

Greenhouse Operating Model Long-Term Options

ISSUE

The City's greenhouse is located at its Avenue P location. The purpose of the building, used by approximately four staff, is to grow plants for civic purposes such as the flowerpot program and plantings throughout parks, and some Civic buildings such as City Hall. In addition, the building has been used to store and propagate plants for the Civic Conservatory.

The greenhouse is 65 years old, is approaching the end of its service life, and will soon need to be vacated for safety reasons. As such, for the 2023 season, a private greenhouse was contracted to supply flower needs. Looking to the future, should the City of Saskatoon build a replacement greenhouse, and if so, what type and with which considerations?

BACKGROUND

History

The Standing Policy Committee on Planning, Development, and Community Services (PDCS), at its meeting on February 8, 2023, received a [City Greenhouse Operating Model Update](#) report. Committee resolved:

“That the report be received as information; and that it be referred to the Municipal Heritage Advisory Committee as information.”

The Municipal Heritage Advisory Committee (MHAC), at its meeting on February 21, 2023, resolved:

“That the information be received; and that the Chair write a letter to Standing Policy Committee on Planning, Development and Community Services requesting the consideration of the heritage aspects, contemplate the refurbishment and potential for expansion of the City Greenhouse while the matter is being discussed.”

PDCS at its meeting on May 3, 2023 received a [letter](#) from MHAC dated April 25, 2023 requesting consideration of the heritage aspects, contemplate the refurbishment and potential expansion of the City Greenhouse while the matter was being discussed. The PDCS Committee resolved:

“that the submission be forwarded to the Administration to join to the file on this matter”

Current Status

In September 2022, the Facilities Management Department received an engineering assessment that indicated escalating issues with the greenhouse structure. These

findings included concerns about wood components, cracking and falling glass, and concerns about the structure's ability to handle snow loads in the winter. For the 2023 season, a private company has been contracted to provide plant material. Additional details can be found in the February 8, 2023, PDCS report referenced above; photos of the greenhouse can be found in Appendix 1.

Based on preliminary research, a new greenhouse, built to serve Saskatoon for the next 50 years, could cost between \$3,000,000 and \$4,000,000; however, further study would be required in order to refine this estimate. Newer technology would be incorporated, allowing for additional efficiencies compared to the current structure.

Refurbishment and Renovation Considerations

The September 2022 engineering assessment of the greenhouse confirmed that:

- The wood and glazing components are at the end of their (or have exceeded) life cycle;
- The foundation elements and metal pipe structures are in serviceable conditions but would need to be re-analyzed to current codes in order to be re-used as part of any renovation or replacement;
- It is likely that the new modern greenhouse glazing would be heavier than the existing and the remaining structure would be insufficient – modern greenhouses tend to be much more robust than what is existing; and
- Current National Building Code does not recognize thermal removal as a rationale for reducing snow loads.

As part of background research, Administration contacted three North American companies specializing in greenhouse restoration/renovation. One declined, and high-level meetings were held with the other two, one of which was the original builder of the City's greenhouse. These firms indicated the refurbishment of the City's greenhouse would be very labour-intensive and involve custom woodwork. One firm advised such work is not feasible in their opinion, and the other provided an initial, high-level estimate of \$3,500,000 to \$4,000,000, with a risk of cost increases. It was also indicated that restorations of this kind are usually for greenhouses from the early 1900s, and it is also important to note this work would not improve the technology or thermal performance of the greenhouse and would also not include foundational work. In summary, refurbishment involves the following considerations:

- High cost to refurbish given the custom millwork that would be required, all glass would have to be replaced with safety laminated or tempered glass, and many replacement parts are no longer manufactured;
- Difficult and costly to include new greenhouse technologies into a retrofit;
- Complicated and labour-intensive work given the age and condition of the building; and
- Likelihood of out of country suppliers required, including some that do not currently work in Canada.

Conservatory Considerations

The availability of greenhouse space also has implications for a future Conservatory. Historically the greenhouse has provided an area for staff to manage a tropical and flowering plant inventory for Conservatory service/displays. Upon the reestablishment of the Conservatory a future year-round greenhouse could once again provide an ongoing inventory of quality readily available plant material for display in the facility.

