

<b>CITY WIDE IMPLICATIONS</b>
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<b>CITY OF HAMILTON</b>
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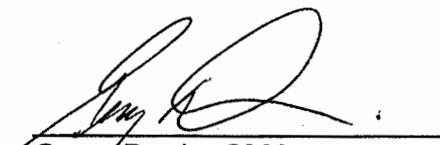
**PUBLIC WORKS DEPARTMENT**  
**Operations & Maintenance Division**

<b>Report to:</b> Chair and Members Public Works Committee	<b>Submitted by:</b> Gerry Davis, CMA General Manager Public Works Department
<b>Date:</b> September 1, 2009	<b>Prepared by:</b> S. Russell Extension 5660

**SUBJECT: Policy for Setting Speed Limits on City of Hamilton Roadways  
(PW09075) - (City Wide)  
*Public Works Committee Outstanding Business List***

<b>RECOMMENDATION:</b>
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- (a) That the Transportation Association of Canada (TAC) "Canadian Guidelines for Establishing Posted Speed Limits" be adopted as the policy for determining posted speed limits on City of Hamilton roadways;
- (b) That Appendix "A" to Report PW09075 be adopted as the "Policy for Setting Speed Limits in School Areas on City of Hamilton Roadways";
- (c) That the "Policy for Setting Speed Limits on City of Hamilton Roadways" dated October, 2001, be rescinded;
- (d) That speed limits on rural roads be set based on the individual characteristics of each roadway in accordance with the TAC guidelines;
- (e) That the Outstanding Business item referring to speeding on Hamilton Roadways (recommendations from Agricultural and Rural Affairs Advisory Committee) be removed from the Public Works Committee Outstanding Business List.

  
Gerry Davis, CMA  
General Manager  
Public Works Department

<b>EXECUTIVE SUMMARY:</b>
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The City of Hamilton currently utilizes the Council-approved policy entitled "Setting Speed Limits on City of Hamilton Roadways". This policy was approved for use in 2002 and has been the basic decision-making tool since. The purpose of this report is to

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request approval to replace the existing speed limit policy with the new guideline for setting speed limits developed by the Transportation Association of Canada (TAC).

City staff was involved in the TAC project to develop the speed limit setting guidelines and as part of that involvement did considerable testing of the proposed methods on roadways throughout the Hamilton area. While the current policy has served the City well, the technical basis of the TAC procedure and the results obtained suggest it would be preferable to convert to the TAC guidelines as the formal City standard, and this is recommended. The TAC guidelines do not cover the setting of posted speed limits in school zones. Therefore, a separate policy has been created in order to retain this section of existing policy for setting speed limits in school zones. This separate policy has been included in this report as Appendix "A" School Zone Speed Limits.

The Agriculture and Rural Affairs Advisory Committee requested a report from staff regarding "the feasibility of standardizing the speed limits on all rural roadways to 60 km/h unless otherwise posted." Speed limits need to be set on an individual basis based on the physical characteristic of the roadway and the surroundings. Properly set speed limits are the ones with the highest likelihood of compliance, require the least amount of police enforcement and gain the highest level of respect for speed limits in general, leading to increased road user safety. Therefore, staff recommends that speed limits on rural roadways continue to be individually analyzed and set as opposed to choosing a blanket 60 km/h limit for all rural roadways.

**BACKGROUND:**

The information/recommendations contained in this report have City-wide implications.

The City of Hamilton utilizes an existing council-approved policy for "Setting Speed Limits on City of Hamilton Roadways". This policy was developed by a local consulting firm shortly after amalgamation in response to concerns regarding speed limits on rural roads, neighbourhood streets and school zones.

In 2008, the Transportation Association of Canada (TAC) commissioned the development of posted speed limit guidelines to provide guidance and to enhance consistency in the evaluation of posted speed limits. The development of this undertaking involved participation from a wide range of municipal and provincial road agencies. The City of Hamilton was one of the project steering committee members with Traffic Engineering and Operations staff sitting on the committee.

