Recommendation

1. That Report TR-CW-35-18 regarding the intersection of Grey Road 19 and Grey Road 21 be received; and

2. That Grey County proceeds with an intersection roundabout design.

Executive Summary

Blue Mountain Resort sees in excess of two million visitors per year, most of whom arrive in personal vehicles. Traffic congestion around the resort is a growing issue, as there is significant residential development happening in the immediate area. A roundabout was installed at the intersection of Grey Road 119, Gord Canning Drive and Grey Road 19 in 2009 and functions well to keep traffic moving.

A project to make improvements to the intersection east of the resort at Grey Roads 19 and 21 has been underway since 2011. While a more expensive option than signalization, a roundabout is the recommended configuration for this location due to the long term improvements in traffic flow that can be achieved and the limitations of a signalized intersection.

Some further discussions regarding property acquisitions should be completed prior to finalizing the Municipal Class Environmental Assessment (MCEA). The intersection reconstruction is a shared project with the County of Simcoe.

Background and Discussion

In February 2011, R.J. Burnside & Associates Limited made a presentation to the Grey County
Transportation and Public Safety Committee indicating that a roundabout was the preferred option for the intersection of Grey Road 19 and Grey Road 21. Although this option was more expensive, it extended the efficient operation of the intersection from 10 years (with traffic signals) to 20 plus years (exact time not defined). The additional cost for a roundabout was, at that time, estimated to be just over $1,000,000.

In 2014, Grey County Transportation Services Department issued RFP-TS-19-14 to procure an engineering consulting firm to complete a MCEA and Intersection Design of the Grey Road 19 and Grey Road 21 intersection. The assignment was awarded to C.C. Tatham & Associates Ltd. (Consultant) in 2014.

The current MCEA is being completed as a Schedule B MCEA and hence Phases 1, 2 and 5 of the MCEA process is applied. To date, the Consultant has completed the following:

- Identification of the problem statement;
- Development of alternative solutions and inventory of affected environments;
- Evaluation of the alternative solutions and identification of the recommended alternative;
- Completion of a Public Information Centre (held on March 14, 2015);
- Identification of the preferred alternative;
- Preparation of the draft MCEA Report;
- Updated the existing traffic projections.

The draft MCEA Report was prepared and circulated to the County of Grey and County of Simcoe in August, 2015. In context of the evaluations completed at the time, which included a desire to consider the lowest cost option, a conventional and standard intersection improvement strategy was identified as the preferred improvement strategy (i.e. add additional through and turn lanes with permanent traffic signal control).

While a roundabout was identified as favourable to a standard intersection, the increased footprint resulted in greater property impacts and hence greater costs (particularly given the proximity of Mountainside Sports and the Town of The Blue Mountains’ water boosting station). At that time, Grey County was hesitant to consider such costs.

During the Counties’ review of the draft MCEA, there was further discussion with respect to the alternatives and consideration for roundabout control. The Consultant and Counties subsequently met in October, 2015, following which a number of refined roundabout solutions were prepared and circulated for review. In July, 2016, it was resolved that Grey County Staff would support a roundabout, as would Simcoe County and that the study evaluation should be revisited accordingly.

Currently, the Consultant is prepared to finalize the MCEA with a roundabout as the preferred option. In general, the majority of staff, residents and the consultant prefer a roundabout to a typical signalized intersection. The Town of The Blue Mountains staff has also indicated that a roundabout is preferred, although the Town is not a financial partner in the project, aside from the potential relocating of the pumping station.

The MCEA indicated four roundabout options. Roundabout Option 2 (a 50 metre radius roundabout) has been removed due to the operational concerns that it may create.
Roundabout Options

The remaining three roundabout options are attached to this document. All remaining roundabout options include a 60 metre outside diameter and two lane configurations.

**Roundabout Option 1**
- Roundabout centered in the existing intersection;
- The property acquisition costs for this option are the most extensive;
- The County has held very preliminary discussions with the owners of the properties required. At this time, it is unclear how acquisitions in this option would affect the cost of the intersection.

