

# 2015 Road System Report



[Contents](#)

**1.0 OBJECTIVE..... 2**  
**2.0 BACKGROUND..... 3**  
**3.0 SYSTEM PROFILE..... 6**  
**4.0 SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)..... 9**  
**5.0 SAFETY.....11**  
**6.0 SPEED STUDIES .....12**  
**7.0 CONCLUSIONS.....14**

**APPENDIX A.....16**

**List of Tables**

**Table 1: Signalized Intersection Level of Service**

**Table 2: Collision Statistics (2008-2013)**

**APPENDIX B.....17**

**List of Maps**

**Map 1: 2015 Oakville Road System**

**Map 2: 2015 Traffic Control Plan**

**Map 3: 2015/2016 Crossing Guard Locations**

**Map 4: Traffic Volumes**

**Map 5: 2015 Signalized Intersections Level of Service**

**Map 7: 2015 Speed Studies Summary**

**Map 8: 2015 Traffic Calming Plan**



## 1.0 Objective

The town owns and operates a network of approximately 1900 lane km of roadway and 65 lane km of cycle lanes. To ensure this network operates effectively, a periodic review of key traffic characteristics is performed to monitor performance levels generally and to identify problem areas specifically.

This report documents the key traffic characteristics, the typical factors used to assess performance, and the application of those factors in a screening process to identify locations which may require improvement. The results from this process provide background information to subsequent studies and programs that would be carried out in the future. Examples of these subsequent studies and programs are the transportation master plan, class environmental assessments, detail design studies, capital road reconstruction program and the traffic calming program. The current report provides an overview of the state of the town road network based on information available as of December 31, 2015.

This report focuses on four key traffic operational characteristics of the road network and they are: traffic volumes, signalized intersection levels of service, collision characteristics and traffic operating speeds.

### *Analysis of Four Key Road Network Operational Characteristics:*

- *Volumes*
- *Level of Service*
- *Collisions*
- *Operating speeds*





*Various annual traffic assessments are collected representing the key elements in establishing road network safety performance*



## 2.0 Background

*Switching Gears*, the town's Transportation Master Plan, which staff will begin updating in 2016, guides the work of the Transportation Strategy section. *Switching Gears* states:

The Town of Oakville needs a transportation system that will accommodate growth to 2031, incorporating the planning framework from the Livable Oakville Plan and the North Oakville Secondary Plans. An opportunity exists to plan a transportation system which:

- Is safe, efficient and accessible with choices in mobility,
- Fosters the use and development of a sustainable transportation network,
- Provides a public transit system that can offer a real alternative to private automobile use, and
- Provides a network of on- and off-road pedestrian and cycling facilities that allow the use of active transportation modes as an alternative to the automobile.

As part of meeting the objectives to have a safe and efficient transportation system, the Transportation Strategy section undertakes a range of assessments from which key traffic operational characteristics are derived.

These assessments include:

- Data Collection
- Proactive Safety Assessments
- Proactive Operations Assessments
- Speeding Assessments
- Reactive Assessments & Public Inquiries
- Transportation Studies

Brief descriptions of each of the assessments are provided below:

### Data Collection

The town conducts a comprehensive array of traffic data collection each year on both proactive and reactive basis. Some data are collected by contracting to outside service providers; other data are collected by part-time and seasonal staff.



The types of data collected and the approximate number of locations are as follows:

- Automated traffic recorder (ATR) surveys ≈150/year
- Speed surveys ≈ 110/year
- Turning movement counts (TMC's) ≈ 130/year
- TMC's for crossing guard locations ≈ 45/year
- Collision Reports from Halton Police ≈ 1200/year.

### Proactive Safety Assessments

Oakville, in conjunction with Halton area municipalities, retains the services of a consultant to develop a collision prediction model consisting of Safety Performance Functions (SPF's).

These SPF's were applied in a network screening process to a database of motor vehicle accident (MVA) reports for the past five year period, for all intersections and road segments within Halton and its area municipalities. This comprehensive approach to safety assessments on a network screening basis is done approximately every five years. From this process a measurement called a Potential for Safety Improvement (PSI) index value is derived for each intersection and road segment within the town. Locations with high PSI indices are identified and reviewed for action plans and/or countermeasures as part of the project planning carried out by the Engineering and Construction department. Typically each year the ten intersections and ten road segments, with the highest PSI indices, are reviewed and this information is forwarded to current planning or design projects to identify feasible countermeasures.

### Proactive Operations Assessments

A variety of traffic control device warrants and other evaluations are calculated annually. The types and numbers of calculations are as follows.

- School crossing guard warrants ≈ 30/year.
- Traffic signal warrants ≈ 30/year.
- All-way stop warrants ≈ 15/year.
- PXO conversion priority indices ≈ 3/year.

### Speeding Assessments

On a proactive basis and as a part of the 2015 Radar Speed Display Sign (RSDS) pilot program staff collected approximately 20 speed surveys at the following six location in each town Ward:

Ward 1 – Great Lakes Boulevard  
Ward 2 – Pinegrove Road  
Ward 3 – Constance Drive  
Ward 4 – Pine Glen Road

Ward 5 – Wembley Road  
Ward 6 – Eighth Line

Following removal of the RSDS signs staff also monitor the post effect of the devices using post-installation speed survey data. Additionally, staff performed traffic calming warrant assessments on a reactive basis to the approximately 100 new inquiries about speeding concerns raised by members of the public in 2015.

#### Reactive Assessments & Public Inquiries

Staff responds to a number of inquiries from the public each year regarding concerns over the safety of the road network, particularly as it relates to speeding. Often such inquiries are accompanied by a request for consideration of a change from the existing conditions such as the implementation of all-way stop control at an intersection or the prohibition of parking. Staff applies established and approved procedures/policies when responding to such inquiries. Typically there are approximately 150 such inquiries annually from the public.

Staff performs technical assessments related to the inquiry and provides a response to the inquiring party. In instances where the response does not satisfy the inquiring party, there may be a need to prepare a more detailed staff report presenting the issue/concern to Community Services Committee (CSC).

In 2015, 3 inquiries led to detailed staff reports to CSC, namely:

1. Forsythe Street and Anderson Street – On-street Parking
2. River Oaks Boulevard West – On-street Parking
3. Hays Boulevard – On-street Parking

#### Transportation Studies

Staff is periodically requested to participate in transportation studies which may be related to town wide issues. Recent examples of such requests include the Metrolinx Regional Transportation Plan update, the Downtown Transportation and Streetscape Study, and the College Park Neighborhood Study.



**Town's traffic control devices:**

- **Traffic Signals = 127**
- **Ped. Signals = 15**
- **PXO's = 3**
- **Crossing Guard Locations = 91**
- **All-way Stops = 163**



### 3.0 System Profile

The town owns and operates a network of approximately 1900 lane km of roadway and 65 lane km of cycle lanes. Developed areas of North Oakville comprise subdivisions located east of Neyagawa Boulevard and west of Sixth Line (see Map 1 in Appendix B). Both areas account for approximately 60 lane kms north of Dundas Street. The roads within these subdivisions will be completed to town standards, but have yet to be assumed by the town.

