COMMITTEE OF THE WHOLE – WORKING SESSION – APRIL 12, 2010

REVIEW OF TRAFFIC CALMING INITIATIVES

Recommendation

The Commissioner of Engineering and Public Works in consultation with the Fire Chief recommends:

1. That the proposed updated 'Neighbourhood Traffic Committee Policy and Procedure', and the proposed NEW 'Traffic Calming Criteria', as attached, be approved;

2. That Council reaffirm its previous direction that prior to the approval of any Plan of Subdivision, the Traffic Management Plan should be presented to Council for approval of all the proposed traffic calming measures for the subject Block/Draft Plan;

3. That Council reaffirm its previous direction prior to Assumption, if the implemented traffic calming measures as approved at the Block Draft Plan stage are not reliable and/or are ineffective as solution(s) for resident safety, then any additional constructed traffic calming measure will be the responsibility of the Developer; and

4. That speed cushions not be used as a traffic calming measure on City roadways.

Contribution to Sustainability

The installation of traffic calming measures on City roadways will ensure that the overall traffic operation and safety is achieved for the residents.

Economic Impact

None.

Communications Plan

Engineering Services staff have requested information from the Vaughan Fire and Rescue Services Department, York School Boards and York Region Transit with respect to the proposed implementation of speed cushions. Engineering Services staff will advise each agency of Council's decision.

Purpose

To provide a report on the update to the Traffic Calming Policy & Procedure and to seek Council's approval. The recommendation will improve communication and service excellence to all citizens regarding the development and implementation of a traffic calming plan.

Background – Analysis and Options

There has been much discussion between Council and staff regarding the existing traffic calming process and traffic calming implementation in new developments. The last revision date of the Traffic Calming process, warrants and resident input was in June, 2007.

Current Traffic Calming Practice

The process by which traffic calming is implemented in existing areas of the City of Vaughan is through the 'Neighbourhood Traffic Committee Policy and Procedure'. The current version of this document is dated June, 2007. Refer to Attachment No. 1.

Traffic Calming Warrant

It is recommended that future traffic calming measures, to be considered for installation on City of Vaughan streets, are in accordance with warrants, as noted below. These warrants should be maintained to simply dictate where certain traffic calming measures should not be considered.

It is recommended that:

- Speed humps and raised crosswalks continue **not** to be considered on streets that are primary emergency response routes. This would apply to streets such as Martin Grove Road or Clark Avenue, and most primary roads similar to Fossil Hill Drive and Autumn Hill Boulevard, from being candidates for speed humps and raised crosswalks.

- Traffic calming measures **not** be considered on streets where the speed limit is greater than 50 km/h.

- Traffic calming measures **not** be considered where the 85^{th} percentile speeds are not greater than 15 km/h above existing speed limit. This will ensure that traffic calming measures are used only on streets where a speeding problem has been established.

- Streetscaping features will be limited to focal points in the traffic calming plans.

The proposed REVISED criteria are included as Attachment No. 2.

Speed Hump/Raised Crosswalk Design

Speed humps in the City of Vaughan are currently 7.0 metres long by 100 mm high and constructed entirely out of asphalt. Raised crosswalks are the same height and length and are constructed with a coloured impressed concrete on the top portion of the hump.

Traffic Calming in the City of Vaughan

The City of Vaughan has been a leading proponent of traffic calming in the Greater Toronto Area. Over the past several years 267 speed humps and raised crosswalks, and a number of other measures, have been implemented through 50 separate Neighbourhood Traffic Committees. There are 4 other committees in the process of developing a traffic calming plan or waiting for their implementation which have followed the 2007 Policy & Procedure. To date the City has spent a total of over $2.5 million on the 50 traffic calming projects.

Each Traffic Committee involves a considerable amount of staff time: preparation and attendance at a minimum of two community meetings; working meetings with the Traffic Committee members; distribution of meeting notices; preparation of advertisements in the local papers; field work including speed studies, traffic counts and sometimes infiltration studies; a report to Committee of the Whole; traffic calming design; tender preparation and contract administration of the construction of traffic calming measures. The work is done with limited staff resources to the detriment of fundamental traffic engineering functions such as pedestrian studies, signal timing review, daily vehicle counts, volume/speed studies on our road network, etc.

Speed Cushions

1. Standard Wheel Base Widths of Various Vehicles

   Staff researched various wheel base widths of vehicles to assist in a design that may be suitable to accommodate emergency and transit vehicles through the speed cushion

while ensuring that the typical vehicle is required to travel over at least one of the speed cushions.

The following wheel base dimensions are indicated below for a variety of vehicle types:

Fire Emergency (rear wheels)	-	1.22 metres (48")
Compact Car (such as Honda Civic)	-	1.22 metres (48")
Midsize car (such as Nissan Altima)	-	1.22 metres (48")
Sport Utility Vehicle	-	1.32 metres (52")
Mini Van	-	1.35 metres (53")

2. Other Municipalities' Speed Cushion

Staff conducted research for speed cushion designs. There is limited information available since they are a relatively new traffic calming measure. The following municipalities were found to be using the noted dimensions for the interior speed cushion widths.

Town of Aurora	- 2.0 metres
City of Cambridge	- 2.0 metres
City of Burlington	- 1.82 metres
United Kingdom	- 1.9 metres

Refer to Attachment No. 3 for the proposed design of a speed cushion, specifically of the interior width.

Stakeholder and Agency Feedback and Comments

1. Vaughan Fire & Rescue Services (VFRS)

Staff requested comments from Vaughan Fire and Rescue Services on the implementation of speed cushions and provided the locations where the Town of Aurora have installed several speed cushions for their opportunity to test them. VFRS stated that their experience with the speed cushions was not positive. The width of the interior section of the speed cushion is 2.0 metres with a 0.75 m gap between the outside sections. The contact between the speed cushions and the front tires transmitted violent jerks to the steering wheel making the vehicle difficult to control. There will most likely be torquing of the apparatus frame and other components as the rear dual tires ride up on the tapered part of the speed cushion. If the speed cushion would be designed to a narrower width, then this application could be workable. However, as stated earlier in the report, the design would need to be near 2.0 metres in width to ensure larger vehicles such as all pick ups/mini-vans, SUV's and the typical vehicle, would be required to travel over at least one section of the speed cushions.