Staff has been active in commenting on the development of this guideline and has done considerable testing of the procedures on roadways throughout the Hamilton area. The Canadian Guidelines for Establishing Posted Speed Limits has recently been completed and has been given final approval by TAC.

The existing policy for "Setting Speed Limits on City of Hamilton Roadways" contains a section for setting speed limits on roadways in school zones. The characteristics of these zones are site specific and are not covered in the TAC guidelines. Therefore, a separate policy has been created in order to retain this section of existing policy for setting speed limits in school zones. This separate policy has been included in this report as Appendix "A" School Zone Speed Limits.

In October 2008, the Agriculture and Rural Affairs Committee requested a report from staff regarding "the feasibility of standardizing the speed limits on all rural roadways to

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60 km/h unless otherwise posted." Staff advised that the TAC project would be completed in 2009, at which time, we would report back on the matter.

**ANALYSIS/RATIONALE:**

Properly set speed limits promote consistency in the signing of speed limits and thus attempts to maximize the safety of the road network. Road safety may be enhanced through credible posted speed limits that match the expectation of the driver for a given roadway and its surrounding area. Motorists drive at a speed which they find comfortable based on visual cues and their surroundings and not from the speed limit signs.

The TAC guidelines have been developed following a rigorous methodology and substantial testing. The TAC guidelines provide an evaluation tool to assess appropriate posted speed limits based primarily on the classification, function and physical characteristics of a roadway. The automated spreadsheet used for establishing posted speed limits is shown in Appendix "B".

The existing city policy for setting speed limits considers only 6 risk factors. The TAC guideline first identifies certain elements of the roadway and then considers 11 risk factors to determine the appropriate speed limit for the subject roadway.

Existing Policy

Risk Factors

- Width of pavement
- Visibility
- Length of section
- Daily traffic volume
- Number of accesses
- Pedestrian traffic

TAC Guideline Analysis

Elements of roadway

- Road classification
- Rural/urban
- Divided/undivided
- Number of lanes
- Design speed
- 85<sup>th</sup> percentile speed

Risk Factors

- horizontal geometry
- vertical geometry
- lane width
- roadside hazards
- pedestrian exposure
- cyclist exposure
- pavement surface
- number of intersections
- number of driveway
- interchanges
- on-street parking

The TAC guideline provides a more in depth review of the roadway and allows a more precisely tailored speed limit to be set. Staff recommends that the TAC Canadian Guidelines for Establishing Posted Speed Limits replace the current policy for setting posted speed limits on City of Hamilton roadways.

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The guidelines developed in the TAC policy do not cover setting the speed limit in school areas. Therefore, a separate policy has been created in order maintain the provision for reducing speed limits in school areas.

School areas are roadways that border on school properties. In accordance with the section concerning school areas of the existing policy, a part-time reduced speed limit can be implemented on arterial roadways along the school frontage zone. Schools located on local roadways may qualify for a full-time speed limit of 40 km/h.

The ideal speed limit would be self enforcing. In most cases, the majority of drivers do find the optimum travel speed, and it is inappropriate to set a posted speed limit that is inconsistent with driver's perceptions, and rely on police enforcement to try to reduce operating speeds. If the majority of speed limits make sense to the drivers, there is a better chance of getting drivers to react to lower speed limits where there truly are issues of safety requiring lower travel speed. Thus, it is important not to set speed limits below what the typical driver considers realistic, unless there is a clear, proven, site-specific reason to do so. Properly set speed limits will result in a higher rate of compliance, leading to the lowest demand for police enforcement or other types of speed limit compliance efforts such as traffic calming. As noted in the TAC procedures, even roads which appear similar, can have differences which affect their operation to the extent that different speed limits are appropriate. Therefore, staff recommends that speed limits on rural roadways continue to be individually analyzed and set utilizing the TAC guidelines as opposed to choosing an arbitrary 60 km/h limit for all rural roadways.

**ALTERNATIVES FOR CONSIDERATION:**

The alternative to switching to the new policy would be to continue utilizing the existing policy for "Setting Speed Limits on City of Hamilton Roadways" but this is not recommended as the research and analysis that went into the development of the TAC guidelines was extensive and thorough.