Information regarding the town's 2015 Traffic Control Plan is provided on Map 2 (Appendix B). This map identifies the locations of traffic signals, pedestrian signals, pedestrian crossovers (PXO's), all-way stop controls, and roundabouts and traffic circles installed to date. Proposed future signal locations are also shown on this map.

#### Traffic Signals

As of January 1, 2015 the number of town intersections controlled by traffic signals was 125. In 2015 traffic signals were installed at 2 new locations.

- 1) Hospital Gate at Veterans Way
- 2) Third Line at the new Oakville Trafalgar Memorial Hospital location

With these signalized intersection installations, the number of town owned signalized intersections has increased to 127.

#### Pedestrian Signals and PXO's

Prior to 2015, the number of Pedestrian Signals (PS's) under the jurisdiction of the town was 14. Under the town's Pedestrian Crossover (PXO) conversion program, the PXO on Kingsway Drive at Prince John Circle was replaced with a PS in 2015. With this installation, the number of town owned PS's has increased to 15.

With the PXO conversion to PS that was accomplished in 2015, there are 3 remaining PXO's. Their locations are as follows.

- 1) Robinson Street and George Street
- 2) Lakeshore Road and Westminster Drive
- 3) Lakeshore Road and Devon Road

These locations will be considered for inclusion in the 2016 and future years' PXO Conversion programs.

### Crossing Guard Locations

As of January 1, 2015, the number of school crossing guard locations within the town was 91 (with 98 guards). Locations that fulfill the policy removal criteria, with warrant levels that have been below 20% warranted for two consecutive years. There was no new crossing guard locations implemented or removed in 2015.

Locations and additional information regarding the school crossing guard program are provided on Map 3 (Appendix B).

### All-way Stop Controls

In 2015, there was no new implementation of all-way stop traffic control. Presently, there are 163 intersections with all way stop control in Oakville.

### Traffic Volumes

There is a hierarchy of roads in Oakville with the Ministry of Transportation and Halton Region owning and operating the upper tiered roads (i.e. freeway and regional arterials) and the town owning and operating the lower tiered roads (i.e. arterial, collector, local). The road hierarchy and the functional classification of roads within it have been designated in the [Livable Oakville Official Plan](#). For this report, they have been illustrated in Map 4 (Appendix B).

Town roads are designated within three classifications; these being local, collector and arterial roads based on the extent to which the road provides access to abutting properties and/or accommodates through traffic. Classifying roads into groups based on these criteria improves the town's ability to carry out its land use planning, transportation planning, road infrastructure design and maintenance, and road operations responsibilities as performed by various town departments. Other roads with a higher order of function (i.e. freeways and major arterials) are under the jurisdiction of either MTO or Halton Region. The Livable Oakville Official Plan contains further detail regarding the road classification system. Relevant sections pertaining to function and traffic volume by road classification are outlined below.

Local roads (including public laneways) function mainly to provide access to properties located adjacent to the roadway and are not intended to accommodate intra-community



through traffic. Collector roads provide direct access to abutting properties while also accommodating intra-community traffic. Arterial roads are higher order roads which provide connectivity for inter-community and inter-neighbourhood traffic. Their main purpose is to accommodate higher volumes of through traffic. Direct access from abutting residential properties is typically discouraged but may be accommodated if suitable provisions are incorporated into subdivision plans.

The range of traffic volumes expected at mature development levels varies by functional classification. Local roads within subdivisions are typically designed such that daily traffic volumes would not exceed 1500 vehicles per day (vpd). Collector roads within these same subdivisions are designed to carry higher volumes of traffic depending upon the type of collector road. Basic collectors are designed for a typical maximum of 5,000 vpd. Major collectors are designed for a maximum of 10,000 vpd while commercial collectors are designed to carry up to 15,000 vpd. Arterial roads are designed to carry higher traffic volumes at higher speeds than either collector or local roads in terms of their fundamental type of design (traffic signal control at major intersections and the number of through lanes ranging from 2 to 6). Depending upon the number of through lanes, an arterial road may carry a typical maximum of 20,000 vpd for 2 through lanes and up to 60,000 vpd for a road with 6 through lanes.

Daily traffic volumes on Oakville roads are measured by staff through the Automatic Traffic Recorder (ATR) program which involves measurements at approximately 150 locations per year. Traffic volumes on roads under the jurisdiction of others within Oakville (i.e. Halton Region and MTO) are measured by these other agencies. A summary of the daily traffic volumes available through the town's ATR Program for 2015 supplemented by available volume information from Halton Region and the MTO is illustrated on Map 4 (Appendix B). The road classifications appearing on this map which fall under Oakville's jurisdiction are that of collector, major collector, industrial arterial, minor arterial and multi-purpose arterial. Major arterials are under regional jurisdiction while freeways are under provincial jurisdiction. The functional classifications for these two higher order road classes are also included in Map 4 (Appendix B).

Also as shown on Map 4, the daily traffic volumes for the town's road system are generally consistent with the typical maximum volumes outlined in the Livable Oakville Official Plan. The roads with higher volumes of traffic such as Dundas Street or QEW typically fall under the jurisdiction of others (i.e. Halton Region or MTO).



➤ *Level of Service analyzed on 50 signalized intersection locations in 2015*

➤ *6 locations identified with LOS of D or E (approaching or experiencing unstable flow)*

➤ *LOS D or E locations addressed in the Oakville Transportation Master Plan*



#### **4.0 Signalized Intersection Level of Service (LOS)**

Traffic volumes and traffic demand are generally the highest during the p.m. peak hour. During this time period, vehicle delay at traffic signal locations often occurs. This is due to and results from the traffic signals' function of allocating right of way (green) and corresponding stop control (red) to conflicting traffic movements at the intersection. To categorize the extent of this signalized intersection delay, the Highway Capacity Manual (HCM) uses the term Level of Service (LOS) and letter designations ranging from A to F to classify the delay. Table 1: Signalized Intersection Level of Service (Appendix A) provides details regarding LOS categories and their related criteria.

Average vehicle delay and LOS information for numerous intersections within the town have been collected as shown on Map 5 (Appendix B). This information was obtained from the town's traffic operations (Roads and Works Operations Department), traffic engineering and from transportation impact studies conducted in support of development applications. The average delay per vehicle and the corresponding LOS designation for these intersections for the p.m. peak period are shown on the map.

LOS is often used as a first step in the review of traffic operations to determine whether a location is operating at acceptable levels of delay. A location which is operating at LOS A, B or C is considered to have satisfactory operations with delays to motorists at acceptable levels. When an intersection's LOS is found to be LOS E or F, its levels of delay are not acceptable to motorists. LOS D is the point at which an intersection may be experiencing the upper limit of tolerable delays on an average basis overall for the intersection. At LOS D, there may be individual movements at the intersection whose level of service and delays are at unacceptable levels (i.e. at LOS E).

As of 2015, on the town's road network, there were 6 intersections which operated with LOS D during the PM peak hour and they are:

- 1) Bronte Road and Rebecca Street
- 2) Third Line and Rebecca Street
- 3) Third Line and Speers Road
- 4) Third Line and South Service Road/Wyecroft Road
- 5) Rebecca Street and Dorval Drive
- 6) Kerr Street and Speers Road

The intersections of Cornwall Road at Cross Avenue and Third Line at North Service Road operate under a P.M. peak period LOS of E, indicating the intersections operates under unacceptable vehicle delay. The above locations are indicated on Map 5 (Appendix B).

With the exception of the above intersections, the signalized intersections under Oakville's jurisdiction operate at a LOS of C or better. This suggests for the most part, the town's signalized intersections are operating in an acceptable manner with respect to intersection delay.



*Road Safety Management Program is performed every five years in conjunction with the Region of Halton to assess the safety performance of the road network and to identify locations with the highest potential for safety improvement*



## 5.0 Safety

The town maintains a vehicle collision database based on motor vehicle accident (MVA) and self-reporting collision report (SRCR) information provided by Halton Regional Police Services (HRPS). The database is used to review road safety at both the overall road network level and at the localized site specific level of analysis.

Collision statistics for the years 2011 to 2015 are provided in Table 2 (Appendix A) showing type of collision (property damage, injury or fatality) and total number of collisions by year.

### Road Safety Management Program

Road agencies often maintain a road safety management program to assess the safety performance of a road network. Identifying road section and intersection locations that have less than desirable safety performance is considered to be the initial step of the road safety management program. The last screening process was applied to the town's road network in 2010. The process involved a review and analysis of a database of motor-vehicle accident (MVA) reports for a 5-year, as provided by Halton Regional Police Service. Intersection and midblock locations that experienced higher than the expected numbers of collisions relative to roads of similar classification, characteristics and function were identified. The objective of this procedure was to identify locations with the highest potential for safety improvement (PSI) for subsequent diagnosis and treatment purposes.

Based on the 2010 network screening, staff completed In-Service Road Safety Reviews (ISRSR) along the four intersections identified with the high PSI index.

### Intersections included in 2015 ISRSR review:

1. Speers Road and Cross Avenue
2. Rebecca Street and Third Line
3. Third Line and Bridge Road
4. Lakeshore Road West and Kerr Street



*110 speed surveys collected in 2015*

*Speed survey results feed into town's traffic calming program*

*In 2015, staff installed 5 passive traffic calming treatments*



The ISRSR review developed a list of countermeasures and corrective action that the town could consider at each location to improve its safety performance. Short term improvements included signal timing modifications, traffic signs and intersections sightlines. Long term improvements such as pavement markings, traffic signal improvements and guard rail reviews will be incorporated within the future capital work plans.

### **6.0 Speed Studies**

The town conducted approximately 100 speed surveys in 2015. These studies may be completed in response to a report from the public that a section of roadway is experiencing a speeding problem or are done following the implementation of speed mitigation (traffic calming) measures. As such, most of the locations shown in Map 7 - Speed Studies Summary represent locations of reported speeding concerns (refer to Appendix B). The current speed study database contains over 600 studies representing over 300 locations. The results of the speed studies are compared to the threshold values established in the town's Traffic Calming Policy. To meet the Traffic Calming Policy warrant threshold, the measured 85<sup>th</sup> percentile speed (also referred to as the operating speed) of a roadway must exceed the value shown below:

#### **Warrant Threshold by Speed Limit**

Posted Speed Limit	85 <sup>th</sup> Percentile Speed Warrant Thresholds
40 km/h	50 km/h
50 km/h	61 km/h
60 km/h	72 km/h

Passive and physical traffic calming measures have been implemented on an ongoing basis for more than 10 years.

2015 passive traffic calming locations included:



1. Glen Abbey Gate
2. Harman Gate
3. Proudfoot Trail
4. Sheridan Gardens Drive
5. Towne Boulevard

In 2012, the town started with the pilot project of converting rubber to concrete speed cushions. By the end of 2015 all school zones have been converted to concrete speed cushions, except for Munn's Avenue at River Oaks Public School. The affected stakeholders of Munn's Avenue requested that the rubber speed cushions be removed and replaced with a less noisy traffic calming device. After extensive consultation with the residents, the final agreement has been reached to implement concrete speed cushions in the spring of 2016. With this, all the school zones will be converted from rubber to concrete speed cushions.

Map 8 (Appendix B) shows the physical and passive traffic calming treatments implemented to date.

Additionally, in 2015 the town has started on a second pilot project on radar speed display signs (RSDS). The first 2014 pilot has been concluded successful and the second pilot served the purpose of further evaluating these devices prior to including them into the upcoming traffic calming policy review. The RSDS pilot program included the placement of 1 RSDS device per ward. The results of 2015 pilot revealed decrease in operating speeds in the range of 2 km/h to 8 km/h.

The 2015 RSDS locations included:

- Great Lakes Boulevard, north of Buena Vista Court (northbound)
- Pinegrove Road, west of Warminster Drive (westbound)
- Constance Drive, east of Bellwood Avenue (eastbound)
- Pine Glen Road, east of Kwinter Road (westbound)
- Wembley Road, south of Meadowland Drive (southbound)
- Eighth Line, south of North Ridge Trail (southbound)

## 7.0 Conclusions

The 2015 Road System Report provides an overview of the traffic operational characteristics of the town's road system and a preliminary screening assessment related to basic performance measures. Information regarding traffic volumes, signalized intersection levels of service, collision characteristics and traffic operating speeds was collected and documented. The findings and conclusions are as follows.

**Traffic Volume** - Daily traffic volumes on the road network are consistent with the road classification, maximum traffic volume levels and expectations identified within the Livable Oakville Official Plan.

**Signalized Intersection LOS** - The majority of the 127 town intersections under traffic signal control are operating at an acceptable level of service (i.e. LOS of A, B, or C) during the critical PM time period. Six town intersections operate at LOS D which represents the upper limit of tolerable delay on average overall, indicating the possibility that some individual movements are operating with unacceptable delays (i.e. LOS E). Two intersections, Cornwall Road at Cross Avenue and Third Line at North Service Road operate at unacceptable LOS E during the critical PM peak period.

**Collision Characteristics** – The 10 intersections and road sections with the highest potential for safety improvement (PSI) were identified in a region-wide network screening review conducted by the Region of Halton of the collision database for the years 2005 to 2009. Town staff are awaiting for Halton to complete the next network screening review (2010-2014) to update the list.

