCS data is needed to understand temporal (day-of-week, month and seasonal) changes in traffic volume. Seasonal factors are applied to the short duration counts to develop the Region's AADT listing. The PCS program uses permanent vehicle detectors

that are embedded into the pavement of the road, collecting traffic data year round. PCS detects traffic in each direction and is capable of detecting traffic in each lane.

Short Duration or Automatic Traffic Recorder (ATR) Counts

The short duration count program is designed to provide roadway segment-specific traffic count information on an ongoing basis and forms the basic component for calculating annual average daily traffic volumes.

Turning Movement Counts (TMC)

A TMC is a manual count of an intersection generally over an eight hour period and captures detailed information such as the number of vehicles entering each approach of the intersection and each manoeuvre (i.e. left, through, or right). Information on the number of pedestrians crossing, heavy vehicles (three or more axles), vehicle occupancy and vehicle queues may also be collected as part of an intersection TMC.

quickfacts

In York Region, there are:

- 12 Permanent Counting Stations (PCS) to monitor seasonal variations in traffic
- Approximately 300 mid-block or short duration counts (ATR) are conducted annually
- Over 300 counts per year at intersections (TMC) capturing turning movements, truck percentages, and pedestrian crossings



Road worker installing an Automatic Traffic Recorder



Example of a Permanent Count Station - electro-magnetic loop detector (highlighted)

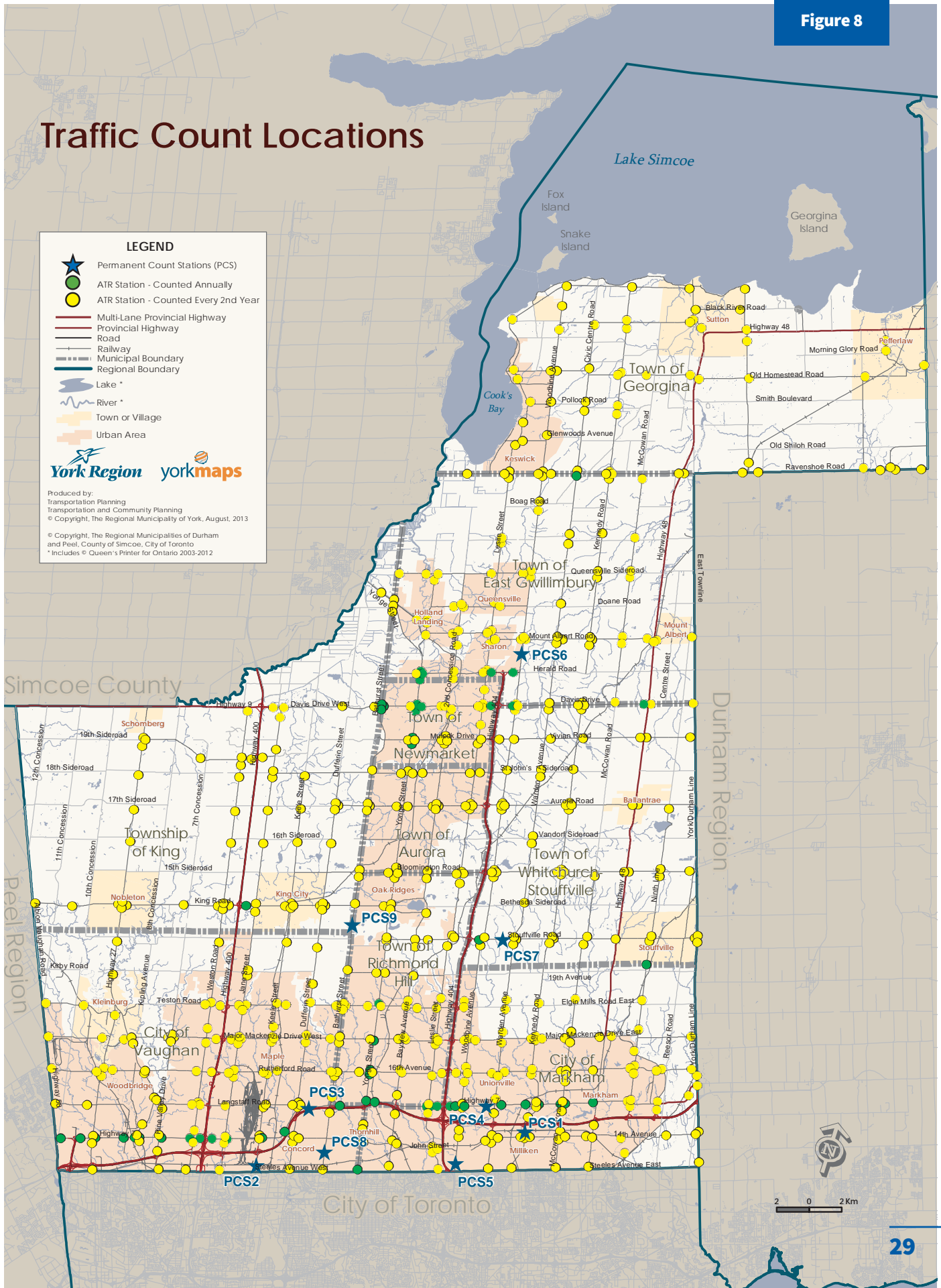
Figure 8

Traffic Count Locations

LEGEND

- ★ Permanent Count Stations (PCS)
- ATR Station - Counted Annually
- ATR Station - Counted Every 2nd Year
- Multi-Lane Provincial Highway
- Provincial Highway
- Road
- Railway
- Municipal Boundary
- Regional Boundary
- Lake *
- River *
- Town or Village
- Urban Area

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2 0 2 Km

Annual Average Daily Traffic (AADT)

Annual Average Daily Traffic (AADT) volumes are generated through the use of two types of automated counting stations, Permanent Count Stations (PCS) and Automatic Traffic Recorders (ATR) that are strategically placed throughout the Region.

Each ATR count only captures traffic a few days a year (typically a consecutive seven-day period), a PCS station that has similar characteristics is used as a control station. Since a full year's worth of traffic counts can be obtained from the PCS stations, factors (on a half-month basis) for each control station are calculated and subsequently used to adjust for any seasonal variation in the non-permanent stations to calculate a Week Day Annual Average Daily Traffic (WDAADT) average and a Seven Day average (AADT).

Regional roads in the vicinity of major employment nodes are consistently among the highest volume roads in the Region. Highway 7 continues to be the Region's busiest road. **Figure 9** illustrates the 2012 AADT in York Region.

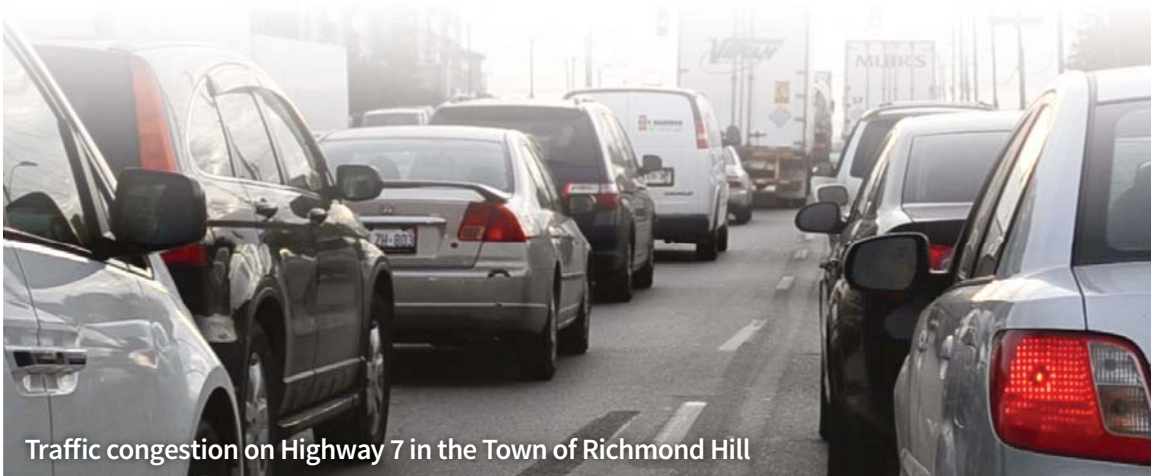
Contact Information

A full copy of the AADT Report is available through:

