

# Report to Council



**Date:** 4/15/2019  
**File:** 0100-01  
**To:** City Manager  
**From:** Brydan Tollefson, Energy Program Manager  
**Subject:** H2O Adventure + Fitness Centre Energy Efficiency Project

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## **Recommendation:**

THAT Council endorse the H2O Adventure + Fitness Centre energy efficiency project CleanBC Communities Fund application as proposed in the report of the Energy Program Manager dated April 15, 2019;

AND THAT, Council commit to contributing its share of the costs associated with the H2O Adventure + Fitness Centre energy efficiency project from the H2O Capital Reserve.

## **Purpose:**

To receive Council's endorsement of an application to the CleanBC Communities Fund for energy efficiency upgrades at the H2O Adventure + Fitness Centre.

## **Background:**

The CleanBC Communities Fund (CCF) is a new program to provide funding for infrastructure projects that support the management of renewable energy, access to clean energy transportation, improved energy efficiency of buildings, and the generation of clean energy. Canada and British Columbia governments are investing up to \$62.94 million in this initial intake to CCF to support infrastructure projects in communities across the province. For Local Governments, the Government of Canada will contribute up to 40% and the Province of BC up to 33.33% for a total of 73.33%. Local Governments will need to contribute 26.67%.

Staff are proposing an energy efficiency project at the H2O Adventure + Fitness Centre that would reduce energy consumption by 420,000 kWh/yr of electricity and 5,900 GJ/yr of natural gas, reductions of 10% and 40% respectively. This will result in estimated greenhouse gas emissions reduction of 295 tonnes and utility cost savings of \$90,000 annually.

The project proposes replacement of the heating plant, which includes boilers, domestic hot water (DHW) tanks, a heat recovery chiller, and storage tanks. The project also includes the addition of lighting controls, variable frequency drives (VFD's) for controlling the speed of pool pumps, a lighting conversion to LED, utility sub-metering equipment, and additional mechanical cooling (air conditioning) for the pool and fitness areas.

The H2O facility currently has no mechanical cooling or dehumidification in place for the natatorium (pool area). Outside and recirculated air is all that is used to dehumidify and cool the natatorium. This works reasonably well for the bulk of the year, however, for approximately four to five months of the year during the warmer summer months and a portion of the shoulder seasons, the outdoor air is as warm or warmer than the indoor pool air. This makes it very challenging, and often impossible, to dehumidify and cool the indoor area in the pool area, resulting in poor occupant comfort, and a number of user complaints. From an energy standpoint, it also means that electric fans are constantly blowing air through the building in an attempt to increase user comfort. Mechanical cooling is required to achieve appropriate and consistent humidity levels in the pool area to increase occupant comfort and meet the levels of service expected by the community. The heat recovery chiller will be sized to include this new cooling load, which will also increase the capacity of the chiller for heating, further reducing the use of the natural gas boilers and DHW tanks and the resulting GHG emissions.

The total project cost is estimated to be \$2,584,900, with the City's contribution estimated to be \$689,393.

All of the items included in the project scope will provide long term benefits to the City of Kelowna and its residents through asset renewal and reliability, lower energy costs, improved levels of occupant comfort, and long term GHG reductions.

#### **Internal Circulation:**

Deputy City manager  
Divisional Director, Financial Services  
Divisional Director, Active Living & Culture  
Infrastructure Operations Department Manager  
Parks and Buildings Planning Manager  
Building Services Manager  
Communications

#### **Existing Policy:**

Kelowna's Official Community Plan (2011) direction is based on creating a sustainable city and the proposed project aligns with many of its policies and objectives. These include:

- Goal 4: Improve Energy Efficiency and Performance of Buildings. Improve the energy efficiency and environmental performance of buildings and infrastructure by embracing sustainable solutions, such as district energy systems, and by providing clear guidelines and incentives for green components for developers.
- Objective 6.2: Improve energy efficiency and reduce community greenhouse gas emissions.
- Policy 6.2.1: GHG Reduction Target and Actions. The City of Kelowna will, in partnership with: senior governments; local residents and businesses; NGOs; external agencies; and utility providers, work towards reducing absolute community greenhouse gas emissions by:
  - 4% below 2007 levels by 2023;
  - 25% below 2007 levels by 2033; and

- 80% below 2007 levels by 2050.
- Objective 7.1: Apply sustainable decision-making approaches in infrastructure planning and procurement.
- Policy 7.1.3: Greenhouse Gas Reduction Criteria. Incorporate greenhouse gas reduction criteria in infrastructure projects for evaluation/ modeling and procurement.
- Policy 7.1.4: Multiple Bottom Line. Ensure a multiple bottom line approach is applied to all infrastructure planning projects.
- Policy 7.19.2: Energy Reduction Priorities. In working to reduce greenhouse gas emissions, place a primary focus on reducing demand, then prioritize further efforts in the following sequence: re-using waste heat, using renewable heat, and then finally on using renewable energy.

Corporate Energy & GHG Emissions Plan targets a 1% reduction per year, to be 12% below 2007 levels by 2022.

**Financial/Budgetary Considerations:**

The City of Kelowna financial contribution of \$689,393, as required by the grant, will be funded from the H<sub>2</sub>O Capital Reserve. Any cost savings as a result of this project will be placed in reserve.

**Considerations not applicable to this report:**

Legal/Statutory Authority:

Legal/Statutory Procedural Requirements:

Personnel Implications:

External Agency/Public Comments:

Communications Comments:

Alternate Recommendation:

Submitted by:

B Tollefson, Energy Program Manager

**Approved for inclusion:**



J. Creron, Deputy City Manager

cc: