



DEVELOPMENT & INFRASTRUCTURE SERVICES – ENGINEERING SERVICES
TOWN OF NEWMARKET
395 Mulock Drive
P.O. Box 328
Newmarket, ON L3Y 4X7
www.newmarket.ca
info@newmarket.ca
905.895.5193

June 16, 2014

**DEVELOPMENT & INFRASTRUCTURE SERVICES REPORT
ENGINEERING SERVICES 2014-32**

TO: Committee of the Whole

SUBJECT: Town-wide Traffic Mitigation Strategy
File No.: T08 T.30 Main Street

ORIGIN: Director, Engineering Services

RECOMMENDATIONS

THAT Development & infrastructure Services Report – ES 2014-32, dated June 16, 2014 regarding Town-wide Traffic Mitigation Policy, be received and the following recommendation(s) be adopted:

- 1. THAT Town Council support the concept of a Traffic Mitigation Strategy;**
- 2. AND THAT Town Council adopt in principle the contents of the Traffic Calming Policy as noted in the report, subject to Corporate Policy Review;**
- 3. AND THAT a public consultation process be conducted prior to presenting the final draft of the Traffic Calming Policy to Council for review and approval;**
- 4. AND THAT all other related approved Policies and Bylaws, such as the Parking and Transportation Management Policies, be amended to reflect the approved Traffic Calming Policy;**
- 5. AND THAT temporary speed humps not be installed on Millard Avenue;**
- 6. AND THAT, since traffic safety is the top priority identified by Newmarket residents in previous Community Satisfaction Surveys, and since requests by the community requiring action by the Town to address traffic safety concerns have increased significantly and will continue to increase into the future, additional resources to support traffic safety programs be considered in the 2015 budget process.**

BACKGROUND

At its regular meeting of Tuesday November 13, 2013, Town Council adopted amended recommendations of Development and Infrastructure Services Report ES-2013-44 which included:

40.1 c) AND THAT a report on the Town wide traffic mitigation policy come forth in the first quarter of 2014 with a feasibility study of an advanced green signal going south on Prospect Street.

This recommendation has two parts. The second part of the recommendation has already been addressed by the Town. At the request of Town Staff, York Region has reviewed the Prospect Street/Queen Street signalized intersection. The most effective solution was to increase the east-west green time, which would clear the traffic queue and allow for greater turning capacity. York Region has implemented this change several months ago. Monitoring by the Town has confirmed that the desired results have been achieved.

The first part of the November 13, 2013 recommendation directed Staff to produce a Town-wide traffic mitigation policy, which is the main subject of this report.

In addition to the previous direction to staff, at its regular meeting of May 5th, 2014, Town Council adopted an additional recommendation under "New Business" which emanated from the April 28th, 2014 Committee of the Whole meeting, stating:

THAT the matter of removable speed humps as a pilot project, for the purpose of mitigating excessive speed on Millard Avenue west of Lorne Avenue and east of Queen Street be referred to the Traffic Mitigation Strategy.

This recommendation will also be addressed as part of this report.

COMMENTS

In the Town's two most recent Community Satisfaction Surveys (2010 and 2005), traffic safety was identified by Newmarket residents as their single most important priority, surpassing by a significant amount all other issues such as taxes, user fees, cost of living, growth, quantity and quality of municipal services and improving the road system. In the 2002 Community Survey, traffic ranked as one of the top three most important priorities.

The fact that traffic safety is at the top of Newmarket residents' priorities is evident by the large number of requests for action regarding traffic safety received from residents, Councillors, Council as a whole and community groups. Currently, staff is working at full capacity dealing with requests involving speeding, infiltration, traffic volumes, crosswalks, school crossing guards, parking, traffic lights, road signage, bicycle lanes, lawn signs, pavement markings, safety reviews, electronic speed boards, educational programs, development designs, traffic reports and capital works affecting traffic, among many others. Staff is currently so busy handling traffic safety requests that it leaves little time to properly address the broader traffic mitigation activities such as traffic calming projects, education programs, community outreach and other important traffic needs.

The number of requests for traffic related matters is increasing and will continue to increase in years to come. Compounding the situation are annual construction programs such as the Town's capital works and vivaNext's construction along Davis Drive and their next phase along Yonge Street due to start in late 2014. The Viva projects will continue until at least 2018. The Town's traffic growth will also be impacted by increased infill development and the imminent Secondary Plan intensification area along the Yonge and Davis corridors until 2031. In order to be able to address traffic issues properly and in a timely manner with these increasing demands, Council will be asked to consider allocating additional resources to the traffic program in the 2015 budget.

The request for a new Town wide traffic mitigation policy stems mainly from concerns related to speeding, traffic volume and perceived infiltration from the vivaNext construction on Davis Drive. As part of its commitment to the Town, vivaNext has continued to work with Town Staff to monitor infiltration effects through nearby residential neighbourhoods. Traffic counts and origin-destination studies from license plate observation during peak hours have indicated that infiltration does not surpass the Town's 20 percent infiltration threshold and therefore, it is not excessive. Investigations have also shown that traffic diverting from Davis Drive is dispersing throughout the east-west corridor and that the road network is able to accommodate the increased volumes.

Having stated the above though, the Town has received numerous recent requests and complaints relating to infiltration on local roads as a result of temporary detour signs posted by vivaNext. These detours are necessary to divert traffic due to temporary road closures during the Davis Drive construction. Although the detours cause inconveniences and concerns in local neighbourhoods, they are temporary conditions that will be alleviated but may recur as road closures continue. Residents who are concerned with speeding and passing vehicles are encouraged to make use of the Road Watch program or to call York Regional Police to enforce the Highway Traffic Act. The Town helps by reviewing available detour routes, by strategizing with vivaNext to minimize disturbances and by discouraging heavy trucks from using detours on local roads by insisting that Viva post "No Heavy Trucks" signs to advise commercial drivers that heavy trucks are not allowed on the Town's local roads.

Any new policy relating to traffic should be Town-wide and should address long-term traffic concerns. Although short-term issues relating to temporary local traffic conditions due to construction activities will continue to be the subject of requests to investigate traffic safety, a new policy should not focus primarily on short-term local problems.

As the present time, the Town adheres to its Council-approved 2009 Transportation Management Policy (circulated separately to Council and staff and made available online or at the Clerk's office for the public), which broaches topics such as speeding, traffic operations, safety and infiltration. Staff has reviewed the existing policy and can confirm that it uses a rational and incremental approach to address issues related to traffic safety. The policy is still sound by current standards. To develop an entirely new policy at this time would be onerous and redundant.

An effective way to approach traffic safety would be with a Town-wide traffic mitigation "strategy". Such a strategy would pool together all existing policies, guidelines, practices and programs with one single goal of mitigating traffic volume and speed and increasing overall safety. Such an all-encompassing strategy is what is being proposed in this report.

There are certain important components of a traffic mitigation strategy, such as Traffic Calming initiatives, that have not been fully developed and are currently just listed in existing policies. Such

components need to be fleshed-out in the form of new strategies or policies. The new Traffic Calming Draft Policy that has been produced as part of this report is one example (circulated separately to Council and staff and made available online or at the Clerk's office for the public).

The Town also adheres to the 3 'E's' approach to traffic safety. The 3 "E's" have been around since 1924 when the concept was presented at the First National Conference on Street and Highway Safety held in Washington D.C. The "3 E's of Traffic Safety" stand for: Engineering, Education and Enforcement.

"Engineering" relates to road design, pavement markings, warning and regulatory signs and traffic calming initiatives, and is extended to include all of the engineering that goes into the design and manufacturing of vehicles. Engineering is handled primarily by the Town. Over the last several years, the Town has developed policies and programs to assist in creating Engineering solutions such as:

1. Transportation Management Policy - 2009
2. Newmarket Neighbourhood Traffic Management Guide – 2005
3. Newmarket Speed Management Program -2003
4. Corporate Parking Policy - 2007
5. OPA#11 Active Transportation Plan (nearing completion)
6. PWPOL #34 – Pavement Marking Practice (currently under review)
7. Bylaw #2011-44 – Traffic Bylaw – 2011

Some of the above are no longer current and need to be reviewed and updated. This requires resources that are not currently available in Engineering Services due to competing priorities. There will be a request for resources in the 2015 budget to address this.

"Education" includes communication and outreach programs, radar trailers, traffic speed boards, media safety campaigns, signage, speed watch and road watch programs. The "Education" component also includes school campaigns, marketing of promotional materials that encourage traffic safety, neighbourhood meetings and driver's education classes. The Town, the local police service, educational organizations, community groups and the general public are responsible for education.

Although Engineering Services receives support from the Town's Communication department for this component, the Town still needs to develop an overall traffic education, communication and outreach strategy. From the Town's perspective, the Safety Driven Campaign was initiated in 2008 and Safety Cone Sam was created as the messenger of traffic safety. While Safety Cone Sam has been present for many events to help spread the word, the communication strategy has not been coherent and tends to be short-lived.

"Enforcement" is carried out by the police and includes warnings and citations related to speeding, stop compliance and other Highway Traffic Act infractions as well as the establishment of Community Safety Zones. Although the Town can assist police somewhat by encouraging residents to use the Road Watch program and ensuring proper signage on roads, the Town's main responsibility for enforcement lies with enforcing the Town's parking by-law.

The traffic related activities that should be undertaken but cannot due to lack of resources are listed below. These will be the subject of a request for resource allocation in the 2015 budget:

Engineering Initiatives:

1. Finalize a Newmarket-Specific Traffic Calming Measures Policy (a preliminary draft has been produced as part of this report and has been circulated separately to Council and staff and made available online or at the Clerk's office for the public)
2. Implement an annual traffic calming program (with an annual budget allocation to be requested in 2015)
3. Explore a Vulnerable User Risk Reduction Program (measures to improve the overall safety of vulnerable road users (pedestrians, cyclists, etc.) by minimising the opportunities for conflict between them and motor vehicles)
4. Develop a Public Acceptance Level Policy (to provide public input into the Town's traffic initiatives)
5. Review and update existing documents (policies, plans, guides, etc.) to ensure that they remain current and relevant
6. Explore "Newmarket only" non-regulation road signage (ex.: Children at Play; Seniors Crossing; etc.) for increased traffic safety on our roads and develop criteria for application
7. Provide a more in-depth analysis of "Speed Board" and Radar Trailer program data to identify problem areas for speeding and traffic volume and recommend solutions
8. Research cutting-edge technologies and traffic calming methods in other municipalities and adapt for use in Newmarket if appropriate
9. Play a more active role in the implementation of Active Transportation routes

Educational Initiatives:

1. Develop a coherent communication plan and work with the Town's Communications Department to create and distribute appropriate messaging
2. Develop an outreach program for traffic awareness in Schools and throughout the community
3. Administer and monitor an annual "Lawn Sign Campaign" to allow residents to display an annual traffic safety message on their front lawns
4. Strengthen the "Safety Cone Sam", "Safety Driven" and "Re:Think" brands and campaigns
5. Become a more active participant in YRP's "Road Watch" program and help market it
6. Work with Community Services to explore partnerships with external parties (CAA, businesses, community groups, etc.)
7. Support community groups interested in traffic safety
8. Update the traffic component of the Town's website regularly
9. Become more actively involved in Regional programs, such as "Active and Safe Routes to School", "Active Transportation Working Group", etc.
10. Explore recommending the establishment of a traffic safety committee with appropriate terms of reference

Enforcement Initiatives:

1. Provide bridging with the Town's By-Law Enforcement department to better coordinate parking enforcement
2. Work with YRP to explore a "Speed Watch" program and Community Safety Zones
3. Share information with YRP as a result of more in-depth analysis of the electronic data obtained from the speed board program

NEXT STEPS

The following are the recommended next steps. The full analysis and review has been circulated separately to Council and staff and has been made available online or at the Clerk's office for the public.