Traffic Management and ITS Branch

Phone: 905-830-4444, ext. 73113 or 1-877-464-9675

Email: transportationservices@york.ca



Traffic congestion on Highway 7 in the Town of Richmond Hill

Figure 9

2012 Annual Average Daily Traffic (AADT)

LEGEND

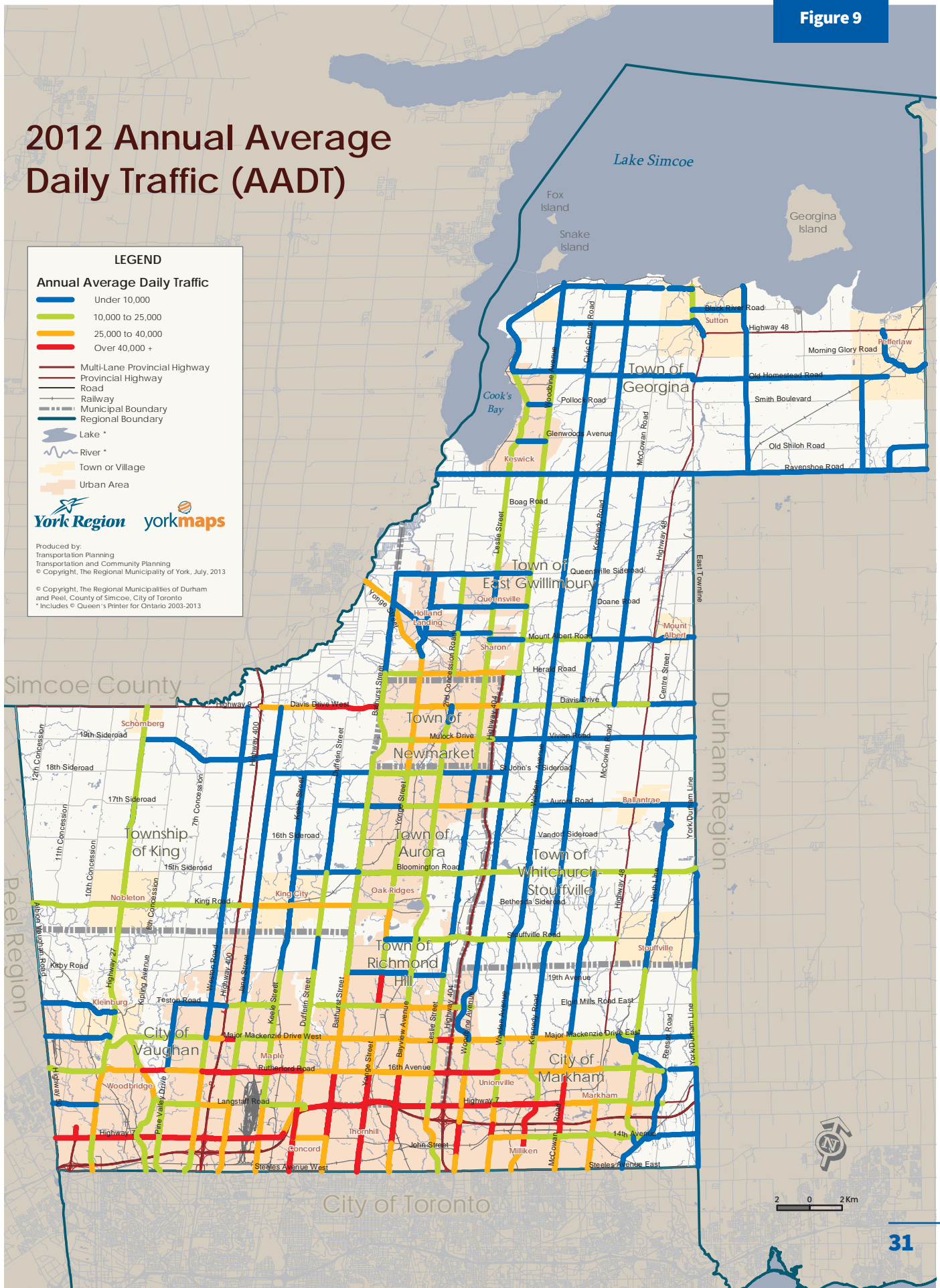
Annual Average Daily Traffic

- Under 10,000
- 10,000 to 25,000
- 25,000 to 40,000
- Over 40,000 +
- Multi-Lane Provincial Highway
- Provincial Highway
- Road
- Railway
- Municipal Boundary
- Regional Boundary
- Lake *
- River *
- Town or Village
- Urban Area

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Top 10 Highest Volume Intersections

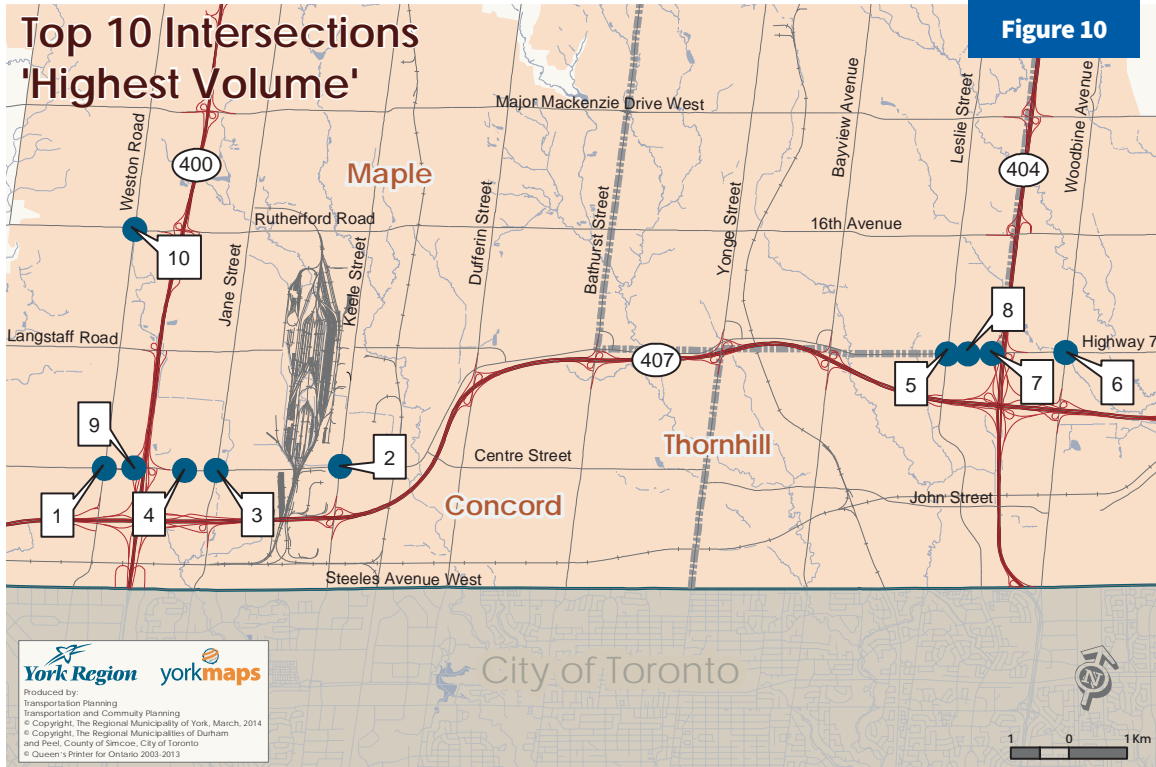
Highway 7 is York Region's most travelled roadway providing a link between Peel Region and Durham Region. Highway 7 is also a major connecting road to Highway 427, Highway 400 and Highway 404.

The volumes presented in **Table 3** are derived from an eight-hour turning movement count (TMC) for all approaches and represents traffic during a typical weekday.

Figure 10 illustrates the top 10 highest volume intersections in York Region.

