



REPORT TO COUNCIL 2024-038

TO: Mayor Gerrits and Members of Council

FROM: Kevin Watson, Roads Supervisor
Sabrina VanGerven, Treasurer

DATE: May 1, 2024

SUBJECT: Structure Replacement Updates

Recommendation

Staff propose redirecting focus and resources towards evaluating Structures 37, 38 and 39 as potential sites for the temporary bridge installations desired by Council.

Background

At the March 6, 2024 Staff were directed to prepare a RFP (Request for Proposal) for replacement of Structure 21 and 36.

Analysis

Structure 21 and 36

Upon thorough evaluation by staff, it has been determined that Structure 21 and 36 would not be suitable candidates for a temporary prefabricated bridge replacement. This decision was reached due to the need to ensure that all structures greater than 3 metre spans adhere to stricter regulations than those under 3 metre span. Conducting geotechnical investigations is a standard practice for replacing or constructing culverts and bridge under the OSIM report. Geotechnical investigations are essential for minimizing construction risks and ensuring that the built structures are safe, stable and durable. These studies ensure that the infrastructure projects are built on a solid foundation and are typically done for the following reasons:

Safety and Stability

- Foundation Integrity – Geotechnical investigations help determine the type of foundation needed based on soil and rock properties. This is critical to ensure that the structure can support expected loads without risk of failure.
- Risk Mitigation – Identifying geotechnical hazards such as poor soil conditions, water seepage issues and potential for ground movement helps in designing structures that can withstand challenges that may be discovered.

Environmental Considerations

- Regulatory Compliance – Geotechnical investigations ensure that the design and construction practices are based on sound engineering principles and a thorough understanding of the site's geology may be required to obtain permits.
- Impact Assessment – Geotechnical investigations can also assess how changes in groundwater flow or soil stability could affect the environment.

Cost-Effectiveness

- Prevention Future Issues – A thorough geotechnical investigation can help avoid costly repairs or redesigns by addressing potential problems in the planning stage. Understanding the soil and rock characteristics can prevent unnecessarily robust and expensive designs by tailoring structure to the specific site conditions.

Longevity and Maintenance

- Design Life – Proper understanding of the subsurface conditions helps in designing culverts and bridges that can meet their expected design life with minimal maintenance needs.

It is the conclusion of staff that Structures 23, 37, and 39 present more feasible options for the implementation of temporary prefabricated bridge structures. These sites are characterized by lower traffic volumes and smaller span length, which align more appropriately with the capabilities and cost-efficiency of prefabricated bridge solutions.

Staff aim to proceed with the preparation of the RFP with the revised focus on structures 23, 37 and 39. This approach helps to ensure we are prioritizing efficiency and cost-effectiveness while addressing the immediate infrastructure needs of our community.

Structure 22, 23 & 40

RJ Burnside has been directed that CSP culverts are the Township's desired replacement option. Concrete precast box culverts are also to be entertained as an option. All three structures will be replaced with closed bottom culverts. Given the similar scope of construction work and to save on design and construction costs, it is anticipated that all three structures be combined into one tender. Structure 40 will be listed as provisional work, allowing flexibility to proceed with work if budget and coordination with the adjacent land development work in Waldemar permits.

The anticipated schedule is as follows:

- Survey, Preliminary Design and Investigations – May/June 2024
- Detailed Design and Drawings – Summer 2024
- Permits and Approvals Secured – Late Summer 2024
- Tender Package – Fall 2024
- Construction – Fall/Winter 2024

Conclusion

The purpose of this report is to keep Council informed on progress and insights that may influence project strategy as we continue to navigate these complex projects.

Attachments	
Appendix 1	Bridge Map

Strategic Plan Pillar: Manage an Efficient and Effective Township

Goal #2 Prudent long-term financial management

Strategic Plan Pillar: Expand Our Capacity to Serve

Goal #2 Identify and prioritize areas for service improvement

Respectfully Submitted,

Sabrina VanGerven, Treasurer

Approved by:
Nicole Martin, CAO/Clerk