

**RESORT MUNICIPALITY OF WHISTLER**

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STAFF REPORT TO COUNCIL

PRESENTED: September 21, 2021
FROM: Environmental Stewardship
SUBJECT: GAME-CHANGER GRANT FOR EMBODIED CARBON GUIDE REPORT

REPORT: 21-106
FILE: 5290

RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Resort Experience be endorsed.

RECOMMENDATION(S)

That Council direct staff to collaborate with the District of Squamish and the Community Energy Association on the development of an embodied carbon guide for BC Municipalities – based on research and policies developed for the Resort Municipality of Whistler and the District of Squamish – as part of the Game-Changer Grant Program.

PURPOSE OF REPORT

The purpose of this report is firstly to provide Council with background information on a proposed collaboration with the District of Squamish and the Community Energy Association as a result of the Game-Changer Grant application, and secondly to seek Council's support in advancing the collaboration to develop an Embodied Carbon Guide for BC Municipalities.

☐ Information Report ☒ Administrative Report (Decision or Direction)

DISCUSSION

Background

On December 15, 2020, Council adopted the Climate Action Big Moves Strategy and new greenhouse gas (GHG) emission reduction target of reducing Whistler's GHG emissions by 50 per cent below 2007 levels by 2030. Big Move 4 of this strategy has the goal that by 2030 all new buildings will achieve the top step in BC's Energy Step Code, use only low carbon heating systems, and embodied carbon emissions will decrease by 40 per cent.

Operational GHG emissions from buildings accounted for 38 per cent of Whistler's community-wide GHG inventory in 2019 and around 50 per cent in 2020. Buildings are therefore one of the largest emission sources in Whistler. While existing buildings are responsible for all reported operational GHG emissions, the RMOW has greater authority to influence new construction and thereby building related emissions in the long term. This includes continuing to lead on the BC Energy Step Code and incentivizing low carbon energy systems in new developments but it also highlights the need to address embodied carbon emissions going forward. Embodied emissions refer to the GHG emissions arising from manufacturing,

transportation, installation, maintenance, and disposal of building materials. Embodied emissions are not currently measured or reported on in Whistler but are estimated to be significantly higher than operational emissions and can make up a substantial proportion of a buildings life cycle emissions, often in the range of 20-25 per cent. In a newer more efficient building, embodied emissions can make up more than 50 per cent of total life cycle emissions. To achieve the Big Move 4 goal of reducing embodied carbon emissions by 40 per cent by 2030, it is mandatory for Whistler to understand their current impact and identify actions the municipality can take to reduce embodied emissions in new buildings.

The Community Energy Association (CEA) – a not-for-profit environmental consulting group - developed the Game-Changer Grant Program to support cutting edge community initiatives related to climate action. The granting program provides senior dedicated capacity from CEA in the form of staff time to work with communities to advance climate action innovations. More information about the grant program is available [here](#).

The Resort Municipality of Whistler's (RMOW) staff evaluated the grant objectives and criteria and determined that the proposed embodied carbon work was a good fit with the funding opportunity, and an excellent opportunity for both the community of Whistler and the Sea to Sky region. RMOW staff collaborated with the District of Squamish (DOS) and submitted a joint Expression of Interest (EOI) to the Game-Changer Grant Program. The intended project is for the development of an Embodied Carbon Guide that helps to increase awareness, inform decisions and build collaborations toward reducing embodied carbon emissions in Whistler, Squamish, and other BC communities.

The EOI was favourably received, and the RMOW and DOS have been identified as one of four finalists for the program. The CEA intends to support all four finalists, which means that there is approximately 440 hours of CEA senior staff professional time available to support the program going forward from now until December 2023. To proceed with the application Council must approve the Resolution, and then staff will finalize a partnership agreement with the CEA.

