Summerland Recreation Centre

Green Building Assessment Report



Prepared For:

District of Summerland

13211 Henry Avenue,

BC, V0H 1Z0

Prepared By:

Neha Bisht, Sustainability Advisor

Reviewed By:

Navid Hossaini, CEO

Recollective Consulting Inc.

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210 – 128 West Hastings Street
Vancouver BC Canada
V6B 1G8

604.669.4940
www.recollective.ca
@recollectiveca

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List of Abbreviations

CEEMP	Corporate Energy and Emissions Management Plan
CEERP	Community Energy and Emissions Reduction Plan
GHG	Greenhouse gases
NECB	National Energy Code of Canada for Buildings in Canada
TEDI	Thermal Energy Demand Intensity
TEUI	Total Energy Use Intensity

Glossary

Airtightness	Airtightness in respect to buildings refers to the building's resistance to air leakage, both flowing in or out of the building.
Carbon emission	carbon dioxide (CO_2) emitted when fossil fuels are burned in buildings.
Carbon offsets	A credit for reductions in greenhouse gas emissions that occur somewhere else and that can be purchased to compensate for the emissions of a building.
District energy system	Systems that distribute thermal energy to multiple buildings in an area or neighbourhood.
Embodied carbon	Carbon emissions associated with materials and construction processes throughout the whole life cycle of a building.
Greenhouse gases (GHG)	Gases that trap heat in the atmosphere are called greenhouse gases.
Heat-recovery	A ventilation system that uses an air-to-air heat exchanger that recovers normally wasted heat while at the same time supplying fresh highly filtered air improving the indoor environment.
Operational carbon	The amount of carbon emitted during the operational or in-use phase of a building.
Plug load	Energy used by equipment that is plugged into an outlet.
Regenerative materials	Building materials that utilize bio-based, reusable and non-toxic materials.
Regional material	Building materials that have been extracted, harvested, or recovered, as well as manufactured within a short distance of the building.
Thermal Energy Demand Intensity (TEDI)	A measure of the amount of annual heating energy needed to maintain a stable interior temperature. The annual heat loss from a building’s envelope and ventilation after accounting for all passive heat gains and losses, per unit of modelled floor area.
Total Energy Use Intensity (TEUI)	The measurement of a building's annual energy consumption relative to its gross floor area.
Thermal bridge	A thermal bridge is a localised area of the building envelope where the heat flow is different (usually increased) in comparison with adjacent areas. Thermal bridge acts as a heat bridge headed straight to the outdoors.
Upfront carbon	The carbon emitted in the production phase of products and materials, from mining and processing of natural resources, transport to processing sites, and the manufacturing phases.
U-value	Refers to thermal transmittance, it is the rate of transfer of heat through a structure. The lower the U-factor, the more energy-efficient the window, door, or roof are.

Executive Summary

Recollective Consulting Inc. ("Recollective") was engaged by the District of Summerland to complete a Green Building Assessment Report for the Summerland Aquatic and Fitness Centre, located at 13205 Kelly Avenue, in Summerland, BC.

The intent of this report was to study different green building frameworks suitable for the re-development of the new Summerland Recreation Centre. The green building frameworks included in the report are:

- BC Energy Step Code
- Leadership in Energy and Environmental Design (LEED)
- Zero Carbon Building (ZCB) - Design Standard

The following table shows the condition of existing buildings, potential improvement areas, and alignments with the green building frameworks. The existing building condition is based on the "Property Condition Assessment" report completed by Stantec Consulting Inc. in November 2018. The report was shared with Recollective by the District of Summerland staff.

Category	Existing Building	Step Code	LEED	ZCB
Building envelope and airtightness	Many air leakage spots are identified resulting in the building's airtightness to be leaky. Most of the building envelope is in poor condition with significant air and water leakage and potential for mold.	✓	✓	✓
Mechanical system	Overall, the mechanical systems appear to be operational and in adequate condition; however, most of the air handling systems and equipment have reached their life expectancy, and it was suggested that the replacement of these units be done sooner than later.	✓	✓	✓
Energy performance	The building has poor energy performance. The facility is consuming 86% more energy per unit floor area than the average swimming pool.	✓	✓	✓
Lighting system	Most parts of the building are lit by fluorescent tubes and would not meet current building code standards for energy efficiency.	✓	✓	✓
Water conservation	Plumbing fixtures are old and in poor condition and should be replaced.	✗	✓	✗

Based on the review of Green Building Frameworks, District of Summerland's Corporate Energy and Emissions Management Plan (CEEMP), Summerland Recreation Feasibility and Site Fit, Property Condition Assessment Report and Energy Study Report, each of the examined frameworks in this report will result in improved sustainability of

the proposed Aquatic Centre compared to the current facility. This is in part due to the age of the building where current building code requirements will provide baseline improvements regardless of the framework chosen. However, if greater sustainability is a goal for Council, Step Code levels 2 or 3, LEED and ZCB do provide additional sustainability considerations. The table below shows the eligibility of applicable grants with the green building frameworks:

Green Building Framework	The Green and Inclusive Community Buildings (GICB)	Canada Community Building Fund (CCBF)*
Step Code		✓
LEED (Silver/Gold)		✓
ZCB Design Standard	✓	✓

** Under Canada Community Building Fund, there are no specific requirements for green building frameworks.*

1. Overview of Green Building Frameworks

This section provides an overview of the green building frameworks and explains how they relate to the aquatic facility.

