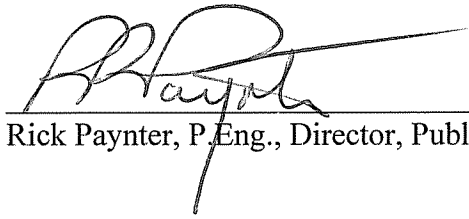

HALIFAX REGIONAL COUNCIL
January 21, 2003

TO: Mayor Kelly and Members of Regional Council

SUBMITTED BY:



Rick Paynter, P.Eng., Director, Public Works and Transportation

DATE: January 7, 2003

SUBJECT: Effectiveness and Safety of Short-Cutting Chicanes

INFORMATION REPORT

ORIGIN

At the December 3, 2002 Regional Council meeting, Councillor Whalen moved that “staff provide a report addressing both the effectiveness of the chicanes and the perception that chicanes are dangerous.” This report is in response to that request.

BACKGROUND

An August 27, 2002 report to Regional Council recommended the approval of the permanent installation of chicanes to complete a project undertaken on Romans Avenue. In addition to approving that staff recommendation, Regional Council requested information on the effectiveness of chicanes and a status follow up on the Province's willingness to approve posted speed limits lower than 50 km/h. A Report to Council was provided at the November 19, 2002 Council meeting. Councillor Whalen, at the December 3, 2002 asked that a report be provided that discussed the effectiveness of the chicanes as well as the perception that chicanes are dangerous.

DISCUSSION

Effectiveness:

Information from a number of sources related to chicanes was compiled by staff and is summarized below. The experience in Halifax with chicanes has been too limited to generate meaningful data regarding speeds. Staff will continue collecting data at traffic calming sites to generate comparative data.

In a United Kingdom study¹, two-way chicanes had an average speed of 43 km/h and an 85th percentile speed² of 50 km/h. This was an 18 km/h reduction in speed from the before case.

In Seattle, Washington³, chicanes showed reductions of average speed of 8 to 21 km/h within the device. Between chicanes, average speed fell by 8 km/h. Of more importance was the reduction in high end speeders. At one location, the number of motorists exceeding the speed limit of 40 km/h dropped from 39 percent to 3 percent.

Reductions from 48 km/h to 37 km/h and from 45 km/h to 34 km/h were observed at two-way chicanes in Nepean, Ontario. No significant reduction in speed was measured between chicanes. In Scarborough, Ontario, a reduction in speed from 50 km/h to 44 km/h was measured⁴.

Speed Limits:

With regard to speed zones, the province has restated their position that posting speeds below 50 km/h has not proven to be effective in reducing actual travel speeds. The Province has, however, indicated a willingness to co-sponsor an independent review of urban speed zone practices across the country. HRM staff will participate with the Province in having this review conducted.

Safety:

The chicanes recently made permanent on Romans Avenue and potentially to be used at other locations in HRM were designed and installed following the guidelines in the Transportation Association of Canada *Canadian Guide to Neighbourhood Traffic Calming*. The *Canadian Guide* does not contain any discussion regarding safety problems with chicanes installed as suggested. Staff did a literature and Internet search for information regarding the relative safety

¹UK Department of Transport Traffic Advisory Leaflet 12/97 Chicane Schemes.

²85th percentile speed is the speed at which 85 percent of vehicles are traveling at or below.

³www.usmayors.org/uscm/uscm_projects_services/health/traffic/best_traffic_initiative_seattle.htm

⁴*Canadian Guide to Neighbourhood Traffic Calming*; Transportation Association of Canada.

of two-way, two-lane chicanes. There was little evidence found.

The FHWA⁵ publication *FHWA Course on Bicycle and Pedestrian Transportation* says that

“A reduction in sight lines should not be used in isolation to reduce speeds, as alone, this could be potentially dangerous. A reduction in sight lines may be appropriate to avoid excessive land taking or as a reinforcing measure only where other physical features are employed that reduce speed.

Chicanes offer a good opportunity to make environmental improvements through planting. However, preference should be given to low-lying or slow-growing shrubs to minimize maintenance and ensure good visibility.

Measures should be employed to ensure that chicanes are clearly visible at night.”

The chicane design used in HRM meets these requirements. Sight lines are maintained by keeping the chicanes themselves low and using low-growing perennial plants. There are numerous signs employed on the chicanes including “Object Markers”, “Delineators” and painted curbs and centre line. The chicanes are near or under street lights.

HRM staff contacted two of the members of the Transportation Association of Canada project steering committee that oversaw the preparation of the *Canadian Guide to Neighbourhood Traffic Calming*, including the chair of the committee. These people said that the question of safety had come up in their considerations and was regarded as being handled properly if the chicanes were well visible and that the chicanes did not obscure visibility of cyclists, motor vehicles and pedestrians beyond the chicanes. As mentioned above, these criteria are met.

The City of Seattle, Washington, has experimented with chicanes and not found any particular safety issue with them.

The United Kingdom Department for Transport has published a number of information leaflets about traffic calming devices, including chicanes. In the Departmental leaflet *A Road Safety Good Practice Guide* the following statements are made:

Limited accident data for chicane schemes indicate a reduction in injury accidents (54%) and accident severity. Current ... data show that injury accidents at chicanes or narrowings in urban areas have been reduced, on average, by 47%.⁶

⁵ Federal Highway Administration (USA).

⁶ Includes both one-lane and two-lane chicanes.

Although chicanes have shown an overall reduction in injury accidents, vehicles are known to have collided with the kerb buildouts at some chicanes resulting in damage only and injury accidents. Traffic Advisory Leaflet 12/97 gives guidance on the location and signing of chicanes and the need to check and maintain signs and illumination.

The Traffic Advisory Leaflet 12/97 mentioned indicates that signing and illumination need to be prominent and checked regularly. There is particular concern when normal approach speeds are higher than 50 km/h. United Kingdom chicanes appear to have considerably fewer signs and markings than North American versions.

A trial of the chicanes recently made permanent was in place on Romans Avenue for approximately one year. During that time there were no collisions reported as a result of or involving the chicanes. Romans Avenue between Bayers and Mumford, but not including the intersections with Bayers and Mumford, had seven collisions reported since 1997. These involved drivers failing to yield when turning left at Vaughan, following too close at Ward and at Vaughan, and making an improper turn at Vaughan and at Ward.

Therefore staff has concluded that the chicane design used in HRM is sufficiently safe and effective to be used as one tool in reducing short-cutting behaviour.

BUDGET IMPLICATIONS

There are no budget implications at this time.


FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN

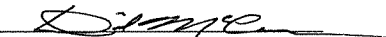
This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

There are no recommended alternatives.

Additional copies of this report and information on its status can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

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ADT/bmh