Table 3 - Top 10 Highest Volume Intersections in York Region

Rank	Description	Year Counted	Total Vehicles	Total Pedestrians	Total Trucks	% Trucks
1	Highway 7 at Weston Road	2010	56,063	1,001	3,705	7%
2	Highway 7 at Keele Street	2013	47,442	356	4,839	10%
3	Highway 7 at Jane Street	2010	47,053	561	5,383	11%
4	Highway 7 at Edgeley Boulevard /Interchange Way	2010	45,915	284	4,490	10%
5	Highway 7 at Leslie Street	2011	44,418	718	1,759	4%
6	Highway 7 at Woodbine Avenue	2011	44,308	196	1,766	4%
7	Highway 7 at Hwy 404 Exit 27	2011	42,490	1	1,693	4%
8	Highway 7 at Commerce Valley Drive East/East Beaver Creek Road	2011	41,399	621	2,023	5%
9	Highway 7 at Colossus Drive/ Hwy 400 Exit 29	2012	41,305	11	2,342	6%
10	Weston Road at Rutherford Road	2013	40,096	392	1,617	4%



Top 10 Highest Truck Volume Intersections

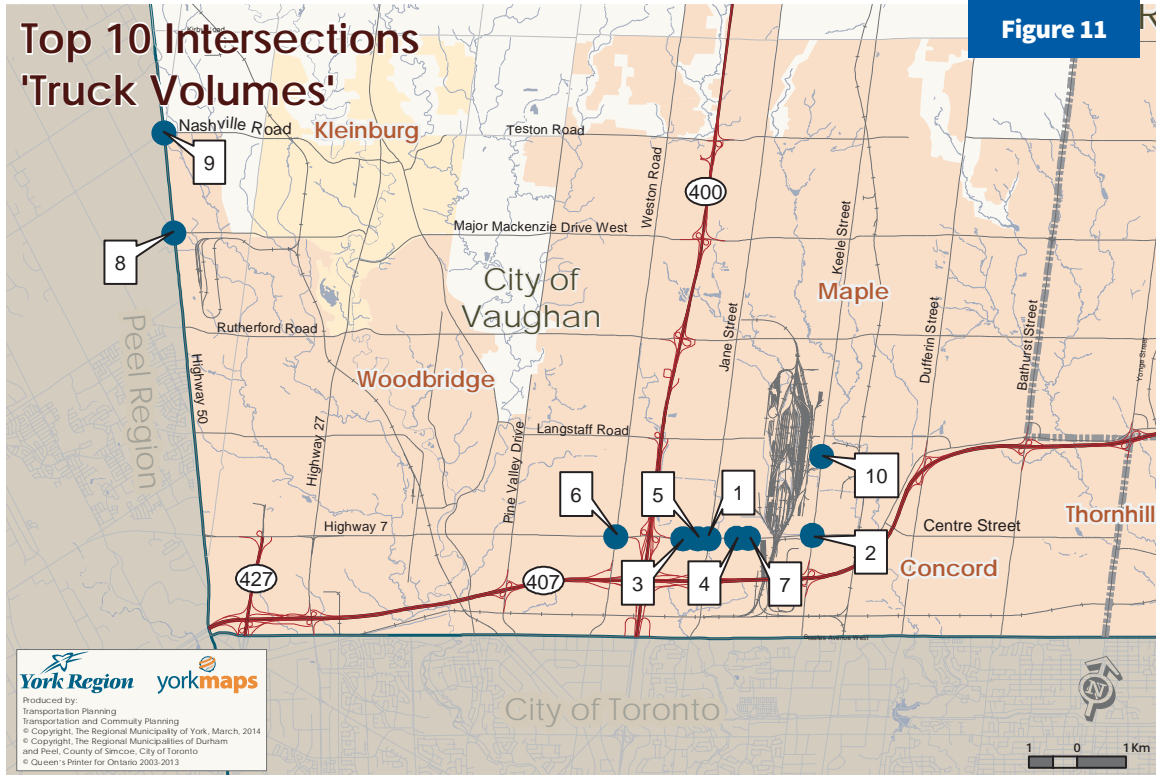
The top 10 highest truck volume intersections are located on Highway 7 between Highway 400 and Keele Street.

The volumes presented in **Table 4** below are derived from an eight-hour turning movement count (TMC) for all approaches and represents traffic during a typical weekday.

Figure 11 illustrates the top 10 highest truck volume intersections in York Region.

Table 4 - Top 10 Highest Truck Volume Intersections in York Region

Rank	Description	Year Counted	Total Vehicles	Total Trucks	Total Pedestrians	% Trucks
1	Highway 7 at Jane Street	2010	47,053	5,383	561	11%
2	Highway 7 at Keele Street	2013	47,442	4,839	356	10%
3	Highway 7 at Edgeley Boulevard /Interchange Way	2010	45,915	4,490	284	10%
4	Highway 7 at Creditstone Road	2012	30,367	4,427	100	15%
5	Highway 7 at Millway Avenue	2010	35,725	3,853	35	11%
6	Highway 7 at Weston Road	2010	56,063	3,705	1,001	7%
7	Highway 7 at Costa Road	2012	33,836	3,627	6	11%
8	Highway 50 at Major Mackenzie Drive West/ Coleraine	2011	16,909	2,727	0	16%
9	Highway 50 at Nashville Road/ Countryside	2013	20,629	2,542	6	12%
10	Keele Street at Bowes Road/ Bowes Road West	2011	18,481	2,541	69	14%



Top 10 Highest Per cent Truck Intersections

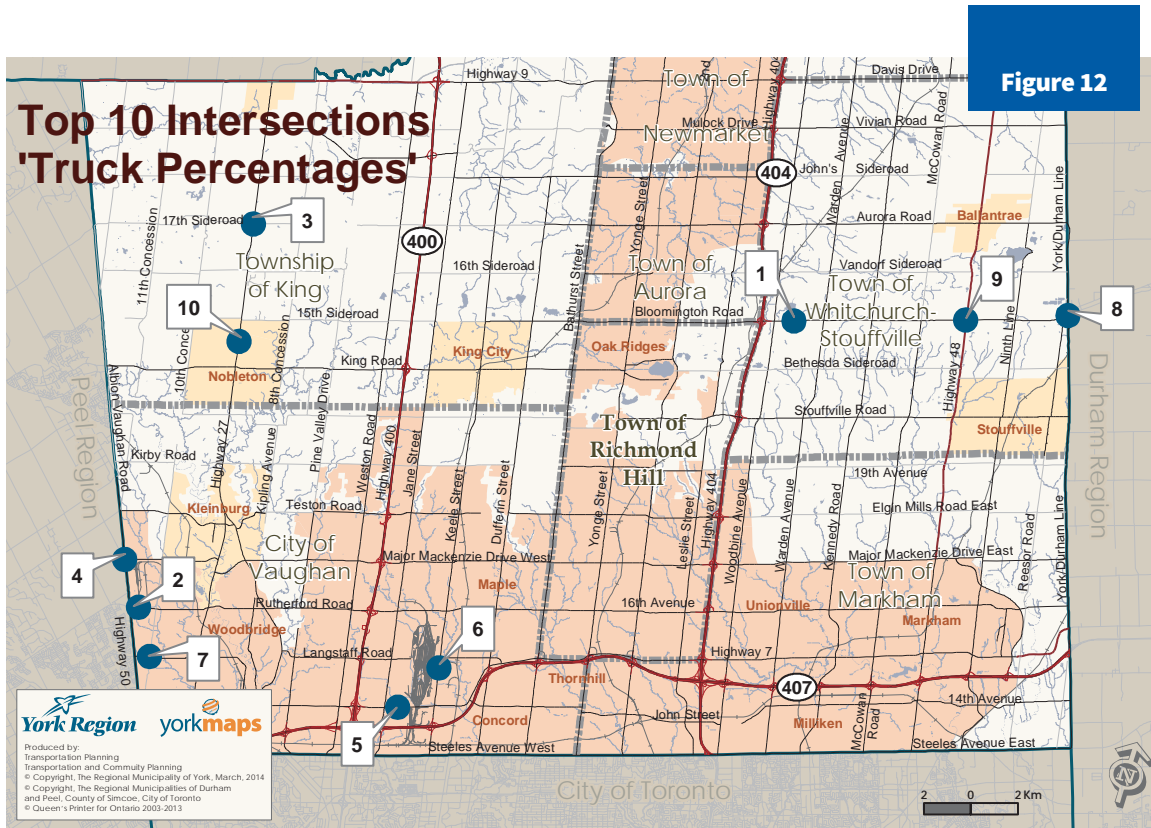
The top 10 highest per cent truck intersections are located mostly along Bloomington Road between Highway 404 and York/Durham Line and in the vicinity of the CP Rail Intermodal Yards in Vaughan.

The volumes presented in **Table 5** below are derived from an eight-hour turning movement count (TMC) for all approaches and represents traffic during a typical weekday.

Figure 12 illustrates the top 10 highest percent truck intersections in York Region.