1. A Newmarket-Specific Traffic Calming Policy, that would include:
 - Measures such as:
 - i. **Textured Pavement/Crossing,**
 - ii. **Road Diets,**
 - iii. **Speed Humps/Cushions,**
 - iv. **Centre Median/Pedestrian Refuge**
 - A **Public Acceptance Level** component with 60% community support needed to proceed;
 - A **Vulnerable User Risk Reduction** component to increase visibility and awareness amongst all road users.
2. A Communication Strategy, that would include:
 - A more visible and coordinated plan for the use of Safety Cone Sam and other branded campaigns;
 - An outreach component for enhanced messaging on the Town's website, on social media and within the community;
 - Newmarket-specific creative road signage and lawn signs for residents;
 - Information on the entire strategy.
3. An analysis of the resources needed to achieve an acceptable level of service regarding traffic safety in the Town of Newmarket

REMOVABLE SPEED HUMPS ON MILLARD AVENUE:

This section deals with Council's request to investigate removable speed humps as a pilot project on Millard Avenue west of Lorne Avenue and east of Queen Street.

Temporary speed humps are similar to regular speed humps with the exception that they are made of a rubberized-material and can be removed and replaced. Once installed, they have the same impact on speeds as a regular speed hump, as long as they are deployed correctly.

There are also differences in cost and durability between the two types of speed humps. The following chart outlines some of the differences between a regular and temporary speed hump.

	Regular	Temporary
Cost	\$1,500 to \$3,000 new to retrofit	\$5,000
Installation	included above	\$1,000
Removal	n/a	\$1,000
Storage	n/a	yes
coverage	12 months	6-7 months
durability	15+ years	3 years estimated

The chart clearly shows that the temporary speed humps are more costly, less durable, and are less effective.

As for Millard Avenue (between Lorne Avenue and Queen Street) specifically, the roadway is classified as a collector road. The Town's current policy does not allow speed humps of any type on collector roads. There are very serious concerns by Fire and EMS regarding the delay in response times due to the presence of speed humps. In addition to delays, EMS and Fire both state that delicate equipment located on board of response vehicles can be damaged or may need recalibration as a result of the jolt that occurs when going over speed humps.

If temporary speed humps were to be installed despite the current policy, the cost would be significant. At their effective spacing of 80 meters, the section from Queen Street to Lorne Avenue (about 775m) would require 8 to 9 temporary speed humps. Field placement would dictate the exact final number. Assuming a lower number of 8 temporary speed humps, the cost would be \$40,000 to purchase the units, plus \$8,000 to install and another \$8,000 to remove for a grand total of \$56,000 to provide 6 or 7 months of speed reduction.

Staff has communicated with other municipalities who have had a speed hump program. Temporary speed humps are not recommended in other municipalities because each hump leaves a few dozen holes in the asphalt road surface which can be patched, but have compromised the integrity of the asphalt and will lead to issues with the roadway surface and they need to be removed before the first winter event, which sometimes comes early and is difficult to predict.

Another negative impact of speed humps is traffic diversion. A percentage of vehicles on Millard Avenue would either divert to similar routes like Queen Street or Park Avenue in order to avoid the speed humps, thereby causing more perceived infiltration.

In conclusion, temporary speed humps are **NOT recommended** as a viable traffic calming option, and a pilot project is NOT recommended on Millard Avenue between Queen Street and Lorne Avenue.

PUBLIC CONSULTATION

There was no public consultation in the preparation of this particular report. However, Staff would like to conduct a public consultation process prior to presenting the final draft of the Traffic Calming Policy to Council for review and approval.

BUSINESS PLAN AND STRATEGIC PLAN LINKAGES

Living Well

- Investigate and resolve bylaw complaints in a timely fashion, and promote voluntary compliance through regular dialogue with the public, thereby promoting health, education and a harmonious community.

IMPACT ON PUBLIC HEALTH AND SAFETY

The initiatives proposed in this report may improve the community and promote safe and efficient operations on the road network.

HUMAN RESOURCE CONSIDERATIONS

To undertake the traffic calming and communication strategy, additional resources would be required. Currently, there is one Senior Transportation Coordinator who handles all traffic concerns such as requests to investigate speeding, infiltration, traffic volumes, crosswalks, crossing guards, traffic lights, road signage, bicycle lanes, lawn signs, pavement markings, safety reviews, electronic speed boards, educational programs, reviewing development designs, reviewing traffic reports, reviewing capital works and resolving parking issues. The requests come from concerned residents, Ward Councillors, Town Council or community groups. These tasks require the Coordinator to spend a great deal of his time in the field, obtaining measurements required for calculations to determine whether various warrants are met. This is in addition to researching and writing an average of two to three Council reports per month (often more), hiring and managing consultants, providing support to the Downtown Parking taskforce and participating on several upper tier committees.

There is one Traffic Technician who assists the Coordinator by executing various duties including the electronic speed board program in the field and reviewing data obtained from them. The Traffic Technician also maintains the website and occasionally assists in some of the educational and promotional programs. Both employees are currently working at capacity and cannot be expected to take on additional duties as recommended in this traffic mitigation program.

For the reasons mentioned above, Council will be asked to consider allocating additional resources to the traffic safety program. It is recommended that this be considered in the 2015 budget process.

IMPACT ON BUDGET

Operating Budget (Current and Future)

There will be an analysis of budget requirements to carry-out the traffic mitigation program that will be presented to Council to consider in the 2015 budget.

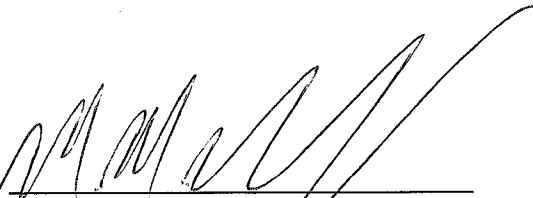

Capital Budget

To undertake a consistent implementation plan for traffic calming, additional funds would be required and should be considered in the 2015 budget process. A request will be made at that time.

CONTACT

For more information on this report, please contact Mark Kryzanowski at 905-895-5193 extension 2508; mkryzanowski@newmarket.ca.

Prepared by:


M. Kryzanowski, M.C.I.P., R.P.P.
Senior Transportation Coordinator
R. Bingham, C.E.T.,
Manager, Engineering & Technical Services
R. Prudhomme, M.Sc., P. Eng.
Director, Engineering Services
R. Prentice, Commissioner,
Development & Infrastructure Services

TOWN OF NEWMARKET COUNCIL - EXTRACT - MONDAY, NOVEMBER 2, 2009

	REF'D TO	COPY TO		REF'D TO	COPY TO
Mayor Tony Van Bynen			Legal and Development Services, Acting Commissioner of		
Reg. Councillor Taylor			Building & Bylaws, Dir. of		
Councillor Vegh			Planning, Dir. of		
Councillor Emanuel			Fire Chief		
Councillor Kerwin			Community Services, Commissioner of		
Councillor Woodhouse			Parks, Recreation & Culture, Dir. of		
Councillor Sponga			Public Works and Environmental Services Dir. of		
Councillor Blight			Corporate and Financial Services, Commissioner of		
Councillor Ramsarran			Town Clerk		
CAO			Communications Manager		
Human Resources			Information Systems Manager		
			Purchasing Manager		
PENDING AGENDAS: COW					
COUNCIL			OTHER:		
JCC					
Letter: File:			ORIGINAL REPORT IN DEPARTMENT BINDER	√	

**40. COMMITTEE OF THE WHOLE MINUTES – OCTOBER 26, 2009 – ITEM 28
COMMUNITY SERVICES REPORT ES 2009-112
TRANSPORTATION MANAGEMENT POLICY**

THAT Community Services Report ES 2009-112 dated October 15, 2009 regarding the Transportation Management Policy be received and the following recommendation be adopted:

THAT the Transportation Management Policy including appendices attached, as amended, be adopted.

TOWN OF NEWMARKET COUNCIL - EXTRACT - MONDAY, NOVEMBER 2, 2009

	REF'D TO	COPY TO		REF'D TO	COPY TO
Mayor Tony Van Bynen			Legal and Development Services, Acting Commissioner of		
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Councillor Vegh			Planning, Dir. of		
Councillor Emanuel			Fire Chief		
Councillor Kerwin			Community Services, Commissioner of		
Councillor Woodhouse			Parks, Recreation & Culture, Dir. of		
Councillor Sponga			Public Works and Environmental Services Dir. of		
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			Purchasing Manager		
PENDING AGENDAS: COW					
COUNCIL			OTHER:		
JCC					
Letter: File:			ORIGINAL REPORT IN DEPARTMENT BINDER	√	

THAT Item 15 of the agenda being Community Services Report – Transportation Management Policy be reconsidered.



Newmarket

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October 15, 2009

COMMUNITY SERVICES REPORT ES2009-112

TO: Committee of the Whole

SUBJECT: Transportation Management Policy
File No.: T.30.13.17

ORIGIN: Director of Engineering Services

RECOMMENDATIONS

THAT Community Services Report - ES 2009-112 dated October 15, 2009 regarding the Transportation Management Policy be received and the following recommendation(s) be adopted:

1. THAT the Transportation Management Policy including appendices attached be adopted.

COMMENTS

The Transportation Management Policy began in 2001 with the development of the Speed Management Work Plan to formalize a process to address the issues of speeding within the Town. As well, at the time, the Town had a variety of other policies such as the All-way Stop Control policy and the Speed Hump policy, which were developed a short time later. Traffic Calming began to become a useful tool to mitigate speeds and other traffic issues which lead to the development of the Neighbourhood Traffic Management Guide (NTMG) in 2005. The NTMG grouped together much of the Town's policies and existing traffic calming and traffic management tools into one comprehensive guide. At this time, most traffic calming measures required an Environmental Assessment (EA) for implementation. However, in 2007, the requirement for traffic calming measures to undertake an Environmental Assessment was dropped by the Ministry of the Environment which considered traffic calming a 'local' issue.

With the removal of the EA requirement, the Town has the ability to implement traffic management programs at a local level. The proposed Transportation Management Policy attempts to bring together all of the current policies, practices and guidelines under a single policy that is drafted with the intent of public consultation which is a large part of the EA process. Therefore, the Transportation Management Policy outlines the process, limits, warrants, and mitigation for traffic management within the Town.

**Community Services
Engineering Services Department**

TOWN OF NEWMARKET
395 Mulock Drive
PO Box 328 STN Main
Newmarket, ON L3Y 4X7

www.newmarket.ca
engineering@newmarket.ca
905.953.5300, ext 2500

Therefore, it is recommended that the Transportation Management Policy, attached, be adopted by Town Council.

