HALIFAX
REGIONAL MUNICIPALITY

PO Box 1749
Halifax, Nova Scotia
B3J 3A5, Canada

Item No. 1
Halifax Regional Council
September 14, 2010

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY: Original Signed by Acting Director

Ken Reashor, P. Eng., A/Director, Transportation and Public Works

DATE: August 25, 2010

SUBJECT: Roundabouts

INFORMATION REPORT

ORIGIN

Regional Council meeting of June 15th, 2010, Item 11.1.

"MOVED by Councillor Blumenthal, seconded by Deputy Mayor Johns, that Halifax Regional Council approve that the staff proposal for a roundabout at the intersection of Duffus Street, Novalea Drive and Devonshire Avenue be abandoned and, instead, that the present system of traffic lights and pedestrian signals be retained, upgraded and/or replaced as necessary.

Councillor Blumenthal advised Council that he has received 604 responses by email and telephone regarding the roundabout proposal. He added that 97.1 percent of those respondents were against the roundabout proposal.

The following points were brought forward during the discussion on the motion:

- it would be beneficial to receive staff input regarding the process of the roundabout to date
- that staff consult with the area Councillor and have public consultation before planning potential roundabout sites
- that staff consult with the Active Transportation Advisory Committee
- safety and availability for pedestrian access, disabled/visually impaired access at roundabouts
- safety and availability of cyclist access at roundabouts
- that Council continue to work and listen to their constituents on matters affecting

"**MOVED by Councillor Watts, seconded by Councillor Hum that staff prepare an Information Report to Regional Council:**

1. Providing information on the process and feedback received from residents during the public meeting, including staff responses, on issues brought forward during the Duffus Street/Novalea Drive/Devonshire Avenue roundabout public information session, including specifics on the following items:

a) Pedestrian Access
b) Cycling Access
c) Disabled persons and visually impaired persons access.

2. That staff attend a future Active Transportation Advisory Committee meeting to provide information on roundabouts and receive Committee feedback.

3. That staff communicate plans by providing preliminary consultation to District Councillors and that staff initiate public engagement at the beginning of the planning of any proposed roundabout sites.

MOTION WAS PUT AND PASSED"

BACKGROUND

On May 11, 2010, Halifax Regional Council adopted in principle the use of modern roundabouts on municipal roads where appropriate design guidelines and standards can be met. In this report the intersection of Duffus Street/Novalea Drive/Devonshire Avenue was identified as an ideal location for a roundabout for several reasons, including:

1. Intersection geometry: This intersection has five entry/exit points with multiple lanes on each approach. Due to the geometry, this intersection has three phases in its signal timing plan which creates complex movements and additional wait times for both pedestrians and vehicles. This multi lane set of traffic signals would have been reduced to a single lane roundabout which would have reduced needless wait times, removed the complexity of turning vehicles, and provide shorter pedestrians crossings.

2. Age: The existing set of traffic signals were installed in 1966 and are in need of replacing. Due to the proven safety benefits, HRM determined a roundabout should be considered at this location.

3. Pedestrian Crossing Distance: Currently the crossing distance for pedestrians are long. For example, to cross the west side of Duffus Street the crosswalk length is currently 20m. With the implementation of a roundabout that lengthy crossing would have been reduced to two 5m crossings with a splitter pedestrian refuge island separating the inbound and outbound traffic. Also, at the existing traffic signals even though a pedestrian has a walk light, that pedestrian must still be aware of left turning, right turning, and red light running vehicles whereas at a roundabout, a pedestrian would only have to deal with one direction of travel by a vehicle, either exiting or entering traffic, when crossing.

4. Community Enhancement: A roundabout is more aesthetically pleasing than a traffic signal. The center island of a roundabout can be used for a community sign, landscaping, public art, etc.

DISCUSSION

On June 2, 2010, a Public Information Session was held at St. Stephen's School, 3669 Highland Avenue, in Halifax from 7pm to 9pm. Information regarding this session was received by the public via public service announcements, an ad in the community newspaper, and letters hand delivered by Councillor Blumenthal. Upon arrival, residents could obtain the Transport Canada pamphlet (Council received this on May 11, 2010) on roundabouts and were encouraged to sign in (97 residents signed in). There was a comment box available so that those wishing to leave a comment were welcomed to do so (20 residents left comments, 6 in support and 14 not in support of a roundabout at this location). HRM Traffic and Right of Way staff presented to approximately 250 residents and several copies of the Concept Plan were available for the residents to review. The presentation was very similar to the one presented to Council on May 11, 2010. Upon conclusion of the presentation residents were encouraged to address staff with concerns and comments. Residents did this by forming a line and delivering questions via a microphone. Many of the concerns expressed by residents included pedestrian crossing safety in particular children, the elderly, and the visually impaired, and that HRM was forcing national standards and new technology on an intersection that didn't have safety or congestion concerns. In attempts by staff to help the residents understand that roundabouts are applied for various reasons not just in congested areas or where safety concerns exist, the answers were met with resistance.