2. York Region Transit (YRT)

York Region Transit indicated that they are in not favour of any vertical measures as per their Policy of Traffic Calming on Public Transit Routes. They have indicated that they are not familiar with speed cushions and the impact it would have on transit vehicles.

At the time this report was prepared, YRT were going to test their vehicles in Aurora, however, staff have not yet received further comments from them.

3. York Region School Boards

At the time this report was prepared, staff did not receive comments back from either School Board.

4. City of Vaughan – Public Works Department

   At the time this report was prepared, staff did not receive comments back from the Public Works Department.

5. Town of Aurora – Use of Speed Cushions

   A summary of Aurora's findings regarding their experience with speed cushions are listed below:

   - Speed cushions and speed humps have a similar reduction in average vehicle speeds of approximately 10 km/h.
   - Speed cushions resulted in a 5% decrease in the number of motorists travelling above the 40 km/h speed limit.
   - Speed cushions were effective at all times of the day regardless of the opposing traffic volumes, compared to chicanes (with minimal opposing traffic volumes), which the motorist would tend to travel down the centre of the road.
   - Discussion with their Works Department indicated that maintenance would be increased as a result of the speed cushion, but manageable.
   - Snow is not removed from the gaps between the speed cushions; however, the snow would clear out gradually once the roads have been salted and when more vehicles would use them (tire tracking in the gaps).

Development/Transportation Engineering staff will continue to follow up on the effectiveness of the implemented traffic calming measures and report back between one and two years after implementation. Prior to assumption of the subdivision, if the implemented measures are not effective then any additional constructed measures are to be the responsibility of the developer. This process will follow the Policy & Procedure on the development of a Plan.

Relationship to Vaughan Vision 2020/Strategic Plan

In consideration of the strategic priorities related to Vaughan 2020, the recommendations of this report will assist in:

- Pursue Excellence in Service Delivery;
- Enhance and Ensure Community Safety, Health and Wellness; and
- Lead and Promote to Environmental Sustainability.

This report is consistent with the priorities previously set by Council.

Regional Implications

York Region Transit has provided their policy on the use of Traffic Calming on Transit Routes and its impact on damages and injuries. Refer to Attachment No. 4.

Much discussion has occurred between City and Regional Transportation Services Department staff on the use and effectiveness of traffic calming. Regional Roads do not contain such measures due to the nature and operating characteristics of these thoroughfares.

Conclusion

It is recommended that the proposed updated Neighbourhood Traffic Committee Policy and Procedure and the proposed NEW Traffic Calming Criteria, be approved, and that the use of speed cushions not be approved.

Attachments

1. Neighbourhood Traffic Committee Policy and Procedure - Current
2. Neighbourhood Traffic Committee Policy and Procedure - Revised
3. Proposed Speed Cushion Design
4. York Region Transit – Policy

Report prepared by:

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Respectfully submitted,

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Commissioner of Engineering and Public Works

Jack Graziosi, P. Eng., M. Eng.
Director of Engineering Services

MD:mc

ATTACHMENT NO. 1

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NEIGHBOURHOOD TRAFFIC COMMITTEE POLICY AND PROCEDURE

REVISED JUNE 2007

APPLICABILITY

The Neighbourhood Traffic Committee Policy and Procedure applies to Neighbourhood Traffic Committees in place as of June 30, 2007. Under this policy and procedure, the Engineering Services Department staff will conduct/review/develop a Neighbourhood Traffic Calming Plan proposal. A community meeting will be held to obtain public input on the Plan proposal.

POLICY

1. Purpose: The goal of the Plan is to prepare a Neighbourhood Traffic Calming Plan (the "Plan"), which should be based on the use of traffic calming, enforcement or regulatory measures to satisfy as fully as practicable the following objectives:

   - Improve safety and convenience for pedestrians and cyclists;
   - Reduce the number and severity of collisions;
   - Reduce the speed and volume of motorized vehicles;
   - Reduce the volume of extraneous or non-local traffic;
   - Minimize traffic impacts on adjacent local residential streets;
   - Reduce motor vehicle emissions; and
   - Maintain access for local traffic and emergency vehicles.

2. Initial Step: A formal request must be received from the residents in the form of a petition by either the City Council staff or Engineering Services Department staff.

3. The Plan: The area of the Neighbourhood Traffic Calming Plan should be bounded by collector or arterial roadways, and should correspond as closely as possible to that of the local ratepayers association, if applicable. An individual roadway can be requested and all procedures will be followed accordingly.

   The Plan should incorporate traffic calming measures in accordance with the City's Warrants for the Use of Traffic Calming Measures, and as specified in City of Vaughan Standard Drawings J-1 to J-10 and the *Canadian Guide to Neighbourhood Traffic Calming* (Transportation Association of Canada, 1998). Variations in the design of these traffic calming measures may be incorporated into the Plan if approved by the Engineering Department.

4. Community Meetings: A community meeting is to be held to discuss the Plan but the meeting shall not be held during the summer vacation months of June, July and August. It may not be appropriate to hold public meetings at other times, such as during religious holidays. All public meetings shall begin no later than 6:00 pm.

PROCEDURE

1. Establishing the Plan: If a local ratepayer's association exists in the area, then its executive may contact their Councillor's office in writing or the Engineering Services Department and request a review for traffic calming. If no such association exists, then an area resident must circulate a petition, signed by at least two-thirds (66.7%) of other such residents, requesting a review for traffic calming. In either case, the request shall be brought to the attention of the Ward Sub-committee and the Local Councillor. A single deputant may appear before Committee of the Whole shall be sufficient to request a review for traffic calming with the approval of City Council.

2. Developing the Plan: The Petition shall identify any neighbourhood traffic concerns, identify preferences for various traffic calming measures in order to develop a Neighbourhood Traffic Calming Plan. The Engineering Services Department shall conduct supporting traffic studies as required and review in the field as necessary to develop the Plan.

   The Plan will submitted to the Local Councillor for review and comment of its feasibility and appropriateness prior to the community meeting.

3. The Community Meeting: The Engineering Services Department shall arrange the time and place of the community meeting. The Engineering Services Department shall prepare notices for the meeting and a map of the Plan proposal, and mail them to all residents in the area no less than two weeks in advance of the meeting date. The notices shall also be sent to any institutional and commercial land uses within the study area. A copy of the meeting notice shall be sent to the members of the Ward Sub-committee, the Fire Department, York Region Transit, and the School Boards.

   The purpose of the community meeting is to obtain public input on the Plan proposal. This meeting must be attended by Engineering Services Department staff and the Local Councillor. Minutes of the meeting shall be forwarded to the members of the Ward Sub-committee. The Plan must have the support of at least two-thirds (66.7 percent) of the residents at the meeting. A formal vote may be held to determine this level of support. Residents may provide input on the Plan to the Engineering Services Department in advance of the meeting that will be included in the vote. Signatures on a petition may be considered, but shall not be counted numerically in a formal vote.

   If minor changes are requested to the Plan, and these changes are acceptable to the Engineering Services Department, then these changes may be incorporated provided they have the support of at least two-thirds (66.7 percent) of the residents present. If major changes are requested, then a further community meeting is required.

4. Approving the Plan: The Plan will be submitted at a Committee of the Whole meeting. The report shall include comments on the feasibility, impacts and estimated costs of the Plan, and the concerns of other agencies. The Plan shall be circulated to the following agencies:

   - City of Vaughan Fire Department;
   - City of Vaughan Public Works Department;
   - York Regional Police;
   - York Region EMS;
   - York Region Transit;
   - York Region Transportation and Works Department;
   - York District School Board; and
   - York Catholic District School Board.

   The Committee of the Whole shall consider the Plan and Engineering Services Department report, hear deputations from the public and interested parties, consider the public support demonstrated at the community meeting, and make a recommendation to City Council.

5. Dealing with Additional Requests: Should a request for additional traffic calming measures be made after the Plan has been approved by Council, but before the Plan is implemented, then the resident making the request shall circulate a petition, signed by at least two-thirds (66.7 percent) of the residents directly affected, indicating support for the additional measures. The "directly affected" shall mean those residents that can reasonably be expected to use that street. The Engineering Services Department shall ultimately determine what area is to be included in the petition.

   If major changes are requested, then a further community meeting to vote on these changes and Council approval is required. Should a request for additional traffic calming measures be made after the Plan has been implemented then a further community meeting, with public notification, and Council approval are required.

6. Evaluating the Plan: The Engineering Services Department shall report to the Committee of the Whole between one and two years after the implementation of the Plan. Several Plans may be reported on at once. The report shall describe any benefits and problems that have been identified or changes that may be required to improve the effectiveness of the Plan.

   If major changes are recommended then a further community meeting and Council approval is required before they can be implemented. Should a number of requests be received for additional traffic calming measures that are not part of the recommended changes, then it may be necessary to hold further community meetings.

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WARRANTS FOR THE USE OF TRAFFIC CALMING MEASURES

JUNE 2007

TYPES OF MEASURES

City Standard Drawings J-1 to J-10 detail the traffic calming measures that shall be considered acceptable for installation on City streets. Other measures that shall be considered appropriate for traffic calming purposes include contrasting materials, pavement markings and warning signage. Their applicability in existing areas and new developments is summarized in Table 1.

Table 1 – Accepted Traffic Calming Measures and their Applicability

Traffic Calming Measure	Through Traffic Committee Process (Existing Areas)	Through Traffic Management Plan (New Developments)
Speed Hump	Subject to Warrant 1	No
Raised Crosswalk	Subject to Warrant 1	With Pedestrian Signal Only on Primary Roads
Raised Intersection	Where Possible	Yes
Roundabout	Yes	Yes
Median	Subject to Warrant 2	Yes
Curb Extension/Road Narrowing	Subject to Warrant 2	Yes
Chicane	Subject to Warrant 2	Yes
Contrasting Materials	Yes	Yes
Pavement Markings	Yes	Yes
Warning Signage	Yes	Yes

WARRANTS FOR INSTALLATION

Warrant 1 – Speed Humps and Raised Crosswalks

Speed humps and raised crosswalks shall be considered in existing residential areas, through the Neighbourhood Traffic Committee process, only where the following three warrants are met:

1. The street is not a primary emergency response route. The determination of whether a street is a primary emergency response route shall be made in consultation with the Engineering and Fire Departments.

2. The speed limit is 50 km/h or less.

3. The average speed on the street is measured to be 10 km/h greater than the speed limit.

Speed humps may not be integrated into streets in new developments through a Transportation Management Plan. Raised crosswalks may only be installed with a pedestrian signal.

Warrant 2 – Medians, Curb Extensions or Road Narrowings and Chicanes

Medians, curb extensions or road narrowings and chicanes shall be considered in existing areas, through the Neighbourhood Traffic Committee process, only where the following two warrants are met:

1. The speed limit is 50 km/h or less.

2. The average speed on the street is measured to be 10 km/h greater than the speed limit.

Medians, curb extensions or road narrowings and chicanes may also be integrated into streets in new developments through a block Transportation Management Plan.

Raised Intersections and Roundabouts

Raised intersections may be integrated into intersections in new developments, as specified in an approved block Transportation Management Plan. They may be retrofitted into existing intersections provided that drainage issues can be satisfactorily resolved.