Table 5 - Top 10 Highest Per cent Truck Volume Intersections in York Region

Rank	Description	Year Counted	Total Vehicles	Total Trucks	Total Pedestrians	% Trucks
1	Bloomington Road at Preston Avenue	2012	5,175	1,141	3	22%
2	Rutherford Road at CP Rail Intermodal Yard	2010	11,991	2,004	2	17%
3	Highway 27 at 17th Sideroad	2013	6,334	1,047	0	17%
4	Highway 50 at Major Mackenzie Drive West	2011	16,909	2,727	0	16%
5	Highway 7 at Creditstone Road	2012	30,367	4,427	100	15%
6	Keele Street at Bowes Road	2011	18,481	2,541	69	14%
7	Langstaff Road at Huntington Road	2011	6,700	876	0	13%
8	Bloomington Road at York/Durham Line	2013	12,395	1,600	1	13%
9	Bloomington Road at Highway 48	2010	13,391	1,691	5	13%
10	Highway 27 at Mactaggart Drive	2013	8,354	1,052	8	13%



Truck Volumes on Regional Roads

High truck volumes are related to the industrial areas such as in the vicinity of the CN MacMillan Yard in Concord, the CP Intermodal Yard and Sears' Distribution Centre in the City of Vaughan. Other areas within the Region that can be characterized as major truck routes are Highway 50 and Highway 7 in the City of Vaughan, Woodbine Avenue in the City of Markham and Bloomington Road in the Town of Whitchurch-Stouffville which serves as a major aggregate haulage route.

Davis Drive serves as key access point to and from northern urban York Region via Highway 400.

In **Figure 13**, Regional roads are classified by a range of truck volumes (less than 1,000, 1,000 to 3,000 and over 3,000 trucks) during a typical eight-hour week-day period. Trucks are defined as medium and heavy trucks (three or more axles).



Truck on Davis Drive East in the Town of East Gwillimbury

Figure 13

Truck Volumes on Regional Roads

WEEKDAY TRUCK VOLUMES ON REGIONAL ROADS

- Under 1,000
- 1,000 to 3,000
- Over 3,000
- No Data Available

Data is compiled from vehicle classification counts (BIN) undertaken during annual Automatic Traffic Recorder (ATR) count program.

LEGEND

- Multi-Lane Provincial Highway
- Provincial Highway
- Road
- Railway
- Municipal Boundary
- Regional Boundary
- Lake *
- River *
- Town or Village
- Urban Area

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2 0 2Km

Travel Time Survey

The travel time measure has been adopted by many agencies as a useful performance measure on highways and major roadways. The Ontario Ministry of Transportation (MTO) has conducted a biennial travel time survey of the major provincial highways in the Greater Toronto Area (GTA) since 1996. The survey is undertaken during the weekday morning, mid-day, and afternoon peak periods and for Labour Day weekend. Travel time data is collected by using Global Position System (GPS) equipped passenger vehicles and the results are documented as part of a report for the participating agencies.

MTO invites municipalities to participate in the survey so that select arterial roads are also measured. In 2006, the City of Toronto and the Regional Municipality of Peel participated in the study with MTO. The combined travel time survey of major freeways and arterial roads within these jurisdictions accounted for a total of approximately 1,050 kilometres.

York Region has participated in both the 2008 and 2010 Travel Time Surveys. The 2010 Travel Time Survey included approximately 28 arterial corridors such as Yonge Street, Dufferin Street, Highway 9/Davis Drive and the Rutherford Road/Carrville Road/16th Avenue corridor, among others, covering approximately 1,000 kms for both directions.

Arterial Performance Measures

Two performance measures were introduced to track the performance of 400-series highways and arterial roads. These two measures are:

- **Travel Time Index (TTI)** – Compares peak period and non-peak travel conditions to provide an indication of the additional time required in peak flow conditions (e.g. a TTI of 1.4 indicates a motorist's trip will take 1.4 times longer during peak periods than at non-peak period travel conditions).
- **Buffer Time Index (BTI)** – A measure of travel time reliability, the BTI represents the extra travel time (or buffer) that a motorist needs to consistently arrive on time with a high degree of confidence (e.g. a BTI of 24 percent means a motorist should allow 24 percent more time than the non-peak travel time for a trip, to arrive on-time for 19 out of 20 trips, or with a 95 percent level of confidence).

Figure 14 illustrates the 2010 aggregate Travel Time Index (TTI). **Figure 15** illustrates the 2010 aggregate Buffer Time Index (BTI) comparison for arterial roads in York Region with other jurisdictions in GTA.

Arterial performance based on the observed speed

Twenty eight arterial corridors were surveyed in York Region in 2010, covering approximately 1,000 km for both directions of the surveyed arterials. The majority of the York Region arterials surveyed fall between Class I and II of the Urban Street Class designation based on the speed range between 55 km/h and 90 km/h. **Table 6** summarizes the arterial level of service definition by Urban Street Class.

York Region arterial normal operating speed for the non-peak period is compared with the observed average operating speed

during the peak periods. This baseline comparison provides an indication of the arterial performance or the “Levels of Service” (LOS). For example, if the Yonge Street segment between Steeles Avenue and 19th Avenue average operating speed during the peak periods is 30 km/h, the level of service would be D, based on Class II level of service criteria. **Table 7** summarizes York Region’s arterial roads levels of service based on observed speed.

Table 6 - Level of Service Definition by Urban Street Class

Urban Street Class	I	II	III	IV
Range of free-flow speeds (FFS)	90 to 70 km/h	70 to 55 km/h	55 to 50 km/h	55 to 40 km/h
Typical FFS	80 km/h	65 km/h	55 km/h	45 km/h
Level of Service	Average travel Speed (km/h)			
A	>72	>59	>50	>41
B	>56–72	>46–59	>39–50	>32–41
C	>40–56	>33–46	>28–39	>23–32
D	>32–40	>26–33	>22–28	>18–23
E	>26–32	>21–26	>17–22	>14–18
F	≤26	≤21	≤17	≤14

Table 7 - York Region Arterials Levels of Service Based on Observed Speed

Level of Service	A.M. Peak Period	Mid-day Peak	P.M. Peak Period
A	8%	11%	8%
B	28%	37%	30%
C	43%	37%	33%
D	13%	13%	15%
E	6%	1%	12%
F	1%	0%	2%

quickfacts

- Approximately 7 per cent of York Region road segments surveyed operated at less than ideal conditions (Level of Service E or F) during the A.M. peak period
- P.M. operations were found to be worse than the other peak periods, with 14 per cent of segments operating at less ideal Level of Service E or worse



Traffic congestion at Bayview Avenue and Elgin Mills Road in the town of Richmond Hill

Traffic Management Systems

Intelligent Transportation Systems

York Region's Traffic Management and ITS Branch is responsible for the operation and maintenance of Intelligent Transportation Systems (ITS) that maximize our ability to move people and vehicles on the existing transportation network safely and efficiently.

Intelligent Transportation Systems include the Centralized Traffic Control System (CTCS), Transit Management Systems, Traffic Management Systems, Automated Vehicle Location Systems and Real-Time Traveller Information Systems.

The Centralized Traffic Control System is used to monitor and control a network of signals within the Region. The purpose of the CTCS is to:

- Identify and respond to changes in traffic patterns on a real-time basis

- Synchronize traffic signal timings along major roadways in order to minimize stops, delays and environmental impacts of traffic congestion
- Quickly identify and respond to traffic signal equipment problems

Transit Signal Priority is provided on specific transit routes to improve service reliability, reduce travel times and delays to transit vehicles at signalized intersections. Transit vehicles are equipped with automated vehicle location equipment and traffic signal interface equipment to provide enhanced service at traffic control signals for transit vehicles that are behind schedule.

Emergency vehicles are given a higher level of traffic signal priority at all signalized intersections.



York Region Centralized Traffic Control System

Traffic Management Systems (continued)

Automated Vehicle Location systems are on public transit vehicles and winter maintenance equipment. Real-Time Traveller Information Systems provide road users with access to public transit and road condition information.

Intelligent Transportation Systems are being implemented throughout the Region for public transit, as well as other road users in order to gather business intelligence that will help maximize the capacity of the existing infrastructure.

Contact Information

To report traffic problems contact:
Roads Dispatch, Road Maintenance Section
Phone: 905-895-1200, ext. 75200 or
Toll-free 1-877-464-9675
Email: dispatch@york.ca

quickfacts

York Region operates and maintains approximately 804 traffic signals:

- **685** are owned by The Regional Municipality of York
- **58** are maintained for MTO
- **34** are maintained for 407 ETR
- **Seven** are maintained for the Town of Newmarket
- **Eight** are maintained for the Town of Aurora along Yonge Street for Viva operations
- **Seven** are maintained for Richmond Hill along Yonge Street for Viva operations
- **Five** are maintained for the City of Markham for Viva operations

Regional signals are managed through the Region's Centralized Traffic Control System (CTCS).

