

# REPORT

## *Engineering Services & Community Services*

**To:** Mayor Johnstone and Members of Council  
**Date:** December 2, 2024

**From:** Lisa Leblanc  
Director of Engineering Services  
**File:** 05.1040.10  
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Blair Fryer  
Acting Director of Community Services  
**Item #:** 2024-680

**Subject:** **Massey Theatre Renovation – HVAC Upgrades and Public Realm Improvements**

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### **RECOMMENDATIONS**

1. **THAT** the upgraded HVAC system, minimum site needs, and recommended site improvements, as described in the report titled "Massey Theatre Renovation – HVAC Upgrades and Public Realm Improvements" be added to the Massey Theatre Renovation project scope;
  2. **THAT**, in consultation with the Massey Theatre Society and others who deliver programs in the Massey Complex, staff conduct further analysis of the capital project sequencing to update the project schedule and cost estimate based on at least two schedule and facility closure scenarios, and report back to Council prior to February 28, 2025; and
  3. **THAT** an objective third party with experience in performing arts operations and major capital projects be engaged to inform and facilitate the consultation and analysis of schedule and cost estimate scenarios.
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### **PURPOSE**

To provide Council with a rationale and outline the benefits, schedule implications and initial cost estimate for adding an upgraded HVAC system and the identified "Minimum Site Needs" and "Recommended Site Improvements" for public realm improvements to the Massey Theatre Renovation project scope. In addition, this report explains the next

steps that staff recommend in engaging with the Massey Theatre Society and other facility stakeholders who will be directly impacted by the renovation project, and report back to Council with at least two possible schedule scenarios and associated budget implications.

## **BACKGROUND**

In a report to Council on June 12, 2023, a budget of \$20.1M was approved to deliver the identified Minimum Viable Option (MVO) scope for the Massey Theatre Renovation project. The MVO is defined in that report as “building upgrades necessary to keep the building safe, operational, and to provide a more inclusive space for employees and others who would access the building”.

The current Massey Theatre project, as defined by the MVO scope in 2023, is comprised of three stages:

- **Phase 1 – Water Entry Phase;** this phase will provide a new water service to the building. This project is underway and is nearing completion.
- **Phase 2 – Deconstruction of the Large Gym;** this phase will complete the deconstruction of the large gymnasium wing. It is currently underway with a targeted completion of March 2025.
- **Phase 3 – Remaining Work to Complete the MVO;** the estimated completion date for the current MVO scope of work is December 2025. A detailed project background from 2015 to 2023, and a table outlining the scope of work in the MVO, as defined in June 2023, is included in *Attachment 1*. If the recommendations of this report are approved, the additional work will be considered as part of Phase 3.

In a report to Council on July 8, 2024, staff provided an update to the building systems at the Massey Complex, and received direction to explore the addition of HVAC and exterior site elements to the renovation project scope.

## **ANALYSIS**

### **HVAC Upgrade – Rationale**

The existing HVAC system has exceeded its expected service life. It had been contemplated for renewal or upgrade as part of the facility asset management plan implementation in the near future. Replacing the HVAC system with a ‘like for like’ replacement (or ‘business as usual’) is not recommended, as the current system is fossil-fuel based. Replacing the system with a similar fossil-fuel based system does not align with the City’s ‘Efficient Equipment Selection Policy (September 2021)’ or the City’s Climate action objectives.

To inform analysis for an upgraded HVAC system, four potential HVAC systems were evaluated. Through this exercise, an all-electric, air source heat pump (ASHP) system emerged as the recommended option. The analysis is described in detail in the *Massey*

*Theatre Renovation HVAC & Public Realm Proposed Scope Additions Recommendation Memo (see Attachment 2).*

In order to inform this report, a preliminary cost estimate was developed on the basis of the following assumptions:

1. Upgrade the system to the recommended electric ASHP system; and
2. Implementation of the recommended ASHP system during a 12 month full facility closure, beginning July 2025.