Roundabouts may be installed at intersections in existing areas through the Neighbourhood Traffic Committee process, and integrated into intersections in new developments as specified in an approved block Transportation Management Plan. In all cases the installation of roundabouts may be subject to right-of-way constraints.

Contrasting Materials, Pavement Markings and Warning Signage

Contrasting materials (i.e. textured concrete crosswalks and parking lay-bys) and pavement markings (i.e. painted road narrowings) may be installed through the Neighbourhood Traffic Committee process, and integrated into streets in new developments as specified in an approved block Transportation Management Plan. Warning signs (i.e. Curve Warning, Children Playing, Park Area, etc.) may be installed by staff in new or existing areas.

ATTACHMENT NO. 2

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NEIGHBOURHOOD TRAFFIC COMMITTEE POLICY AND PROCEDURE

REVISED MAY 2010

APPLICABILITY

The Neighbourhood Traffic Committee Policy and Procedure applies to Neighbourhood Traffic Committees in place as of May 2010. Under this policy and procedure, Engineering Services Department staff will conduct/review/develop a Neighbourhood Traffic Calming Plan proposal. A community meeting will be held to obtain public input on the Plan proposal.

POLICY

1. Purpose: The goal of the Plan is to prepare a Neighbourhood Traffic Calming Plan (the "Plan"), which should be based on the use of traffic calming, enforcement or regulatory measures to satisfy as fully as practicable the following objectives:

   - Improve safety and convenience for pedestrians and cyclists;
   - Reduce the number and severity of collisions;
   - Reduce the speed and volume of motorized vehicles;
   - Reduce the volume of extraneous or non-local traffic;
   - Minimize traffic impacts on adjacent local residential streets;
   - Reduce motor vehicle emissions; and
   - Maintain access for local traffic and emergency vehicles.

2. Initial Step: A formal request must be received from a resident(s) or by the Local Ratepayers Association by either the City Council staff or Engineering Services Department staff. A petition is required from the resident to which Engineering Services staff will provide the resident the area road network to collect support for the petition to initiate the traffic review.

3. The Plan: The area of the Neighbourhood Traffic Calming Plan should be bounded by collector or arterial roadways, and should correspond as closely as possible to that of the local ratepayers association, if applicable. An individual roadway can be requested and all procedures will be followed accordingly. To provide and ensure that the area or roadway under consideration for traffic calming is properly captured, the area or roadway must have been assumed by the City a minimum of five years. This five year time period will allow the neighbourhood to mature and to develop the travel pattern of the area residents.

The Plan should incorporate traffic calming measures in accordance with the City's Warrants for the Use of Traffic Calming Measures, and as specified in City of Vaughan Standard Drawings J-1 to J-10 and the *Canadian Guide to Neighbourhood Traffic Calming* (Transportation Association of Canada, 1998). Variations in the design of these traffic calming measures may be incorporated into the Plan if approved by the Engineering Services Department.

4. Community Meetings: A community meeting is to be held to discuss the Plan but the meeting shall not be held during the summer vacation months of June, July and August. It may not be appropriate to hold public meetings at other times, such as during religious holidays. All public meetings shall begin no later than 6:00 pm.

PROCEDURE

1. Establishing the Plan:

   * If a local ratepayer's association exists in the area, then its executive may contact their Councillor's office in writing (with a petition) or the Engineering Services Department to request a review for traffic calming.
   * If no such association exists, then an area resident must submit a letter requesting a review for traffic calming. A petition is required from the resident and the Engineering Services staff will provide the resident the area road network to collect support to initiate the traffic review.
   * In either of the above cases, the request shall be brought to the attention of the Ward Sub-committee and the Local Councillor.
   * A single deputant may appear before Committee of the Whole shall be sufficient to request a review for traffic calming with the approval of City Council.
   * Traffic calming will not be considered on collectors or arterials with a right-of-way width of 26.0 metres or greater.

2. Resident Support

   Once a letter or notification is received, Engineering Services staff will proceed:

   Only if the petition reflects a participation rate of at least 75% of the residents identified within the road area network (as set out by Engineering Services staff). At least 75% of the respondents must be in agreement to begin a traffic calming review.

   The road area network will be determined as the normal travel route of residents through the area that has been requested.

3. Data Collection

   Traffic data collection is vital part of the process to gain an understanding of the concerns raised by the community. This information is part of an analysis to determine the most appropriate traffic calming measure and is compared to Warrants 1, 2 and 3.

   Traffic data to be collected:

   - traffic volume – roadway AADT and/or intersection turning movement counts
   - vehicle speeds
   - collision history
   - pedestrian studies

- traffic infiltration studies
- location characteristics

4. Developing the Plan:

The requested submission shall identify any neighbourhood traffic concerns, identify preferences for various traffic calming measures in order to develop a Neighbourhood Traffic Calming Plan. The Engineering Services Department shall conduct supporting traffic studies as required and review in the field as necessary to develop the Plan.

Restrictions to be considered:

- All vertical measures such as speed humps/raised crosswalks and the like, are to be discontinued on feeder/primary, collector and arterial roadways.
- Must be a local, feeder/primary, or collector two-lane classification roadway.
- The posted maximum speed limit shall not be greater than 50 km/h.
- Vertical measures such as speed humps/raised crosswalks not to be installed on a street designated as an emergency response route or transit route.
- Streetscaping features will be limited to focal points in the traffic calming plan.

Cost Availability Guideline:

- Local roadways – $30/metre of road
- Feeder/Primary/2 lane Collector roadways - $65/metre of road

The Plan will be submitted to the Local Councillor, Vaughan Fire & Rescue Services, Vaughan Public Works Department, York Regional Transit, York Region District School Board and the York Catholic District School Board for their review and comment of its feasibility and appropriateness.