**Roundabout Option 3**
- Roundabout shifted 30 metres west;
- East to North movement is sharper than desired.

**Roundabout Option 4 (Preferred Option)**
- Roundabout shifted 17 metres west and 14 metres north;
- Avoids major property acquisitions;
- Spacing between legs most balanced.

The options were evaluated using the Roundabout Option Matrix. The matrix indicates that Option 4 is the preferred option.

Outstanding Tasks

The following tasks are outstanding upon approval of the roundabout option:
- Complete further analysis on Option 1 when further property acquisition costs are determined.
- Update the MCEA Report and circulate it for review and approval by Grey and Simcoe Counties;
- Place the updated MCEA Report on public record for 30 days and follow with the design stage of the project (assuming no issues stem from the public’s review).

Legal and Legislated Requirements

Transportation Services will continue to work with the Consultant and County of Simcoe to complete the design and MCEA.

Financial and Resource Implications

The roundabout option will result in a longer life of the intersection, as the proposed traffic signals will eventually not satisfy the needs of the intersection.

Currently, the Option 1 costs are projected to be significantly higher due to the required property
acquisitions. Discussions with the property owners are ongoing and a final acquisition cost has not yet been determined. This will impact the cost benefit of Option 1.

Relevant Consultation

☒ Internal
Grey County Committee of the Whole by way of this Report

☒ External
General Public
County of Simcoe
Town of The Blue Mountains

Appendices and Attachments

Grey Road 19 and Grey Road 21 Intersection Roundabout Matrix
Roundabout Option 1
Roundabout Option 3
Roundabout Option 4
<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Roundabout 1</th>
<th>Roundabout 3</th>
<th>Roundabout 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Description</td>
<td>• 2-lane roundabout (42m island + circulatory lanes = 60m outside diameter) with 2 exit lanes on each approach. • EB &amp; WB provide shared left- through and through-right lanes • NB &amp; SB provide left and through-right lanes • Roundabout is centred on the existing intersection.</td>
<td>• 2-lane roundabout (42m island + circulatory lanes = 60m outside diameter) with 2 exit lanes on each approach. • EB &amp; WB provide shared left-through and through-right lanes • NB &amp; SB provide left and through-right lanes • Roundabout is offset 30 m west of the centre of the existing intersection.</td>
<td>• 2-lane roundabout (42m island + circulatory lanes = 60m outside diameter) with 2 exit lanes on each approach. • EB &amp; WB provide shared left-through and through-right lanes • NB &amp; SB provide left and through-right lanes • Roundabout is offset 17 m west, and 14 m north of the centre of the existing intersection.</td>
</tr>
<tr>
<td>Physical Environment</td>
<td>✓ Acceptable operations will be provided with each option as geometry and design is comparable (Level of service B or better with minimal delays under both the 2029 and 2039 horizon years). ✓ Roundabout provides traffic operations, safety and environmental benefits over a signalized intersection. A roundabout is currently located at the intersection of Grey Road 19 / Grey Road 19 to the west; a future roundabout is to be constructed at Grey Road 19 / Crosswinds Blvd. (main access to Windfall) to the west, and the Town of Collingwood is currently considering a roundabout at Mountain Road / 10th Line to the east. From a corridor perspective, the preference is to construct a roundabout to ensure comparable operations and driver expectations throughout. ✓ Roundabouts are generally preferred to signalized intersections given improved safety and traffic operations and reduced environmental impacts. ✓ Future intersection improvements north of the roundabout on Grey Road 21 to provide access to the Windfall Development can be incorporated into all options. ✓ The roundabout alternatives will impact the water booster station (SW corner) and gas regulator station (NW corner). ✓ Above ground and underground telephone and gas in the area of the roundabout. ✓ Impacts to 30-32 utility poles. ✓ Commercial entrances within close proximity of the intersection will have to be closed.</td>
