

DATE OF MEETING | MAY 16, 2022 |

AUTHORED BY | JENNIFER McASKILL, MANAGER, FACILITY ASSET PLANNING
DEANNA WALKER, FINANCIAL ANALYST |

SUBJECT | **CLEANBC COMMUNITIES FUND GRANT APPLICATION FOR
MECHANICAL RENEWAL AT NANAIMO AQUATIC CENTRE**

OVERVIEW

Purpose of Report

To obtain Council's approval for an infrastructure grant application. |

Recommendation

That Council:

1. Direct staff to submit an application to CleanBC's Clean Communities Fund for the Mechanical Renewal at Nanaimo Aquatic Centre (NAC), and commit to funding \$1,493,520 of the project, as well as any cost overruns;
2. Amend the 2022 – 2026 Financial Plan to remove the NAC Boiler Replacement Project in 2024/2025 for \$799,200 funded from the Facility Development Reserve Fund; and
3. Amend the 2022 – 2026 Financial Plan to add the Mechanical Renewal at NAC to 2023/2024 for \$5,600,000 funded from a \$4,106,480 grant, \$1,093,520 from the Facility Development Reserve Fund and \$400,000 from the Climate Action Reserve Fund with project contingent on a successful grant application.

BACKGROUND

CleanBC Communities Fund (CCF) is a climate change mitigation funding stream under the Investing in Canada Infrastructure Program (ICIP) and funds only tangible physical infrastructure projects that reduce greenhouse gas (GHG) emissions and provide "public use or benefit". The CCF funds projects that support the management of renewable energy, access to clean energy transportation, improved energy efficiency of buildings and the generation of clean energy. This is the third and final intake for the program.

This funding opportunity provides joint provincial and federal funding up to 73.33% of eligible costs for projects that can be substantially complete by March 2027. Stacking rules apply to this funding. Therefore 40% is the maximum that could be funded from federal government sources, including the Gas Tax Community Works Funds received by the City annually. Funding announcements are expected by the summer of 2023.

The grant application deadline is **2022-MAY-25**.

Nanaimo Aquatic Center (NAC) was built in the year 2000/2001 and has been providing excellent service to the community for over 20 years. NAC is a popular destination for people of all ages to recreate, rehabilitate, exercise, and socialize. The facility is also the largest single producer of greenhouse gas (GHG) emissions in the City's portfolio, accounting for approximately 32% of all corporately consumed natural gas, and 12% of all corporately consumed electricity.

Many of the systems and components integral to the function of NAC are nearing, or past their ability to meet service expectations, and require renewal. The facility was constructed at a time when emissions were less of a concern. With evolving technology and emission reduction priorities there is an excellent opportunity to both renew critical components of the facility and significantly reduce emissions.

On 2020-03-18, Council approved expenditure of \$50,000 from the Emission Reduction Reserve Fund to proceed with a feasibility study reviewing opportunities for significant GHG emission reductions at Nanaimo Aquatic and Beban Park Recreation Centres. The completed study for NAC included two concepts for consideration. One of these concepts used geo-thermal energy to off-set emissions. Upon critical review, the concept appeared overly optimistic and presented significant financial and longevity risk. Geo-thermal could be investigated further at a later date, however would take significant resources, and the risks may not be able to be mitigated.

The second concept uses heat recovery and electrification of boiler systems. To further refine and prove out this concept, a more in depth study was undertaken in 2022, which is the source for this grant application. The new study provides an in-depth analysis of our current systems, opportunities for emission reductions, and cost estimates.

The CCF grant priorities align very well with the HVAC renewal and upgrades proposed in this report.

DISCUSSION

All the proposed emission and energy conservation measures align with the scope of the CCF, providing significant opportunity to leverage funds into a comprehensive project, achieve greater emissions reduction, and significantly improve the function of the facility, enhancing reliability and user comfort. Improved function of the HVAC system also protects other assets of the facility, such as interior finishes, electrical systems, and the building envelope. These holistic renewal projects are a key part of asset management and extending the service life of a facility.

The proposed grant-funded project includes replacing two key air handling units, the dehumidification system, and the boilers. It implements significant heat recovery in the primary HVAC system and includes a substantial shift in energy source from gas to electric. Using heat pump technology, heat recovery efficiently and effectively reclaims heat-energy that would otherwise be lost into the atmosphere, and redirects it for use elsewhere in the pool. This scope is anticipated to reduce the facility's overall emissions by 60% - 70%. Cost estimates for this work are approximately \$5.6 million.