Council Report:

A council report will be prepared outlining the details of the design, comments received from the outside agencies, a cost estimate of the Plan and recommending approval from Council to move forward with the community meeting.

5. The Community Meeting:

- The Engineering Services Department shall arrange the time and place of the community meeting.
- The Engineering Services Department shall prepare notices for the meeting

and a map of the Plan proposal, and mail them to all residents in the area no less than two weeks in advance of the meeting date.

- The notices will be mailed out to the affected residents as defined in Section 2.
- The notices shall also be sent to any institutional and commercial land uses within the study area.
- A copy of the meeting notice shall be sent to the members of the Ward Sub-committee, the Fire & Rescue Services Department, York Region Transit, and the School Boards.

The purpose of the community meeting is to obtain public input on the Plan proposal. This meeting must be attended by Engineering Services Department staff and the Local Councillor. Minutes of the meeting shall be forwarded to the members of the Ward Sub-committee. The Plan must have the support of at least **75%** of the residents at the meeting. A formal vote may be held to determine this level of support. Residents may provide input on the Plan to the Engineering Services Department in advance of the meeting that will be included in the vote. Signatures on a petition may be considered, but shall not be counted numerically in a formal vote.

If minor changes are requested to the Plan, and these changes are acceptable to the Engineering Services Department, then these changes may be incorporated provided they have the support of **100%** of the residents present. If major changes are requested, then a further community meeting is required.

6. Approving the Plan:

- A report will be submitted at a Committee of the Whole meeting which will include comments on the feasibility, impacts and estimated final costs of the Plan, and the concerns of other agencies.

The Committee of the Whole shall consider the Plan and Engineering Services Department report, hear deputations from the public and interested parties, consider the public support demonstrated at the community meeting, and make a recommendation to City Council.

The implementation of the plan is subject to approval in the following Capital Budget year.

7. Dealing with Additional Requests:

Should a request for additional traffic calming measure(s) be made after the Plan has been approved by Council, but before the Plan is implemented, then the resident making the request shall circulate a petition, signed by **100%** of the residents directly affected, indicating support for the additional measure(s).

The "directly affected" shall mean those residents that will have the additional traffic measure(s) located near their home. The Engineering Services Department shall ultimately determine what area is to be included in the petition.

If major changes are requested, then a further community meeting to vote on these changes and Council approval is required. Should a request for additional traffic calming measures be made after the Plan has been implemented then a further community meeting, with public notification, and Council approval are required.

8. Evaluating the Plan:

The Engineering Services Department shall report to the Committee of the Whole between one and two years after the implementation of the Plan. Several Plans may be reported on at once. The report shall describe any benefits and problems that have been identified or changes that may be required to improve the effectiveness of the Plan.

If major changes are recommended then a further community meeting and Council approval is required before they can be implemented. Should a number of requests be received for additional traffic calming measures that are not part of the recommended changes, then it may be necessary to hold further community meetings.

9. Future Modifications:

Unless a health and safety issue has been identified by Engineering Services staff, no modifications will be considered to the traffic calming measures for a minimum period of 5 years following implementation. The procedure for any future modifications will begin at Section 2 – Resident Support and then continue through remaining stages of the policy.

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WARRANTS FOR THE USE OF TRAFFIC CALMING MEASURES

MAY 2010

TYPES OF MEASURES

City Standard Drawings J-1 to J-10 details the traffic calming measures that shall be considered acceptable for installation on City streets. Other measures that shall be considered appropriate for traffic calming purposes include contrasting materials, pavement markings and warning signage. Their applicability in existing areas and new developments is summarized in Table 1.

Table 1 – Accepted Traffic Calming Measures and their Applicability

Traffic Calming Measure	Through Traffic Committee Process (Existing Areas)	Through Traffic Management Plan (New Developments)
Speed Hump	Subject to Warrant 1	No
Raised Crosswalk	Subject to Warrant 1	With Pedestrian Signal Only on Primary Roads
Raised Intersection	Where Possible	Yes
Roundabout/Traffic Circle	Yes	Yes
Median	Subject to Warrant 2	Yes
Curb Extension/Road Narrowing	Subject to Warrant 2	Yes
Chicane	Subject to Warrant 2	Yes
Contrasting Materials	Yes	Yes
Pavement Markings	Yes	Yes
Warning Signage	Yes	Yes

WARRANTS FOR INSTALLATION

Warrant 1 – Speed Humps and Raised Crosswalks

Speed humps and raised crosswalks shall be considered in existing residential areas on local classification roadways, through the Neighbourhood Traffic Committee process, only where three of the four warrants are met:

1. The street is not a primary emergency response route. The determination of whether a street is a primary emergency response route shall be made in consultation with the Engineering Services and Fire & Rescue Services Departments.

2. The speed limit is 50 km/h or less.

3. The 85th percentile speed on the street is measured to be 15 km/h greater than the speed limit. (The 85th percentile speed is the speed at which 85% of drivers are driving at or less).

4. Traffic volume: local roadways greater than the trip generation rate of 9.57 trips/household/day. Source: Institute of Transportation Engineers (ITE), Trip Generation Manual – 8th Edition.

Speed humps may not be integrated into streets in new developments through a Transportation Management Plan. Raised crosswalks may only be installed with a pedestrian signal. All vertical measures are to be discontinued on feeder/primary, collector and arterial roadways.

Warrant 2 – Medians, Curb Extensions or Road Narrowings and Chicanes

Medians, curb extensions or road narrowings and chicanes shall be considered in existing areas, through the Neighbourhood Traffic Committee process, only where the following two warrants are met:

1. The speed limit is 50 km/h or less.

2. The 85th percentile speed on the street is measured to be 15 km/h greater than the speed limit. (The 85th percentile speed is the speed at which 85% of drivers are driving at or less)

Medians, curb extensions or road narrowings and chicanes may also be integrated into streets in new developments through a block Transportation Management Plan.