1.1. BC Energy Step Code - Step 1 (Baseline)

The BC Energy Step Code is a compliance path in the BC Building Code that local governments can use to incentivize or require a level of energy efficiency in new construction that goes above and beyond the requirements of the BC Building Code. It's designed to help government and industry create a future in which all new construction in B.C. is net-zero energy-ready by 2032. The BC Energy Step Code serves as a policy pathway and technical roadmap to reach that target.

The BC Energy Step Code has three step levels for different building types as shown in Figure 1:

- Step 1, which is the BC Building Code.
- Lower Steps
- Upper Steps



Figure 1: Step Code Steps for Different Building Types

The District of Summerland adopted the BC Energy Step Code on June 5, 2018. Currently, District of Summerland requires Energy Step Code 3 for Part 9 Residential Buildings and Step 1 for other building types. The Aquatic Centre baseline energy requirement is to meet BC Energy Step Code 1. The Province does not mandate higher levels of the Energy Step Code for recreation facilities, therefore it is up to Council to direct development of the recreation facility to exceed the BC Energy Step Code 1.

Step 1 entails modelling energy performance and measuring airtightness to ensure that a building will meet or exceed the minimum energy-efficiency requirements in the base BC Building Code. The energy modeling needs to be completed according to Part 8 of the National Energy Code of Canada for Buildings (NECB), The building energy performance compliance path. This is a whole building approach that compares the performance of a proposed building to that of a reference building, i.e., one that follows the prescriptive path. The performance path allows performance losses in one building system or parameter to be offset by performance gains in another. For example, a proposed building with a boiler that is less efficient than required in the prescriptive path could have a building envelope with better thermal performance than required in the prescriptive path. If the total energy consumption of the proposed building is less than or equal to that of the reference building, the design is considered NECB-compliant.

To achieve Step 1, the Aquatic Centre can rely on conventional building designs with careful air-sealing practices and heat recovery ventilation. By achieving Step 1, the energy performance of the new Aquatic Centre will be much better than the existing building due to current energy code requirements. Most of the building envelope is in poor condition with significant air and water leakage and potential for mold. The new building's envelope will be high-performance, and as such, will have improved airtightness and will include air and water barriers to prevent mold.

Most of the air handling systems and equipment of the existing building have reached their life expectancy. The mechanical system for the new building will be energy efficient and will use heat recovery ventilation to reduce energy consumption of the Aquatic Centre.

1.2. BC Energy Step Code – Step 2 and Step 3

To achieve the Lower Step (Step 2) and the Upper Step (Step 3), the design and construction team for the new Aquatic Centre will need to adopt a more integrated approach to building design and need to incorporate more substantial changes to the envelope and mechanical systems. The following table shows the strategies Aquatic Center could incorporate to achieve these steps.

Table 1 Step Code Strategies

Strategies	Step 2	Step 3
Improve heat-recovery efficiency (e.g., 60%)	✓	✓
Improve window performance (e.g., double- and triple-glazed windows with higher U-values)	✓	✓
High-performance building envelope (e.g., minimum effective R-10 for walls and effective R-20 for roofs)	✓	✓
Reduce thermal bridging		✓
Design for a lower overall window-to-wall ratio (e.g., 40% WWR)		✓

As per the Energy Study Report completed by Building Energy Solutions Ltd in December 2019, the existing Aquatic Center building has a total energy use intensity (TEUI) of 946.3 kWh/m2/year, which means the building is not energy efficient and is using more energy than other similar buildings. As per the Property Condition Assessment report completed by Stantec Consulting Inc. in November 2018, the aquatic building has poor energy performance. The facility consumes 86% more energy per unit floor area than the average swimming pool.