The proposed project does not include all HVAC systems at the facility. There are still seven, natural gas roof-top units in service at NAC. Overall these account for about 1% of the current natural gas consumption. Addressing emissions from these units would be a future opportunity when this equipment needs replacing. Of the equipment currently within the project scope, transition to full electric was considered. This included heat recovery as noted above, and

additionally implemented an electric boiler system in lieu of the proposed high-efficiency natural gas boilers. Cost estimates for full electrification are approximately \$11.2 million. The additional 30 - 40% emission reduction comes with a 100% capital cost premium. Considering operational costs, annual electricity costs are expected to increase 250% above current. This accounts for both the increased electricity consumption, and the increased Demand Charges. Large electric services such as the one at NAC are subject to Demand Charges; a fee levied by BC Hydro against the peak power draw each month. It is anticipated that the Demand Charges associated with this electrified option would triple current charges.

The proposed project is an optimized balance that includes electrification, substantial GHG emission reduction, and sustainable service delivery. The work proposed would not preclude additional work in the future to further decrease emissions.

As the City maintains a number of facilities, including Beban pool with similar energy consumption to NAC, emission reduction can be considered from a global portfolio standpoint, as opposed to individual facilities. Capital investment throughout the portfolio would reduce corporate emissions more significantly and cost effectively than a substantial investment in a single facility. When considering emissions reduction, return on the capital investment diminishes as the emission reductions increase; the first tonne of carbon offset is the easiest and cheapest, while the last tonne is the hardest and most expensive.

The required funding to complete this project exceeds the replacement budget currently contained within the 2022-2026 Financial Plan. The grant provides an opportunity to leverage external funding and capitalize on an optimal approach. At this time, proceeding with this work is contingent on success with the grant. If the grant is not successful, Staff will return to Council to seek direction for next steps.

FINANCIAL CONSIDERATIONS

Estimated costs of this project are \$5.6 million. The 2022-2026 Financial Plan currently includes \$799,200 for the design and construction costs of the replacement of the boilers, funded from the Facility Development Reserve. A successful grant application would provide \$4,106,480 of funding. The remaining \$694,320 would be funded \$294,320 from the Facility Development Reserve plus \$400,000 from the Climate Action Reserve Fund.

OPTIONS

1. That Council
 - a. Direct staff to submit an application to CleanBC's Clean Communities Fund for the Mechanical Renewal at Nanaimo Aquatic Centre (NAC), and commit to funding \$1,493,520 of the project, as well as any cost overruns;
 - b. Amend the 2022 – 2026 Financial Plan to remove the NAC Boiler Replacement Project in 2024/2025 for \$799,200 funded from the Facility Development Reserve Fund; and
 - c. Amend the 2022 – 2026 Financial Plan to add the Mechanical Renewal at NAC to 2023/2024 for \$5,600,000 funded from a \$4,106,480 grant, \$1,093,520 from the Facility Development Reserve Fund and \$400,000 from the Climate Action Reserve Fund with project contingent on a successful grant application.

- The advantages of this option include the renewal of aging mechanical equipment with more efficient, emission-reduction focused alternatives. This option anticipates a reduction in NAC's emissions by approximately 60 - 70% while re-establishing optimal interior air conditions, and is intended to prioritize emissions reduction at the facility through increasing the scope of a planned renewal.
- The disadvantage of this option: None are expected.
- Financial Implications: Additional funding from the Climate Action Reserve and Facility Development Reserve would be required to fund this initiative, leaving less funds available for facility improvements and other climate initiatives.

2. That Council provide alternate direction |

SUMMARY POINTS

- Key infrastructure at Nanaimo Aquatic Centre are at, or nearing the end of its ability to meet service expectations.
- CleanBC Clean Communities Fund provides opportunity for funding infrastructure projects that significantly reduce greenhouse gas emissions which aligns with the proposed renewal work at Nanaimo Aquatic Centre.
- Applying for, and being successful with this grant opportunity will allow leveraging of existing funds for asset renewals to provide a more holistic solution with consideration for emission reduction.

Submitted by:

Deanna Walker
Financial Analyst

Jennifer McAskill
Manager, Facility Asset Planning |

Concurrence by:

Poul Rosen
Director, Engineering

Richard Harding
General Manager, Parks, Rec & Culture

Laura Mercer
Director, Finance |