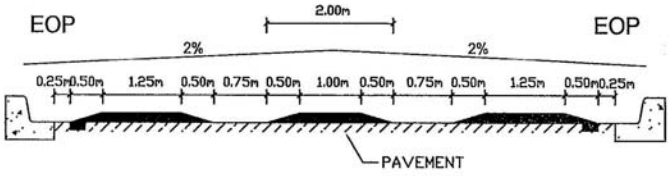
Raised Intersections and Roundabouts/Traffic Circles

Raised intersections may be integrated into intersections in new developments, as specified in an approved block Transportation Management Plan. They may be retrofitted into existing intersections provided that drainage issues can be satisfactorily resolved.

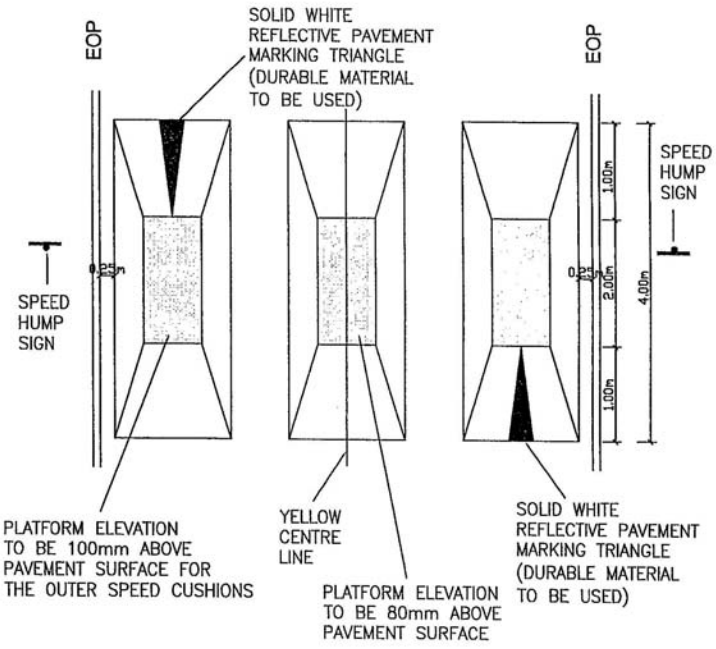
Roundabouts/traffic circles may be installed at intersections in existing areas through the Neighbourhood Traffic Committee process, and integrated into intersections in new developments as specified in an approved block Transportation Management Plan. In all cases the installation of roundabouts/traffic circles may be subject to right-of-way constraints.

Contrasting Materials, Pavement Markings and Warning Signage

Contrasting materials (i.e. textured concrete crosswalks and parking lay-bys) and pavement markings (i.e. painted road narrowings) may be installed through the Neighbourhood Traffic Committee process, and integrated into streets in new developments as specified in an approved block Transportation Management Plan. Warning signs (i.e. Curve Warning, Children Playing, Park Area, etc.) may be installed by staff in new or existing areas.



SPEED CUSHION LAYOUT
(PLACED THREE ABREAST)
N.T.S.



ATTACHMENT NO. 3

	REVISIONS	DATE
4.		
3.		
2.		
1.		

City of Vaughan — The City Above Toronto

ENGINEERING SERVICES

CITY OF VAUGHAN ENGINEERING STANDARD

SPEED CUSHION

NOT TO SCALE DESIGNED: _____ STD. DWG.

REVISION: _____ DATE: _____

mm DIMENSIONS IN MILLIMETERS EXCEPT AS NOTED

Acad File: O:\Engineering Services\Design Services\Design Drafting\$$Design Std Drawings 2004\CAD Files\J_Traffic Calming\J-11.dwg

ATTACHMENT NO. 4

1

YORK REGION TRANSIT
POLICY FOR TRAFFIC CALMING ON PUBLIC TRANSIT ROUTES

(Please refer to Minute No. 150 of the Regional Council Minutes for recorded vote on the adoption of the recommendations in the foregoing Clause.)

The Transit Committee recommends that:

1. **The presentation from Rick Tagaki and Ann Marie Carroll regarding Traffic Calming Policy on Public Transit Routes be received.**
2. **The policy regarding "Traffic Calming on Public Transit Routes" be amended as follows:**

   a) **The last sentence of the "Description" section be deleted and replaced with the following:**

   "It is recognized that both the installation and removal of traffic calming devices requires an Environmental Assessment process. The Region will work with the local municipality to identify options and possible alternative traffic calming devices to mitigate the impacts to York Region Transit."

3. **That recommendation contained in the following report, June 4, 2004, from the Commissioner of Transportation and Works be adopted, as amended above.**

1. RECOMMENDATION

It is recommended that:

1. The policy entitled "Traffic Calming on Public Transit Routes" be adopted and that, York Region staff be authorized to communicate the policy to the local municipalities and the public *(see Attachment 1)*.

2. PURPOSE

The purpose of this report is to update Transit Committee and Regional Council on the proposed York Region Transit (YRT) policy for traffic calming on public transit routes, and to seek adoption of the policy.

This policy will serve to identify issues surrounding the effects of traffic calming devices on public transit services. It will establish guidelines for the Region and the local municipalities when considering the implementation of traffic calming devices on streets

where transit buses currently operate and those where transit buses may operate in the future.

3. BACKGROUND

YRT staff submitted a proposed policy entitled "Traffic Calming Devices on Transit Routes" to the August 22, 2003 Transit Committee meeting. The following resolution was subsequently passed by Regional Council at its meeting on September 18, 2003.

1. *The following report, August 22, 2003, from the Commissioner of Transportation and Works be received.*
2. *This matter be referred to York Region Transit staff to establish a working group to include local municipalities, Regional Transportation and Works, Fire and EMS Departments, for the purpose of drafting a policy for region-wide traffic calming measures on public transit routes.*
3. *Local municipalities be encouraged not to implement traffic claming measures on existing and/or anticipated York Region Transit routes until policy has been adopted.*

The list of working group members has been expanded to also include York Region Police (YRP).