The following Table shows the requirements for each of the two-performance metrics of each Step applicable to the Aquatic Center:

Table 2 Energy Performance Requirements of Step Code

Step*	Total Energy Use Intensity (TEUI) in kWh/m^2.year	Thermal Energy Demand Intensity (TEDI) in kWh/m^2.year
1	Conform to Part 8 of the NECB**	
2	170	30
3	120	20

** for Business and Personal Services or Mercantile Occupancies. Table 10.2.3.3.B of Building Act*

*** Part 8 of NECB is Building Energy Performance Compliance Path, which is intended to compare the energy performance of a proposed building to that of a building designed in accordance with the prescriptive requirements of the NECB.*

- **Total Energy Use Intensity (TEUI) in kWh/m^2/year**: The measurement of a building's annual energy consumption relative to its gross floor area
- **Thermal Energy Demand Intensity (TEDI) in kWh/m^2/year**: A measure of the amount of annual heating energy needed to maintain a stable interior temperature. The annual heat loss from a building's envelope and ventilation after accounting for all passive heat gains and losses, per unit of modelled floor area.

1.3. LEED v4 Building Design and Construction (BD+C) for New Construction - Silver & Gold

Leadership in Energy and Environmental Design (LEED) is internationally recognized as the leading voluntary green building standard in North America. In Canada, the LEED Framework is administered by the Canada Green Building Council (CAGBC). For the new construction of the Aquatic facility the project would fall under the version 4.1 of the LEED Building Design and Construction (LEED BD+C): New Construction (NC) framework. In short, LEED v4.1 NC.

LEED is a holistic system that doesn't simply focus on one element of a building such as energy, water, or health; rather it looks at the big picture factoring in all the critical elements that work together to create the best building possible. The LEED framework evaluates building performance using the following criteria:

- Location and Transportation
- Sustainable Sites
- Water Efficiency
- Energy Performance

- Building Materials
- Indoor Environmental Quality

The combination of mandatory (Prerequisites) and voluntary (Credits) elements earns points towards a LEED certification at various levels: Certified, Silver, Gold, and Platinum, with each higher level attained through the acquisition of more points. Additional points are achieved by including more of the voluntary elements to the building and site design.

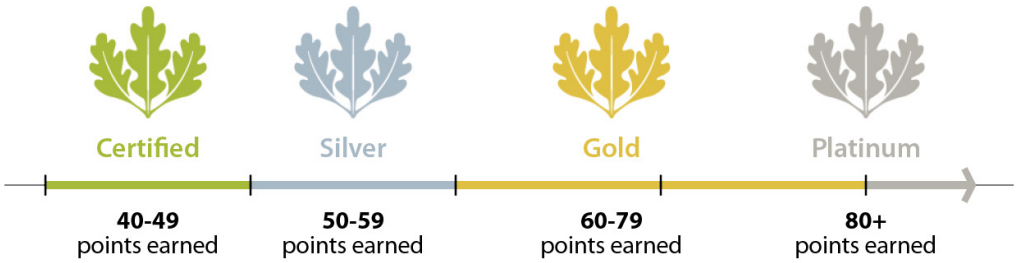


Figure 2: LEED certification levels and their points threshold

The following Figure shows the energy consumption of the existing Aquatic Center. The percentages are calculated using the estimated energy consumption in Table 9: Actual End-Use Breakdown Estimate (2018) of the Energy Study Report.

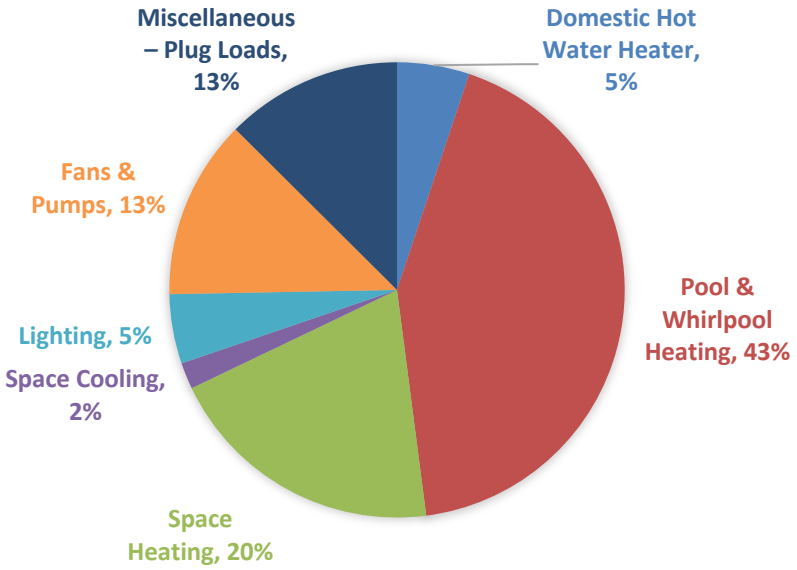


Figure 3: Energy consumption for different end-uses of the existing Aquatic Center

The largest contributor to energy consumption is pool & whirlpool heating, followed by space heating. LEED strategies that could be implemented in the re-development of the new Aquatic Center are listed below based on the different end uses:

Table 3 LEED Strategies

Pool & Whirlpool Heating	Space Heating & Cooling	Fans, Pumps & Plug Load	Lighting	Domestic Hot Water Heater
- Use electric heat pumps	- Use electric heat pumps - Use heat recovery ventilators - Connect mechanical equipment with Building Management System (BMS) to monitor the energy consumption	- Use Energy Star rated pumps. - Use of Energy Star rated appliances and fans	- Install dimmable LED lighting with Occupancy Sensors. - Incorporate natural light and daylighting	- Use highly efficient water heater system

In addition to energy efficiency, the following strategies can be implemented to achieve points in other categories:

- **Material Resources**
  - Use building materials that have Environmental Product Declarations (EPD) or Health Product Declarations (HPD)
  - Use FSC certified wood
  - Divert at least 75% of the total construction and demolition materials from landfills and incineration facilities
- **Water Conservation**
  - Use efficient landscaping irrigation
  - Install water-efficient fixtures reducing the indoor water consumption by at least 30%.
- **Indoor Environmental Quality**
  - Use indoor finishing materials that are low in volatile organic compounds (VOCs) and contain no urea formaldehyde.
  - Install high efficiency air filters such as MERV13.

1.4. CaGBC Zero Carbon Building (ZCB) - Design Standard

ZCB is a relatively new green building framework developed by the Canada Green Building Council that narrows the focus to carbon analysis, evaluating emissions across the building life cycle, including construction and operation. There are two pathways:

- **ZCB-Design Standard:** This pathway is a one-time certification for new buildings and major renovations. Certification is awarded based on the project's final design, and teams are eligible to submit for certification once construction documents are ready. Projects are awarded certification once all requisite documentation is received and a review by the Green Building Council confirms the requirements of the ZCB-Design Standard have been met.

- **ZCB-Performance Standard:** This pathway is applicable to existing buildings. The ZCB-Performance Standard verifies that buildings achieve zero carbon operations year after year. Verification is required annually. Carbon emissions from common building activities like heating, cooling, and lighting are assessed as part of operational carbon emission. Additionally, the embodied carbon associated with new structural and envelope materials are assessed and accounted for.

Figure 4 shows the zero carbon balance for ZCB framework.

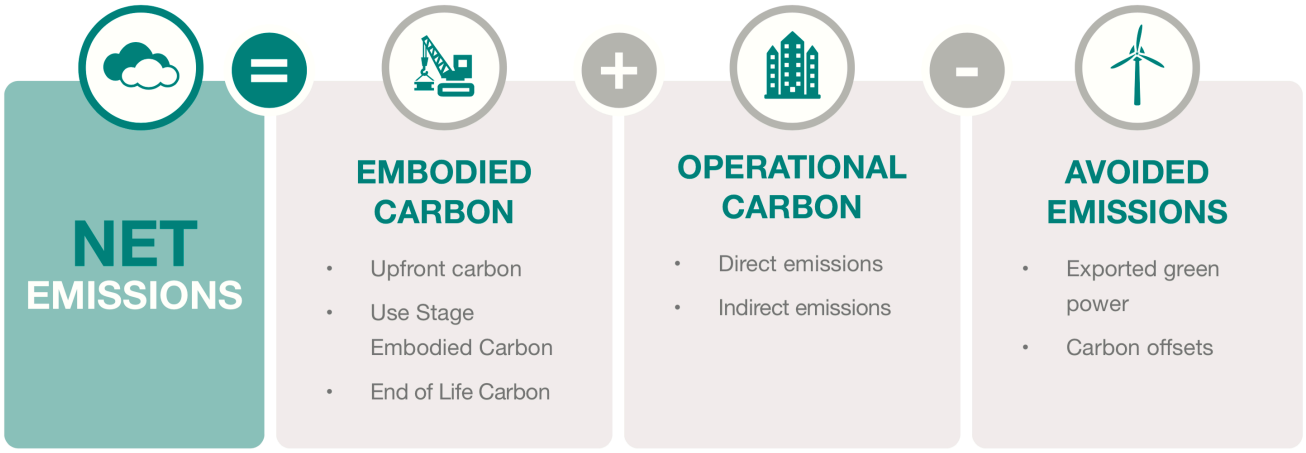


Figure 4. Zero carbon balance

- Embodied Carbon is carbon emissions associated with materials and construction processes throughout the whole life cycle of a building.
- Operational Carbon is the amount of carbon emitted during the operational or in-use phase of a building.
- Carbon offset is a credit for reductions in greenhouse gas emissions that occur somewhere else and that can be purchased to compensate for the emissions of a building.

