

4

PROPOSED ROUNDABOUT AT KEELE STREET AND LLOYDTOWN-AURORA ROAD, TOWNSHIP OF KING

The Transportation Services Committee recommends the adoption of the recommendation contained in the following report dated August 15, 2012, from the Commissioner of Transportation and Community Planning.

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

This report informs Council of a proposed roundabout planned for the intersection of Keele Street and Lloydtown-Aurora Road in the Township of King.

3. BACKGROUND

Traffic signals are warranted at the intersection of Keele Street and Lloydtown-Aurora Road to address existing operational needs

Staff monitor intersection operations throughout the Region on a regular 3-year schedule. Intersection operations at the intersection of Keele Street and Lloydtown-Aurora Road (*See Attachment 1*) were reviewed in accordance with the Region's traffic control signal policy and it was concluded that signals are warranted to address existing operational needs associated with traffic volumes and vehicle delay.

A feasibility review was undertaken to determine if temporary or permanent traffic signals could be implemented without significant geometric/road improvements. Due to the existing intersection geometry, sightlines and property constraints, signalization of the intersection could not be completed without substantial geometric modifications to the existing intersection. As a result, the project was added to the Region's construction program.

Council has endorsed the implementation of roundabouts on Regional roads

Council has directed staff to review roundabouts as a potential option for all intersection improvements and has already endorsed a Staff report to implement a roundabout on

Dufferin Street at King-Vaughan Road. This is currently the only other location within the network of Regional roads where a roundabout is currently being proposed.

The proposed roundabout will be the first constructed on the Region's network of arterial roads

Preliminary design of the roundabout is underway and will be followed by detailed design, property acquisition and utility relocations. With construction planned for 2015, the proposed roundabout at the intersection of Keele Street and Lloydtown-Aurora Road will be the first to be constructed on a Regional road.

4. ANALYSIS AND OPTIONS

A roundabout is the preferred form of intersection control at the intersection of Keele Street and Lloydtown-Aurora Road

Based on the technical review of alternative intersection treatments, the implementation of a roundabout is preferred for the following reasons:

- Provides a transition between the 80 km per hour section to the east of Keele Street and the 60 km per hour section to the west.
- Improves traffic flow through the intersection by reducing congestion and delays along the Keele Street approaches.
- Improves overall intersection safety relative to a signal as approach speeds will be slower and right angle collisions are eliminated.
- The estimated capital cost (property and construction) and the long term operation and maintenance costs of a roundabout at this intersection is estimated to be lower than a signalized intersection by \$400,000 over the 20 year life of the asset.

York Region's Pedestrian and Cycling Master Plan designates Lloydtown-Aurora Road in the area of Keele Street as a rural cycling route

Dedicated bicycle lanes are not provided in a roundabout, as these lanes keep cyclists to the outside of the circulatory road where they are in conflict with exiting motorists. Cyclists will have the option of either navigating the roundabout as a pedestrian, by dismounting, or navigating the roundabout as a motorist by using the traffic lane.

The roundabout will be initially constructed with a single lane allowing for an expansion to two lanes in the future

Traffic growth forecasts suggest that a two-lane roundabout will be necessary by 2031; however, a single lane facility will be adequate until beyond 2021. Capacity improvements to either Lloydtown-Aurora Road or Keele Street in this area are not anticipated by 2031 in the current Transportation Master Plan.

The ultimate preliminary two-lane configuration of the roundabout is shown in *Attachment 2*.

A communication plan will be developed and implemented to inform residents and stakeholders of the roundabout and how it will affect them

Roundabouts are still an emerging concept in Ontario and the vast majority of road users are accustomed to standard signalized intersection operations. Based on the current construction schedule, the Keele Street and Lloydtown-Aurora Road roundabout would be the first roundabout to be implemented within York Region's network of arterial roads. Some of the key communications with stakeholders include:

1. Promoting education and awareness on roundabout operations prior to, and after, implementation of the roundabout.
2. Accommodating summer and winter road maintenance requirements.

Link to Key Council-approved Plans

Proposed improvements to the intersection of Keele Street and Lloydtown-Aurora Road are included in the Council-approved 2012 10-Year Roads Construction Program.

Improvements to the intersection of Keele Street and Lloydtown-Aurora Road will increase safety and mobility to road users, which aligns with the 2011 to 2015 Strategic Plan by continuing to deliver and sustain critical infrastructure and optimizing the transportation capacity in Regional corridors.

In addition, the project aligns directly with the Vision 2051 goal of *Interconnected Systems for Mobility* by reducing delays and congestion to ensure the safe and efficient movement of people and goods through a variety of transportation modes.

5. FINANCIAL IMPLICATIONS

The estimated capital cost, including property and construction, for this project is \$4,200,000. This estimate includes costs associated with improving the vertical geometry for the approaches to the intersection.

The project estimate allows for some local consultation, however, does not include any type of larger scale educational campaign should that be deemed necessary.

The improvements to the intersection of Keele Street and Lloydtown-Aurora Road have been identified in the Region's 2012 10-Year Roads Construction Program for construction in the year 2015. The project will be funded at 10 per cent from Tax Levy and 90 per cent from Development Charges.