PUBLIC CONSULTATION

Town Council has dealt with many transportation and traffic issues over the years and has attempted to apply consistency and sound engineering practices to the solutions. Based on the June 2008 Council Workshop, the policy received favourable response.

The policy was referred to the Policy Review Committee, and subsequently received approval of the policy to proceed forward to Town Council.

BUSINESS PLAN AND STRATEGIC PLAN LINKAGES

Living Well

- Investigate and resolve Bylaw complaints in a timely fashion, promote voluntary compliance through regular dialogue with the public, thereby promoting health, education and a harmonious community.

IMPACT ON PUBLIC HEALTH AND SAFETY

The Transportation Management Policy will attempt to safely and efficiently address the traffic management concerns of the community.

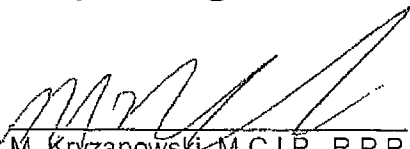
IMPACT ON BUDGET

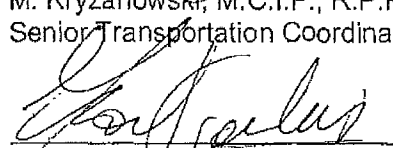
There is no budgetary concerns with adoption of the policy.

CONTACT

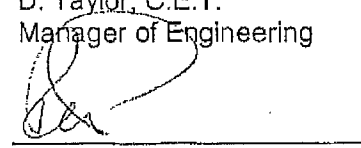
For more information on this report, please contact Mark Kryzanowski at 905-895-5193 extension 2508; mkryzanowski@newmarket.ca.

Prepared by:


M. Kryzanowski, M.C.I.P., R.P.P.
Senior Transportation Coordinator


J.G. Koutoumbis, B.Eng., P. Eng.
Director of Engineering Services


D. Taylor, C.E.T.
Manager of Engineering


R. Prentice
Commissioner of Community
Services



Corporate Policy Manual

Sub Topic:	Transportation Management Policy	Policy No.	ENG.1-02
Topic:		Employees Covered:	
Section:	Engineering Services	Council Adoption Date:	
Effective Date:		Revision No:	Date:

STRATEGIC PLAN LINKAGES

The Town of Newmarket is committed to the safe and efficient movement of its residents. This is accomplished by a well-planned and well-balanced approach to the management of municipal traffic in Newmarket.

PURPOSE

The purpose of this policy is to set the framework for managing vehicular traffic and pedestrians on the Town's municipal right-of-ways. This Policy will also ensure the corporation meets or exceeds legislation as amended from time to time.

PROCEDURES

This policy is divided into the three main themes – Parking, Traffic and Pedestrians. Appendices to this policy should be considered a 'living' document that will change as the needs of the Town change, as well as Regional or Provincial mandates, and legislative requirements, and therefore may be amended by the Director of Engineering Services or designate.

Parking By-law Amendments

- 1 The Community Services Commission (e.g. Manager of Engineering and Technical Services or the Senior Transportation Coordinator) will ensure that staff, Council and the public are aware of the process to amend the Parking By-law.
- 2 Notwithstanding the above, the Downtown Parking Plan requires additional consideration when amending parking restrictions such as noted in Appendix B.
- 3 Parking Bylaws are enforced by the appropriate authority in compliance with provincial and municipal legislation.

Traffic Management

Speed

- 1 All speed mitigation requests shall come in the form of: a) a written letter/electronic mail from the resident; b) a written/electronic mail request from the Ward Councillor; or c) requests from members of Town Council to the Director of Engineering Services.
- 2 Engineering Staff will initiate a review of the speeding issue which shall include, but not limited to, volume and speed counts. The procedure for reviewing speeds is found in Appendix C.
- 3 A follow-up volume and speed study will be conducted 6 to 12 months after the category 1 traffic calming mitigation measures have been implemented.
- 4 If more aggressive traffic calming mitigation measures are required, then various category 2 traffic calming measures may be implemented.

Volume

- 1 All traffic volume reduction requests shall come in the form of: a) a written letter/electronic mail from the resident; b) a written/electronic mail request from the Ward Councillor; or c) requests from members of Town Council to the Director of Engineering Services.
- 2 A volume and speed study will be undertaken on a particular street, as well as adjacent streets if necessary. The procedure for reviewing volumes is found in Appendix C.
- 3 If the volume and speed study indicate average daily volumes less than the ideal threshold, then no further action is required.
- 4 If the volume and speed study indicate average daily volumes greater than the ideal threshold, then an area-wide transportation review would need to be conducted in order to determine cause and appropriate mitigation measures.

Traffic Infiltration

- 1 All traffic infiltration mitigation requests shall come in the form of: a) a written letter/electronic mail from the resident; b) a written/electronic mail request from the Ward Councillor; or c) requests from members of Town Council to the Director of Engineering Services.
- 2 Traffic infiltration studies which include turning movement counts and origin-destination (license plate trace) studies will be conducted to determine the extent of the infiltration and potential mitigation. The procedure for reviewing traffic infiltration is found in Appendix C.

Right-of-way Control (Stop Sign requests)

- 1 All Right-of-way control (stop sign) requests shall come in the form of: a) a written letter/electronic mail from the resident; b) a written/electronic mail request from the Ward Councillor; or c) requests from members of Town Council to the Director of Engineering Services.
- 2 The appropriate turning movement count study is undertaken to determine compliance to the Town's requirements. The procedure for reviewing right-of-way control requests is found in Appendix C.

Safety

- 1 All safety requests shall come in the form of: a) a written letter/electronic mail from the resident; b) a written/electronic mail request from the Ward Councillor; or c) requests from members of Town Council to the Director of Engineering Services.
- 2 The nature of the safety concerns will dictate the next course of action and mitigation measures.
- 3 Since engineering safety reviews are a specialized field, the Town may elect to retain a consultant on an as needed basis to communicate their professional opinion.

Signs

- 1 All sign requests can be referred directly to the Director of Engineering Services.
- 2 All sign requests (other than all-way stop control signs) are reviewed in accordance to the Ontario Traffic Manual (OTM). Signage placement shall be determined by the requirements contained in the OTM books.

Pedestrians**Sidewalks**

- 1 All sidewalk requests or concerns would be addressed in the Corporate Sidewalk Policy PWES.1-01.

School Guard Crossing

- 1 The Traffic and Transportation Management Advisory Committee TTMAC (or its successor) shall be considered the authority for the Town in the governance of school guard crossings. All requests shall be in a written form to TTMAC.
- 2 The Engineering Services Department shall be considered the agency capable of undertaking the necessary gap studies and field inspections.

The procedure for reviewing school crossing guard locations is found in Appendix D.

CROSS REFERENCE

- School Crossing Guard Guide (January 2006) (Ontario Traffic Conference updated the 1992 MTO Guidelines)
- Corporate Parking Policy
- Ontario Traffic Manual, Book 5 and Book 6
- Corporate Sidewalk Policy – PWES.1-01

Appendix A

DEFINITIONS

All-way stop controls. All-way stop controls are either three-leg or four-leg intersections with a stop sign controlling each leg. All-way stop controls are implemented to control right-of-way of traffic and pedestrians. All-way stop controls should not be used as a speed reduction measure or for protected crossings for pedestrians. As well, all-way stop controls should not be used when the major road has high traffic volumes.

Average Daily Volumes. Average Daily Volumes, sometimes referred to as daily volumes, are developed from Volume Speed studies. Ideally, the average daily volumes are calculated by totaling up the volume and speed study traffic volume total, and dividing by the number of days.

Collision Database. The Collision Database is a compilation of recorded traffic collisions on Town roads under the maintenance of the Town. The revised Collision Database begins with data which started on January 1, 2000. Information is supplied by York Region from the York Regional Police. It must be noted that the Collision database contains only "recorded" collisions by the York Regional Police.

Gap Studies (School Guard Crossing). Gap studies are simple studies to determine the amount of time between cars on a roadway and number of gaps in a time period to allow children to cross the street.

Ontario Traffic Manual. Ontario Traffic Manuals (OTM) are a compilation of engineering standards that govern all local roads. As an example, OTM Book 5 deals with Regulatory signs such as speed limit signs and parking signs. The OTM manuals are derived from the Highway Traffic Act and the Ontario Ministry of Transportation.

Operating Speed. Operating Speed is an engineering term used to describe the speed at which 85% of all traffic travels at or below. The Operating speed is used to determine mitigation measures.

Parking By-law. Refers to the Towns Comprehensive Parking By-law 1993-62. This by-law governs parking controls and restrictions for municipal road allowances and municipal parking lots.

Posted Speed. Posted Speed is the by-law maximum posted speed for the road. Generally, all roads within the Town are posted 40 km/h with the exceptions of the industrial roads and a few primary collector roads which are posted at 50 km/h. Each street should have at least one speed limit sign per direction to indicate the posted speed.

Review Agency (School Guard Crossing). The Review agency as set out in the School Crossing Guard policy is responsible for the review and recommendation of school crossing locations. Currently, the Engineering Services Department would be considered the Review Agency for the Town.

Right-of-way Control. Right-of way control refers to a method of controlling the traffic flow at an intersection by clearly establishing which directions (s) have the right-of-way over others. Examples of right-of-way control include stop signs, yield signs, school guard crossings, police and traffic signals.

Road Classification. Road Classification is a term used to describe the type of road and general characteristics. The Town has three road classifications: local, minor residential collector, and primary residential collector. The same characteristics of the roads refers to the items like anticipated traffic volumes and road allowance widths.

Safe Gaps. Safe Gaps are a determination of how many seconds is required for a child to safely cross a street in traffic conditions. Safe gaps look at factors like: width of road, walking speed, decision to cross time, sight lines, children groups. Once a safe gap time is determined, it is applied to the gap studies to determine if a school guard crossing location is needed.

Safety (mitigation). While all roads are designed to a safe standard, certain secondary elements may create less than ideal driving conditions which would necessitate mitigation measures to reduce the risk. The concept of safety is a perceptual one, and standard engineering principles and judgment would determine if mitigation measures are required.

School Guard Crossing . A location on a Town or Regional road that is manned by a trained Town employee or contracted service that is present for the sole purpose of safely crossing elementary school aged children from one side of the street to the other. The basic concept for the placement of school crossing locations is for the safety. It is the ultimate responsibility of the parent/guardian to ensure that their children go to and from school safely.

Sidewalk. Sidewalks in this policy refers to any sidewalk or walkway on a municipal road allowance. It does not refer to the path and trail systems throughout the Town's park systems.

Traffic Calming. Traffic Calming is a generic engineering term which refers to a wide variety of measures with the purpose of reducing road speeds and/or traffic volumes. The most common form of traffic calming are speed humps.

