



City of Hamilton Memorandum

To: Mayor and Members of
City Council

Date: July 16, 2025

Report No: PW25047(a)

Subject/Title: Sherman Cut Wall Replacement

Ward(s) Affected: Wards 3 and 7

Information

At the July 7th Public Works Committee, Report PW25047 Sherman Cut Steel Wall Replacement and Road Resurfacing – Request for Additional Funding was approved. As part of the report discussion, a concern was raised around the choice of materials for the wall replacement; being a concrete panel system as opposed to a steel crib wall system similar to the existing wall. Specifically, the concern was raised in light of recent US imposed steel tariffs and the significant impacts on Hamilton's steel industry.

The purpose of this memo is to provide further information on the different options considered for the wall replacement and the potential to support the local economy. The memo also provides an opportunity to highlight opportunities where steel and other locally produced materials are being used in other construction projects in the City.

For the Sherman Cut project, the preliminary design of the wall replacement was completed by Dillon Consulting in September 2024 and detailed design was completed in March 2025. The walls are located under the two bridges at Concession Street and Mountain Park Avenue and serve the purpose of protecting the bedrock supporting the bridge structures from weathering over time, and in turn ensuring the stability of the bridge foundations.

As part of the Preliminary Design project, three different wall replacement options were reviewed:

- Option 1: Constructed in-place concrete walls
- Option 2: Steel walls (similar to existing system)
- Option 3: Precast concrete panels with steel posts.

Options were reviewed based on a number of criteria including time required to construct (given impacts of access closures), lead time for materials, constructability, design performance and service life.

The main benefit of constructed in-place concrete systems is they do not require long-lead items to be ordered by the contractor, however, an extended period would be required to construct and cure the walls, especially if the walls are constructed in multiple stages. This requires the escarpment access to be closed for a longer period during construction.

Benefits associated with the steel wall system is that it is light weight and contributes ease and speed of installation. However, based on observations of the performance and maintenance requirements of the existing steel wall system, this alternative will be more prone to corrosion than concrete options resulting in a shorter service life of 10 to 15 years especially in a corrosive environment as an escarpment access due to excessive de-icing operations.

A wall system comprised of precast panels spanning between steel posts was the third option considered. The posts would be comprised of steel piles founded on concrete footings sitting on bedrock and stabilized with rock anchors. The prefabricated concrete panels provide better quality control at the manufacturing location. Careful material selection for the various components of the wall system was investigated to maximize the service life including premium concrete and reinforcing for the precast panels and coating system for the posts in addition to the ease of construction and procurement of the units.

The report recommended replacement for the Sherman Cut walls using precast concrete panels installed in between steel posts. This option will provide the best service life and will have a similar construction duration to the steel wall option, making it the best overall solution for these sites. This system is expected to last 75 years in comparison to the steel wall system which is prone to higher maintenance and corrosion providing a shorter life span.

It is important to note that any of the wall replacement options include a component of steel. Overall, the different systems would be similar in construction cost; however, from an overall lifecycle cost, Option 3 would have the lowest cost. The concrete panels are supported by large steel vertical posts. Each of the panels also have internal reinforcing steel rods.

Staff have confirmed with one of the potential panel manufacturers that the stainless-steel rods used in concrete panels can be sourced locally, depending on availability and as such, there is an opportunity for this project to support the local economy, both for pre-cast concrete and steel.

In reviewing the different products with suppliers, it has been somewhat difficult to ascertain the source of steel for the different options, as it appears to vary based on availability and market conditions. Furthermore, Council is advised that, for the full steel

wall system alternative, and at the time of this memo, staff has not been able to confirm if the steel would be Canadian or sourced internationally.

Opportunities to Support the Steel Industry and Local Economy

The discussion of options for the Sherman Cut Wall replacement has served to highlight the important link between capital infrastructure projects and our local economy. While safety and cost are key considerations in the design process, given recent economic challenges, the sourcing of materials is now very much a key consideration as well.

It is noteworthy that many capital projects in the City use steel in various ways. Example uses include steel reinforced concrete, railings, pipes, valves and numerous components. Gaining knowledge of the sources for these materials and components will enable choices to be made, where appropriate, that support our local, provincial and national economy.

Summary

Based on the review of options, it can be concluded that the preferred wall replacement consisting of precast concrete panels and steel posts does have a steel component, albeit less than the full steel crib wall system. While a full steel wall option could be utilized, this would require a revised design and tender package. The cost of this design is estimated at \$12K and would take approximately 6 weeks. There is no imminent danger due to the condition of the existing steel facing walls. However, the consultant noted that the replacement should be considered immediately due to the potential for aggregate spilling in the roadway causing traffic hazards.

Consultation

The following companies were contacted to gather information on their wall system products:

- Durisol Ltd.
- Atlantic Industries
- Armtec Inc.

Staff will continue to reach out to other companies to learn more about source materials and local content.

In addition, Dillon Consulting, who prepared the Preliminary Design Report were consulted regarding the evaluation of material options and timelines on project delivery.

Appendices and Schedules Attached

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OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

N/A

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