York Region Travel Alert App for Smart Phones

The York Region Travel Alert App is a hands-free, real-time traffic reporting system. It alerts motorists to unexpected traffic delays on their route through voice prompts and a colour-coded map.

The App will notify motorists when they are entering Community Safety Zones and approaching speed limit reductions.

It comes with a list of popular destinations and works throughout Ontario, including 400-series highways. It is available for iPhone, Blackberry and Android smart phones and can be downloaded for free by visiting www.york.ca/travelalert



York Region Travel Alert App

quickfacts

In 2013, York Region equipped 20 intersections with **Red Light Cameras** as a tool for reducing side-impact collisions by modifying driver behaviour.

Traffic Safety in York Region

There were approximately 20,000 motor vehicle collisions per year between 2003 and 2012. Almost half (9,280) of these motor vehicle collisions per year occurred on Regional roads for the same period. Motor vehicle collisions may occur randomly and the analysis of collision trends and patterns must be assessed over several years, rather than comparing actual numbers from one year to the next. This approach accounts for factors such as seasonal variations, changes to the roadway features and increases in traffic volumes.

Many years of data are required to accurately assess the overall improvement in road safety and initial findings. The total number of collisions in the Region has increased slightly year over year, while the number of fatal collisions remained relatively constant or decreased slightly.

The Red Light Camera Program is among several York Region initiatives to increase road safety for pedestrians, cyclists and motorists. Other initiatives include:

- A revised speed limit policy
- Additional Community Safety Zones

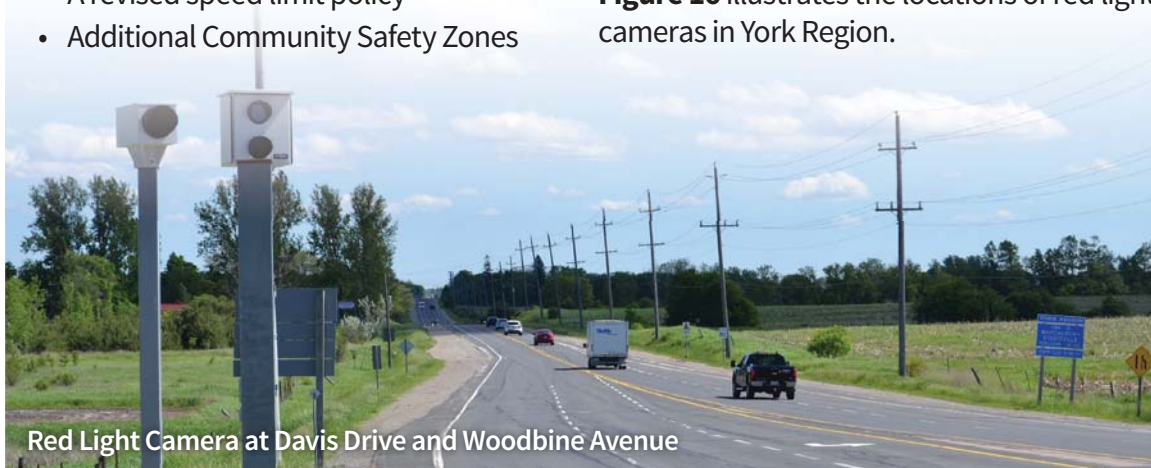
- High-visibility zebra crosswalk markings at intersections
- Pedestrian countdown signals
- Increased pedestrian crossing time at traffic signals
- Audible signals for pedestrians with low vision
- A pedestrian safety campaign to create awareness on safety issues affecting motorists and pedestrians

Red Light Cameras

York Region Council approved the installation of red light cameras at 20 intersections throughout the Region, an initiative to help save lives and prevent injuries by modifying driver behaviour at intersections.

Side-impact collisions are among the leading causes of motor vehicle deaths and bodily injuries. The presence of red light cameras in municipalities, including the City of Toronto, has resulted in fewer side-impact collisions from drivers going through red lights.

Figure 16 illustrates the locations of red light cameras in York Region.

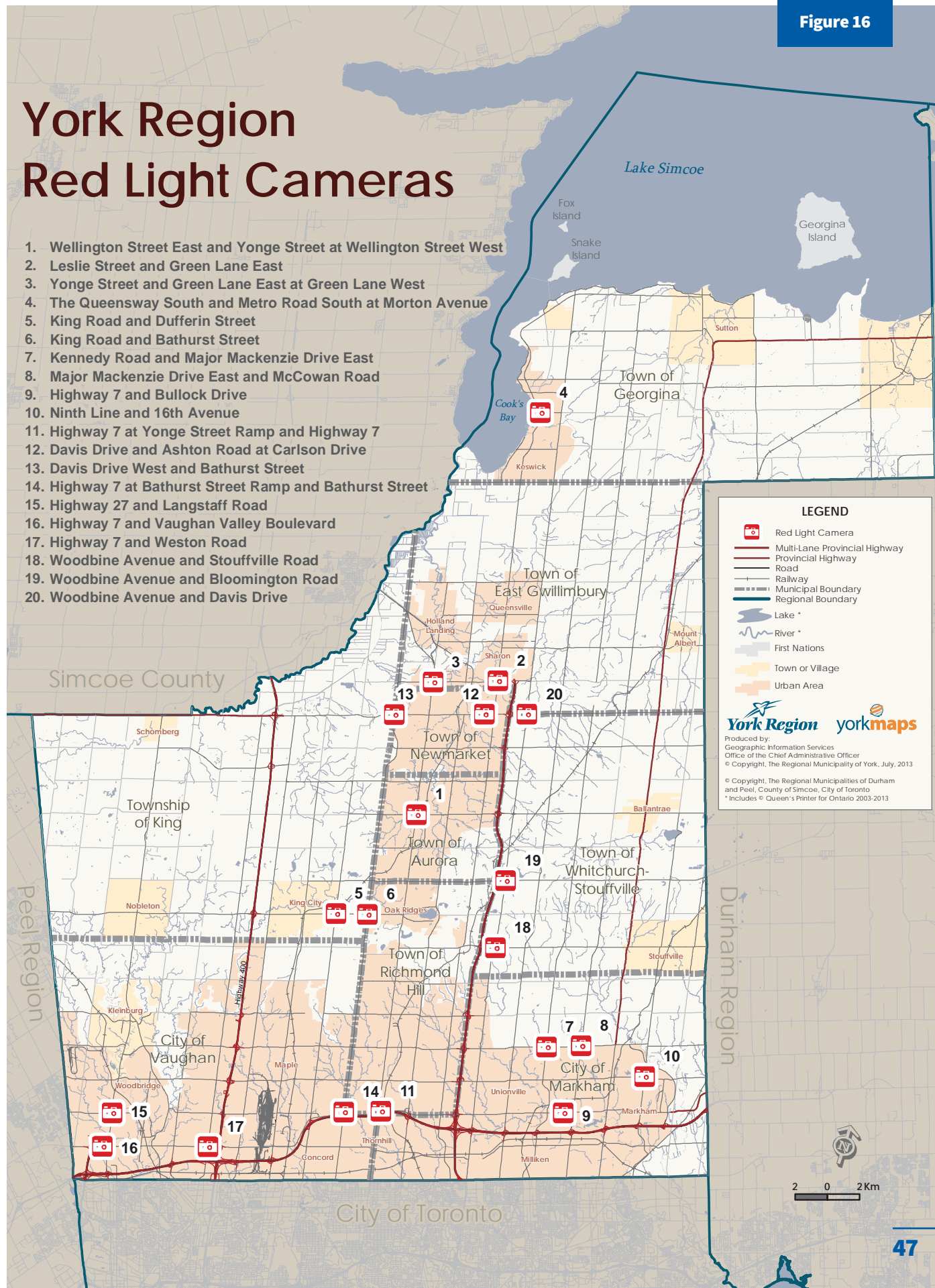


Red Light Camera at Davis Drive and Woodbine Avenue

Figure 16

York Region Red Light Cameras

1. Wellington Street East and Yonge Street at Wellington Street West
2. Leslie Street and Green Lane East
3. Yonge Street and Green Lane East at Green Lane West
4. The Queensway South and Metro Road South at Morton Avenue
5. King Road and Dufferin Street
6. King Road and Bathurst Street
7. Kennedy Road and Major Mackenzie Drive East
8. Major Mackenzie Drive East and McCowan Road
9. Highway 7 and Bullock Drive
10. Ninth Line and 16th Avenue
11. Highway 7 at Yonge Street Ramp and Highway 7
12. Davis Drive and Ashton Road at Carlson Drive
13. Davis Drive West and Bathurst Street
14. Highway 7 at Bathurst Street Ramp and Bathurst Street
15. Highway 27 and Langstaff Road
16. Highway 7 and Vaughan Valley Boulevard
17. Highway 7 and Weston Road
18. Woodbine Avenue and Stouffville Road
19. Woodbine Avenue and Bloomington Road
20. Woodbine Avenue and Davis Drive



The Pedestrian Safety Campaign

The Pedestrian Safety Campaign is part of the York Region and York Regional Police Pedestrian Safety Campaign advocating respect between motorists and pedestrians to help reduce the number of collisions, injuries and fatalities on Regional roads. The campaign theme, Motorists and Pedestrians ... Let's work on our Relationship, focuses on creating awareness around safety issues affecting motorists and pedestrians in the fall, winter and spring. Visit www.york.ca/pedestriansafety for more information.