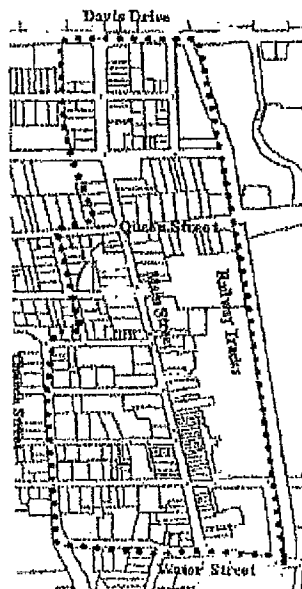
Traffic Infiltration. Traffic that originates on a regional arterial road and uses the community local road network to access another regional arterial or by-pass a congestion point, typically found on regional arterial or Town primary collector roads

Volume and Speed Study. This study is conducted over a seven day period (ideally), and automatically gathers traffic volumes and traffic speeds per direction and summed every 15 minutes. These studies are essential to help define the nature of mitigation requests.

Appendix B

DOWNTOWN PARKING PLAN

- B.1 The Downtown Parking Plan encompasses the local streets and municipal parking lots in the Downtown area, and care must be exercised in altering the parking restrictions as the entire parking plan strives to achieve a balance in the Downtown area.
- B.2 The Downtown Parking Plan Area is noted below.



Appendix C

TRAFFIC MANAGEMENT

The Traffic Management appendix defines the process, limits, warrants, mitigation, etc, for studies involving: speeds, traffic volumes, traffic infiltration, right-of-way control, and safety.

Speed

- C.1 The operating speed will be the speed used to determine mitigation measures if any.
- C.2 The operating speed threshold for local designated streets is 10 km/h above the posted speed limit, and 15 km/h above the posted speed for collector roads.
- C.3 If the operating speed is above the posted speed limit for all road classifications, Category 1 traffic calming mitigation measures may be implemented.
- C.4 Category 1 traffic calming mitigation measures include:
 - i. Community Based – radar speed board, road watch program, public education
 - ii. Enforcement – increased police enforcement
 - iii. Signage – regulatory, warning and information
- C.5 If the follow-up operating speed is within the 10/15 km/h threshold, then Category 1 traffic calming mitigation measures will be maintained.
- C.6 If the follow-up operating speed is greater than the 10/15 km/h threshold, then Category 2 traffic calming mitigation measures can be implemented.
- C.7 Category 2 traffic calming mitigation measures include:
 - Textured pavement/crossing
 - Road narrowing
 - Increased on-street parking
 - Speed humps
 - Raised crosswalks/intersections
 - Curb radius reductions
 - Curb radius extensions
 - Raised centre median/pedestrian refuge island
 - Traffic circles
 - Chicanes
 - Diagonal diverters

Volume

- C.8 The traffic volume ideal threshold for the various road classifications is as follows:
- Local road – 1,500 vehicles per day or less
 - Minor Collector roads – 5,000 vehicles per day or less
 - Primary Collector road – 6,000 vehicles per day or less for residential Primary collectors and 10,000 vehicles per day or less for non-residential Primary collectors.
 - Non-residential primary collector streets include: Main Street, Eagle Street, Gorham Street, Harry Walker Parkway.

Infiltration

- C.9 If the traffic infiltration studies reveal that 20% or less of the street traffic is infiltrating traffic, then no action is required since the industry standard threshold for traffic infiltration is 20%.
- C.10 If the traffic infiltration studies reveal that more than 20% of the street traffic is infiltration traffic, then an area wide transportation study would be conducted to determine cause and mitigation measures.
- C.11 Mitigation measure would also include the Region and may be items such as, but not limited to:
- Traffic signal timing adjustments
 - Turn restrictions
 - Arterial traffic flow improvement

Right-of-way Control

- C.12 A 5-hour turning movement count is undertaken at the intersection. The time periods are:
- 7:00 am to 9:00 am
 - 3:00pm to 6:00pm
 - Consideration must be given to nearby schools and the afternoon count may need to be adjusted to 2:00pm to 5:00pm.
- C.13 The Right-of-way Control requests are governed by the contents of the All-way Stop Control Policy.
- C.14 The turning movement count results are applied to the All-way Stop Control Policy as follows:
- Warrant #1 Improved Right-of-way control. – Where traffic signals are warranted and urgently needed, the all-way stop control is an interim measure than can be installed to control traffic while arrangements are being made to have the signals installed.
 - Warrant #2 Collisions – An accident problem as indicated by 3 or more reported accidents during a 12 month period of collision types susceptible to correction by an all-way stop control installation

(such as turning movement collisions) will warrant the approval of that control.

- Warrant #3A – Total Intersection Traffic and Pedestrian Volumes
 - i. When either of the roads is classified as a 'Collector' road, the total vehicular and pedestrian volumes entering the intersection must average at least 500 per hour summed from the peak 4-hours of the 5-hour count.
 - ii. When both roads are classified as 'Local' roads, the total vehicular and pedestrian volumes entering the intersection must average at least 250 per hour summed from the peak 4-hours of the 5-hour count.
 - iii. When there is a high pedestrian generator such as a school or seniors facility within 100 metres straight line distance, the pedestrian values are doubled for all calculations.
- Warrant #3B – Minor Road Traffic and Pedestrian Volumes
 - i. When either of the roads is classified as a 'Collector' road, the total vehicular and pedestrian volumes entering the intersection from the minor street must average at least 200 per hour summed from the peak 4-hours of the 5-hour count.
 - ii. When both roads are classified as 'Local' roads, the total vehicular and pedestrian volumes entering the intersection from the minor street must average at least 100 per hour summed from the peak 4-hours of the 5-hour count.
 - iii. When there is a high pedestrian generator such as a school or seniors facility within 100 metres straight line distance, the pedestrian values are doubled for all calculations.

C.15 For all-way stop controls to be considered, 100% of either Warrant #1 or Warrant #2 or both Warrant #3A and #3B must be achieved.

Safety

C.16 Given that the nature of safety concerns vary, a review of the collision database and field investigation should be conducted as a minimum.

Appendix D

PEDESTRIANS

The Pedestrians appendix defines the process, limits, warrants, for studies involving the placement of school crossing guards.

- D.1 The following are some considerations when reviewing a location:
- No school guard crossing location shall be within 150 metres of an all-way stop control or traffic signal on the crossing street.
 - The minimum number of children crossing shall be no less than 10 children for both the morning and afternoon time periods.
 - Gap studies shall be taken 30 minutes before first bell and 30 minutes after last bell.
 - Minimum number of safe gaps per 5-minute period shall be four (4) for more than 50% (4 or more) of the six 5-minute time periods in each 30 minute gap study.
- D.2 If the gap studies indicate that the school guard crossing is not warranted but the results are close, then a second gap study will be preformed.
- D.3 Irrespective of the gap study, if it is in the opinion of the review agency that a school guard crossing is warranted, due to engineering or safety considerations, then a reason behind the warrant must be documented.
- D.4 All field inspections and gap studies must conform to the requirements outlined in the School Crossing Guard Guide, January 2006.

June 16, 2014

**DEVELOPMENT & INFRASTRUCTURE SERVICES REPORT
ENGINEERING SERVICES 2014-32
COMPANION DOCUMENT AND PRELIMINARY DRAFT TRAFFIC CALMING POLICY**

PURPOSE

The purpose of this document is to supply additional information (companion document) to Development & Infrastructure Services Report – Engineering Services 2014-32 and to provide the foundation for a preliminary draft Traffic Calming Policy. This document provides information on the various items noted the main document that assisted in developing the recommendations for the Committee of the Whole report dated June 16, 2014.


BACKGROUND

Prior to this report, the Town of Newmarket has been abiding by its Council-approved 2009 Transportation Management Policy, which broaches topics such as speeding, traffic operations, safety and infiltration on Town roads. The existing policy uses a rational and incremental approach to address issues related to traffic safety. The ideas and concepts in the 2009 policy were based on the Newmarket Neighbourhood Traffic Management Guide, which was produced in 2005. The policy to which the Town currently adheres is still sound by current standards.

The request for a new Town-wide traffic mitigation policy stemmed mainly from concerns related to speeding, traffic volume growth and perceived increased infiltration from construction on Davis Drive. The definition of “traffic infiltration” as per Newmarket’s 2009 Transportation Management Policy is (additional definitions are contained in Appendix 1):

“Traffic that originates on a regional road and uses the community local road network to access another regional arterial or by-pass a congestion point, typically found on regional arterial or Town primary collector roads.”

As part of its commitment to the Town, vivaNext has continued to work with Town Staff to monitor infiltration effects through residential neighbourhoods. Reports have been submitted to Town Council showing traffic counts and origin-destination data from license plate studies during peak hours. Results have indicated that traffic diverting from Davis Drive is dispersing throughout the east-west corridor (see Figure 1) and that the road network is able to accommodate the increased volumes. It was also found that the measured volume of infiltrating traffic was considerably less than the 20 percent infiltration threshold, and therefore the volume of infiltration is to be considered as “normal” traffic.



The Town has recently been made aware of increased traffic on local roads seen as a result of temporary detour signs posted by vivaNext in late May. These detours are required as a result of road closures due to the Davis Drive construction. Although the detours cause some inconveniences in the local neighbourhoods, they are a temporary condition that cannot be avoided. Residents who were concerned with speeding and passing vehicles were encouraged to call York Regional Police to enforce the highway traffic act. The Town helps by reviewing available detour routes, by strategizing with vivaNext to minimize disturbances and by discouraging heavy trucks from using detours on local roads by insisting that Viva post “No Heavy Trucks” signs to advise commercial drivers that heavy trucks are not allowed on the Town’s local roads.