For the new Aquatic Center, the ZCB-Design Standard can be an appropriate standard to use. The ZCB-Design standard would focus on the following aspects of the Aquatic Center:

Table 4 Zero Carbon - Design Standard Requirements

	Category	Implementation
CARBON	Zero carbon balance	Zero Carbon Balance shows the net carbon emissions of the building and the amount of renewable energy or carbon offsets required. This is determined based on energy modelling and detailed embodied carbon analysis of the building.
	Embodied carbon	Embodied carbon analysis, demonstrating the requirement (<500 kg CO_2e/m^2) is met. This can be achieved by using low carbon concrete or mass timber structure.
	Refrigerants	Selection of refrigerants that have low global warming potential and minimizing potential leaks.
	Carbon offsets	Estimate of the carbon offset cost for the Aquatic Center. Design standard projects are not required to purchase offsets.
	Onsite combustion	Project should eliminate any onsite combustion and use of natural gas. If natural gas is used, a 5-year transition plan must be prepared showing the intention for the Aquatic Center to go all-electric.
ENERGY	Energy efficiency	Meet TEDI and TEUI targets shown below: **TEDI:** 32 kWh/m2/year **TEUI:** 25% better energy performance compared to an NECB 2017 reference building.
IMPACT & INNOVATION		Projects must include two Impact and Innovation strategies. The following strategies can be used for the new Aquatic Center: 1. Electric space heating 2. 20% Embodied Carbon Reduction

2. Benefits of Each Green Building Design Framework

The following table compares the Green Building Frameworks discussed in the previous section and their benefits in respect to the new Aquatic Centre. The table shows describes each benefit and its relevance to each green building framework. Level of alignment is identified in three colour coded levels:

- **Green: High alignment.** The item is core benefit of the green building framework
- **Yellow: Medium alignment.** The item is somewhat addressed in the green building framework and achievement depends on the design strategies.
- **Red: Low or No alignment.** The item is not addressed in the green building framework

The requirements of the ZCB Design standard align with the requirements of the Step code. The Step code focuses on high-performance building envelope, air-tightness and energy efficiency. Additionally, the ZCB Design framework targets GHG reduction. LEED is a holistic green building framework that covers a wide spectrum of sustainability criteria including energy efficiency, GHG reduction, water efficiency, healthy materials, and waste diversion.

The following diagram shows the crossover of these green building frameworks. Achieving LEED can result in meeting Step Code 1 and potentially higher steps of the BC Step Code. This depends on the building design and can be evaluated by conducting an energy modeling exercise in early design. Also, achieving ZCB will result in meeting Step Code 2 and getting up to 18 LEED energy points. It's important to note that these green building frameworks have different requirements and methods for measuring performance. For example, energy performance in LEED is measured based on relative analysis compared with a baseline, while Step Code and ZCB have absolute energy targets.