6. LOCAL MUNICIPAL IMPACT

Staff from the Engineering Department of the Township of King are supportive of the preferred solution to construct a roundabout at the intersection of Keele Street and Lloydtown-Aurora Road. Regional staff will continue to work with staff from the Township of King throughout the detailed design and construction phases of the project.

7. CONCLUSION

A roundabout is a favourable alternative to traffic signals at the intersection of Keele Street and Lloydtown-Aurora Road. A roundabout will address operational concerns while reducing the potential for severe collisions at this location. A roundabout also provides a clear transition between higher and lower speed sections of Lloydtown-Aurora Road.

For more information on this report, please contact Brian Titherington, Director, Roads at Ext. 5901.

The Senior Management Group has reviewed this report.

(The two attachments referred to in this clause are attached to this report.)



Keele Street and Lloydtown-Aurora Road Location Plan

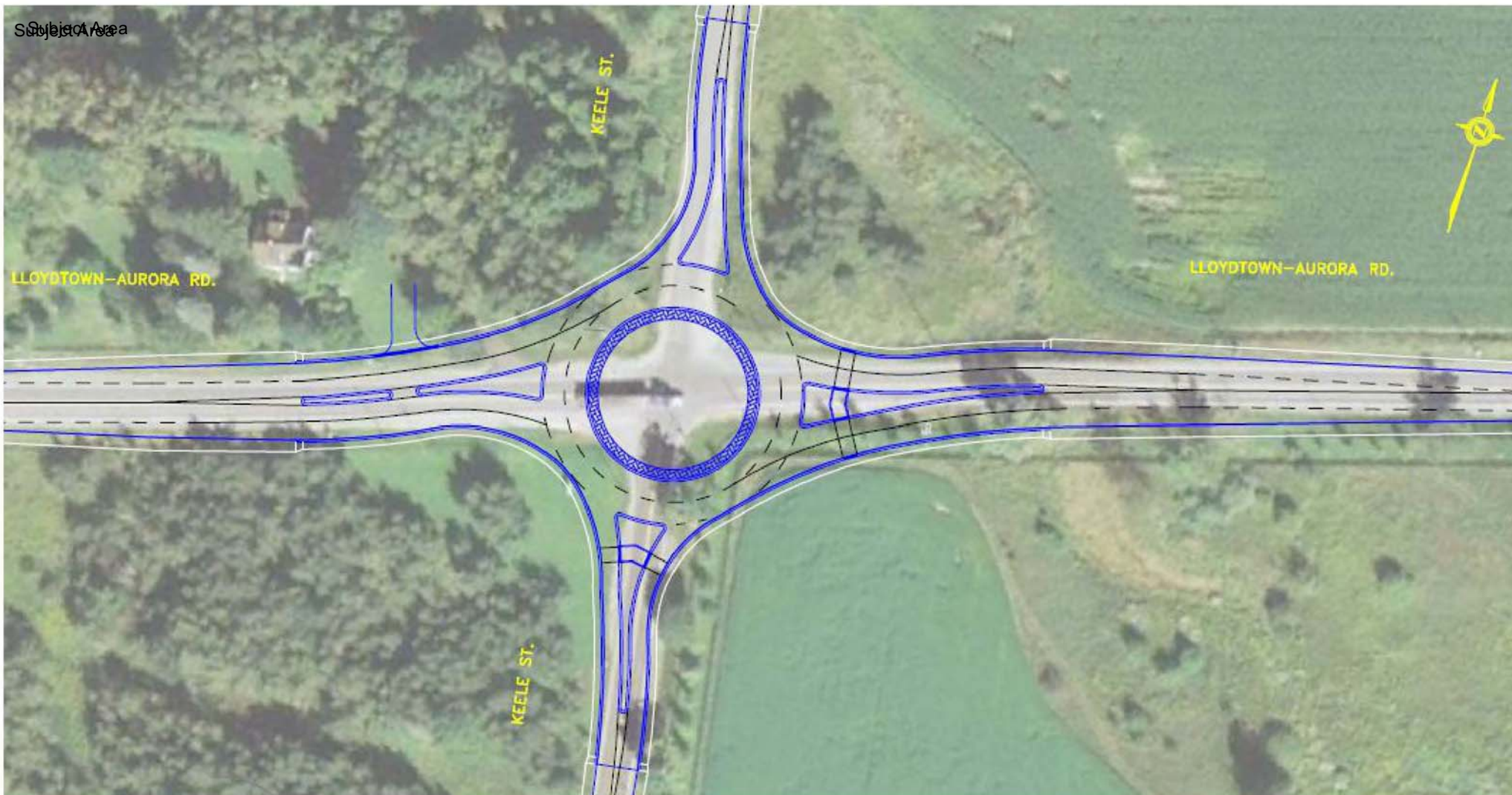
Proposed Roundabout
Intersection of Keele Street and Lloydtown-Aurora Road, Township of King
September 5, 2012



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Keele Street and Lloydtown Aurora Road Preliminary Design - Ultimate Roundabout Configuration

Proposed Roundabout
Intersection of Keele Street and Lloydtown-Aurora Road
Township of King
September 5, 2012