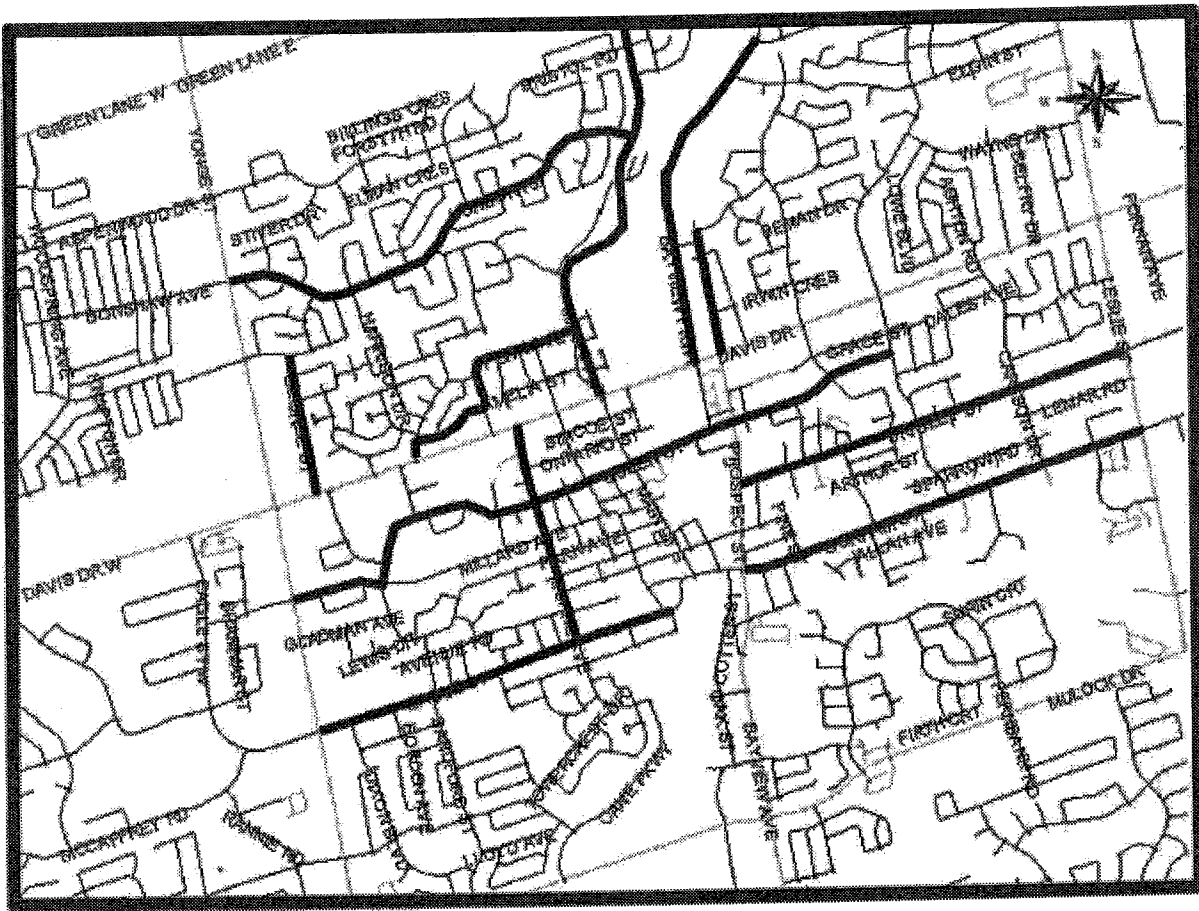


FIGURE 1: vivaNext Traffic Infiltration Map

Potentially compounding the situation will be the next phase of the vivaNext construction along Yonge Street, which is scheduled to start in late 2014 and run to 2018. Eventually, the Town will also see construction and traffic growth related to the development of the Secondary Plan area along the Yonge and Davis corridors which is planned to the 2031 horizon. There will also be infill developments that will add to traffic growth and volume. Therefore, any new policy relating to traffic should be Town-wide and should address long-term traffic concerns. Although short-term issues relating to temporary local traffic conditions due to construction activities can be the subject of requests regarding safety, the new policy should not focus on ‘band-aid’ solutions geared to short-term problems.

In creating a Town-wide traffic mitigation policy, the Town needs to move cautiously forward so that our roads remain accessible and not restricted to local traffic only. Resident and vehicular access in and out of the community, including access to service and delivery vehicles, must be maintained. The license plate tracing program has shown that the increase in vehicles on local roads in the Davis Drive area is potentially due to drivers re-routing through their own community to avoid congestion rather than as a result of drivers from outside the local community wanting to short-cut between Davis Drive and Yonge Street. This is to be confirmed with more detailed origin-destination license plate surveys to be done in the future.

Looking forward into the future, development traffic from the Yonge/Davis corridor as per the Secondary Plan will be accommodated by a clearly laid-out fine-grained grid of streets to provide access to the developments and additional capacity in the two corridors. These future developments will be part of a community as well, and as such, there will be local roads that provide access to schools and commercial / employment areas. It will be important that the Traffic Mitigation Policy ensure safety without impeding access to such areas.

It will also be important to manage perceptions of what constitutes “safe” traffic conditions in the community. The determination of traffic safety is based on sound engineering practices and principles and on measurements, monitoring and enforcement.

The following is a list of some brief but important facts regarding the safety of the Town’s local roads:

1. There has been one (1) fatality recorded on local Town roads since 2000. In comparison, on York Region Roads within the Town, there were 12 fatalities (from 2001 to 2010).
2. Most Town roads have a design speed (speed at which any vehicle can safely travel) of 50 or 60 km/h whereas the posted speed is mostly 40 km/h, with a few of the primary collectors and industrial roads being posted at 50 km/h.
3. The majority of road collisions in the Town involved collisions with parked vehicles.

The Town’s existing 2009 Traffic Management Policy is structured in a way that allows each local community to have a say in what measures are being proposed to address any traffic safety concerns.

COMMENTS

Importance of Traffic Issues to the Residents of Newmarket

Traffic safety and traffic management are pressing concerns that are always on Newmarket residents’ minds. In all three of the past Community Satisfaction Surveys (2010, 2005 and 2002) commissioned by the Town, traffic was rated as one of the “Top 3 Most Important Issues Facing Newmarket”. More specifically, in BOTH the 2010 and 2005 surveys, traffic was chosen by residents as the one most important priority, topping (by a significant amount) other issues such as taxes, user fees, cost of living, growth, quantity and quality of municipal services and improving the road system. Numerous municipalities throughout Canada and the U.S. have done similar Community Satisfaction Surveys where traffic and transportation issues rank alongside fire and emergency services as residents’ top concerns.

The fact that traffic safety is at the top of Newmarket residents' list of priorities is evident by the number of resident-initiated traffic safety and parking requests that Engineering Services deals with on a daily basis. Staff also receives requests to investigate traffic safety issues from Town Council, the Ward Councillors or from community groups. Currently, staff is working at full capacity on requests involving speeding, infiltration, traffic volumes, crosswalks, school crossing guards, parked vehicles and parking in general, traffic lights, road signage, bicycle lanes, lawn signs, pavement markings, safety reviews, electronic speed boards, educational programs, development designs, traffic reports and capital works affecting traffic, among many others. The number of resident requests for traffic related matters appears to be increasing and it is obvious that traffic safety is a top priority for residents.

The Three E's of Traffic Safety

The high importance of traffic issues in municipalities is not recent and it is not unique to Newmarket. Traffic safety involving motor vehicles dates as far back as the 1920's, when the concept of "The Three E's of Traffic Safety" was presented at the First National Conference on Street and Highway Safety held in Washington D.C. and chaired by the Honourable Herbert Hoover.

The concept of "The Three E's of Traffic Safety" is based on Engineering, Education and Enforcement. "Engineering" relates to road design, pavement markings, warning and regulatory signs and traffic calming initiatives and can also include all of the engineering that goes into the design and manufacturing of vehicles. "Education" includes radar trailers, traffic speed boards, media safety campaigns, signage, speed watch and road watch programs, and informs the public through school campaigns, neighbourhood meetings and driver's education classes. These programs aim to modify driver behaviour to encourage safer streets and to make the public aware of the tools that are available to them to address safety concerns. Responsibilities for Education reside with many organizations such as the Town, the local police service, educational organizations, community groups and the general public. "Enforcement" is carried out by the police and includes warnings and citations related to speeding, stop compliance and other traffic infractions and the establishment of Community Safety Zones.

The Three E's (Enforcement, Engineering and Education) have now been adopted throughout the world as a guide to traffic safety and traffic management. Although the concept has been expanded to add "Encouragement" as a 4th "E" and some have even added a 5th "E" (Evaluation) as part of the Safe Routes to School programs, municipalities throughout the world are focusing on the main 3 E's. Encouragement and evaluation are imbedded under the Education and Engineering components of the standard 3 "E's".

Staff has reviewed the existing policy and can confirm that it uses a rational and incremental approach to address issues related to traffic safety. The policy is still sound by current standards. To develop an entirely new policy at this time would be onerous and redundant.

An effective way to approach traffic safety would be with a Town-wide traffic mitigation "strategy" rather than one policy. Such a strategy would pool together all existing policies, guidelines, practices and programs with one single goal of mitigating traffic volume and speed and increasing overall safety.

Listed below are a few of the major existing documents that would fall under the Town wide traffic mitigation strategy umbrella:

1. Transportation Management Policy - 2009
2. Newmarket Neighbourhood Traffic Management Guide – 2005
3. Newmarket Speed Management Program -2003
4. Safety Driven Campaign - 2008
5. Corporate Parking Policy - 2007
6. OPA#10 Secondary Plan (nearing completion)
7. OPA#11 Active Transportation Plan (nearing completion)
8. PWPOL #34 – Pavement Marking Practice (currently under review)
9. Bylaw #2011-44 – Traffic Bylaw – 2011

There are a number of other Town documents like the Engineering Design Standards that may have some impact, as well as York Region documents like the Master Transportation Plan. Provincial Plans aligned with Metrolinx, and industry standard documentation like Neighbourhood Traffic Calming Guides should also form part of the strategy.

What is missing from the list above and discussed further below are:

1. Newmarket-Specific Traffic Calming Measures
2. Communication Plan
3. Vulnerable User Risk Reduction Programme
4. Public Acceptance Level Policy

DISCUSSION

Newmarket-Specific Traffic Calming Measures

As a preamble, it should be noted that traffic calming initiatives cannot correct illegal driving. Traffic calming is designed to improve the road network traffic flow by guiding or reducing speeds. hence “calm” traffic.

The 2005 Newmarket Neighbourhood Traffic Management Guide reviewed a number of traffic calming measures, listing their application, their benefits and the drawbacks. Appendix 2 lists the 3 tables produced in the 2005 Guide. This information was used in the creation of the 2009 Transportation Management Policy. However, the 2009 Policy did not go a step further by creating a specific set of traffic calming measures that would work well for Newmarket roads.

It must be noted that the 2009 and 2005 documents do not provide identical information, as there were changes that occurred in the 4 years between them. For example, in 2005, the Ministry of the Environment required a Class Environmental Assessment to be done for traffic calming initiatives. However, the requirement for a Class EA was lifted in 2007. Therefore, that legislative change is reflected in the newer document.

“Category 1” traffic calming measures include items such as signage, enforcement and education, as well as pavement markings and parking restrictions. These methods are straightforward and can be very effective if used properly. The use of these methods is governed under the Town’s by-laws and the Ontario Traffic Manuals (OTM) produced by the Ministry of Transportation of Ontario.

“Category 2” traffic calming measures go a step further by addressing localized conditions that can be of concern. The following is a discussion on various “Category 2” traffic calming measures, along with recommendations as to whether each is suitable for inclusion in a Newmarket-specific traffic calming policy.

One-Way Streets. One-way streets can be very effective, particularly in commercial areas. The Town has a few one-way streets that perform rather well. A good example includes Botsford and Timothy Streets. One-way street systems are usually created due to road allowance constraints or because of highly localized specific traffic patterns. This type of traffic calming measure would not be particularly effective in the majority of the Town’s neighbourhoods since the road widths are usually sufficient and the majority of the residential roads are not in any form of a grid pattern. Therefore, one-way streets are **NOT recommended** as a viable traffic calming measure for residential neighbourhoods.

Rumble Strips. Rumble strips are an effective tool to bring a driver’s attention to a particular road feature rather than a measure for speed reduction. For example, Highway 404 has a form of side rumble strips to notify the motorist that they are straying off the travelled portion of the road towards the shoulder. These were originally used on paved country roads to warn motorists of an upcoming all-way stop or an uncontrolled intersection. Unfortunately, rumble strips are very loud and produce an undesirable noise when used in residential neighbourhoods. The City of Vaughan had installed rumble strips in a residential area but the City promptly removed them two weeks later due to complaints about the noise. Just to place the noise level into context, the Town of Newmarket occasionally receives complaints about the noise generated when vehicles drive over the soft tubes used to measure traffic counts, which is much lower than rumble strips in comparison. Therefore, rumble strips are **NOT recommended** as a viable traffic calming measure.

