

## EAC's Position on Roundabouts and Active Transportation

August, 2013

The Ecology Action Centre has noted an increasing trend to use roundabouts to improve intersections in the province of Nova Scotia. Through our research we have learned that roundabouts can be a great method to improve traffic flow and reduce traffic collisions. Properly designed roundabouts can reduce the speed of traffic going through intersections, reduce lanes of traffic, and bring an element of beauty to an urban street scape. It is possible for roundabouts to function well for all users, but careful consideration and design must be taken when adding this type of intersection to provincial and municipal transportation infrastructure.

In Nova Scotia cars must yield to pedestrians at all crosswalks, marked and unmarked, which tends to make roundabouts pedestrian-friendly, but can reduce the continuous traffic flow that is the largest benefit of roundabouts. Furthermore, motorists may be tempted to increase their speed in an attempt to exit the roundabout before needing to yield to and wait for a pedestrian to cross. Because of these factors, roundabouts tend to function less well in areas of high pedestrian traffic. Careful design can be implemented to mitigate these issues, as is noted in the study “Identifying Factors that Determine Bicyclists and Pedestrian-Involved Collision Rates that Affect Bicyclist and Pedestrian Demand at Multi-Lane Roundabouts”<sup>1</sup>. We encourage the reading of such documents and application of the principles within to make interactions between motorists and pedestrians in roundabouts pleasant and safe while reducing impacts on traffic flow.

Pedestrians with disabilities, especially with visual impairment, can have a difficult time safely crossing at roundabouts due to the movement of traffic being less predictable than in signalized intersections. Yielding by motorists, as happens in Nova Scotia, does make safe crossing more likely. However, other factors such as proper design, reduced speed, and technological treatments are also necessary to ensure maximum accessibility and safe use for citizens with disabilities, especially in multi-lane roundabouts<sup>2</sup>.

Cyclists are also very vulnerable users of roundabouts. The safest option for a cyclist is a single-lane roundabout with low speeds. Furthermore, cyclists should ride in the centre of their lane rather than ride on the right side of the road<sup>3</sup> and studies have shown that dedicated cycle lanes through roundabouts can actually cause increased collisions between cars and cyclists<sup>1</sup>. Multi-lane roundabouts, roundabouts with greater than 10,000 vehicles per day, or roundabouts with vehicle speeds greater than 50km per hour can be safe for cyclists, but special provisions, such as signalized bike crossing or grade separations, are recommended<sup>1</sup>.

Roundabouts can be a solution for some difficult intersections that exist in Nova Scotia, but they must be designed to meet the needs of all pedestrians, cyclists, and motorists. Careful consideration must be given to the volume of each transportation mode and the speed of motorized vehicles. The safety of all roundabout users, as well as the reduction of efficient traffic flow, is at risk if design and implementation do not take into account all of their needs. We, the Transportation Issues Committee of the Ecology Action Centre, would like to be invited to stakeholder meetings and public consultations when roundabouts are being considered in Nova Scotia, as we can contribute to discussions aimed at ensuring the needs of all potential roundabout users are considered and addressed.

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<sup>1</sup> Lindsay Arnold, “Identifying Factors that Determine Bicycle and Pedestrian-Involved Collision Rates that Affect Bicycle and Pedestrian Demand at Multi-Lane Roundabouts,” [<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2010/PRR-2010-34.pdf>], 2013.

<sup>2</sup> Bastian Schroeder *et al.*, “Crossing Solutions at Roundabouts and Channelized Turn Lanes for Pedestrians with Vision Disabilities,” [[http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_rpt\\_674.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_674.pdf)], August 2013.

<sup>3</sup> Philip Weber, “Accommodating Small and Large Users at Roundabouts,” [<http://www.tac-atc.ca/English/resourcecentre/readingroom/conference/conf2009/pdf/weber.pdf>], 2013.