Based on these assumptions, the cost estimate for the HVAC upgrade is \$8.8M, which is an additional \$3.3M above a 'like for like' replacement (estimated \$5.5M cost). The benefits gained by upgrading the HVAC system to an ASHP system:

- An estimated 92% reduction in GHG emissions above the current system;
- Significantly improved occupant comfort in the building, each room would be conditioned independently with an automated control system;
- Estimated \$37K/ yr savings on electric and gas bills each year; and
- HVAC controls would be consistent with controls at other city facilities.

Benefits to addressing the HVAC upgrade at the same time as the current construction, and with a 12 month full facility closure include:

- Lower costs and shorter schedule associated with performing the HVAC upgrade work at a time when the building's structure is already exposed, such as during envelope replacement, structural repairs and new construction work. This directly reduces cost by not having to expose the roof and wall assemblies twice, and by avoiding costly re-work associated with making penetrations to the newly upgraded roof and wall assemblies to accommodate HVAC equipment and ducting in the future, after the MVO work has been completed. There are further efficiencies associated with reduced project management and coordination costs, as well as reduced site preparation and mobilization costs.
- A reduction in the uncertainty and risk associated with maintaining an aging, failing, HVAC system.
- Eliminates the possibility of an unplanned complete failure of the existing system, thereby proactively managing risk to MTS operations.

It is important to highlight that there would be significant impacts to MTS and the other organizations that operate in the Massey Complex should the project proceed on the schedule assumed for the cost estimate. Staff do not recommend proceeding on the basis of these assumptions alone and are seeking Council's support to conduct further consultation with MTS and other facility users, and conduct further construction schedule analysis, with the purpose of presenting at least 2 scenarios that reflect the full impacts to the capital project and operational impacts (both short and long-term) to MTS, facility stakeholders and the community.

Public Realm Improvements – Rationale

Due to limited knowledge about the site impacts at the time the current MVO was developed in 2023, the current MVO does not address exterior areas of the site directly impacted by the MVO scope of work. It also does not include a broader scope of work that would create a cohesive, functional site plan.

The recommended public realm improvements identified in this report can be considered as:

- **Minimum Site needs** – public realm improvements resulting directly from the MVO project scope, such as treatment and tie-in of the asphalt footprint left behind after the demolition of the gymnasium,
- **Recommended Site Improvements** – opportunities to develop a permanent long-term solution to complete the site. The Massey Theatre site is highly used by the community, both by students commuting by foot or bicycle to NWSS, and by vehicles accessing the Moody Park Arena, the Theatre, sporting practices and events at Mercer Stadium or for High school drop off and pick-ups. A permanent solution to the site presents an opportunity to develop a safe, permanent and useable site for the community in the long term, and would create a public realm space that develops on the adjacent Re-Memorialization project, and unifies the site with the Massey Theatre Society (MTS) landscape Gathering Place project.

**‘Minimum Site Needs’ – areas directly impacted by the MVO scope of work**

The current project MVO scope includes work to demolish the gymnasium and work to replace the drain tile along the building’s 8<sup>th</sup> Avenue frontage. The MVO scope does not, however, include an approach for addressing these areas of the site impacted by the currently approved MVO work. The recommended additional ‘site needs’ recommended in this report include:

1. **Work to address the remaining site area where the gymnasium existed, after the gymnasium is demolished;** currently the MVO scope (per Figure 1) includes only a temporary asphalt pavement treatment over the demolition footprint of the large gym. This treatment does not include a design for parking lines, considerations or improvements to vehicle circulation, safety pathways for pedestrians and cyclists, landscaping, lighting or grading/drainage strategies. The additional scope would include a strategy to meaningfully design the new footprint area into the existing site in a way that improves the quality of the public realm by:
  1. Improving site pedestrian safety by using site treatments, such as dedicated pathways to separate the parking area and vehicular traffic area from pedestrian areas,
  2. Additional and improved lighting in the area; existing lighting in the area is located on the gymnasium and will be removed with the gymnasium

- 3. Improved site drainage; this work would holistically improve stormwater management on site, and address issues such as ponding, abandoned catch/lawn basins and improper grading.
- 4. Modifying the north-west entrance ramp for better safety and accessibility.
- 5. Adding 20 electric vehicle charging stations.

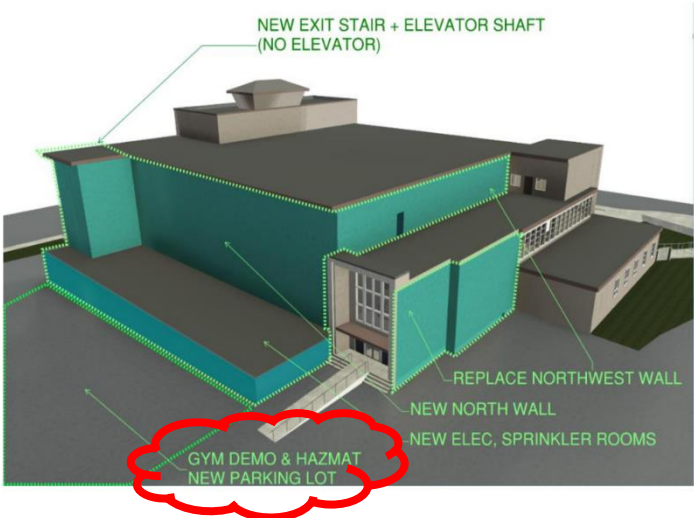


Figure 1 (above): Excerpt from presentation to Council, June 13 2023: [Massey Theatre Renovation Pre-Design Phase Summary: Scope, Schedule and Budget](#)

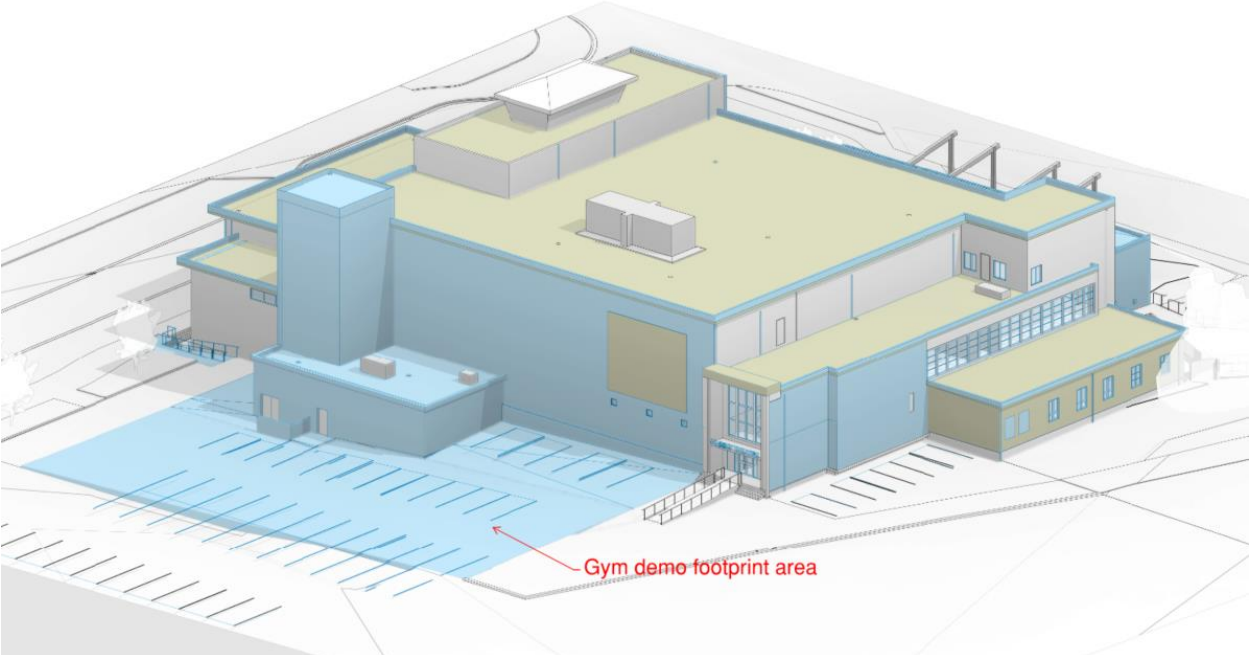


Figure 2 (above): public realm large gym demolition footprint

**2. Replacing the landscaping impacted by replacing the drain tile along 8th Avenue through the MVO; replacing the drain tile along eighth avenue**

building frontage is part of the project MVO scope, as this work is needed to prevent water from entering into the building and to mitigate the resulting damage caused to the wood timber building structure. Scope to replace landscaping removed to accommodate this work is not currently included with the MVO. This additional ‘site needs’ scope includes replacing and ‘making-good’ the landscaping and landscape features removed to accommodate the drain tile work.

The estimated cost (Class ‘D’ with a +/-20% accuracy) to accommodate the ‘site needs’ is \$2.5M.

**‘Recommended Site Improvements’**

While the project is under construction, this also presents opportunities to consider a permanent solution for the entire site. These include:

- 1. **Incorporating improved public spaces and plazas on site** - considering opportunities for improving the overall quality of the public realm in this area, including new public open space on site to maintain the ‘look and feel’ of the adjacent NWSS Re-Memorialization project and MTS Gathering Place projects
- 2. **Improved building accessibility and universal design elements on the site** - by addressing issues related to existing Building Code non-conformance, such as the location, slope and width of entrance ramps at the building’s main entries. In particular, the public realm upgrade would improve the design of the facility’s busiest entry: the north-west entry that interfaces with the shared parking lot at the rear of the facility. Following demolition, this long entrance ramp will be sub-optimally located between two sections of parking lot. At the south (main) entrance on 8th Ave frontage, the building entrance ramp would be redeveloped to provide a Code-compliant solution, plus better pedestrian and wheelchair connectivity to the building and among the various public realm elements of the site plan, such as MTS Gathering Place project and NWSS Re-Memorialization project.
- 3. **Incorporating public art** – by including a 1% (\$140K) financial contribution based on the estimated construction cost of the HVAC upgrade and public realm scope additions in accordance with the City’s *Public Art Policy*.

This analysis work is described in detail in the *Massey Theatre Renovation HVAC & Public Realm Proposed Scope Additions Recommendations Memo (see Attachment 2)*.



Figure 3 (above): Public realm Recommended Site Improvements and Minimum Site Needs

**Benefits to completing the public realm improvements with the current construction scope**

While the ‘Minimum Site Needs’ and ‘Recommended Site Improvements’ are identified separately in this report to help identify what works relate directly to the project MVO, it is recommended to complete *both* the ‘Minimum Site Needs’ and ‘Recommended Site Improvements’ at the same time as the current construction scope because:

- It offers a permanent, long-term solution for a cohesive site,
- Work could be performed by the same contractor as part of the Phase 3 contract, offering greater efficiency, value for money and less disruption,
- Completing the public realm upgrade in the future risks higher costs due to market cost escalation and inefficiencies associated with multiple contractor mobilizations. It may also result in the need to re-do work completed through the current construction project, and will not provide opportunities for logical integration with the adjacent NWSS Re-Memorialization project,
- If electric vehicle charging stations are not added as part of the MVO project scope, EV charging infrastructure will likely be required in the near future, at an increased cost and at risk of needing to redo site work completed through this work.

The estimated cost (Class 'D' with a +/-20% accuracy) to accommodate the 'Recommended Site Improvements' and 'Minimum Site Needs' is \$5.2M.

### Schedule Considerations

As stated earlier, in order to inform this report, a preliminary cost estimate was developed on the basis of the following assumptions:

4. Upgrade the system to the recommended electric ASHP system,
5. Implementation of the recommended ASHP system during a 12 month full facility closure, beginning July 2025.

Based on these assumptions, both the HVAC upgrade and public realm scope addition would require an extension of approximately 6 months to the current project schedule (from a scheduled completion in December 2025 to June 2026 at the earliest). In addition, it would require an additional 9 month facility shutdown (for a total 12 month closure), compared to a 3 month closure anticipated through the current scope).

Project management best practice prioritizes budget cost containment through the prudent management of risk. In the case of the Massey Theatre Renovation, budget cost containment is at risk given the objective to maintain operations to the extent possible during the renovation. If this were a typical capital project requiring extensive highly disruptive capital construction such as this, operations would typically be relocated out of the facility, and displaced services and programming would be resumed at other facilities wherever feasible; where not feasible, services and programming would be paused. While this was the approach taken when the Arenex collapsed, when Canada Games Pool closed, and during the period between when Centennial Community Centre closed for demolition and *təməsewtx<sup>w</sup>* opened to the public, it is recognized that the Massey Theatre is a significantly different facility which operates under a different operating model and a different policy context, which therefore requires additional considerations.

As noted in the Theatre Strategy, a phased approach to construction was recommended as the preferred approach in order to support the health of the cultural sector, allowing for theatre operations to continue during key performance seasons. This approach has been employed in other municipalities (City of Vancouver for example) in order to ensure that key arts organizations and community stakeholders remain viable when the project is complete. This has been the approach with this project to date, and it is the preferred approach by MTS. A letter of support from MTS, which also includes considerations related to the project schedule, will be provided.

The assumptions used for the purpose of developing the cost estimates for the HVAC and Public Realm scope would require a 12 month shut down of the Theatre on very short notice, ceasing all programs and operations, which is not a realistic scenario given contract, logistical and other realities. Theatre seasons are planned 12-18 months out and, therefore, displacement of events for fall 2025-winter 2026 would have significant impact for the operator and facility stakeholders.



It is important as Council is considering the expanded scope, to understand the range of impacts operationally. Although it may be prudent from a capital project cost control perspective to advance an accelerated, extended shut down, the short and long term impacts to the operations, stakeholders and sector are to be considered in full.

**SUSTAINABILITY IMPLICATIONS**

The HVAC upgrades will align with the ‘Carbon Free Corporation’ and ‘Carbon Free Buildings’ of the Seven Bold Steps by electrifying the mechanical system at Massey Theatre. This will result in a reduction of GHG emissions by an estimated 92%, a net GHG emissions savings of 141 tonnes per year. The Massey Theater building is the highest GHG emitting building in the City’s building portfolio, at approximately 240 tonnes in 2023. This building accounts for approximately 25% of the emissions within the civic buildings sector (which includes office spaces, fire halls, outdoor swimming pools and arenas).

The Public Realm improvements will provide for up to 20 electric vehicle charging stalls, in line with the [Corporate Energy and Emissions Reduction Policy](#) (CEERS) and Bold Step #4 ‘Pollution Free Vehicles’ and will respond to the Bold Step #7 ‘Quality People-Centered Public Realm’ by improving access for pedestrian and active transportation modes on the site, and through creating additional public space on the site.

**FINANCIAL IMPLICATIONS**

HVAC Upgrades

The estimated Class D cost estimate (+/- 20% accuracy) to install the recommended ASHP HVAC system is \$8.8M. This is an estimated \$3.3M more than the estimated \$5.5M cost to replace the existing system with a like for like replacement. The ASHP Upgraded system would also realize an estimated \$37K/year savings in electricity and gas bills.

<b>HVAC Upgrade (ASHP System)</b>	<b>Like-for-Like / Business-as-Usual</b>
\$8.8M	\$5.5M

The incremental cost to achieve GHG emission reductions is \$3.3M, which would require an ASHP System above the Business-as-Usual option. The incremental cost (\$3.3M) is eligible for funding from the City’s Climate Action Reserve Fund, as supported by the City’s Climate Action Decision Making Framework and related guiding principles.