Textured Pavement/Crossings. Textured Pavement and Crossings are becoming more widely used to highlight intersections. Main Street South and Water Street are examples of textured pavement and crossing areas. York Region has used impressed asphalt with a white durable plastic grid to simulate a textured crossing at some of the arterial intersections. This method does not reduce speeds, but it is very effective in increasing the visibility of intersections where there is the highest level of potential vehicle-pedestrian conflicts. Based on this, textured pavement/crossings **ARE recommended** as a viable traffic calming measure.

Road Diets. Road diets are an effective means to reduce speeds. The Town used centre line treatments in the curved sections of Bristol Road and Queen Street to reduce vehicle speeds. A more prominent example is Woodspring Avenue, which was reduced (or dieted) from 4 lanes to 3 lanes with bicycle lanes. The proposed Active Transportation Plan has a number of streets designated to include bicycle lanes. Therefore, road diets, in many forms, **ARE recommended** as a viable traffic calming measure.

Speed Humps/Cushions. Speed Humps/Cushions are a method of vertical deflection whereby vehicles are forced to slow down or drivers will experience a severe jolt going over the speed hump. Speed Cushions are similar to speed humps, but are designed in attempt to accommodate EMS vehicles and other larger wheel based vehicles. Speed Tables, which are not mentioned in Appendix 2, are off-setting speed humps, again designed in an attempt accommodate EMS vehicles. The Town has two areas where it has used speed humps: Cotter and Oaks Streets, and Kingston Road/Malton Road/Lancaster Avenue. Second only to stop sign controls, speed humps are one of the most frequently requested measure for of traffic calming in Newmarket. Speed humps are effective in reducing speeds, but there are too many drawbacks related to increased noise generation and traffic diversion to other local roads. For example, the speed humps on Kingston Road prompted requests for speed humps on Malton Road to slow the traffic that was diverting there to avoid the first set of speed humps. Once the Malton Road speed humps were installed, traffic diverted to Lancaster Avenue, resulting in requests for speed humps on that road as well. However, traffic diverting from Cotter and Oak Streets due to speed returned back onto Prospect Street where it should have been. In this latter case, the traffic calming method was effective in both speed and volume reduction on Cotter and Oak Streets. The Town has a long-standing policy regarding speed humps and their location and deployment. In general terms, speed humps are not allowed on collector road systems mainly because the collector road system is the access into and out of the local communities. Therefore, speed humps **ARE recommended** as a viable traffic calming measure, but only in locations where they are warranted.

Temporary Speed Humps. Temporary speed humps are similar to regular speed humps with the exception that they are made of a rubberized-material and can be removed and replaced. Once installed, they have the same impact on speeds as a regular speed hump, as long as they are deployed correctly.

There are considerable differences in cost and durability between the two types of speed humps. The following chart outlines some of the differences between a regular and temporary speed hump. The chart clearly shows that the temporary speed humps are more costly and less durable.

	Regular	Temporary
Cost	\$1,500 to \$3,000 new to retrofit	\$5,000
Installation	Included above	\$1,000
Removal	n/a	\$1,000
Storage	n/a	yes
coverage	12 months	6-7 months
durability	15+ years	3 years estimated

Staff has communicated with other municipalities who have had a speed hump program. Temporary speed humps are not recommended in other municipalities because each hump leaves a few dozen holes in the asphalt road surface which can be patched, but have compromised the integrity of the asphalt and will lead to issues with the roadway surface. Another drawback is that they need to be removed before the first winter event of every year and cannot be re-installed until there is certainty that all winter events are over, which is often difficult to predict. In conclusion, temporary speed humps are **NOT recommended** as a viable traffic calming option.

Speed Bumps. Speed Bumps, whether temporary or permanent, are similar to speed humps, but they have a narrower profile. Even though they were considered to be an option in 2005, speed bumps are not widely used because driving over a speed bump at posted speeds (such as 40 km/h) can create quite a jolt and bouncing effect and they cause damage to vehicles. Speed bumps were meant to be used in slower speed areas such as driveways. Therefore, speed bumps, permanent or temporary, are **NOT recommended** as a viable traffic calming measure.

Raised Crosswalk/Intersection. Similar to a textured pavement/crossing noted above, raised crosswalks/intersections draw attention to the fact that there is an intersection ahead with the added feature of a vertical deflection through the intersection. The raised section would not necessarily slow vehicles down, but would provide an additional visual cue of the upcoming intersection. The addition of a raised component does not justify the extra cost and maintenance (and possibly drainage issues) that would ensue, when weighed against the benefit it would provide. The more cost effective solution for the same degree of traffic mitigation could be found in the textured pavement option. Therefore, the raised crosswalk/intersection is **NOT recommended** as a viable option.

Curb Radius Reduction. Curb radius reduction provides a reason to slow vehicles down as they turn through a corner. This speed reduction measure is typically used at intersections where vehicle speeds need to be reduced due to a high incidence of vehicle-pedestrian conflicts. As an example, most curb radii on Main Street South and any of the intersecting streets have been reduced. However, this is effective for smaller cars, but does not work well for trucks or vehicles with a longer wheel base. There are better traffic calming methods to reduce speeds. In residential subdivisions, the curb radii are standard to accommodate service vehicles and the Town has not received many complaints about speeding around corners. The additional cost to construct the reduced curb radius is not justified in terms of the benefit received. Therefore, curb radius reduction is **NOT recommended** as a viable option.

Curb Extensions. The effect of curb extensions is similar to that of curb radius reductions. The effect of a curb extension is two-fold. First, the curb extension provides a visual break on a long linear road, somewhat similar to a pinch-point. Secondly, the curb extension reduces the distance required for pedestrians to cross the road. The Town has not installed any curb extensions in the past. There are also two drawbacks. First, curb extensions are quite costly and the cost is not justified for the benefit achieved. The same effect can be achieved using other, more cost-efficient traffic calming measures. Secondly, drainage and maintenance issues often arise as a result of the curb extensions. Therefore, curb extensions are **NOT recommended** as a viable option.

Centre Median/Pedestrian Refuge. This measure involves constructing infrastructure in the middle of the road to create friction and a pinch-point. Centre medians have been used throughout the Town on Regional roads to maintain the arterial traffic flow by limiting access across the barrier. Cane Parkway is a good example of a centre median that is landscaped. Centre medians need to be used cautiously since they impact the ability to access driveways. There are mountable centre medians with rolled curbs and textured surface that give both the visual look of a median, but still allow access. Pedestrian refuge islands are an enhancement to centre medians to allow pedestrians a refuge or “break” when crossing the road. The Town currently has a pedestrian refuge island on William Roe Boulevard, east of Yonge Street. We may also implement a second refuge island on Woodspring Avenue, east of Ford Wilson Boulevard to help connect the recreational open space. Therefore, centre median/pedestrian refuge islands **ARE recommended** as a viable traffic calming measure.

Traffic Circles. The Town has two traffic circles or small “roundabouts”. One is on Fernbank Road and the other on Nellie Little Crescent. Traffic circles are technically smaller versions of the large roundabouts. Traffic circles operate well when designed into the road network but they are difficult to retrofit into an existing road network. Traffic circles need a considerably wider right-of-way property ownership than a standard road allowance. Traffic circles are intended as an alternative to a stop control system (stop signs or traffic lights), and do not mitigate speeds. Also, they are not a pedestrian- or cycling-friendly alternative. Therefore, traffic circles are **NOT recommended** as a viable traffic calming measure.

Chicanes. After stop signs and speed humps, chicanes are the next most requested traffic calming alternative in Newmarket. Chicanes are a series of curb extensions or ‘bump-outs’ to create pinch-points in an attempt to reduce speeds. Chicanes work best when there is a significant amount of two-way traffic on the street, which actually only happens on some collector roads during the road peak rush hour times. They are not as effective during non-rush hours of the day, evening and weekend. They can cause maintenance and drainage issues. Therefore, chicanes are **NOT recommended** as a viable traffic calming measure.

Cul-de-Sacs/Road Closures. Road closures have never been a viable alternative in the Town. Roads are meant to provide access to and from the communities and, by closing roads off, communities begin to become isolated similar to gated-communities. Traffic flows are inevitably shifted and concentrated to other roadways. Therefore, cul-de-sacs/road closures are **NOT recommended** as a viable traffic calming measure.

Diagonal Diverters. The Town used a variation of a diagonal diverter on Pearson Street at Court Street. This diverter was to prevent traffic from going down a steep hill into a sharp curve. The number of single motor vehicles leaving the road at the bottom of the hill and collisions accompanied by personal injuries at this location were well documented. While the diagonal diverters are considered a traffic calming measure, the diverter on Pearson Street was specifically designed to address one specific safety issue. However, diagonal diverters are similar to road closures by restricting traffic flow along a street. For this reason, diagonal diverters are **NOT recommended** as a viable general traffic calming measure.

Summary of Recommended Traffic Calming Measures

The following is a list of the recommended traffic calming measures drawn from the information above:

- 1. Textured Pavement/Crossings**
- 2. Road Diets**
- 3. Speed Humps/Cushions**
- 4. Centre Median/Pedestrian Refuges**

Communication Plan

Currently, Safety Cone Sam is the main spokesperson for Newmarket's communication plan on traffic safety. Sam has appeared at many events where a specific traffic message is being delivered. Engineering Staff is currently working on an expanded communication plan that involves a greater web site presence, specific messaging at events (for example bicycle safety at Town special events for children) and information signage. The new program is to be rolled out in 2014 and 2015.

One nearby municipality ran a program in which school children designed a specific traffic safety sign for the school. The winning sign was installed at the school by the local municipality. Unlike all of the typical Highway Traffic Act regulation signs, this was a colourful and creative information sign denoting the school area. This concept could be applied to Newmarket. After the community's experience with the vivaNext Safety Cone Sam lawn signs, Engineering believes that using our copyrighted Safety Cone Sam as the key brand and having a contest for children to fill in the rest, including slogans, might be a popular initiative. A panel of local celebrity judges could evaluate the entries. The winning sign could be placed locally or Town wide. The main point is to provide something that is visually different, non-distracting, and originates from within the community.

Other communication activities that the Department would like to undertake revolve around the educational component of Traffic Safety, and include:

1. Developing a coherent communication plan and working with the Town's Communications Department to create and distribute appropriate messaging
2. Developing an outreach program for traffic awareness in schools and throughout the community
3. Administering and monitoring an annual "Lawn Sign Campaign" to allow residents to display an annual traffic safety message on their front lawns
4. Strengthening the "Safety Cone Sam", "Safety Driven" and "Re:Think" brands and campaigns
5. Becoming a more active participant in YRP's "Road Watch" program and help market it
6. Working with Community Services to explore partnerships with external parties (CAA, businesses, community groups, etc.)
7. Supporting community groups interested in traffic safety
8. Updating the traffic component of the Town's website on a regular basis
9. Becoming more actively involved in Regional programs, such as "Active and Safe Routes to School", "Active Transportation Working Group", etc.
10. Exploring the establishment of a traffic safety committee with appropriate terms of reference

In order to accomplish the above objectives, additional resources would be required. It is recommended that this be presented to Council to consider in the 2015 budget exercise.

Vulnerable User Risk Reduction Program

This program is an enhancement to traffic calming measures. Vulnerable user risk reduction is specifically geared toward pedestrians and cyclists. It was noted previously that the most frequent type of vehicular collision in the Town involves parked cars. However, pedestrians are involved and injured in collisions as well. A large percentage of collisions occur at intersections where there is the highest potential for pedestrian-vehicle conflict to occur.

The Town is currently assessing the feasibility and cost of installing stop bars and pedestrian lines at all Town intersections (PWPOL #34 – Pavement Marking Practice). However, special attention should be paid to critical or high pedestrian intersections associated with schools. York Region has been installing a specific type of pedestrian crossing called a 'ladder' design at all of its traffic signal crossings. These ladder designs are meant to increase the visibility of the intersection for drivers and also to make pedestrians walking across the intersection more noticeable. It is suggested that this type of ladder design be employed at all Town traffic signal locations and at key intersections throughout the Town where there is high pedestrian or school traffic. These key intersections should have a strong association to a school in order to maintain their effectiveness.

Public Acceptance Level Policy

All transportation-related changes should require a level of public acceptance to be measured through a consultation process. Some of the current policies include a public consultation component. For example, the Corporate Parking Policy of 2007 requires that requests for changes to the parking by-law be supported by a majority of the community residents who would be impacted by the change, as long as safety is not an issue.

The public consultation process can sometimes be misleading. When a few vocal individuals push for change, it can appear to be pressing, but it does not necessarily mean that the entire affected community will be in favour of the change. Also, many residents do not comment on proposed changes when consulted via surveys. As a result, Town Council and Staff often face the difficult process of determining what is wanted by the entire community versus what is really wanted and what is needed to ensure the community's safety and satisfaction.

Several other area municipalities have adopted a "public acceptance level" policy, whereby a certain percentage of the community must be in favour before traffic initiatives can be implemented. Appendix 3 contains a memorandum sent by Newmarket Staff in March 2013 that reports on acceptance levels that have been adopted by other municipalities.

In the memorandum, Staff had recommended that a 60% acceptance level should be implemented. For example, if parking restrictions or traffic calming measures were being proposed for a street with 50 homes, a minimum of 60%, or 30 households, would have to be supportive of the planned changes before they could be implemented. This type of required acceptance level would ensure that Staff and Town Council could be confident that the majority of the affected community is in favour of the proposal.

PUBLIC CONSULTATION

Public consultation should be undertaken to determine if the community is in agreement with the new approach being taken with a new “Town-Wide Traffic Mitigation Strategy”.

HUMAN RESOURCE & BUDGET CONSIDERATIONS

It is recommended that a budget be allocated for an annual traffic calming program to implement traffic calming measures in areas where they are being requested and where they are warranted. Staff will be recommending that Council consider this in the 2015 budget. Details regarding the request will be provided at that time.

Currently, one Senior Transportation Coordinator and one Traffic Technician are working at full capacity on an abundance of traffic matters and resident concerns / requests. Staff will be recommending that Council consider allocating additional resources in the 2015 budget if it chooses to implement the additional work program and traffic calming initiatives being recommended in this document.

APPENDIX 1

GLOSSARY

This is a glossary of common terms used in neighbourhood traffic management. It is augmented with information from the Canadian Guide to Neighbourhood Traffic Calming (TAC)

Breakaway Barriers	Gates, barriers or posts, most often constructed from wood and designed to break away upon impact by an emergency service vehicle. These barriers are often used as a means of effecting a temporary or permanent road closure while still ensuring passage for emergency service vehicles
Bus-Only Crossings	Also known as bus-only links, this form of roadway connection is used to reduce the impact of vehicular infiltration, but permits transit and other emergency service vehicles to utilize the crossing. The bus-only crossing is a device that could be as simple as a gate that opens when activated by the approaching bus. Other examples are "vehicle-traps", which are sections of road with imbedded tracks fitted for a bus and emergency vehicles, but do not permit cars to traverse.
Channelization	The separation and direction of vehicle and pedestrian movements at an intersection into defined paths through the use of roadway features and signs.
Chicane	A series of curb extensions on alternating sides of a roadway, which narrow the roadway and require drivers to steer from one side of the roadway to the other to travel through the chicane. Typically, a series of at least three curb extensions is used.
Community	A group of individuals with common interests. A community is often defined by neighbourhood boundaries, but may also include individuals who live outside the neighbourhood, but work or operate businesses in the neighbourhood, or whose children attend school in the neighbourhood.
Curb Extensions	A horizontal intrusion of the curb into the roadway resulting in a narrower section of roadway.
Curb Radius Reduction	The reconstruction of an intersection corner using a smaller radius, usually in the 3.0 m to 5.0 m range.
Deflection	A vertical and/or horizontal change in the course or path of a vehicle as the result of a physical feature of a roadway. For example, a speed hump deflects the wheels, suspension and chassis of a vehicle in a vertical direction. A traffic circle requires that the vehicle be steered or deflected horizontally from its straight path to manoeuvre past the circle.
Depressed Curb	A section of concrete curb in which the height of the vertical face has been reduced to allow passage while maintaining positive guidance and drainage control. Also referred to as drop curb.
Device	A physical feature of the roadway, constructed for the purpose of affecting the movement of motor vehicles, bicycles and/or pedestrians.

Diagonal Diverter	A raised barrier placed diagonally across an intersection, that forces traffic to turn and prevents traffic from proceeding straight through the intersection.
Directional Closure	A curb extension or vertical barrier extending to approximately the centreline of a roadway, effectively obstructing (prohibiting) one direction of traffic.
Divert	To redirect traffic, typically through the use of physical obstructions in the roadway and/or regulatory signs.
Full Closure	A barrier extending across the entire width of a roadway, that obstructs all motor vehicle traffic movements from continuing along the roadway.
Information Signing	Signs such as "traffic calmed neighbourhood" or "children playing" or "slow" can be considered as information signing. Such signing is non- standard and is not generally to MUTCD standards and is often implemented through local bylaws.
Intersection Bump-Out	The narrowing of the roadway at the intersection through the use of curb extensions. The result is less distance for pedestrians to cross the traveled portion of the roadway
Intersection Channelization	Raised islands located in an intersection, used to obstruct specific traffic movements and physically direct traffic through an intersection.
Median Barrier	A raised island located near the centreline of a roadway through an intersection that narrows the pavement width for vehicles and prevents turning movements from being made.
Mode	A way or manner of travelling. Examples of common modes of transportation include drive-alone automobile travel, carpooling, transit, cycling, and walking.
MUTCD	The Manual of Uniform Traffic Control Devices, which provides a consistent basis for the design and application of signs, signals, and pavement markings.
Neighbourhood	A cohesive urban area defined by geographic features, the street network or socio-economic characteristics. With respect to traffic calming, neighbourhood boundaries are often defined by the arterial street network, which typically presents a significant barrier to travel and interaction.
Neighbourhood Transportation Management	A phrase often used to describe an approach that encompasses traffic calming measures as well as design, operations, legal and other techniques to address transportation issues within a neighbourhood, such as speeding and excessive volumes or conflicts
Raised Crosswalk	A marked pedestrian crosswalk at an intersection or mid-block location constructed at a higher elevation than the adjacent roadway -usually at the same elevation as the adjacent sidewalk.
Radar Message Board	A portable electronic message sign or board to be used in conjunction with a manned speed radar unit. The board is used to display the speed of approaching vehicles and is most often employed on roadways where "speeding" has been identified as a problem. The unit is designed to alert motorists to their vehicle

operating speeds relative to the posted speed limit. These devices are regularly used as part of an educational program in conjunction with a "road watch" or "speed watch" program or neighbourhood traffic management study.

Raised Intersection	An intersection -including crosswalks -constructed at a higher elevation than the adjacent roadways -usually at the same elevation as the adjacent sidewalk.
Raised Island	Median An elevated median constructed on the centreline of a two-way roadway to reduce the overall width of the adjacent travel lanes. The median island can be mountable (rolled curb) or constructed with a barrier curb.
Raised Through Intersection	Median An elevated median located on the centreline of a two-way roadway through an intersection, which prevents left turns and through movements to and from the intersecting roadway.
Retrofit	The reconstruction of a roadway or other transportation facility with physical improvements to the existing design.
Roundabout	Similar to a traffic circle. Roundabouts are typically used on arterial and collector streets, and are distinguished by Yield signs and raised median islands on all approaches, and in some cases, flare of the entry approach to two or more lanes.
Rumble Strips	Raised buttons, bars or grooves closely spaced at regular intervals on the roadway that create both noise and vibration in a moving vehicle.
Self-enforcing	A traffic calming measure that does not require police enforcement in order to be effective. A speed hump is self-enforcing, for example, whereas a posted maximum legal vehicle speed is not self-enforcing.
Short-cutting	Traffic that is travelling through or "infiltrating" a neighbourhood normally to bypass congestion on the arterial street network, or to make use of a more direct route. Short-cutting or infiltrating traffic normally does not have an origin or destination in the community
Sidewalk Extension	A sidewalk is continued across a local street intersection. For a "raised" sidewalk extension, the roadway is raised to the level of the sidewalk at the intersection. For an "unraised" sidewalk extension, the sidewalk is lowered to the level of the roadway.
Speed Bump	A raised curb often used in parking lots and through private entrances, which deflects both the wheels and frame of a traversing vehicle.
Speed Hump	A raised area of a roadway, which deflects both the wheels and frame of a traversing vehicle
Stop Signs	Stop signs are regulatory signs used for right-of-way control. Their usage should be limited to the control of right-of-way conflicts and they should not be used as speed control devices. Stop signs should only be used where traffic engineering studies considering such factors as traffic volumes, restricted sightlines, and collision experience indicate that the usage of "stop signs" is warranted. The use of stop signs when not supported by the appropriate study can lead to unsafe conditions at an intersection.

Streetscaping	A means of enhancing the street environment for all users of the right of way, and a means of modifying motorists behaviour, through the use of physical features that provide protection, coherence, security, convenience, community identity, way-finding and orientation, aesthetic quality and interest along an urban street.
Textured Crosswalk	A crosswalk incorporating a textured and/or patterned surface that contrasts with the adjacent roadway.
Through Traffic	Traffic that travels through or "infiltrates" a neighbourhood, and does not originate from, nor is destined to, a location within the neighbourhood.
Traffic Calming	The combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behaviour and improve conditions for non-motorized street users. Traffic calming devices or strategies are most often implemented to address concerns regarding vehicle speeds.
Traffic Circle	A raised island located in the centre of an intersection, which requires vehicles to travel through the intersection in a counter-clockwise direction around the island.
Traffic Management	The change in traffic routing or flow within a neighbourhood street system through a combination of measures that alter route options.
Turn Prohibition	A regulation prohibiting a left turn or right turn at an intersection.