<td>✓ Acceptable operations will be provided with each option as geometry and design is comparable (Level of service B or better with minimal delays under both the 2029 and 2039 horizon years). ✓ Roundabout provides traffic operations, safety and environmental benefits over a signalized intersection. A roundabout is currently located at the intersection of Grey Road 19 / Grey Road 19 to the west; a future roundabout is to be constructed at Grey Road 19 / Crosswinds Blvd. (main access to Windfall) to the west, and the Town of Collingwood is currently considering a roundabout at Mountain Road / 10th Line to the east. From a corridor perspective, the preference is to construct a roundabout to ensure comparable operations and driver expectations throughout. ✓ Roundabouts are generally preferred to signalized intersections given improved safety and traffic operations and reduced environmental impacts. ✓ Future intersection improvements north of the roundabout on Grey Road 21 to provide access to the Windfall Development can be incorporated into all options. ✓ The roundabout alternatives will impact the water booster station (SW corner) and gas regulator station (NW corner). ✓ Above ground and underground telephone and gas in the area of the roundabout. ✓ Impacts to 26-28 utility poles. ✓ Commercial entrances within close proximity of the intersection will have to be closed. ✓ Entry to Mountainside Sports is reduced to two accesses, both of which will be within close proximity of the roundabout.</td>
<td>✓ Acceptable operations will be provided with each option as geometry and design is comparable (Level of service B or better with minimal delays under both the 2029 and 2039 horizon years). ✓ Roundabout provides traffic operations, safety and environmental benefits over a signalized intersection. A roundabout is currently located at the intersection of Grey Road 19 / Grey Road 19 to the west; a future roundabout is to be constructed at Grey Road 19 / Crosswinds Blvd. (main access to Windfall) to the west, and the Town of Collingwood is currently considering a roundabout at Mountain Road / 10th Line to the east. From a corridor perspective, the preference is to construct a roundabout to ensure comparable operations and driver expectations throughout. ✓ Roundabouts are generally preferred to signalized intersections given improved safety and traffic operations and reduced environmental impacts. ✓ Future intersection improvements north of the roundabout on Grey Road 21 to provide access to the Windfall Development can be incorporated into all options. ✓ The roundabout alternatives will impact the water booster station (SW corner) and gas regulator station (NW corner). ✓ Above ground and underground telephone and gas in the area of the roundabout. ✓ Impacts to 29-31 utility poles. ✓ Commercial entrances within close proximity of the intersection will have to be closed. ✓ Entry to Mountainside Sports is reduced to two accesses, both of which will be within close proximity of the roundabout.</td>
</tr>
<tr>
<td>Natural Environment</td>
<td>✓ No major issues/impacts/constraints have been identified with respect to the natural environment as the surrounding areas are primarily developed or have been identified for development. ✓ The west side of the intersection is within a regulated Nottawasaga Valley Conservation Authority (NVCA) floodplain area and hence an NVCA permit will be required prior to commencement of works. ✓ All options are considered feasible and will have similar and minimal impacts (slightly greater possible impacts with Roundabouts 3 &amp; 4).</td>
<td>✓ No major issues/impacts/constraints have been identified with respect to the natural environment as the surrounding areas are primarily developed or have been identified for development. ✓ The west side of the intersection is within a regulated Nottawasaga Valley Conservation Authority (NVCA) floodplain area and hence an NVCA permit will be required prior to commencement of works. ✓ All options are considered feasible and will have similar and minimal impacts (slightly greater possible impacts with Roundabouts 3 &amp; 4).</td>
<td></td>
</tr>
<tr>
<td>Social Environment</td>
<td>✓ NW corner: No property impacts, widenings have been obtained from Windfall on both Grey Road 19 &amp; 21. ✓ NE corner: 30m x 30m daylight triangle required (446 m²). ✓ SW corner: 9m widening along Grey Road 19 (711 m²). ✓ SE corner: To acquire Mountainside Sports - minor widening along Mountain Road - minor widening along Grey Road 19 (1687 m²). ✓ Greatest property impacts with Roundabout 1 given the location of Mountainside Sports (2844 m²). ✓ Roundabout 3 has the least impacts of improvements (1398 m²).</td>
<td>✓ NW corner: No property impacts. ✓ NE corner: 30m x 30m daylight triangle required (446 m²). ✓ SW corner: 6m widening along Grey Road 19 (967 m²). ✓ SE corner: 5m x 5m daylight triangle required (13 m²). ✓ Roundabout 3 has the least impacts of improvements (1398 m²).</td>