Public Realm Improvements

The recommended public realm scope addition is estimated to cost \$5.2M (+/- 20% accuracy), including all soft costs, hard costs, public art allowance and contingencies. The “Recommended Site Improvements” option is an estimated \$2.7M more than the “Minimum Site Needs” option.

Recommended Site Improvements (“Should Do”)	Minimum Site Needs (“Must Do”)
\$5.2M	\$2.5M

Funding for public realm improvements through the City’s Climate Action Reserve Fund is not recommended by the City’s Climate Action Decision Making Framework. This decision is based on the limited alignment of the wide scope of improvements with climate mitigation strategies, the minimal direct greenhouse gas emissions reductions, and the relatively high capital cost associated with the funding request.

Capital Budget Addition

If the recommendations of this report are accepted and the \$14.0M is added to BU 11762 Massey Theatre in the five year Capital Plan (2025- 2029), it is anticipated the spending would be allocated as follows:

- \$0.1M – 2024
- \$8.9M – 2025
- \$5.0M – 2026

The funding strategy for the capital budget addition comprises \$3.3M allocated from the Climate Action Reserve Fund (CARF), with the remaining \$10.7M sourced from the General Fund Provision. As of 2023 year-end, the Climate Action Reserve Fund holds a balance of \$44.0M and additional allocation of CARF will be identified through the 2025 budget process. Under Council’s direction, additional capital funding can be allocated from the Climate Action Reserve Fund, beyond the incremental amounts recommended by the Council adopted Climate Action Decision Making Framework.

There are additional financial implications associated with a full facility closure to enable the construction, but it has not been possible to estimate these potential costs yet. The amount varies depending upon the timing of the closure, and it must be informed through meaningful consultation with MTS and other organizations. Subject to the direction received from Council as a result of this report, further analysis will be required to refine both the schedule and the cost implications. Given the specialized and complex nature of the analysis, staff feel it would be prudent to engage an independent third party with expertise in the performing arts sector, and experience with facilities of this type and major capital projects, to aid City staff, MTS staff and the consultant project team in developing and analyzing schedule scenarios and cost estimates.

**INTERDEPARTMENTAL LIAISON**

Staff from multiple departments were consulted for this work including staff from Climate Action, Community Services, and Finance.

**OPTIONS**

The following options are presented for Council’s consideration:

Option 1 - THAT the upgraded HVAC system, minimum site needs, and recommended site improvements, as described in December 2, 2024 report to Council entitled "Massey Theatre Renovation – HVAC Upgrades and Public Realm Improvements", be added to the Massey Theatre Renovation project scope;

Option 2 - THAT staff consult with the Massey Theatre Society and others who deliver programs in the Massey Complex, and conduct further analysis of the capital project sequencing, to update the project schedule and cost estimate based on at least 2 schedule and facility closure scenarios, and report back to Council prior to February 28, 2025; and

Option 3 - THAT an objective third party with experience in performing arts operations and major capital projects be engaged to inform and facilitate the consultation and analysis of schedule and cost estimate scenarios.

Option 4 – Provide staff with alternate direction.

Staff recommend Options 1 to 3.

### **ATTACHMENTS**

Attachment 1 - Additional Background Information and MVO Scope definition (June At 2023)

Attachment 2 - Massey Theatre Renovation HVAC & Public Realm Proposed Scope Additions Recommendation Memo

### **APPROVALS**

This report was prepared by:

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This report was reviewed by:

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Leya Behra, Deputy Director of Climate Action  
Todd Ayotte, Manager Community Arts and Theatre

This report was approved by:

Lisa Leblanc, Director of Engineering and Deputy CAO  
Blair Fryer, Acting Director of Community Services  
Lisa Spitale, Chief Administrative Officer