

Staff Report

Council Meeting Date: August 11, 2025

Subject: PWRDS-2025-06 - Paisley Fire Hall and Public Works Project Update

Report from: Nathan Van Myall, Project Manager

Attachments:

Recommendation

Be It Resolved that Council hereby receives for information Report PWRDS-2025-02 – Paisley Fire Hall and Public Works Project Update (2).

Background

The Municipality of Arran-Elderslie has initiated the construction of a new fire hall and public works building in Paisley. This approximate \$4.7 million project aims to provide the Paisley Fire Department and the Paisley Public Works Department with a modern facility. The new building will offer updated and suitable accommodation for the fire fighters and public works employees, ensuring functionality for the next several decades.

Analysis

This report provides an update on the Paisley Fire Hall project, focusing on recent geotechnical recommendations and anticipated discussions regarding construction methodology.

Preliminary Geotechnical Review and Rational for Additional Testing

Prior to the recent geotechnical study done by DS Consultants Ltd. (DS), a review was conducted of the original geotechnical report prepared by Peto MacCallum Ltd. (PML). That review identified the presence of soft to very soft silty clay deposits starting at depths of 4 to 5 meters below grade. However, the full thickness of these weak clay soils was not determined, as the PML boreholes did not fully penetrate the deposits.

Key findings from the PML logs included:

- SPT N values ranging from 1 to 4 blows per 300 mm, indicating very low soil strength.
- Moisture content between 30-40%, consistent with compressible soils.
- Anticipated excessive long-term settlement under the proposed building loads and grade raise.

Due to these concerns, DS recommended additional geotechnical investigation, including:

- Two CPT tests to depths of approximately 30 meters or refusal.
- Settlement analysis to determine the vertical extent and strength of the weak soils.
- Potential for a deep borehole to explore deep foundations options, pending the CPT results.

Without further investigation, DS indicated they could not issue a certificate for engineered fill with bearing capacity.

Geotechnical Recommendations – Surcharge Fill

Following the CPT testing and analysis, DS recommended surcharge preloading across the proposed building area to mitigate post-construction settlement risks.

Key recommendations include:

- Surcharge Fill:
 - o North and Southeast areas: Elev. 239.9m (4m of fill above finished floor)
 - o Other areas: Elev. 238.9 (3m of fill above finished floor)
- Monitoring: Settlement plates will be installed prior to surcharge placement to track ground movement.
- Duration: 4-6 months, with weekly settlement monitoring
- Scope: Surcharge required only within the building footprint.

This approach aims to mitigate post-construction settlement and ensure long-term structural stability.

Anticipated Verbal Update - Alternative Construction Method

During the upcoming council meeting, Aug 11, 2025, a verbal update may be provided regarding a potential alternative construction method. This method is being explored with a specialized construction company experienced in soft soil conditions. The intent is to assess whether alternative techniques could reduce the need for extended surcharge timelines or offer other efficiencies.

Further details will be shared pending discussions with the contractor and geotechnical engineer.

Travis Burnside, NA Engineering assisting the Municipality will be attending virtually should Council have any questions for the Engineer.

Link to Strategic/Master Plan

6.3 Facilitating Community Growth

Financial Impacts/Source of Funding/Link to Procurement Policy

There are currently no impacts to the approved budget for this project.

Fundraising efforts continue for the project.

Approved by: Emily Dance, Chief Administrative Officer