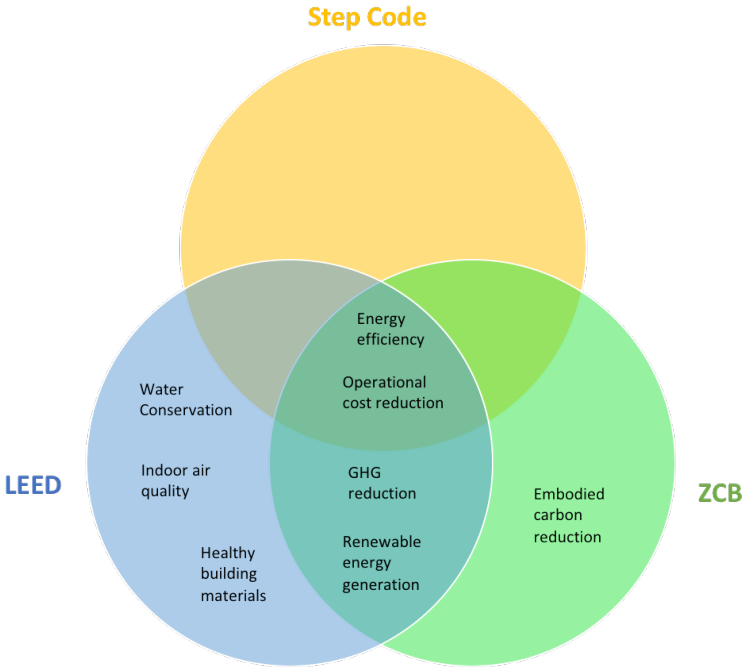


Figure 5 Venn Diagram of Green Building Frameworks

Table 5 Benefits of Green Building Frameworks

Benefits	Description	Step Code	LEED		ZCB Design Standard
			Silver	Gold	
Energy efficiency	Building design elements that conserve energy. Design elements include building envelope, HVAC, lighting.	Step 2 ≤ 30 ekWh/m²/yr Step 3 ≤ 20 ekWh/m²/yr	Energy savings ≥ 24%	Energy savings ≥ 35%	TEDI target ≤ 32 ekWh/m²/yr
GHG reduction	Includes the operational carbon emissions due to the source of energy used.	No GHG target	GHG reduction path for energy credit	GHG reduction path for energy credit	Strong GHG reduction target. No combustion
Water conservation	Includes indoor water use reduction and outdoor water use reduction for irrigation		Water savings ≥ 20%	Water savings ≥ 30%	
Indoor air quality	Includes use of high efficiency air filters.		High efficiency air filters	High efficiency air filters	
Healthy building materials	Includes use of healthy building materials with low VOC.		VOC limit for indoor materials	VOC limit for indoor materials	
Embodied carbon reduction	Includes the carbon footprint associated with the building materials used in the Aquatic Centre.		Embodied carbon reporting	Embodied carbon reduction ≥ 10%	Embodied carbon reduction ≥ 20%
Operational cost reduction	Includes the utility bills associated with the operation of the Aquatic Centre.	Operation cost reduction due to lower energy use	Operation cost reduction due to lower energy use	Operation cost reduction due to lower energy use	Operation cost reduction due to lower energy use
Renewable energy generation	Includes generation of renewable energy on-site.		LEED points for renewable energy generation	LEED points for renewable energy generation	Counts as an Impact and Innovation strategy

3. Cost Breakdown of Each Green Building Design Framework

This section summarizes the incremental cost premium of each green building framework reviewed in Section 1 versus the baseline BC Step Code Step 1 (baseline for current nonresidential buildings).

- **Soft Costs:** These include costs related to additional consulting services and fees from building professionals and administrative fees required for each green building framework.
- **Hard Costs:** Meeting the requirements of each green building framework requires investment in a better building envelop, more efficient mechanical systems, or using building materials that are third-party certified for health impact. The capital costs associated with that are included in the following table. The costs shown in this table are gathered from published reports for LEED, Step Code, and Zero Carbon Design costs as well as Recollective Consulting's experience from past projects. These costs are estimates and it is the responsibility of the District to confirm these costs with a Cost Consultant.

Table 6 Cost of Green Building Design Frameworks

	Estimated Soft Cost				
Cost Category	**Description**	**BC Step Code 1**	**BC Step Code 2 & 3**	**LEED Silver and Gold**	**ZCB Design**
Registration Fee	The fee associated with registering the building with the green building council. This is a one-time fee paid at the beginning of the project.	N/A	N/A	$2,000	$4,000
Certification Fee	The fee associated with green building certification. The fee is paid to the green building council to assess the building and grant certification if requirements are met.	N/A	N/A	$20,000	$15,000
Consulting Fee	The fee associated with services of building professionals, including sustainability consultant and design consultants.	N/A	$20,000	$75,000	$35,000
Energy Modelling Fee	The fee associated with creating a computer model of energy consumption of the building.	$10,000	$20,000	$20,000	$20,000
Airtightness Testing	The fee associated with performing an airtightness testing prior to construction completion.	$15,000	$15,000	N/A	$15,000
Embodied Carbon Modeling Fee	The fee associated with creating a computer model of the construction materials used in the building and calculation of the carbon footprint.	N/A	N/A	$10,000	$15,000
Total		**25,000**	**55,000**	**$127,000**	**$104,000**
	Estimated Hard Cost *				
Capital Cost Premium	Capital cost associate with building materials, systems and construction activities. Meeting requirements of each green building framework requires investment in better building envelop, more efficient mechanical system and using building materials that are third-party certified for health impact.	0 %	1% - 10%	0% – 10% **	1% – 5%

** A percentage range is given for hard cost as these cost premiums significantly depend on the new Aquatic Centre design and experience of the design and construction team with each of the green building frameworks. The lower range of the cost is associated for an integrated design team working with an experienced general contractor. The higher end of the range is associated with inexperienced design and construction team.*

*** The LTA cost consultants Schematic Design Estimate report has stated: "The baseline estimates of construction costs included in this estimate assumes a building that would meet the requirements of a building constructed to LEED Silver standards."*

4. Comparison of Green Building Design Frameworks with District Climate Goals

In March 2021, The District of Summerland developed a Corporate Energy and Emissions Management Plan (CEEMP) in collaboration with the Community Energy Association. Part of an organizations role in dealing with climate action is to reduce emissions caused by its own buildings and fleet. Reducing corporate GHG emissions offers many co-benefits, including:

- Increasing energy conservation and efficiency, reducing municipal energy costs, i.e., providing better value for money to taxpayers
- Providing improved thermal regulation and quality of lighting, resulting in a more comfortable working environment for staff and visitors
- Minimizing air pollution and improving air quality by transitioning to low or zero carbon fleets and infrastructure