4. ANALYSIS AND OPTIONS

YRT staff assembled the working group as directed. The group's objectives were to:

- Determine whether the framework of YRT's existing draft policy could be further developed.
- Identify preferred traffic calming solutions to be used on transit routes.

The goals of the working group were to:

- Remedy operating concerns.
- Reach consensus on types of traffic devices acceptable on transit routes.
- Develop a communications strategy.
- Prepare a Transit Traffic Calming Policy to be submitted to Regional Council.

It has been determined that the Town of Markham and the City of Vaughan are the only two municipalities that currently install speed humps/bumps along transit routes.

The Town of Markham began installing speed humps/bumps in 1999. Since 1999, Markham has designated 42 municipal streets to receive speed humps/bumps, 22 of which are streets where transit operates.

The Town of Vaughan has installed speed humps/bumps on 7 municipal streets where transit operates.

A critical issue with speed humps/bumps is the travel time delay they cause. The investigation into this indicated that for every speed hump/bump installed, there is the potential to reduce travel time by 10 seconds. An example of this is Route 40 (Markham-Unionville Local).

Table 1
Route 40 Time Delay

Route	No. of Speed Humps	Current Service	Time Delay
40	35	30min. peak hours 1 hr. off peak	12 min. round trip

The proposed policy submitted to Regional Council in September, 2003 was reviewed and discussed by the group members. Overall the members supported the intent of the policy. YRT was asked to include a grandfather clause in the policy exempting existing and approved locations having vertical traffic measures, inclusive of 2002/2003 projects. YRT staff has agreed to include a grandfather clause; however, if it is found that the vertical devices interfere with YRT's operation, YRT reserves the right to request the removal of the devices.

Speed humps/bumps are the most common type of traffic calming device being installed by local municipalities at this time and are the primary concern for both municipal and Regional staff. The pros and cons of this type of device are as follows:

Pros:
- Economical.
- Easy to install.
- Effective.

Cons:
- Reduced operating speeds (response time).
- Damage to vehicle and associated costs.
- Downtime of vehicles.
- Operator and customer discomfort.
- Liability.
- Street aesthetics.
- Road maintenance and construction works.
- Repairs to the devices and costs associated with the repairs.
- Traffic diversion. Redirecting traffic from one street to another.

Staff then considered other traffic calming devices to determine if there are in fact better solutions.

4.1 Traffic Calming Devices

There are four main categories of traffic calming devices to be considered as outlined in Table 2.

Table 2
Traffic Calming Device Options

	Type	Description	Sample
1.	Non-Physical	Do not alter the physical path of travel.	Speed Enforcement Photo Radar Radar Trailers Signage Pavement Markings Streetscaping
2.	Horizontal	Decrease width of roadway through physical measure.	Traffic Circles/Roundabouts Chicanes Medians Centre Islands Choke points Realigning Intersections On-street parking
3.	Vertical	Form road surface with varying heights and/or textures.	Speed humps/bumps Speed tables Textured pavement Raised crosswalks and intersections
4.	Diversion	Restricts traffic flow. (Not considered as part of analysis).	Street closures Turning prohibitions and other restrictions One-way to two-way streets Cul-de-sacs

Each of the four categories were discussed and then evaluated by each working group member. The categories were ranked based on an agree/disagree format, with non-physical devices being most preferred, and diversion devices the least preferred.

Non-physical devices were preferred as there were no concerns relating to municipal operations, transit and emergency services. Police enforcement was thought to be the most effective method of non-physical traffic calming. The representative from York Regional Police stated that they are currently planning for an increase in traffic enforcement resources in 2004.

Horizontal devices were thought to be more expensive and less effective, however, they do address the issues noted in the groups list of cons.

Group members agreed that vertical measures should be considered as the last resort.Diversion devices where not discussed as they do not relate to transit.

4.2 Plan of Action

The group identified the need for an integrated plan for traffic safety, taking into account the community as a whole. The following actions are suggested:

- Invest in public education to change perceptions, behaviours and attitudes that lead to collisions.
- Provide visible police enforcement where resources permit.
- Address specific traffic problems with intelligent, cost effective solutions that will not compromise safety or penalize law-abiding citizens.
- Educate community that instead of turning streets into playgrounds, there is a need to develop recreational grounds and facilities where children can play safely away from traffic.

Building obstacles to impede traffic is not the answer to the problem of aggressive drivers. It has been determined that police enforcement and public education should be the first steps to traffic calming.

The Town of Markham has recently coordinated a "Street Safe Task Force" that is addressing the issue of traffic calming specifically. Their staff is preparing a scheme that would serve the residents of a community, YRT and emergency service providers.

4.3 Communication

To improve communications with the local municipalities, YRT staff agreed to:

- Provide group members with one point of contact.
- Provide current transit information through its web site.
- Circulate a summary of its annual service plan each year to group members.
- Produce mapping identifying roads selected for future transit services through the subdivision plan approval process.

4.4 Relationship to Vision 2026

YRT will work with the local municipalities and other partners to support the goals stated in York Region's Vision 2026 and will focus on the following areas:

"Housing Choices for Our Residents"

- Planning for Strong Lives, Work, Play and Learn Connections.
- Creating Well-Designed and Liveable Communities.

"Infrastructure for a Growing Region"

- Ensuring that our transportation network co-ordinates with development.
- Continuing to improve service and infrastructure for successfully integrated transit service.
- Promoting transit usage as a practical and wise alternative to private vehicle use.

5. FINANCIAL IMPLICATIONS

An overall financial impact caused by the installation of vertical traffic calming measures is unknown. It is certain that if vertical traffic calming devices continue to be installed along transit routes, the Region will incur costs as a direct result.

A twelve minute round trip time delay as shown in Table 1(Route 40 example) alone could cost the Region $73,000 annually. Other areas identified as potential costs would be vehicle damage to the lower side panels, liability claims due to bumps and falls, and customer dissatisfaction due to extended travelling times.

6. LOCAL MUNICIPAL IMPACT

Local planners and engineers will have to consider the impact on public transit when designing and/or approving traffic calming devices. Increased noise levels and pollution may occur as a result of the increase in the number of vertical devices being installed. Where vertical traffic calming measures are used, public transit will not be provided.

The working group determined that the local municipalities prefer vertical devices because they consider them to be economical, simple to install and effective, however the total cost associated with vertical devices has not yet been investigated by most municipalities. The local municipalities may or may not incur higher costs to install other types of devices in order to accommodate public transit service.

7. CONCLUSION

Regional Council endorsement is being sought for YRT's policy entitled "Policy for Traffic Calming on Public Transit Routes".

YRT supports municipal introduction of well-planned traffic calming measures into the municipal landscape and will assist local municipal staff to develop their plan. It is, however, necessary to continue to provide transit services to all areas of York Region while maintaining a safe and comfortable environment for the general public, transit customers and bus operators.

The cities of Toronto and Hamilton both have similar policies in place. Other jurisdictions such as Mississauga, Brampton and Waterloo are in the process of developing policies.

The Senior Management Group has reviewed this report.

(A copy of the attachment referred to in the foregoing is included with this report and is also on file in the Regional Clerk's Office.)

COUNCIL ATTACHMENT 1

York Region

STATUS
Council Approved Y N
CAO Approved: Y N

TITLE: Traffic Calming on Public Transit Routes	NO.: Approval Date: Last Updated:

POLICY STATEMENT:

The Regional Municipality of York supports municipal introduction of well-planned traffic calming measures into the municipal landscape. It is, however, necessary to continue to provide bus services to all areas of York Region while maintaining a safe and comfortable environment for the general public, transit customers and bus operators.

APPLICATION:

This policy shall be applicable where traffic calming measures and public transit are to coexist.

PURPOSE:

The Region wishes to ensure that buses can negotiate traffic calming schemes in a satisfactory manner without damage to the buses and to maintain a safe and comfortable environment for both our customers and bus operators.

DEFINITIONS:

The definition of traffic calming is:

"The implementation of physical and visual measures that are intended to reduce vehicle speeds and subdue aggressive driving behaviour to improve road safety and create an environment where the needs of all road space users, not just motor vehicles, are enhanced."

DESCRIPTION:

The Region supports non-physical and selected horizontal traffic calming devices and opposes the installation of vertical traffic calming devices on roads designated for transit.

The Region approves of non-physical type traffic calming devices. Where horizontal measures are to be installed, the Region requests that the local municipality work with Region to ensure the device design allows buses to negotiate through the scheme without damage to the buses or discomfort to our customers and bus operators.

The Region does not agree with the installation of vertical traffic calming devices on designated transit routes including roads that are deemed future transit routes.

As requested by the Town of Markham, the Region agrees to continue operating transit services on streets with vertical devices (speed humps/bumps) that were installed or approved prior to December 31, 2003. This is inclusive of all the local municipalities in the Region of York. If it is determined, however, that the vertical devices are causing significant service delays, damage to buses or operator and/or customer dissatisfaction, the Region reserves the right to request the removal of the devices. Refusal to remove the devices will result in the discontinuation of public transit service from the affected roadway.

RESPONSIBILITIES:

Local Municipality:

- At the earliest stage of development of a traffic calming scheme, YRT should be notified of the intent to introduce traffic calming on a particular road and where concerned, YRT should be consulted and be allowed to participate in the design of the scheme.

- Must ensure that vertical measures are not installed on roads where transit services exist and on roads designated for transit.

York Region Transit:

- YRT will make every effort to respond to the Region's and/or municipalities requests for comments within a reasonable amount of time so as not to delay the design and/or approval process.

- Will put in place a tool to assist municipal staff in predetermining roads that are designated transit roads.

NON-COMPLIANCE WITH POLICY:

Non-compliance with this policy will result in the removal of public transit service from the affected roadway.

REFERENCE:

City of Toronto Staff Report,
Subject: Traffic Calming Policy
City of Brampton
Traffic Calming Program
International Association of Public Transport

Traffic Calming Measures and Bus Traffic.

Victoria Transport Policy Institute
Traffic Calming Benefits, Costs and Equity Impacts.

City of West Sacramento
Community Development Department,
Residential Traffic Calming Program

Canada Safety Council
Traffic Calming Versus Safety

CONTACT:

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APPROVAL INFORMATION				
CAO Approval Date:				
Committee:	**Clause:**			**Report No:**
Council Approval:	**Minute No.**	**Page:**	**Date:**	

Schedule 'A'

The Region's preferred list of traffic calming measures:

Non-physical

Non-physical type traffic calming devices are the preferred methods of traffic calming on roads where transit operates service.

These devices do not alter the physical path of travel and do not require significant construction on the roadway. Examples of non-physical types:

- Speed Enforcement
- Photo Radar
- Radar Trailers
- Signage
- Pavement Markings
- Streetscaping
- Reduced Speeds
- High visibility crosswalks
- Gateway/Entryways
- Neighbourhood Watch

Horizontal

Select horizontal type devices are acceptable to transit. Lane widths and turning radii must be considered in the design of these devices. On-street parking would not be ideal for transit routes.

These devices decrease the width of the roadway through the use of physical measures and may not allow for straight-line travel. Examples of horizontal devices:

- Traffic Circles/Roundabouts*
- Chicanes
- Medians
- Centre Islands
- Choke points
- Realigning Intersections
- On-street parking

*Roundabout intersections may be more difficult for visually impaired pedestrians because they do not have straight traffic or regular breaks in traffic flow.