The meeting concluded at 9pm with the residents unconvinced that a roundabout was the best option for the intersection of Duffus Street/Novalea Drive/Devonshire Avenue. Upon exiting the meeting Councillor Blumenthal had a station set up whereby residents could sign a petition either in favour or against a roundabout at this location. Results of this petition were presented to Council on June 15, 2010.

While staff was cleaning up several members of the public came up to compliment staff on a good presentation and to apologize for the overall response by the general public. These people were in favour of a roundabout at this location but felt it difficult to express such statements at this meeting due to the overall hostility of the crowd.

Questions asked by residents included:

- What is the cost of a roundabout?
- Where is the data to support the roundabout?
- A roundabout is not recommended for the visually impaired, what are you going to do to guarantee safety?
- How does a neighborhood's wants get taken into account?

- Can we afford this?
- Are you doing this for the developers?
- Is this considered to be the first roundabout?
- Will there be another meeting before construction?
- Concern over funneling more traffic through the neighbourhood. Concern that by implementing a roundabout at this location HRM wanted to encourage more traffic to utilize this intersection.
- Why is HRM applying national standards to an intersection in north end Halifax.
- Why this intersection, why not the intersection of North Park/Trollop/Rainnie/Ahern/ Cogswell?
- Is a roundabout being considered to increase traffic flow or considered because the lights are in need of replacing?
- Expressed concern about construction time for a roundabout versus construction time to replace signals.
- Expressed concern about business and residential access and egress near the roundabout.
- Felt that the presentation lacked information.
- Expressed that maybe this intersection was not the best starting point for roundabouts.

In general, the following outlines staff's response to the above questions. Keep in mind that many of the questions could not be answered by staff because the detailed design had not been completed. Staff presented a concept based on traffic and pedestrian volumes and existing geometry. Because roundabouts are being supported as being safer than traffic signals internationally, nationally, and locally, a roundabout at this location was identified as an option. Residents were informed:

- Significant review and design to accommodate pedestrians (including the visually impaired, children, and the elderly) would be undertaken before final approvals were given including meetings with special interest groups (i.e., CNIB or Visually Impaired Safe Travel Advocates or VISTA committee, etc.) so that all needs of the community could be incorporated into the design where appropriate.
- Only preliminary costs could be provided for the proposed roundabout as a detailed design had not been completed.
- It was HRM's intention to complete the detailed design for a roundabout.
- The first roundabout in HRM is the Armdale roundabout. In 2010/2011 the Province will be implementing 6 new roundabouts within HRM including two that will be owned by HRM.
- Further public consultation would have been undertaken by HRM if this roundabout had proceeded to design.
- It was HRM's intention to provide a safer intersection for pedestrians and vehicles as well as a more aesthetically pleasing option for the community, not entice more vehicles to utilize this intersection.
- This intersection was selected for a potential roundabout because of the requirement to replace the aging traffic signals, the low traffic volumes, and the long pedestrian crossing distances.

- HRM applies National standards in every design it undertakes regardless of its location.
- Construction times would have been similar for a roundabout or a new set of traffic signals.
- A traffic model of this intersection was completed and identified it as a good candidate for a single lane roundabout. This single lane roundabout would replace the multiple entry and exit lanes that exist.

In response to the specific items identified by Council, staff provided the following responses to the residents:

Pedestrian Access
Roundabouts provide for one way traffic flow and the elimination of turning movements, the number of conflict points is reduced compared to a standard set of signals. As a result, roundabout pedestrian crossings are generally safer than signalized intersections. Staff identified that pedestrians currently crossing Duffus Street had to cross 20m of asphalt while watching for left turning, right turning, and red light running vehicles. Whereas, the proposed roundabout offered two 5m crossings with a pedestrian refuge to split the entering and exiting traffic. As stated above this single lane roundabout would replace the multiple entry and exit lanes that currently exist further making it easier and safer for pedestrians to cross.

Cycling Access
The current practice of treatment of cyclists in roundabouts creates a generally accessible and safe environment for pedestrians, cyclists, and vehicles. National Cooperative Highway Research Program (NCHRP) 572 indicates current practice results in a relatively low occurrence of pedestrian-vehicle and bike-vehicle conflicts. The majority of bike related collisions at roundabouts are entry/circulating with the entering vehicles hitting the circulating bike. Very good entry path deflection will slow down entering traffic and minimize bike crashes and would be undertaken as part of the detailed design.