York Region has revised speed limits at 15 road locations across the Region to ensure better safety and consistency. A list of these revisions is available at www.york.ca/trafficsafety

Road Watch

Road Watch is a community-based program that gives residents an opportunity to report aggressive driving, including speeding, following too closely, unsafe lane changes, unsafe passing and disobeying traffic signs and signals.

Residents who observe acts of aggressive driving in their community are encouraged to complete a Road Watch Report, available at www.yrp.ca (select Online Services). To complete a Road Watch Report, the licence plate number and a brief description of the vehicle is required.

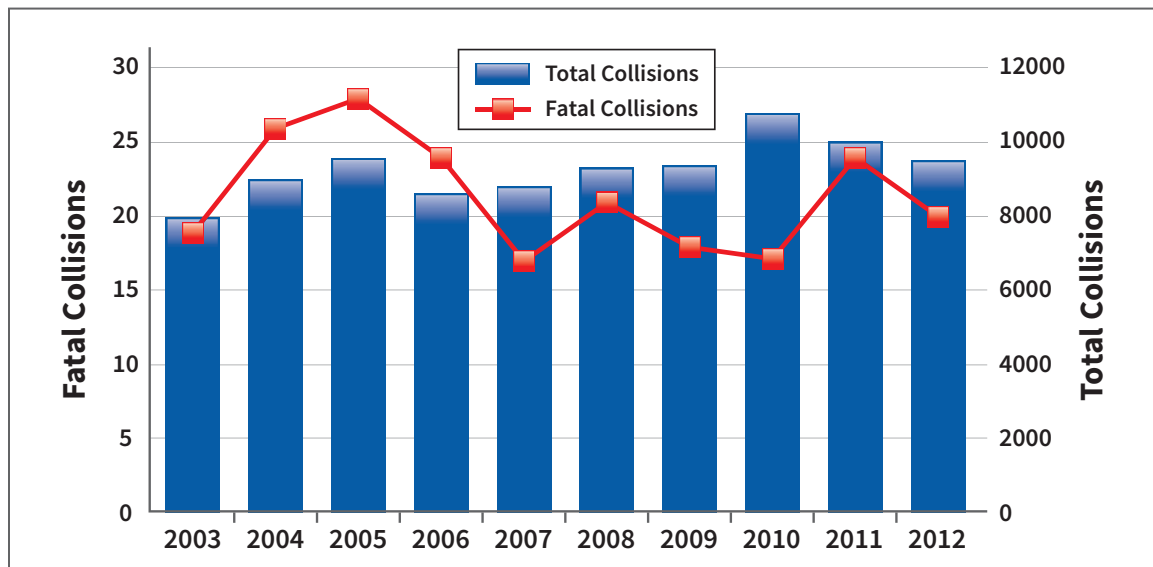


York Region Pedestrian Safety Campaign decal on snow plow

Collision Statistics in York Region

Figures 17 to 24 provide collision statistics for motor vehicles, pedestrians and cyclists in York Region between 2003 and 2012.

Figure 17 - Collision Statistics between 2003 and 2012



Note: The reduction in collisions in 2006 and 2007 are in part attributed to a change in accident reporting requirements and collection methodologies.

quickfacts

York Region statistics show a small increasing trend in total collisions over the past decade. However, the total collision rate per 100,000 population has decreased slightly in York Region.

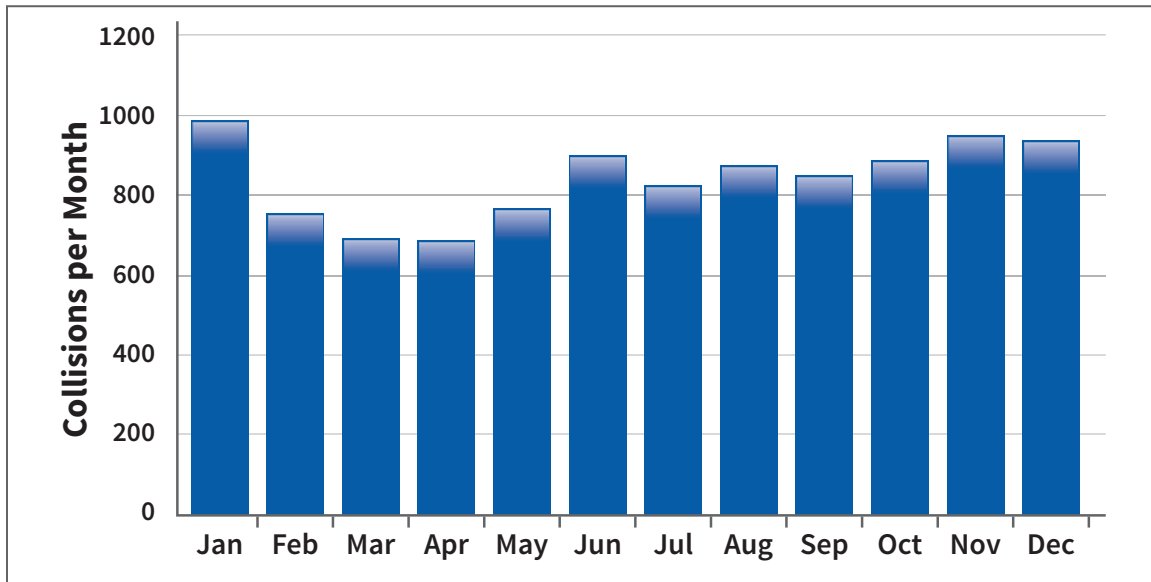


Motorist receiving a Pedestrian Safety Campaign postcard

quickfacts

About **30 per cent** of all collisions occurred between November and January.

Figure 18 - Collision Frequency by Month (Three-Year Average between 2010 and 2012)

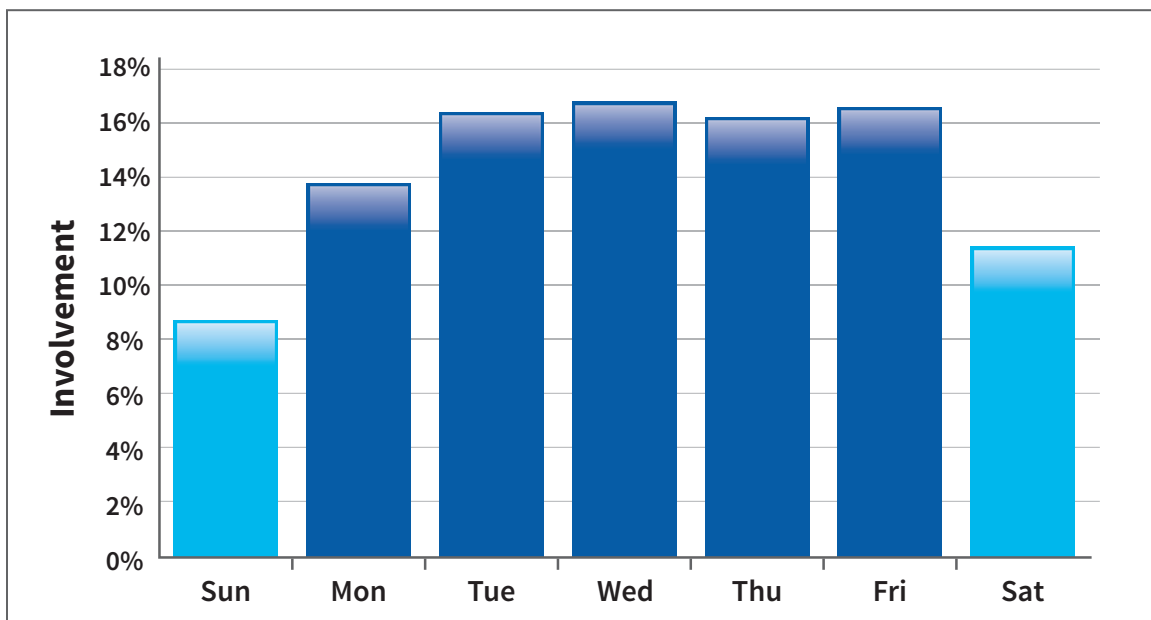


quickfacts

About **80 per cent** of all collisions occurred on weekdays (Monday through Friday).