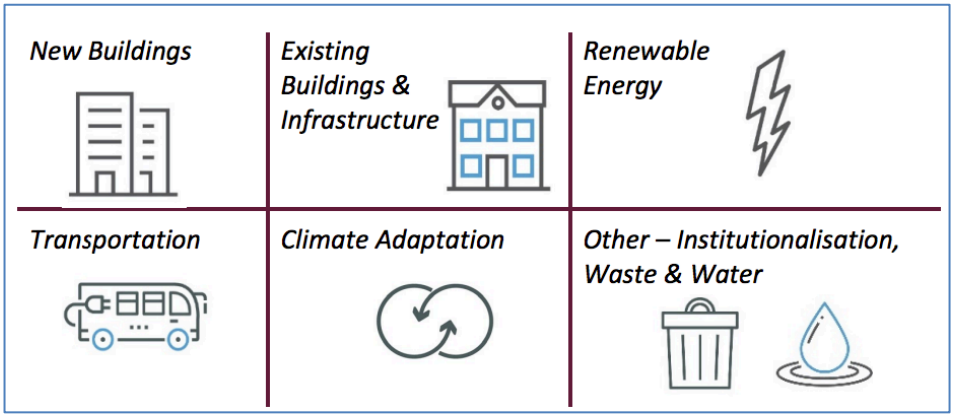


Figure 6: District of Summerland CEEMP Categories.

The CEEMP identified 15 actions to be implemented over the next five years within the following categories. 7 actions relevant to the new Aquatic Centre are identified in Table 7 CEEMP Action and Strategies. By collectively implementing the CEEMP actions the District can over time expect a decline in total emissions by the following percentages below 2012 emissions:

- 29% by 2025
- 37% by 3030
- 60% by 2050

Based on the emission analysis from the CEEMP the recreation facilities were identified as having the highest GHG emissions. Therefore, in providing a more comprehensive approach to the redevelopment of the Aquatic Center for reduced emissions and increased efficiency, the project addresses one of the main emitters at the corporate level, which advances the corporate emission carbon targets.

The following table shows the CEEMP's actions relevant to the Aquatic Center and the level of priority for each action identified in the CEEMP. The Table shows which action items are addressed in the green building frameworks.

Table 7 CEEMP Action and Strategies

Action	Strategies	Priority	Step Code	LEED	ZCB
NB1: Commit to building energy efficient and resilient facilities and buildings	The district will commit to building the most energy efficient new facilities and buildings with as low GHGs as it reasonably can, with consideration for relevant green design standards.	High			
NB2: Optimise siting and orientation of new buildings	Proper siting for new buildings can also mitigate damage from future climate impacts such as flooding, as well as avoid emissions associated with repairing potential damages. The district will commit to doing this wherever reasonably possible.	High			
NB3: Include renewable energy in new construction & major renovations	New buildings can be designed to operate with ground-source heat pumps to ensure that they have very low GHG emissions, and with solar PV and/or hot water to help shield them from future energy price increases.	High			
T2: Reduce emissions associated with staff commuting to work	Providing amenities like bicycle racks and showering facilities; make EV charging stations and plug-ins available for EVs, e-bikes, and e-scooters; offer programs through recreation to encourage cycling or walking (such as promoting Go By Bike Week).	Medium			
O1: Improve emissions reporting process	Sub-meters could be installed in key buildings, to assist with measurement and verification of the impacts of energy saving measures. Weather normalisation could also be incorporated into the emissions reporting.	Low			
O2: Manage District water consumption	The district does not currently actively manage its consumption of water. There is an opportunity to lead by example, which in turn would help with community-wide actions identified in the CEERP.	High			
O3: Manage District waste creation	The district does not currently actively manage its creation of waste. There is an opportunity to lead by example in managing waste by first reusing, then reducing, and finally by recycling.	Low			

Level of alignment is identified in three color coded levels:

- **Green: High alignment.** The item is a core benefit of the green building framework
- **Yellow: Medium alignment.** The item is somewhat addressed in the green building framework and achievement depends on the design strategies.
- **Red: Low or No alignment.** The item is not addressed in the green building framework

As it can be seen from the Table above, the LEED framework addresses all of the action items identified in CEEMP. LEED showcases itself by providing a holistic green building framework that covers a wide spectrum of sustainability criteria including energy efficiency, GHG reduction, water efficiency and waste diversion. It aligns well with the District of Summerland's CEEMP and its climate action targets.

The ZCB framework addresses action items related to energy efficiency and carbon but falls short in addressing other categories such as water and waste management. The Step Code is focused entirely on energy efficiency which can result in the GHG reductions because of energy reductions. However, the Step Code does not limit the building energy source (i.e. electricity, natural gas) and as such, its impact on GHG reduction is limited.