Based on previous network screening review, town staff are undertaking In-Service Road Safety Reviews (ISRSR) at the four locations that showed a positive potential for safety improvement through the network screening process and they are:

- Speers Road/Cornwall Road and Cross Avenue
- Third Line and Bridge Road
- Rebecca Street and Third Line
- Lakeshore Road and Kerr Street

This ISRSR reviews should be completed in Q2 of 2016.

**Traffic Operating Speeds** - Generally the majority of roads within Oakville have acceptable operating speeds. Locations with unacceptable or undesirable operating speeds are addressed in priority sequence through town's traffic calming program.

### Next Steps:

The traffic characteristics and performance measures identified in this report help to identify how well the road network is operating and to identify locations which may require improvement or further study. This information is utilized as background information/data to develop and support road improvement initiatives and programs the

Engineering and Construction Department will undertake in 2017 and beyond as part of its future capital programs.

## Appendix A

Table 1: Signalized Intersection Level of Service

Level of Service	Description	Average Control Delay
A	Free Flow	10 or less
B	Stable Flow (slight delays)	10.1 to 20
C	Stable Flow (acceptable delays)	20.1 to 35
D	Approaching unstable flow (upper limit of tolerable delay, occasionally wait through more than one signal cycle before proceeding)	35.1 to 55
E	Unstable flow	55.1 to 80
F	Forced flow (jammed)	>80

Table 2: Collision Statistics (2011 – 2015)

Collision Information	2011	2012	2013	2014	2015*
Number of Collisions Involving Fatal Injury	4	3	2	1	2
Number of Collisions Involving Non-Fatal Injury	140	152	139	146	104
Number of Collisions Involving Property Damage Only	1056	953	1002	880	788
Total Number of Collisions	1200	1108	1143	1027	894

\*2015 collisions are to September 30, as there is a delay in receiving the collision files

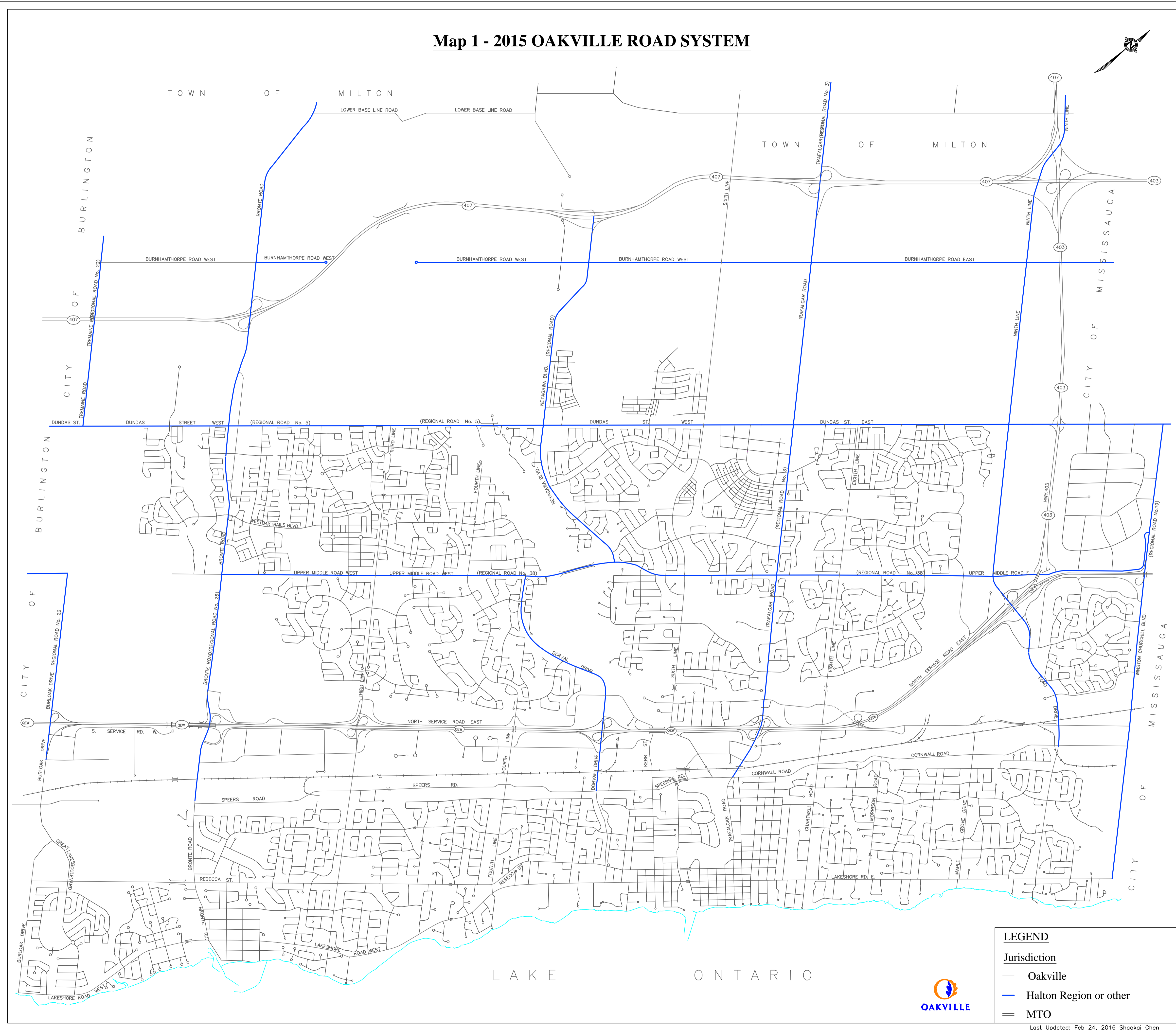
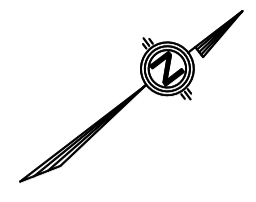
## **Appendix B**

### List of Maps:

- Map 1: Oakville Road System
- Map 2: 2014 Traffic Control Plan
- Map 3: 2014 / 2015 Crossing Guard Locations
- Map 4: 2014 Traffic Volumes
- Map 5: 2014 Signalized Intersection Level of Service
- Map 7: 2014 Speed Studies Summary
- Map 8: 2014 Traffic Calming Plan