The roundabout would be designed to offer a cyclist the choice of proceeding through the roundabout as either a vehicle or a pedestrian. In general, cyclists are better served by treating them as vehicles. However, the best design provides options to allow cyclists of varying degrees of skill to choose their more comfortable method of navigating the roundabout. To accommodate cyclists traveling as a vehicle, bike lanes should terminate in advance of the roundabout to encourage cyclists who prefer not to use the roundabout to choose an alternate. A widened sidewalk or a shared bike/pedestrian path may be provided (similar to the Armdale Roundabout), but would most likely not be provided in this instance due to it being a low volume, single lane, roundabout.

Disabled persons and visually impaired persons access
The absence of stopped traffic presents a problem for pedestrians with vision impairments in crossing streets. It is true that traffic signals at conventional intersections establish a stop-and-go pattern that can assist blind and visually impaired pedestrians in crossing busy streets by producing audible cues about vehicle movements. However, a large majority of Halifax intersections are not

controlled by traffic signals. The absence of stopped traffic, while potentially problematic for pedestrians with vision impairments, is a frequently encountered condition. Compared with conventional intersections, roundabouts can provide improved access and safety for visually impaired pedestrians as well as sighted individuals because of specific roundabout design and operational characteristics. First and foremost, traffic speeds within roundabouts are very low, typically between 25-35kph, compared with considerably higher traffic speeds at most traffic signals and stop sign controlled intersections. Pedestrian refuge islands at roundabouts provide for short crossing distances. Currently, the pedestrian crossing across Duffus Street is 20m, with a roundabout this would be reduced to two 5m crossings with a pedestrian refuge between crossings. Also, roundabouts are relatively simple intersections that eliminate left turns, right turns, and the associated turning vehicle conflicts common at conventional intersections. By comparison, conventional intersections are characterized by higher traffic speeds, longer crossing distances, and are more complex due to two-way traffic flow and frequent vehicles turning movements. The combination of low traffic speeds, short crossing distances, and absence of turning vehicles provide safe crosswalks for visually impaired pedestrians at many roundabouts.

Additional measures that could enhance safety include textured pavement in conjunction with ramps to help lead the visually impaired pedestrian to the crosswalks, raised crosswalks that can further slow entering and exiting vehicles, and pedestrian yield signs in both directions of the crossing that require drivers to stop for pedestrians waiting on the crosswalk. Pedestrian channelization can be achieved by means of landscaping, railings, bollards with chains, and similar devices to prevent prohibited pedestrian crossings to the centre island. As long as there isn't a protected pedestrian phase (which is the case for all of the signalized intersections in HRM), pedestrians are in conflict with turning vehicles. To further clarify, a pedestrian may have a walk light to cross at a signalized intersection but a vehicle heading along that same corridor also has a green light to turn left or right across that pedestrian walk light. Even though a pedestrian has the right of way, they should still be aware of turning vehicles which is similar to a pedestrian crossing a crosswalk at a roundabout. Even though the pedestrian has the right of way they should still be aware of exiting or entering vehicles.

HRM continually researches ways, and there is ongoing research being completed around the world, to determine the most effective strategies for making roundabouts accessible for the visually impaired. Proper design cannot be overstated. Good design is critical to the success of a roundabout.

With respect to item 2 in the origin of this report, as discussed in the May 11, 2010 presentation to Council on the "Applicability of Roundabouts on HRM Roads", public education is a vital part of gathering acceptance for roundabouts with residents, special interest groups, and Council. It was, and still is, our intention to meet with special interest groups to provide information and receive feedback from them. Special interest groups include the CNIB, the Active Transportation Advisory Committee, schools, emergency response staff, Metro Transit, and other groups. Since the public information session HRM staff have had discussions with the CNIB and obtained a copy of the

CNIB publication entitled "Clearing our Path" which describes methods in which to better accommodate the visually impaired pedestrian at roundabouts as well as met with the VISTA Committee. HRM staff are scheduled to be in attendance at the September 16, 2010 Active Transportation Advisory Committee to discuss roundabouts and receive feedback back from the committee.

With respect to item 3 in the origin of this report, since the June 15, 2010 Council, when Council requested this Information Report, the Traffic and Right of Way group made arrangements to have staff from our Community Engagement group come in to talk with us for a half day about improved methods for engaging the community. It is Traffic and Right of Way's intention to further meet with this group to help develop a plan for implementing other roundabouts around the City. At this time the plan is not finalized but is anticipated to include: meeting with the District Councillor(s), gathering all interested departments, and engaging the public once the preliminary details are analyzed.

BUDGET IMPLICATIONS

There are no budget implications associated with this report.

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN

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

COMMUNITY ENGAGEMENT

Community engagement was not deemed to be necessary in this process as it is an Information Report about a previous community engagement process.

A copy of this report can be obtained online at http://www.halifax.ca/council/agendasc/cagenda.html then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: Tanya Davis, P.Eng., Traffic Services Supervisor, 490.8425

Original Signed

Report Approved by: _____

Taso Koutroulakis, P.Eng, A/Manager of Traffic and Right of Way, 490-4816