5. Applicable Grants and Conclusions

This section outlines some of the applicable grants available to the new Aquatic Centre and their evaluation criteria. It highlights if green building frameworks identified in this report would help meeting the applicable grants. The table below shows the eligibility of applicable grants with the green building frameworks:

Table 8 Applicable Grants

Green Building Framework	The Green and Inclusive Community Buildings	Canada Community Building Fund*
Step Code		✓
LEED (Silver/Gold)		✓
ZCB Design Standard	✓	✓

** Under Community Building Fund, there are no specific requirements for green building frameworks.*

The Green and Inclusive Community Buildings program requires that buildings be "net-zero-carbon-ready". The Aquatic Centre can use the ZCB Design Standard to meet this requirement. The Canada Community Building Fund has no specific requirements for green building frameworks. Achieving Step Code, LEED or Zero Carbon Standard can help demonstrate sustainability commitment of the new Aquatic Centre and meet requirements of this Fund.

5.1. Green & Inclusive Community Buildings

The Green and Inclusive Community Buildings (GICB) program aims to build more community buildings and improve existing ones – in areas with populations experiencing higher needs – while also making the buildings more energy efficient, lower carbon, more resilient, and higher performing. This five-year $1.5 billion program will support green and accessible retrofits, repairs or upgrades of existing public community buildings and the construction of new publicly accessible community buildings that serve high-needs, underserved communities across Canada.

Program Category

Clean Energy, Climate Adaptation, Built Environment, Environment, Community Infrastructure

Application Stream

Aquatic Center fits within the Scheduled Intake Streams which is for applicants with large retrofit projects to existing buildings or new community building projects with total eligible costs ranging from $3 million to $25 million through a competitive intake process.

Eligibility

New construction projects will be required to meet one of the following minimum standards:

- **Built to be net-zero carbon:** Highly energy efficient building that produces onsite, or procures, carbon-free renewable energy or high-quality carbon offsets. To meet the requirements of this category, the building must meet the Zero Carbon Building – Performance Standard.
- **Built to be net-zero-carbon-ready**
  Building designed and built to a level of performance such that in accordance with a transition plan it will achieve net zero performance in carbon emissions. i.e. with the addition of solar panels or other renewable energy technologies. To meet requirements of this category, the building must meet the Zero Carbon Building – Design Standard.

Application timeline

The first scheduled intake closed on July 6th, 2021. According to GIBC website, the second intake is anticipated later in 2022, however, the date has not yet been determined. More information is available here.

5.2. Canada Community - Building Fund

The Canada Community-Building Fund provides predictable, long-term and stable funding to local governments in British Columbia for investment in infrastructure and capacity building projects. Over the 10 years of the Agreement, British Columbia is expected to receive a transfer of $3.052 billion in funding from Canada.
In British Columbia, the Canada Community-Building Fund is delivered through three program streams: Community Works Fund; Strategic Priorities Fund; and Greater Vancouver Regional Fund.

The Aquatic Center is eligible for the Community Works Fund. The Community Works Fund provides funding for local governments in BC for capital infrastructure and capacity building projects including those in community energy systems, integrated community sustainability planning, public transit, solid waste, drinking water, waste-water. Local governments make local decisions about which eligible projects to fund. The District staff have applied for the Strategic Priorities fund stream in June 2022 for $6 million dollars. A decision has not yet been rendered by the program to staff.

Program Category

Clean Energy, Climate Adaptation, Sustainable Transportation, Community Infrastructure

Application Stream

This is a Continuous intake funding. Funding distribution is twice per year and requires a report on how the fund is used.

Eligibility

Projects must qualify under an eligible category, be for public use and benefit, and achieve program outcomes. There are no specific requirements for green building frameworks. Achieving Step Code, LEED or Zero Carbon Standard can help demonstrate sustainability commitment of the project.

Application timeline

Community Works Funding is provided twice annually to local governments who make local decisions about which projects to fund. Allocations vary by year. More information is available here.

5.3. Conclusions

Based on the review of Green Building Frameworks, District of Summerland's Corporate Energy and Emissions Management Plan (CEEMP), Summerland Recreation Feasibility and Site Fit, Property Condition Assessment Report and Energy Study Report, it is concluded that using Step Code, LEED or ZCB will improve the energy performance of the new Aquatic Centre and will lower the greenhouse gas emissions. Out of the green building frameworks, LEED addresses all of the action items identified in the CEEMP and aligns with the District of Summerland's goals.

The climate actions found within the CEEMP address a number of important areas of concern for emission reduction and energy efficiency, and the criteria used for LEED align well with these actions providing an opportunity for the District to check of many of its own actions for a new building. Further, based on the current building issues identified in the Property Condition Assessment report, they would be addressed through a new building that follows the LEED criteria (Silver or Gold).

Disclaimer

This report has been prepared based upon information provided and includes the input and commentary from the professionals involved. In some cases, assumptions have been made to enable calculations to be completed. The costs shown in this report represent the professional consultant team's best estimate given the project constraints and sustainability requirements. It is the responsibility of the owner to confirm these costs and engage a professional cost consultant. This document represents Recollective Consulting's best judgment, based on the information available at the time of its completion, and should be considered as "information and reference" only.