# Map 1 - 2015 OAKVILLE ROAD SYSTEM



**LEGEND**

**Jurisdiction**

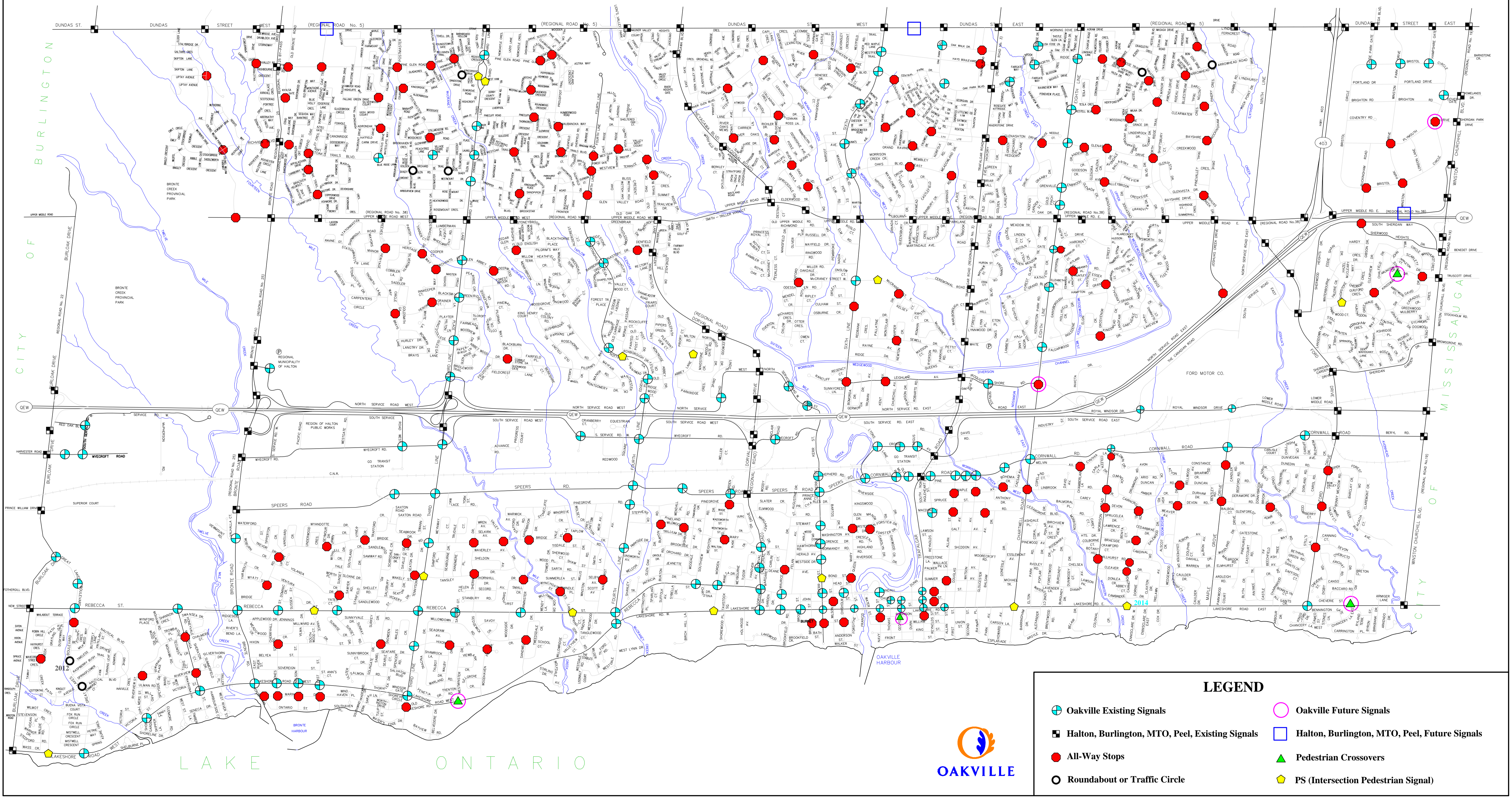
- Oakville
- Halton Region or other
- - - MTO

**OAKVILLE**

Last Updated: Feb 24, 2016 Shaokai Chen



# Map 2 - 2015 TRAFFIC CONTROL PLAN

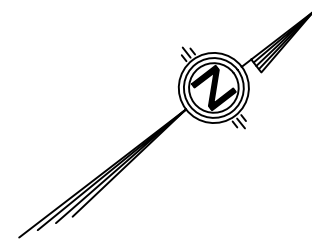


**LEGEND**

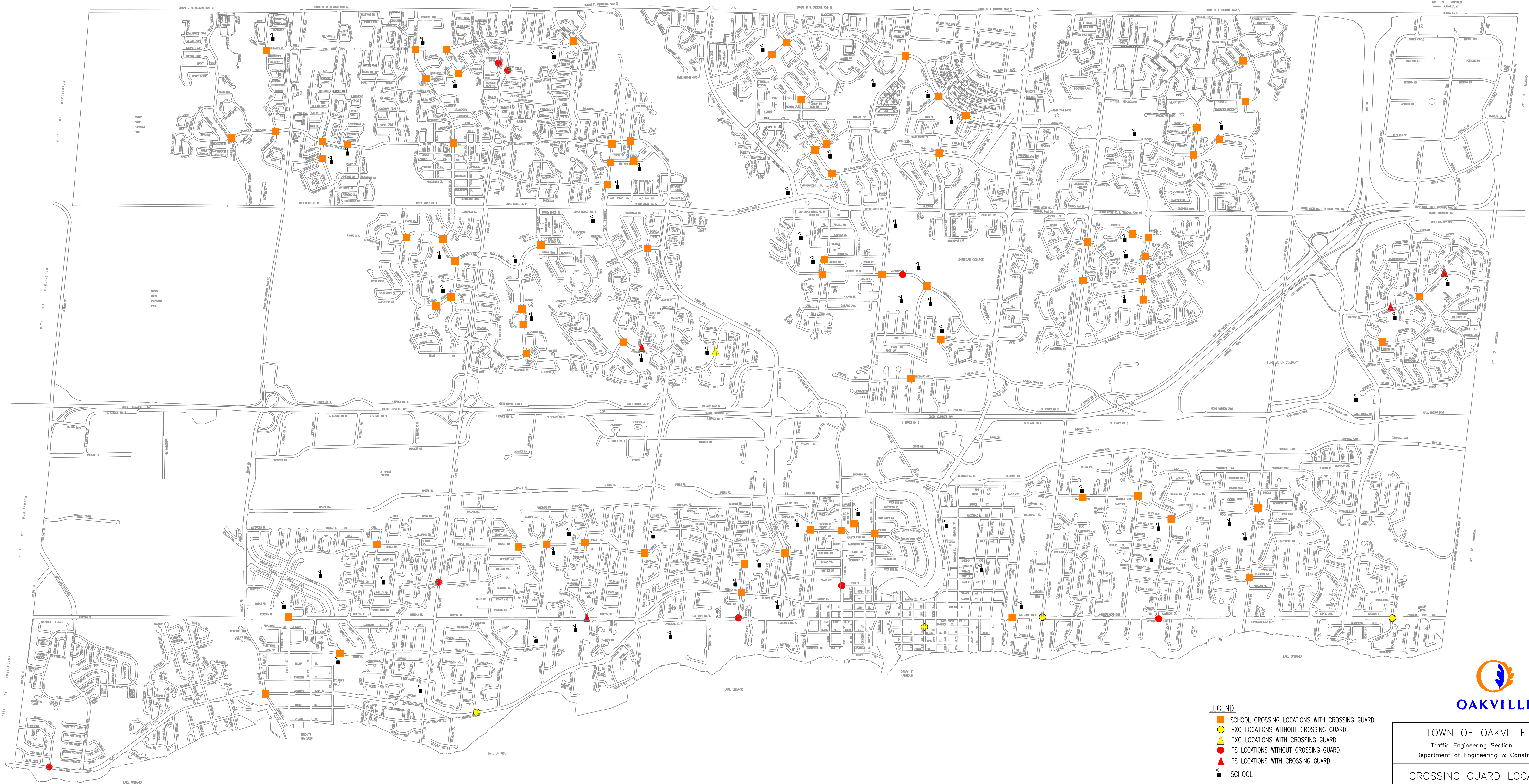
- ⊕ Oakville Existing Signals
- ⊕ Oakville Future Signals
- Halton, Burlington, MTO, Peel, Existing Signals
- Halton, Burlington, MTO, Peel, Future Signals
- All-Way Stops
- ▲ Pedestrian Crossovers
- Roundabout or Traffic Circle
- ◆ PS (Intersection Pedestrian Signal)







### Map 3 - 2015/2016 Crossing Guard Locations



- LEGEND**
- SCHOOL CROSSING LOCATIONS WITH CROSSING GUARD
  - PXO LOCATIONS WITHOUT CROSSING GUARD
  - ▲ PXO LOCATIONS WITH CROSSING GUARD
  - PS LOCATIONS WITHOUT CROSSING GUARD
  - ▲ PS LOCATIONS WITH CROSSING GUARD
  - SCHOOL

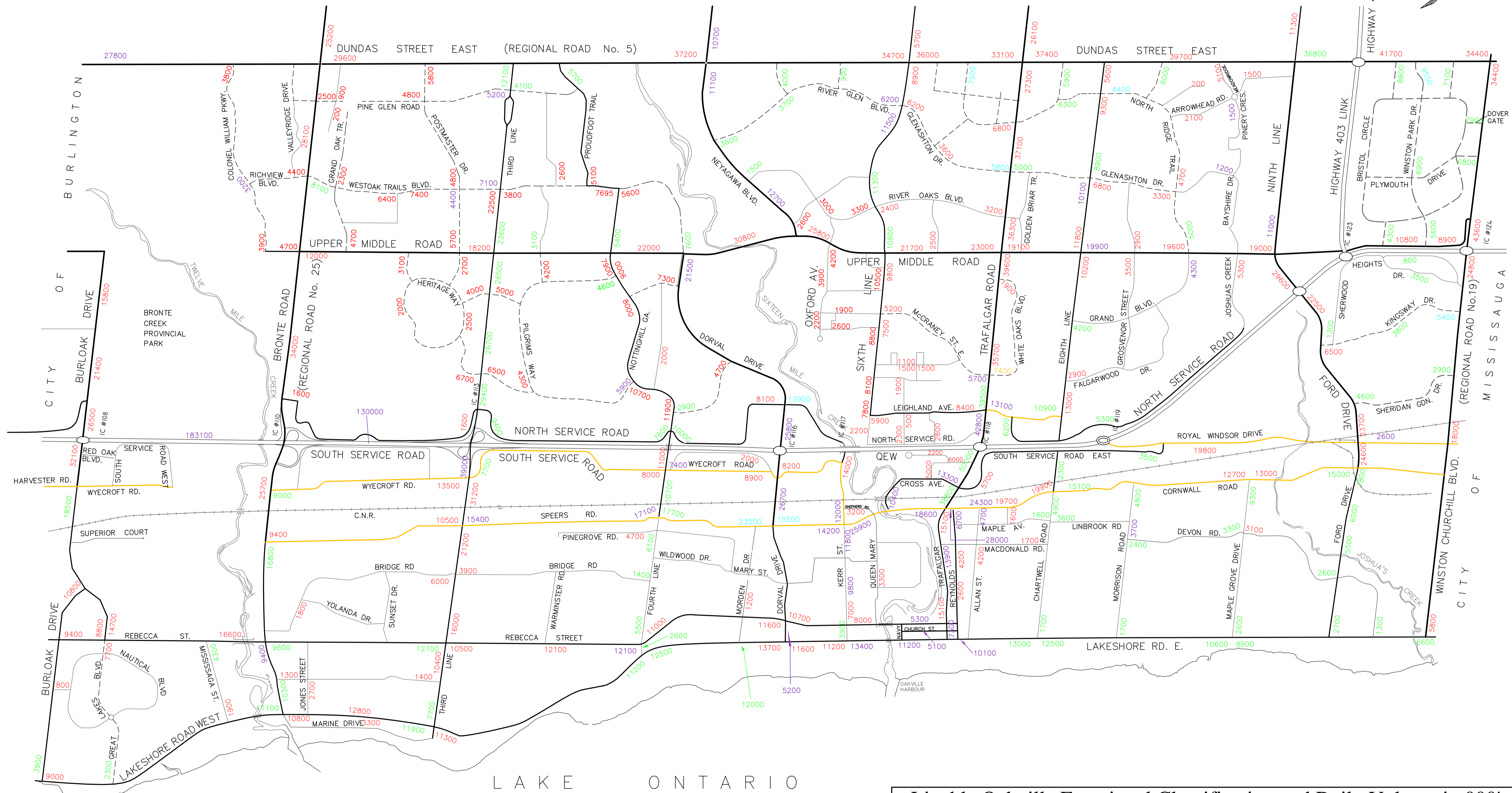
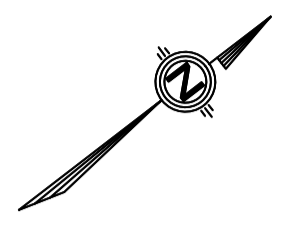


TOWN OF OAKVILLE  
Traffic Engineering Section  
Department of Engineering & Construction  
**CROSSING GUARD LOCATIONS**

