Town of Riverview
COUNCIL REPORT FORM

Presented to: Mayor & Council

Department: Engineering & Public Works

Date: April 22, 2026

Subject: Response to Council's Motion on Increasing Roundabout Adoption

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BACKGROUND

The engineering department has reviewed Council's request to expand roundabout implementation in new subdivisions and throughout the broader transportation network. The request highlights several well-documented operational and safety benefits of roundabouts, including reduced conflict points and lower collision severity, improved traffic flow, and introduce traffic calming. It was noted that the costs of converting existing intersections into roundabouts can be high: utilities need to be relocated, and land may need to be purchased, and further references the Pinewood/Pine Glen project, where the final cost approached $2 million. This demonstrates why a measured, demand-driven approach is needed.

The current review took into consideration the constraints of the development community expectations, capital planning, budget realities, and regional design practices. Instead of investigating locations for increasing the use of roundabouts as a traffic control device in the Town, the department focused on improving the current development process in order to better support the future needs of intersection traffic control devices using roundabouts as an option.

1. CAPITAL PROGRAM AND COST-SHARING CONSTRAINTS

From an engineering and asset-management perspective, the municipality currently lacks the fiscal capacity to undertake additional unplanned capital works of the magnitude associated with roundabout construction or intersection retrofits. Roundabouts, particularly in a retrofit situation, with active traffic requires:

- Significant geometric reconfiguration
- Potential utility relocations (water, sanitary, storm, telecom, and electrical)
- Potential right-of-way acquisition
- Drainage redesign and grading adjustments
- Construction staging that often disrupts existing traffic operations

The report (see attached) correctly notes that retrofits can cost 2–4 times as much as it would to build a roundabout from scratch on a newly constructed street. Even when roundabouts are developer-initiated, the municipality will typically be responsible for cost-sharing components tied to municipal infrastructure, including utility adjustments, the existing infrastructure,

oversizing capacity, and downstream network impacts. Given current budget constraints, the municipality cannot commit to such obligations at this time.

Situations where a developer would be responsible for the full cost of a roundabout are limited to cases where the proposed development itself requires a new roundabout, traffic signals, or mini-roundabouts within the development site. This would not apply when improvements extend from the existing street network. These cases are expected to be rare and would generally involve only large-scale developments, which Riverview has yet to see.

2. APPLICABILITY OF MINI ROUNDABOUTS

Based on technical guidelines from the Transportation Association of Canada (TAC) and supporting municipal standards like those from the City of Ottawa, the space requirements for a mini roundabout are defined by its Inscribed Circle Diameter (ICD) and its ability to fit within existing right-of-way or within the limits of the property.

Inscribed Circle Diameter (ICD): The typical diameter for a mini-roundabout ranges from 13 m to 27 m. Guidelines generally recommend they do not exceed 30 m; beyond this size, a standard single-lane roundabout is preferred.

Central Island Size: The central island itself is much smaller, often a painted and slightly domed raised section of the roadway constructed of either asphalt or concrete in some jurisdictions, with some standards specifying a diameter between 1 m and 4 m.

Minimal Footprint: A primary technical advantage of a mini roundabout is that it is designed to fit into a smaller area than a modern roundabout, sometimes within the existing right-of-way or even within existing curb lines.

Required Width: To be feasible, the right-of-way must be wide enough to accommodate the 13 m to 27 m ICD plus any adjacent sidewalks and pedestrian refuge areas, if required. If splitter islands are included for pedestrians, a minimum width of 1.8 m is required .

Comparison of Roundabout Types

Feature	Mini-Roundabout	Single-Lane Roundabout
Typical ICD	13 m – 27 m	28 m – 60 m
Central Island	Fully traversable (mountable)	Raised (often with truck apron)
ROW Needs	Low; usually fits existing footprint	Higher; often requires land acquisition

Mini roundabouts, if approved, could be considered at some of the existing all-way stop control intersections and future development projects. The selection criteria and feasibility would need to be developed in order to understand the benefit and reason for implementation.

The Town has 24 all-way stop intersections. Of these, only 2 may be appropriate locations to consider modifying to mini roundabouts. The two 2 possible candidates do not meet the warrant threshold to require this investment. The department will continue to monitor traffic volumes, history of noncompliance, collision history, and turning movement patterns.