APPENDIX 2

**Table 1: Potential Traffic Control Measures
Assessing Operational, Safety and Environmental Impacts**

MEASURE OR TECHNIQUE	OPERATIONAL			SAFETY			ENVIRONMENTAL			
	Impacts on Adjacent Residential Roadways	Emergency Vehicle Impact	Transit Vehicle Impact	Cyclist Impact	Vehicular Impact	Ped-estrian Impact	Noise Impact	Air Quality Impact	Fuel Impact	Visual Impact
COMMUNITY BASED										
Radar Message Board	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
Road Watch Program	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
Public Education	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
ENFORCEMENT										
Increased Enforcement	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
Photo Radar	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
REGULATORY										
Stop Signs	◐	◐	◐	◐	○	◐	○	○	○	◐
Speed Limit Signs	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
Turn Prohibitions	○	◐	◐	◐	◐	◐	◐	◐	◐	◐
One-Way Streets	○	○	○	◐	◐	◐	◐	◐	◐	◐
Truck Restrictions	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
School Zone Signs/Signals	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
Information Signing	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
LEVEL 1 TRAFFIC CALMING										
Rumble Strips	◐	◐	◐	○	◐	◐	○	◐	◐	◐
Textured Pavement/Crossing	◐	◐	◐	○	◐	◐	○	◐	◐	◐
Road Diets	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
Increase On Street Parking	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
Roadside Improvements	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
LEVEL 2 TRAFFIC CALMING										
Speed Humps/Cushions	◐	○	○	◐	◐	◐	○	◐	◐	○
Speed Bumps (Temporary)	◐	○	○	○	◐	◐	○	◐	◐	○
Raised Crosswalk/Intersection	◐	○	○	◐	◐	◐	○	◐	◐	◐
Curb Radius Reduction	◐	○	○	◐	◐	◐	◐	◐	◐	◐
Curb Extensions	◐	○	○	◐	○	◐	◐	◐	◐	◐
Centre Median/Ped Refuge	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
Traffic Circles	◐	◐	◐	○	◐	○	VARIES			
Chicane	◐	○	○	◐	◐	◐	◐	◐	◐	◐
Cul-de-Sacs/Road Closures	○	○	○	◐	◐	◐	◐	◐	◐	◐
Diagonal Diverters	○	○	○	◐	◐	◐	◐	◐	◐	◐
Breakaway Barriers	○	◐	○	◐	◐	◐	◐	◐	◐	◐
Bus Only Crossings/Links	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
SYSTEM IMPROVEMENTS										
Arterial Improvements	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐

○ MAJOR NEGATIVE ◐ MINOR NEGATIVE ◐ NONE ◐ MINOR POSITIVE ◐ MAJOR POSITIVE

**Table 2: Potential Traffic Control Measures
Assessing Community, Social and Economic Impacts**

MEASURE OR TECHNIQUE	COST		COMMUNITY	
	Installation* (Construction)	Operation and Maintenance	Difficulty of Neighbourhood Access	Need for Enforcement
COMMUNITY BASED				
Radar Message Board	Variable	●		
Road Watch Program	Variable	●		
Public Education	Variable	● OR ○		
ENFORCEMENT				
Increased Enforcement	Variable	●		
Electronic Enforcement	\$75,000 - \$95,000 / unit	●	●	●
REGULATORY				
Stop Signs	\$250 - \$500 / sign	●	●	○
Speed Limit Signs	\$250 - \$500 / sign	●	●	○
Turn Prohibitions	\$250 - \$500 / sign	●	●	○
One-Way Streets	\$250 - \$500 / sign	●	●	●
Truck Restrictions	\$250 - \$500 / sign	●	●	○
School Zone Signs/Signals	\$5,000 - \$8,000 / location	●	●	○
Information Signing	\$250 - \$500 / sign	●	●	●
LEVEL 1 TRAFFIC CALMING				
Rumble Strips	\$200 to \$1000 / location	○	●	●
Textured Pavement/Crossing	\$50 - \$150 / m ²	● OR ○	●	●
Road Narrowing	\$10 / linear metre	●	●	●
Increase On Street Parking	\$250 - \$500 / sign	●	●	○
Roadside Improvements	Variable	●	●	●
LEVEL 2 TRAFFIC CALMING				
Speed Humps/Cushions	\$3,000 - \$5,500 / unit	●	●	●
Speed Bumps (Temporary)	\$300 - \$500 / lane	●	●	●
Raised Crosswalk/Intersections	\$20,000 - \$32,500 / unit	●	●	●
Curb Radius Reduction	\$6,000	●	●	●
Curb Extensions	\$5,000 - \$8,000 / unit	●	●	●
Raised Centre Median/Ped Refuge	\$5,000 - \$8,000 / unit	●	●	●
Traffic Circles	\$15,000 - \$27,500 / unit	●	●	●
Chicane	\$ 4,000 - \$8,000	●	●	●
Cul-de-Sacs/Road Closures	\$25,000 - \$32,500 / unit	●	○	● ¹
Diagonal Diverters	\$5,000 - \$8,000 / unit	●	○	●
Breakaway Barriers	\$5,000 - \$8,000 / unit	●	○	● ¹
Bus Only Crossings/Links	\$30,000 - \$42,500 / unit	●	●	●
SYSTEM IMPROVEMENTS				
Arterial Improvements	Variable		●	●

Legend:

○ High Impact ● Medium Impact ● Low Impact

NOTE: * Installation Cost does not include: Design and Engineering, Property and Drainage and Maintenance Costs
1. After Initial Period Following Implementation

**Table 3: Potential Traffic Control Measures
Selecting Appropriate Measures**

		ISSUE/CONCERN		
MEASURE OR TECHNIQUE	SUITABILITY to Road Type*	Vehicle Speeds	Excessive Through Traffic Volumes	OVERALL EFFECTIVENESS
COMMUNITY BASED				
Radar Message Board	L,C	◐	○	◐
Road Watch Program	ALL	◐	○	◐
Public Education	ALL	◐	◐	◐
ENFORCEMENT				
Increased Enforcement	ALL	●	◐	●
Photo Radar	ALL	●	◐	●
REGULATORY				
Stop Signs	ALL	○	○	○ ^{1.}
Speed Limit Signs	ALL	◐ ^{1 & 2}	○	◐
Turn Prohibitions	ALL	○	◐ ^{2.}	◐
One-Way Streets	ALL	○	◐	◐
Truck Restrictions	ALL	○	◐	◐
School Zone Signs/Signals	ALL	◐	○	◐
Information Signing	ALL	◐	○	◐
LEVEL 1 TRAFFIC CALMING				
Rumble Strips	L, C, CT	◐	○	◐
Textured Pavement/Crossing	L, C, CT	◐	○	◐
Road Narrowing	L, C, CT	◐	○	◐
Increase On Street Parking	L, C, CT	◐	○	◐
Roadside Improvements	L, C, CT	◐	○	◐
LEVEL 2 TRAFFIC CALMING				
Speed Humps/Cushions	L, C	◐	◐	◐
Speed Bumps (Temporary)	L, C	◐	◐	◐
Raised Crosswalk/ Intersections	L, C	◐	◐	◐
Curb Radius Reduction	L, C	◐	○	◐
Curb Extensions	L, C, CT	◐	◐	◐
Centre Median/Ped Refuge	L,C	◐	◐	◐
Traffic Circles	L, C	◐	◐	◐
Chicane	L, C	●	◐	●
Cul-de-Sacs/Road Closures	L	●	●	●
Diagonal Diverters	L	◐	◐	◐
Breakaway Barriers	L	●	●	●
Bus Only Crossings/Links	CT	○	●	◐
SYSTEM IMPROVEMENTS				◐
Arterial Improvements	A	◐	●	◐

Legend:

○ not effective ◐ marginally effective ● effective

NO * Road Types: L Local Road
TE: C Collector Road, No Transit Service
CT Collector Road, Transit Service

1. When Warranted can be effective
2. With Police Enforcement

APPENDIX 3



ENGINEERING SERVICES
Town of Newmarket
395 Mulock Drive
P.O. Box 328, STN Main
Newmarket, ON L3Y 4X7
www.newmarket.ca
engineering@newmarket.ca
T: 905.895.5193
F: 905.953.5138

MEMORANDUM

TO: R. Bingham, C.E.T., Manager of Engineering & Technical Services
FROM: M. Kryzanowski, MCIP, RPP, Senior Transportation Coordinator
DATE: March 18, 2013
RE: **Public Acceptance Level
Transportation Management Policy
Our File No.: T.08 T.30.7**

The approval of the Transportation Management Policy has provided good guidance and has stood the 'tests of time' since the implementation of the policy in December 2009. However, one concept that was not placed in the Policy was the public acceptance level characteristic. To date, the Policy was based on a majority level of public acceptance. It should be noted that the majority level of acceptance could be two or three people on a street with the rest of the street remaining silent. This acceptance method has caused, on occasion, a sizeable amount of work and staff time only to be rejected or 'after the installation', receiving complaints and concerns. This method does not serve the Town or the Ward Councillor adequately enough.

Based on peer review of other municipalities, most have some formal level of public acceptance. Just recently from the East Gwillimbury's Speed Limit Reduction Warrant Policy, staff only proceeds with a 'successful petition' of the affected area which is 65% in favour of the measure. There are two separate issues that can improve the Town's level of public acceptance based on EG's Speed Limit Reduction Policy – acceptance level and petition authors.

Acceptance Level

As noted above, the Town bases the public acceptance of any transportation issue on an undefined majority. The following table illustrates what other municipalities are using for affected residents.

East Gwillimbury	65%
Vaughan	75%
Brantford	51%
Windsor	66%
Markham	60%
Toronto	60% of 51% (about 30% of total affected)
Pickering	70%
Guelph	60%

R. Bingham
March 18, 2013
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The values range from about 30% (Toronto) to 75% (Vaughan). Having a clear majority of residents behind any issues is beneficial to the community, Ward Councillor and the Town. As a starting point, I would recommend that 60% be used; however, this is open for discussion. Therefore, if 60% is used, then this would mean that 60% of households in the affected area would need to respond in favour to continue. If the response rate (favourable or not) is less than 60%, then this would automatically mean the community would not be in favour to continue.

Petition Authors

Typically, the Town receives a petition on an issue. All petition requests are reviewed under due diligence, and all are reported on back to Town Council. However, many of these petitions are not the 'majority' or have several members from the same household sign separately, for example. As well, in a bid to determine public acceptance, the Town does mail out 'comment' requests to 100% of the affected residents, and response rates vary from 10 to 25%, depending on the numbers involved. While community generated petitions can bring an issue to light, the Town does not have any control over how the petition was undertaken, and the Town has one case in particular where the petition undertaken was less than transparent to the community. It is recommended that the valid level of acceptance be determined by the Town in either a follow-up letter or some other form. The Town would then have a clear understanding of the public level of acceptance. However, the Town would still receive community generated petitions and act on them accordingly.

Next Steps

I would like to have this written in a policy accepted by Town Council as either an amendment to the Transportation Management Policy or as a separate Policy. As well, some form of Policy addressing petition and public acceptance may be useful in a Town-wide Policy.

Sincerely,



Mr. Kryzanowski, MCIP, RPP
Senior Transportation Coordinator

MIK007M