Public Engagement

Public engagement has not been conducted at this time. Regardless of the option chosen, service levels will not be affected, and the program is highly regarded by stakeholders, such as the Business Improvement Districts and the public. Other stakeholders have been engaged, including the Municipal Heritage Advisory Committee, and other community organizations that utilize greenhouses. Depending on the option chosen, additional engagement will be conducted.

Approaches in Other Jurisdictions

Saskatoon and Edmonton are the only major prairie cities that grow most of its seasonal plant material at a civic greenhouse. Approaches across the region include:

- Regina: Approximately 20 years ago, the City of Regina closed their greenhouse as it became too expensive to maintain and replacement cost was prohibitive. Bedding plants are directly sourced from the Provincial Capital Commission, who plant for the Legislative grounds.
- Calgary: The City of Calgary procures all bedding plant material from multiple private sector bidders. Quality concerns have been minimal as the contract is very important to growers and they ensure the best product is delivered.
- Edmonton: The City of Edmonton has a mixed model with the majority of growing in-house, but also orders from several private greenhouses due to the size of the city.
- Winnipeg: The City of Winnipeg sources 100% of their plant material via a four-year public tender from growers, which tends to be split evenly between bidders.

OPTIONS

As the current greenhouse facility is at the end of its life, numerous future options exist. It should be noted that each of the options below envision maintaining the current service level, with the potential for future expansion. Under all options, Conservatory material currently stored in the greenhouse will be moved to suitable City facilities as outlined in the February 2023 [report](#).

Option 1: Refurbish the Existing Greenhouse

Under this option, the existing greenhouse would be refurbished to address the existing structural concerns, specifically the glass and wood components. This work would be done by a specialized contractor knowledgeable in greenhouse restoration.

Capital Costs: \$3,500,000 to \$4,000,000 (more if foundational components are included)

Operating Costs: \$400,000 per year

Advantages:

- Preserves the heritage and history of the existing structure.

Disadvantages:

- High cost with the potential for cost overruns.
- Does not improve energy efficiency.
- Initial discussions reveal refurbishment is not recommended as feasible by some firms specializing in this work.
- Potential reliance on out-of-country contractors that have not done work in Canada before.

Option 2: Procure Seasonal Plants from Private Greenhouses

Under this option, the City would not pursue a replacement greenhouse, and would procure all seasonal plant requirements through a public tender for the long-term. For reference, the cost of procurement in 2023 was approximately \$80,000. The existing greenhouse structure at Vic Rempel yards would be recommended for demolition.

Capital Costs: \$60,000 (existing structure demolition)

Operating Costs (estimate): \$300,000 per year (procurement and staffing)

Advantages:

- Low capital costs and lower operating costs over time.
- Flexibility to increase size of program.

Disadvantages:

- Potential of additional time and effort in contract and tender management to ensure quality standards are met.
- Contract pricing may fluctuate.
- Potential loss of internal horticultural knowledge over time.

Option 3: Plan to Build a New City Greenhouse

This option proposes the development of a new, full-scale City-owned greenhouse. Due to the specialized nature of greenhouses and advances in technology, this option requires more planning. Preliminary investigation suggests that a high-level cost estimate of \$3,000,000 to \$4,000,000 (2023 dollars) can be used as a guideline. Also under this option, the development of a new smaller scale or alternative (tension membrane) greenhouse would be considered that would allow for expansion over time.

For this option, a capital project would be submitted requesting funding within the next budget cycle for the design and construction of a new greenhouse, in the future to support the internal production of flower/plant program requirements.

Capital Costs (estimate): \$3,110,000 to \$4,110,000

- \$3,050,000 to \$4,050,000 (for design and construction of a new greenhouse)
- \$60,000 for demolition of the existing structure

Operating Costs: \$400,000 per year

Advantages:

- Internal control over quality and production.
- In-house horticultural knowledge.

- Depending on greenhouse type, additional opportunities for operational savings associated with heating, cooling and increased automation could be explored and implemented if appropriate potentially reducing identified operating costs.

Disadvantages:

- High upfront costs with little or no opportunity to recover the cost.
- Ongoing operating costs for the maintenance and upkeep of the facility structure.
- Does not directly consider potential community partnerships.