Last updated by Shookai Chen | Feb 24 - 2016



# Map 4 - 2015 TRAFFIC VOLUMES



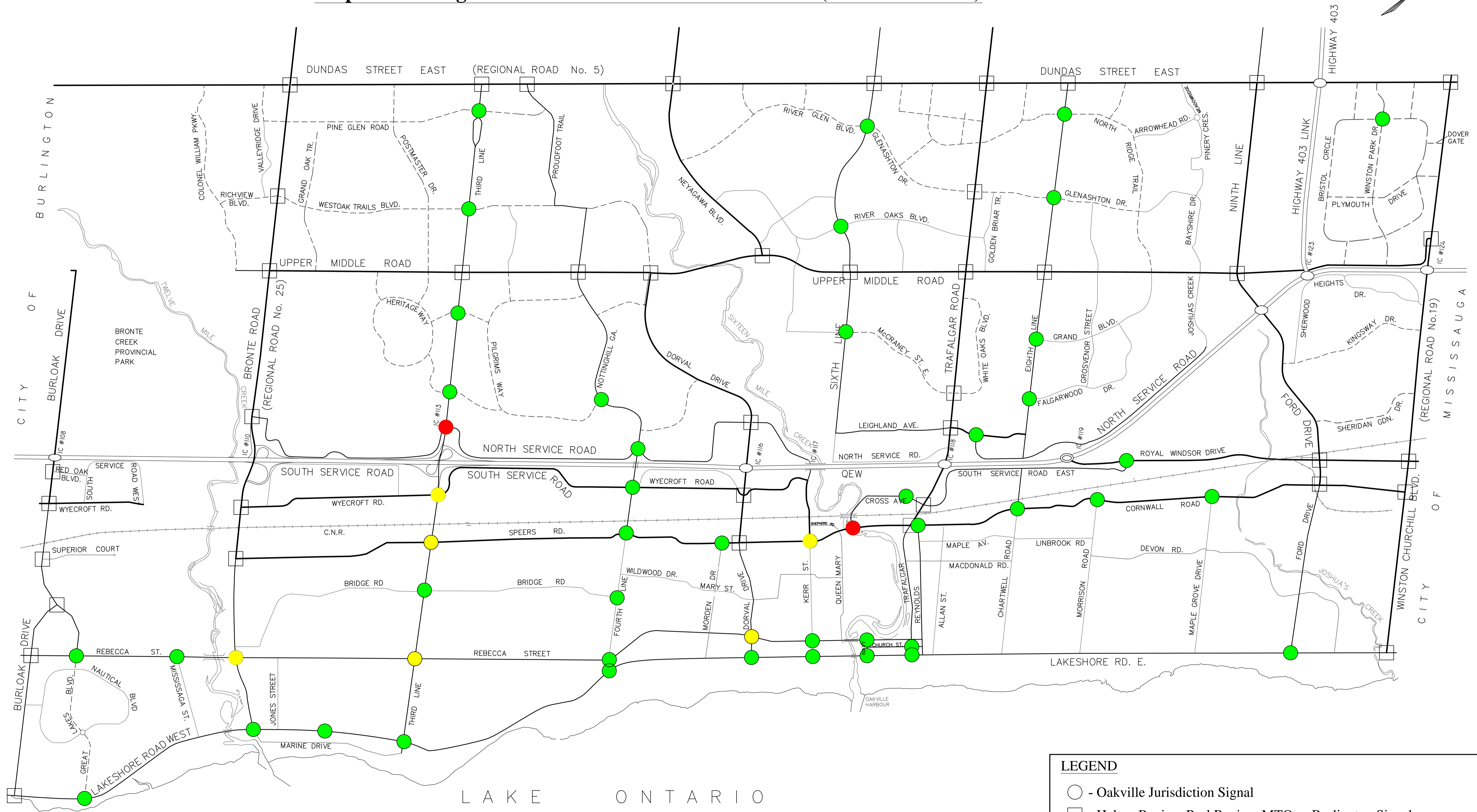
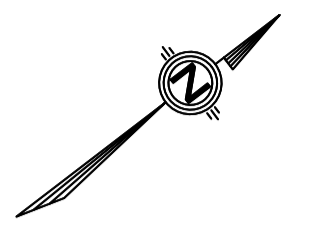
LEGEND				
2014 Volumes	2013 Volumes	2012 Volumes	2011 Volumes	2010 Volumes
Please Note: All Volumes Are Rounded to the Nearest 100.				

Livable Oakville Functional Classification and Daily Volume in 000's				
Road Class	Typical Maximum		Road Class	Typical Maximum
Major Arterials	40-60	—————	Industrial Arterials	15
Multi-purpose Arterials	20-40	—————	Major Collectors	10
Minor Arterials	20-40	—————	Collectors	5

Last Updated: February 24, 2016



### Map 5 - 2015 Signalized Intersections - Level of Service (P.M. Peak Hour)



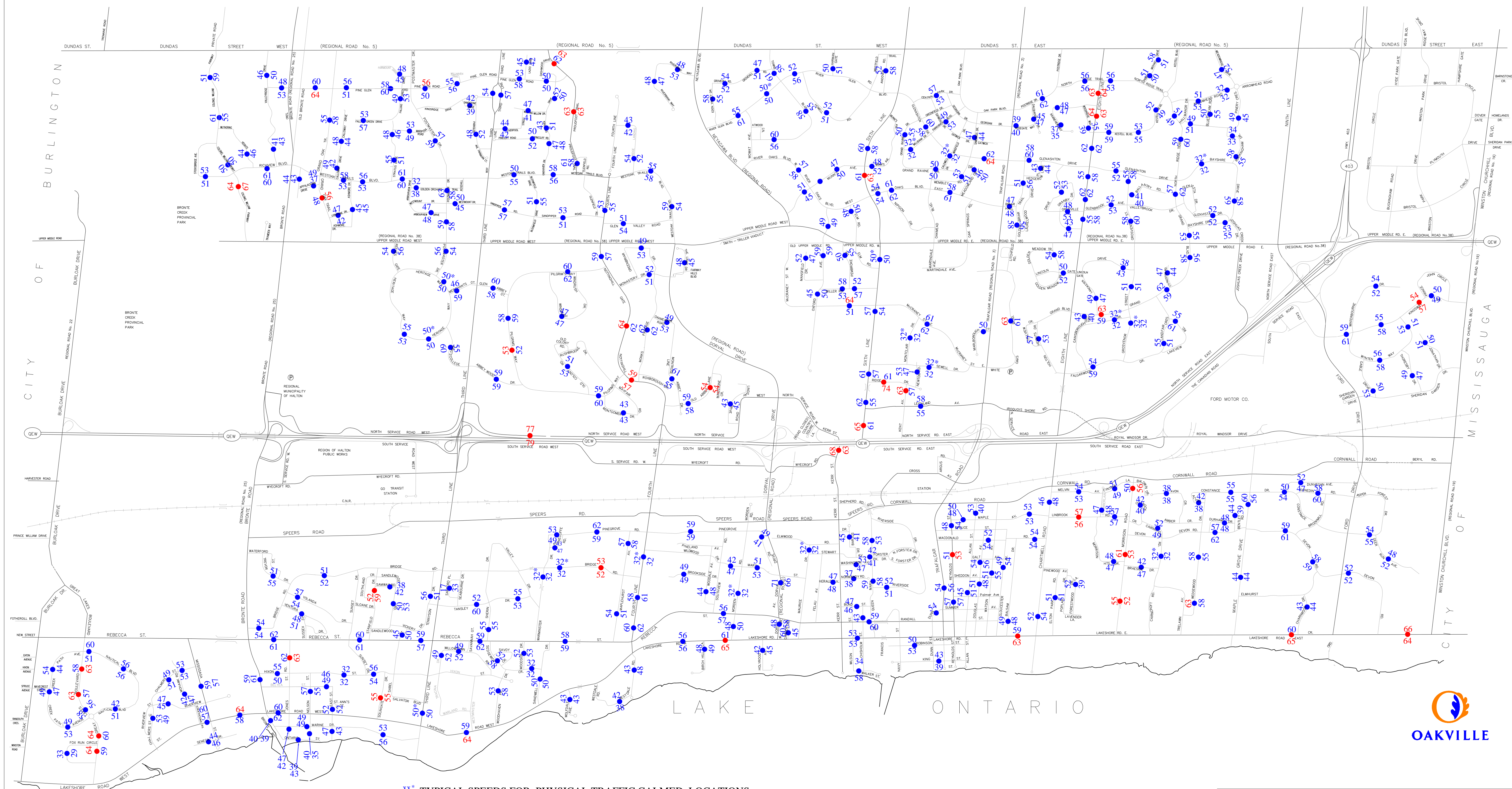
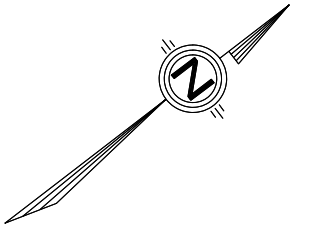
**LEGEND**

- - Oakville Jurisdiction Signal
- - Halton Region, Peel Region, MTO or Burlington Signal
- - Level of Service A to C (average vehicle delay 0 to 35 seconds)
- - Level of Service D (average vehicle delay 36 to 55 seconds)
- - Level of Service E and F (average vehicle delay 56 seconds or higher)





# Map 7 - 2015 SPEED STUDIES SUMMARY



xx\* yy TYPICAL SPEEDS FOR PHYSICAL TRAFFIC CALMED LOCATIONS

CONCRETE MEDIANS  $\frac{50^*}{50}$   
 SPEED CUSHIONS  $\frac{32^*}{32}$

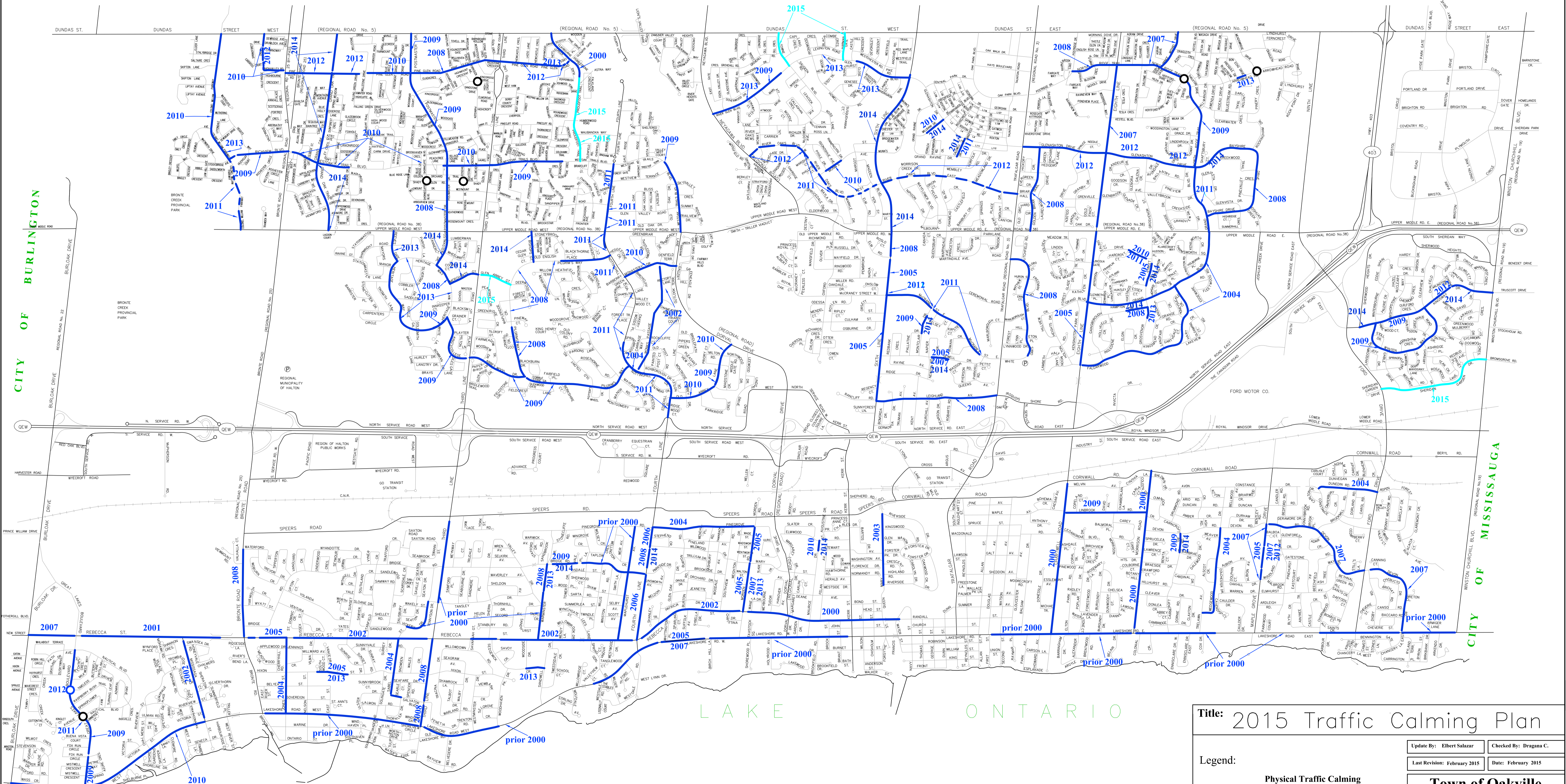
LEGEND:	
xx yy	85th Percentile Speed ≤ warrant threshold**
xx yy	85th Percentile Speed > warrant threshold
**Note 2: speeds within 1 km/h of warrant value are included herein.	

Note 1: Includes 2003 to 2015 Speed Study Results





# Map 8 - 2015 TRAFFIC CALMING PLAN



CITY OF BURLINGTON

CITY OF MISSISSAUGA

LAKE ONTARIO


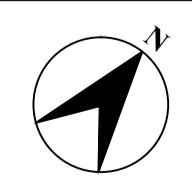
**Title:** 2015 Traffic Calming Plan

**Legend:**

- Physical Traffic Calming**
  - Existing: —
  - Future: —
- Passive Traffic Calming**
  - Existing: —
  - Future: —

Update By: Elbert Salazar	Checked By: Dragana C.
Last Revision: February 2015	Date: February 2015

**Town of Oakville**  
 Department of Engineering and Construction  
 Traffic Engineering Section  
 1225 Trafalgar Road, Oakville, Ontario L6L 5A6

Last updated Feb 24, 2016