Consideration

The design and consideration for mini roundabouts will need further consultation prior to any implementation and is not considered an approved intersection control option at this time. A separate feasibility study considering use of mini roundabouts in Town will be brought back to Council:

- ✓ Emergency services have not been consulted on the operational characteristics of mini roundabouts in this region.
- ✓ Snow clearing operations may present operational challenges for traversable island designs.
- ✓ Traffic volume criteria should be determined to help identify locations where investment in mini roundabouts may be most beneficial.
- ✓ Design criteria including size, signage, and design features for use on Town streets for implementing mini roundabouts should be established

3. FUTURE ROUNDABOUT INTEGRATION

Roundabouts remain a valid and effective intersection control strategy when warranted by traffic demand and supported by geometric feasibility. The engineering department along with the planning staff will continue to:

a. Integrate long range corridor planning

For major boulevards and collector road corridors, the engineering department and planning staff will identify potential future roundabout locations during the planning and subdivision design stages. This includes:

- Preserving adequate right of way
- Establishing appropriate intersection spacing
- Ensuring geometric continuity for future circular intersection design
- Avoiding fixed infrastructure placements that would impede future construction

This approach allows the municipality to safeguard future options without committing to immediate capital expenditures.

b. Apply warrant based evaluation

Roundabouts will be considered where traffic volumes, collision history, turning movement patterns, and network function justify their use relative to other control types (signals, All Way Stop control, or unsignalized priority control).

c. Maintain engineering and financial due diligence

Intersection control decisions will continue to be based on:

- TAC Geometric Design Guide for Canadian Roads
- Provincial design standards
- Lifecycle cost analysis
- Safety performance metrics
- Network-level operational modeling

4. CONCLUSION & RECOMMENDATION

The municipality acknowledges the safety and operational benefits of roundabouts as outlined in the report, including the reduction in conflict points and improved traffic flow. Roundabouts will continue to be considered the preferred intersection treatment when justified by traffic demand and engineering analysis, and the engineering department and planning staff will incorporate future roundabout opportunities into long-range corridor planning to ensure that the transportation network remains adaptable, safe, and cost-effective.

Modern roundabouts are currently being considered at the following existing intersections:

- ✓ Whitepine/Findlay
- ✓ Cleveland/Pinewood
- ✓ Robertson/Gunningsville/Pinewood

Intersections where the engineering is monitoring traffic where roundabouts should be further considered include the following locations:

- ✓ Whitepine / Trites
- ✓ Pine Glen/Gunningsville Blvd
- ✓ Gunningsville/Pinder/West Riverview Boulevard
- ✓ Runneymeade/Hillsborough
- ✓ All new intersections along Gunningsville Boulevard
- ✓ Cleveland/Gunningsville/Quinn
- ✓ All new intersections along West Riverview Boulevard

However, due to the requirement for municipal cost-sharing in development-driven projects and the significant capital implications of both new and retrofitted roundabouts, we recommend Council approves an approach that will enable the Town to improve its overall position towards future needs for roundabouts by proceeding the below motion.

Firstly, evaluating and protecting the necessary right-of-way width at key intersections to accommodate the future implementation of modern roundabouts will ensure that such requirements are applied only when a roundabout is deemed technically appropriate by a qualified engineer and supported by a Traffic Impact Study.

Secondly, include a dedicated operational budget line item for intersection upgrades studies in the 2027 draft budget to support the implementation of priority projects identified by the engineering department, starting with the review of the use of mini roundabouts.

Third, evaluate the long-term financial implications to the Town in establishing a dedicated capital budget line item for Intersection upgrades in the 2027 Draft Budget to support the implementation of priority projects identified by the engineering department.

CONSIDERATIONS

Financial: The motions, if adopted, would represent new budget item for both the operating and capital budgets.

Policy: The motions require an amendment to the municipal plan by-law and/or subdivision by-law.

Stakeholders: Council, staff, and residents.

Strategic Plan: The motions impact on the community is connected to all 5 strategic themes of the current plan: Safe and Inclusive Community, building a Sustainable Community, Thriving Community, Active and Engaged Community, and Service Excellence.

Interdepartmental Consultation:

The Engineering Department worked with the Traffic Committee, and the CAO in the preparation of this council report form. The report was brought at the leadership team meeting on April 21, 2026 for discussion and support.

Communication Plan: N/A

RECOMMENDATION FROM STAFF

We recommend Council directs staff to:

a) Identify and protect the necessary Right-of-Way width at key intersections to accommodate the future implementation of roundabouts.

b) Ensure such requirements are applied only when a roundabout is deemed technically appropriate by a qualified Engineer and supported by a Traffic Impact Study.

c) Incorporate these requirements into the Town's Municipal Plan or subdivision By-Law and development review process to ensure sufficient ROW space is secured during the land-severance or subdivision application stage.

d) Include an operational budget for intersection upgrade studies in the 2027 draft budget to support the implementation of priority projects identified by the engineering department, starting with the review of the use of mini roundabouts.

e) Consider the capital implications of future intersection upgrades as part of the yearly draft budget deliberation to support the implementation of priority projects identified by the engineering department.

f) Identify potential development charge contributions, cost-sharing agreements, or financing agreements with private developers.

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