The alternative to setting speed limits on rural roads would be to follow the request of the Agricultural and Rural Affairs Committee to use 60 km/h everywhere, but this would result in speed limits which would, in many cases, not be tailored to the road conditions and environment and would result in poorer compliance overall. This alternative is not recommended.

**FINANCIAL/STAFFING/LEGAL IMPLICATIONS:**

No changes are required to implement the new policy.

**POLICIES AFFECTING PROPOSAL:**

This initiative is consistent with Focus Area 7 - Healthy Communities, of the City Strategic Plan, in that it aims to maximize road safety through a rational approach to setting speed limits.

"*Innovate Now*", identifies Public Works' vision "to be recognized as the centre of environmental and innovative excellence in Canada". This proposal is consistent with "Communities" vision driver as well as one of its top priorities to be a leader in the "greening" and stewardship of the City.

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This project is also consistent with the goals of the Hamilton Strategic Road Safety Program. This program attempts to make roadways safer by setting speed limits that motorists will respect.

**RELEVANT CONSULTATION:**

The Canadian Guidelines for Establishing Posted Speed Limits has been reviewed and supported by many municipal and provincial road agencies across Canada.

The Hamilton Police Service has reviewed the proposed policy and agrees completely with the concept of setting speed limits based on good engineering principles. The Service does not support artificially low speed limits due to the impact on fair and appropriate enforcement.

- The police have limited resources to apply to speed limit enforcement. While the police do conduct proactive enforcement, much of the enforcement effort is in response to public complaint.
- Police enforcement can generally address only the worst of the drivers even if a significant number are exceeding the speed limit.
- The police prefer a properly set speed limit based on good engineering principles. A well-set speed limit will find a limited number of drivers exceeding the speed limit and does not make violators out of the majority of motorists who are driving with reasonable care and attention.
- It is recognized that a small tolerance between the posted speed limit and the speed at which violation notices are issued must be allowed in order to account for issues such as speedometer error and driver inattention; as well, the courts have a similar expectation.
- The police strongly support speed limit measures around schools and already spend a considerable amount of time undertaking that type of enforcement.

**CITY STRATEGIC COMMITMENT:**

By evaluating the "Triple Bottom Line", (community, environment, and economic implications) we can make choices that create value across all three bottom lines, moving us closer to our vision for a sustainable community, and Provincial interests.

**Community Well-Being is enhanced.**  Yes  No

Public services and programs are delivered in an equitable manner, coordinated, efficient, effective and easily accessible to all citizens.

**Environmental Well-Being is enhanced.**  Yes  No

Human health and safety are protected.

Consumption of all natural resources is reduced.

Consumption of energy is reduced; alternative energy and co-generation are supported.

A sustainable transportation network provides many options for people and goods movement; vehicle-dependency is reduced.

**Economic Well-Being is enhanced.**  Yes  No

Reducing the severity of motor vehicle collisions saves real and societal costs

**Does the option you are recommending create value across all three bottom lines?**

Yes  No

**Do the options you are recommending make Hamilton a City of choice for high performance public servants?**

Yes  No

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**Appendix "A" to Report PW09075**

**School Zone Speed Limits Policy**

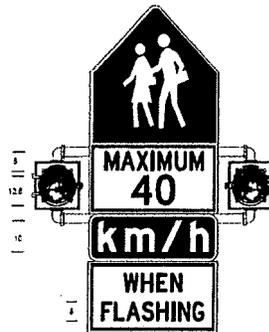
Roadways that have contiguous school property will be considered for a reduced speed limit.

The decision to lower speed limits adjacent to schools will be based on factors such as the presence or absence of sidewalks, the volume and speed of vehicular traffic on the road adjacent to the school, the number of students who walk using the subject roadway, the presence of fencing at the school property and the difficulty of school buses and passenger vehicles to access the school property.

Speed limits may be reduced to a maximum 40 km/h provided that the reduction does not exceed a 10 km/h difference between existing speed limit and the reduced school zone speed limit.

**Arterial Roadways** - Arterial roadways and roadways with traffic volumes over 3000 vehicles per day will be considered for part-time reduced speed limits. Arterial roads that abut a school will be considered for a part-time reduced speed zone. The lower speed limit will be applicable to the section of road that is contiguous to the school and for 150metres along the road on either side of the school property. The limits of lower speed limit may be extended if it results in an adjacent speed limit that is too short to adequately enforce.

The part-time reduced speed limit will be in effect during the times of the day when students are walking to and from school, as prescribed by municipal by-law. The part-time speed limit will be displayed through the signing arrangement show in Figure 1.



Arterial roads have a primary purpose of moving traffic. Lower speed limits are generally contrary to this explicit purpose. However, recognizing the need to provide for the safety of school-aged pedestrians en route to school, it may be appropriate to slow the maximum permissible speed of motor vehicle traffic. The time-limited speed limit strikes a balance between the safety of school children and the need to ensure mobility through the City.

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**Local Roadways** - The speed limit on local roads that are contiguous to schools may be reduced to 40 km/h at all times of the day, where appropriate. The full-time 40 km/h speed limit will extend for a minimum of 150 metres along the road on either side of the school, and may be extended if this results in an adjacent speed limit that is too short to adequately enforce.

Speeds on local streets are typically low, and there is no undue hardship imposed by a full-time 40 km/h speed limit. The 40km/h speed limit highlights the presence of the school and the school children, and therefore increases their safety.

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**Appendix "B" to Report PW09075**

**Calculation Sheet for Determining Posted Speed Limit from Transportation Association of Canada - Canadian Guidelines for Establishing Posted Speed Limits**

		<b>Automated Speed Limit Guidelines</b>		Version: 10-Apr-09
<b>FORM A - Automated Speed Limit Guidelines Spreadsheet</b>				
Name of Corridor: <input style="width: 100%;" type="text"/>				
Segment Evaluated: <input style="width: 45%;" type="text"/>		to <input style="width: 45%;" type="text"/>		
Geographic Region: <input style="width: 100%;" type="text"/>				
Road Agency: <input style="width: 100%;" type="text"/>				
Road Classification:	<input style="width: 300px;" type="text"/>	Length of Corridor:	<input style="width: 100px;" type="text"/>	m
Urban / Rural:	<input style="width: 300px;" type="text"/>	Design Speed: (Required for Freeway, Expressway, Highway)	<input style="width: 100px;" type="text"/>	km/h
Divided / Undivided:	<input style="width: 300px;" type="text"/>	Current Posted Speed: (For information only)	<input style="width: 100px;" type="text"/>	km/h
Major / Minor:	<input style="width: 300px;" type="text"/>	Prevailing Speed: (85th Percentile - for information only)	<input style="width: 100px;" type="text"/>	km/h
# Through Lanes Per Direction:	<input style="width: 300px;" type="text"/>	Policy: (Maximum Posted Speed)	<input style="width: 100px;" type="text"/>	

RISK		Score	
A1	GEOMETRY (Horizontal)		
A2	GEOMETRY (Vertical)		
A3	AVERAGE LANE WIDTH		
B	ROADSIDE HAZARDS		
C1	PEDESTRIAN EXPOSURE		
C2	CYCLIST EXPOSURE		
D	PAVEMENT SURFACE		
E1	<b>NUMBER OF INTERSECTIONS WITH PUBLIC ROADS</b>	<i>Number of Occurrences</i>	
	STOP controlled intersection		
	Signalized intersection		
	Roundabout or traffic circle		
	Crosswalk		
	Active, at-grade railroad crossing		
E2	<b>NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS</b>	<i>Number of Occurrences</i>	
	Left turn movements permitted		
	Right-in / Right-out only		
E3	<b>NUMBER OF INTERCHANGES</b>	<i>Number of Occurrences</i>	
	Number of Interchanges along corridor		
F	ON-STREET PARKING		

**Total Risk Score:**

**Recommended Posted Speed Limit (km/h):**

As determined by road characteristics

As determined by policy

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

**Comments:**