<td>✓ NW corner: 30m x 30m daylight triangle required (418 m²). ✓ NE corner: 30m x 30m daylight triangle required (446 m²). ✓ SW corner: 6m widening along Grey Road 19 (711 m²). ✓ SE corner: 5m x 5m daylight triangle required (13 m²). ✓ Roundabout 2 has slightly greater property impacts than Roundabout 3 (1588 m²).</td>
</tr>
<tr>
<td>Cultural Heritage Environment</td>
<td>✓ The Stage 1 Archaeological Assessment identified elevated potential for the recovery of Aboriginal and Euro-Canadian archaeological remains within undisturbed portions of the study area due to its close proximity (within 100 metres) to historic transportation routes and being partially within the former hamlet of Kirkville. Undisturbed areas include (but are not limited to) the slightly treed and overgrown area located beyond the existing right-of-way within the NE corner, the wooded areas along the NW limit, and the grassed area along the SW limit of the study area.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation Criteria</td>
<td>Roundabout 1</td>
<td>Roundabout 3</td>
<td>Roundabout 4</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
|                      |   ✓ All identified areas which contain archaeological potential must be subjected to a Stage 2 Archaeological Assessment.  
|                      |   ✓ All options have similar requirements and are considered feasible.  
| Economic Environment |   ✓ Greatest costs for relocation of utility poles (but likely comparable between all options given the extent of work)  
|                      |   ✓ Comparable costs to construct the roundabout between all options given the same size and geometry  
|                      |   ✓ Extent of road work on approaches is least given roundabout is centred in the intersection  
|                      |   ✓ Overall roundabout construction cost is likely less with Roundabout 1 as compared to Roundabout 3 or Roundabout 4.  
|                      |   ✓ Additional costs to relocate water booster station and gas regulator station ($0.75M to $1.0M estimated).  
|                      |   ✓ Roundabout maintenance is cheaper than traffic signal maintenance ($2000 vs $5000 per year).  
|                      |   ✓ Greatest property costs (Mountainside Sports property estimated at $1M-$1.25M).  
|                      |   ✓ Lowest cost for relocation of utility poles (but likely comparable between all options given the extent of work)  
|                      |   ✓ Comparable costs to construct the roundabout between all options given the same size and geometry  
|                      |   ✓ Extents of road work on North-South legs are greater than Roundabout 1 and Roundabout 4 given offset location; extents on East-West legs are greater than Roundabout 1 but less than Roundabout 4 (Roundabout 3 is centre on East-West road).  
|                      |   ✓ Overall roundabout construction cost is likely more than Roundabout 1 given increased extents of work; likely comparable to Roundabout 4.  
|                      |   ✓ Minimal property costs. Property at Windfall can be acquired through Site Plan Approval.  
|                      |   ✓ Slightly greater property costs than Roundabout 3.  
|                      |   ✓ Property at Windfall can be acquired through Site Plan Approval.  

The cost to construct a signalized intersection and roundabouts are comparable. However, in considering the costs associated with relocating the water booster station and acquiring the Mountainside Sports property, the roundabout alternatives are 2x to 3x greater than signals.

**Recommendation**
Roundabout 4 is recommended for the following reasons:
✓ avoids Mountainside Sports and adjacent properties and still provides opportunity for access via both Mountain Road and Grey Road 19  
✓ alignment provides greater flexibility with respect to the East-West approaches and the opportunity to introduce approach curves to ensure approach speeds are reduced (the more tangential the approach, the greater the speed)  
✓ spacing between approach and departure legs is better suited (more uniform) as compared to Roundabout 3 (given that the shift from the centre of the existing intersection is not as significant)  
✓ reduced property impacts on the SW corner  
✓ while there will be impacts to the property on the NE corner, such, can be potentially reduced and mitigated accordingly through relocation of existing trees.

---

**TR-CW-35-18**

June 28, 2018