Option 4: Short-term Private Procurement and Investigate the Feasibility of a Long-term Shared Greenhouse

This option envisions potential long-term greenhouse partnerships with stakeholders, such as Meewasin, the University of Saskatchewan, Saskatchewan Polytechnic, the Saskatoon Food Bank and others. Initial discussions with these groups have indicated that each group has a need for greenhouse space, and that a shared space opportunity could be examined further. In addition, this option has the potential to include learning, research, and community programming regarding native species, food security, and seed bank storage.

Under this option, in the short-term (three to five years), plant material would continue to be procured from the private sector. As discussions and needs are identified with stakeholders, feasibility and funding requirements would become more defined. Under this option, other locations (in addition to Vic Rempel Yards), operating costs and greenhouse types (glass, tension membrane, etc.) would be explored. Further reporting would occur as discussions with partners progress.

Capital Costs: Unknown; potentially \$3,000,000 to \$5,000,000 to be shared among the confirmed partners.

Operating Costs: Unknown – would require further analysis. As discussions evolve, the partners will at some point require a modest investment to develop a preliminary design concept.

Advantages:

- Lower capital and operating costs in the short-term.
- Could provide a “made in Saskatoon” solution that benefits the City and community stakeholders.
- Horticultural expertise is maintained.
- Allow historical levels of plant display services to be maintained or expanded upon within the city, such as BIDs, and a future Conservatory.
- Opportunity for additional value-added functions in collaboration with partners, in line with the City’s Strategic Plan.
- Depending on greenhouse type, additional opportunities for operational savings associated with heating, cooling and increased automation could be explored and implemented, if appropriate, potentially reducing operating costs.

Disadvantages:

- A shared facility may not meet the needs of all users, especially during times of peak demand.
- Additional unknowns compared to other options at this time, including estimated date of completion and funding arrangements.

RECOMMENDATION

That the Standing Policy Committee on Planning, Development, and Community Services recommend to City Council that:

1. Option 4, Short-term Private Procurement with long-term Shared Greenhouse, be approved, in principle;
2. A capital project at an estimated cost of \$50,000 that includes further engagement, planning and design associated with a long-term shared Greenhouse be forwarded for consideration within the 2024/25 multi-year business plan and budget.

RATIONALE

Option 4, Private Procurement with long-term shared greenhouse, is considered the most advantageous option for the following reasons:

- In the short term, no capital requirements are required and operating costs are minimized;
- Should a partnership be ultimately implemented and a shared facility is constructed, control over quality and availability remains with the City;
- Potential community partners benefit from a shared space, including potential for additional learning, research, and/or food production uses;
- Potential lower/shared capital and/or operating costs compared to building a City-only facility;
- Maintains the pride and long history of the City operating its own greenhouse; and
- A more detailed examination would also ensure a shared greenhouse is situated at a location where it is the highest and best use and in line with the City's long-term facility planning.

If this option is selected by Council, the Administration would pursue partnerships and develop the best model possible. The model would then be compared against other options and presented to Council with an Administrative recommendation. The Administration would not consider Council's approval of Option 4 at this time to be any form of commitment to fund a construction project. That decision would be a future decision of Council, and would be weighed against all other civic priorities.

ADDITIONAL IMPLICATIONS/CONSIDERATIONS

If a new greenhouse is constructed in the future, reducing its emissions and carbon footprint will be an important consideration. The current greenhouse incurs significant utility costs per year, specifically to heat the structure.

Depending on the option chosen, there may be impacts to staff. Our goal through this process is for all current greenhouse staff to remain employed with the City of

Saskatoon. We will ensure all employees affected and CUPE 59 have all relevant information to assist with their decisions as per the CUPE 59 Collective Agreement.

COMMUNICATION ACTIVITIES

Other than consultation with shared greenhouse stakeholders, no additional communication activities are planned at this time. Depending on the option chosen, additional communication activities, and potential public engagement will occur.

APPENDICES

Appendix 1 – City of Saskatoon greenhouse

REPORT APPROVAL

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Approved by: Lynne Lacroix, General Manager, Community Services

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