A review of collision data on the Regional road network indicates that collisions are **most likely to occur in January** and **least likely to occur between March and April**.

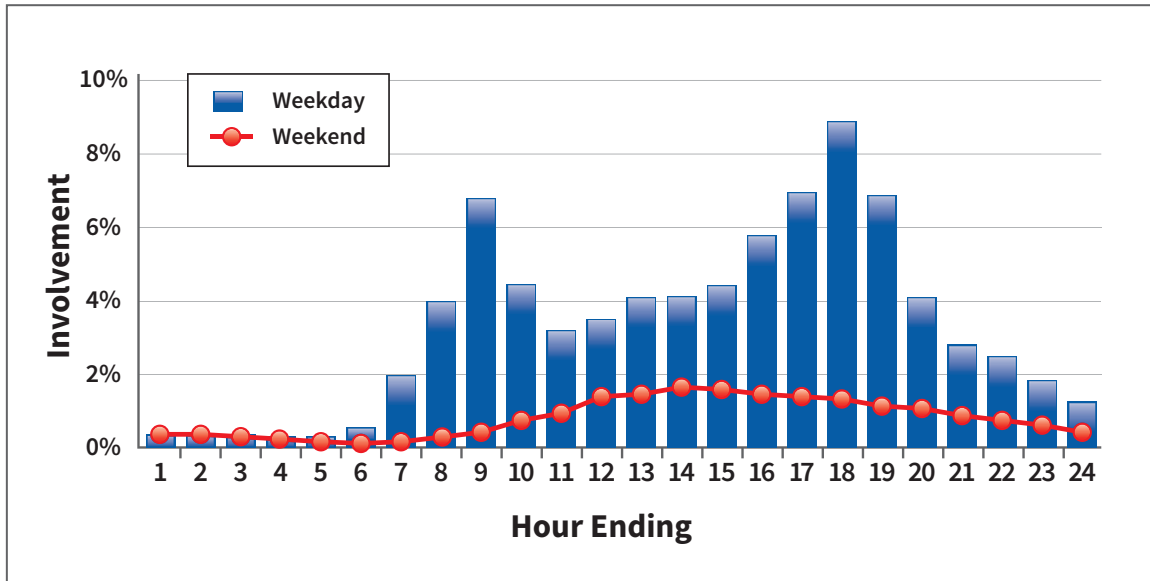
Figure 19 - Collision Frequency by Day of the Week (Three-Year Average between 2010 and 2012)



quickfacts

Approximately **30 per cent** of collisions occur between **3 and 7 p.m.** on weekdays, with 5 to 6 p.m. being the highest during the day.

Figure 20 - Collision Frequency by Time of Day (Three-Year Average between 2010 and 2012)



The data indicates an obvious trend that collisions are more likely to occur during the afternoon peak period on weekdays.

quickfacts

About **48 per cent** of collisions in York Region are **rear-end type** collisions.

Figure 21 - Collision Involvement by Impact Type (Three-Year Average between 2010 and 2012)

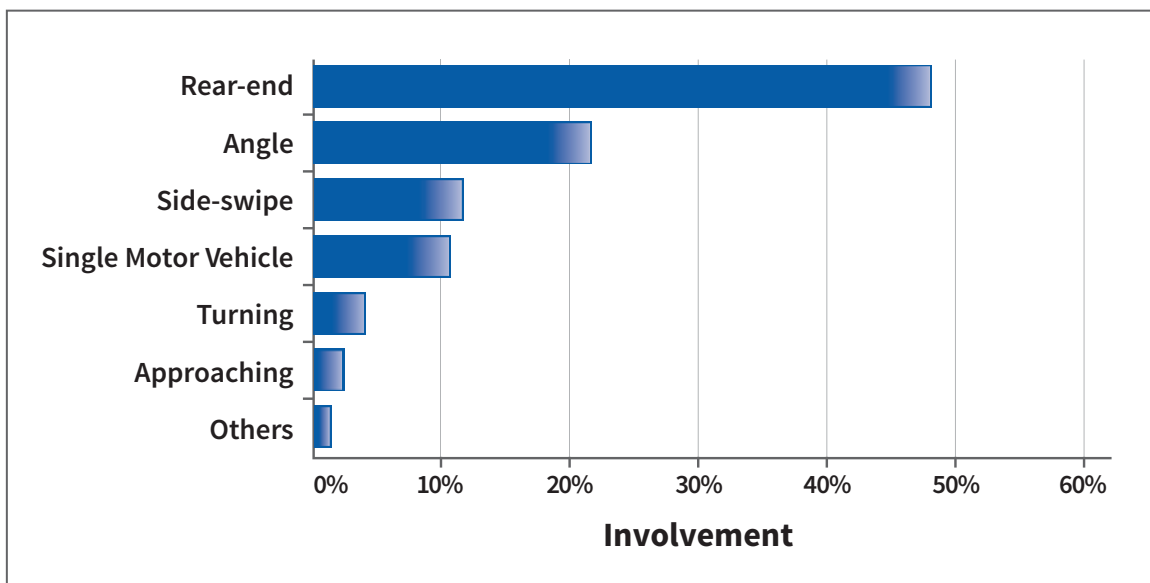
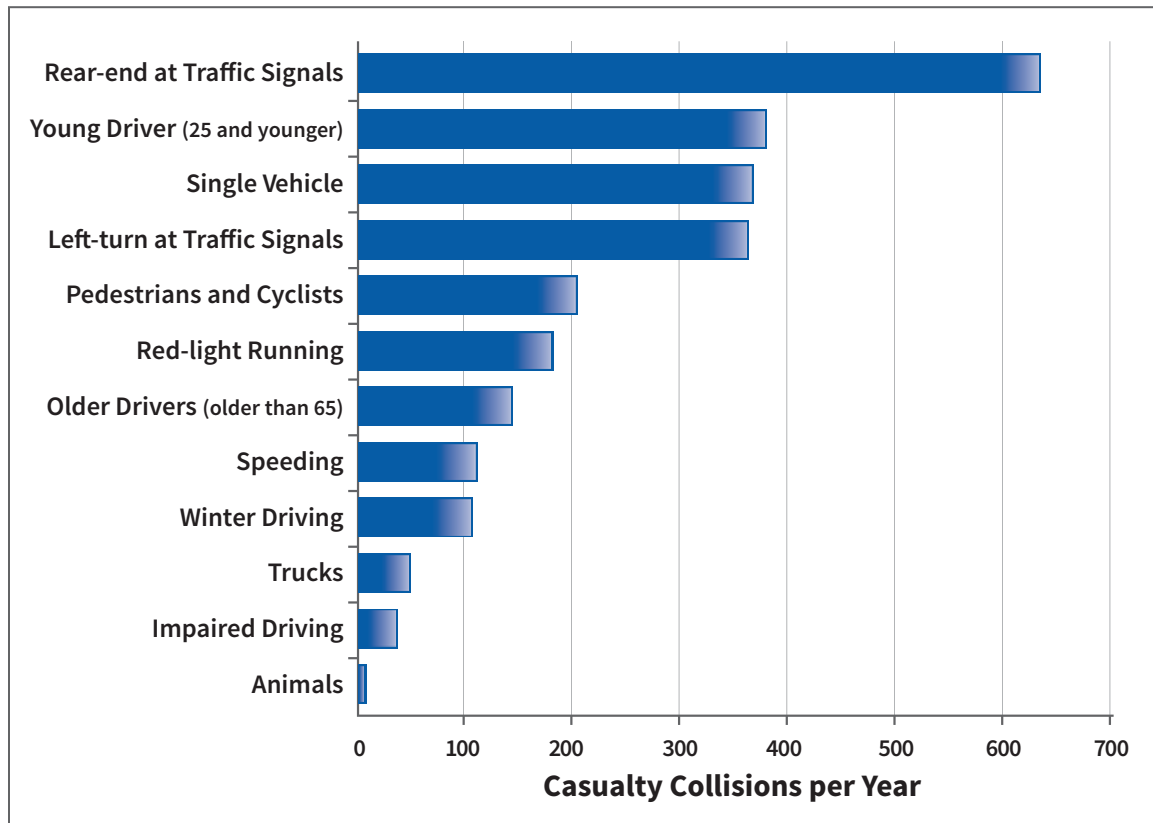


Figure 22 - Category of Collisions (Three-Year Average between 2010 and 2012)



quickfacts

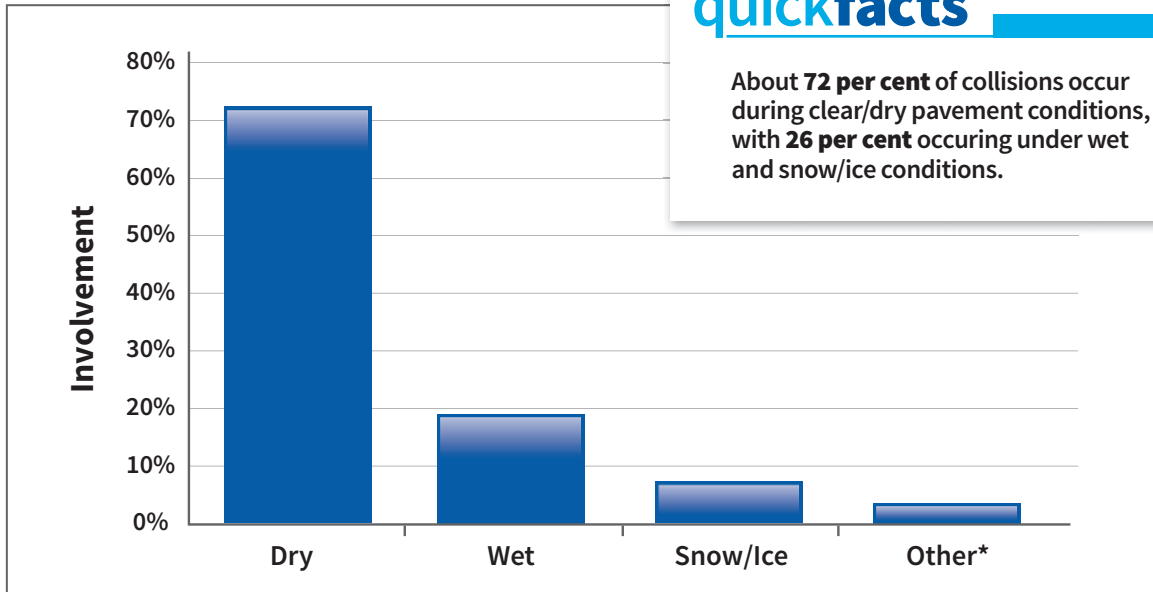
Approximately **25 percent** of all collisions are rear-end collisions at signalized intersections, making this the highest category of collisions.

Driver behaviour, visual and auditory acuity, decision-making ability, driver reaction time and driver perception of the road are all part of human factors that can contribute to a collision.



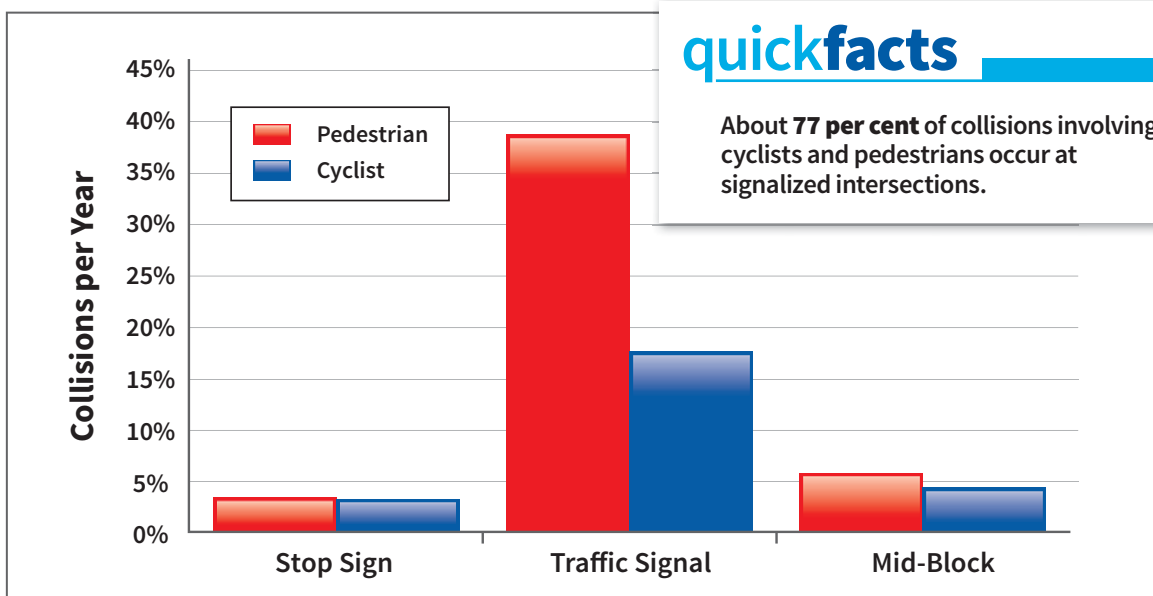
The majority of accidents in York Region are rear-end collisions

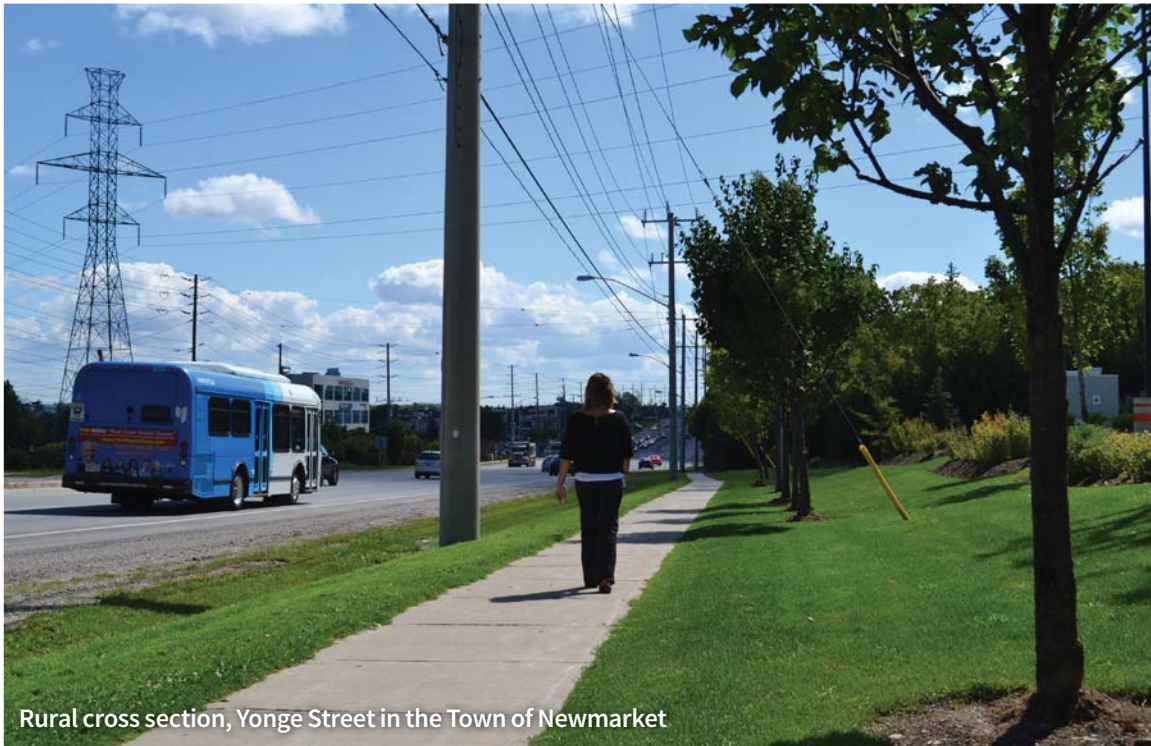
Figure 23 - Pavement Conditions as a Factor in Collisions



*Other: Gravel pavement, mud, spilled liquid and other pavement conditions not listed above.

Figure 24 - Collisions Involving Pedestrians/Cyclists (Three-Year Average between 2010 & 2012)





Rural cross section, Yonge Street in the Town of Newmarket



Zebra crosswalk at Dufferin Street and Clark Avenue in the City of Vaughan



Cyclist on Davis Drive in the Town of Newmarket



Cyclists and pedestrians on Yonge Street in the Town of Newmarket