Analysis

Rationale for embodied carbon emissions work in Whistler:

To effectively respond to climate change it is crucial to consider, measure and mitigate embodied emissions. Therefore, as the RMOW works toward implementing the Climate Action Big Moves strategy and decarbonizing new and existing buildings, embodied emissions become a larger issue that needs to be considered and addressed. Reasons why it is crucial to begin considering embodied emissions in buildings in BC communities (such as Whistler and Squamish) include:

1. Embodied emissions are *now* emissions, while operational emissions are spread over the life of the building. Poor embodied carbon choices have the potential to negate all operational emissions reductions that could be achieved by 2030.
2. Whistler, Squamish and many other BC communities are rapidly growing and are facing large development proposals.
3. Municipal governments have authority to influence new constructions and thereby embodied emissions in buildings.
4. Whistler and Squamish have a strong record of collaboration, are climate action leaders, are proximal to Vancouver and are recreation and tourism hubs. These factors make both towns

ideal candidates to be visible leaders amongst small communities in BC.

5. There are viable ways to significantly reduce embodied emissions, including technologies that are net carbon negative. Embodied carbon can be a good news story.
6. There are important waste reduction and waste emissions implications related to embodied carbon, and important associated local social and economic benefits.

Proposed project work:

The RMOW and the DOS are proposing to partner with the CEA to create an Embodied Carbon Guide for BC Communities. This guide will be a valuable resource for the RMOW to increase awareness, inform decisions and collaborate toward reducing embodied carbon emissions in Whistler, Squamish and other BC communities. Whistler and Squamish will serve as case study communities for the guide. The final guide will explore four main areas of potential actions that the RMOW and other BC communities can take. These are:

- I. Policy and regulation
- II. Removing barriers and providing incentives for low carbon materials
- III. Capacity building to facilitate industry transformation
- IV. Complementary strategies and advocacy to higher levels of government

Each of these four areas will be explored and initiated in Whistler and Squamish, and the resultant guide will enable a range of communities across BC to develop strategies, policies, partnerships (and potentially jurisdiction) to appropriately consider and reduce embodied emissions.

Next Steps and Timeline:

The development of the proposed embodied carbon guide will be divided into 3 phases:

Phase 1 - Modelling and Research (October 2021 – July 2022): In the first project phase, research and modelling will be conducted to build an understanding of embodied carbon emissions for communities in BC. This work will result in a vision and clear scope for the initiative and will be foundational in identifying embodied carbon emission reduction opportunities. The modelling will guide the development of reduction pathways for smaller communities. Detailed analysis in Squamish and Whistler will occur. It is anticipated that the embodied carbon inventories for the two communities will be somewhat similar, but that there will be more embodied emissions related to single family homes in Squamish, and for larger buildings in Whistler.

Phase 2 – Evaluation of Local Government Levers (May 2022 – May 2023): The second phase will build on the recently published report “[Making Embodied Carbon Mainstream](#)” by the Pacific Institute for Climate Solutions. This phase has the goal to evaluate and map out the implementation of all potential actions that a local government can take to reduce embodied carbon emissions. Opportunities for collaboration will be identified to enable economies of scale, market opportunities and the sharing of best practices.

Phase 3 – Guide for BC Municipalities (September 2022 – August 2023): The final phase of this project will be the creation of a detailed guide and implementation roadmap for Whistler, Squamish and other local governments to reduce embodied emissions. The guide will enable communities across BC

to develop strategies, policies, partnerships and possibly jurisdiction to appropriately consider and reduce embodied emissions.

POLICY CONSIDERATIONS

Relevant Council Authority/Previous Decisions

The proposed project directly supports the 2020 Climate Action Big Moves Strategy, in particular the following:

Big Move 4, “Build zero emission buildings”, with the goal that by 2030, all new buildings achieve the top step in B.C.’s Energy Step Code, use only low carbon heating systems, and embodied carbon emissions drop by 40 per cent.

- Key initiative 7: “Encourage low carbon design (efficient use of materials and optimized spaces), low carbon material use (e.g. mass timber, lower GHG-intensive cement, recycled materials), and low carbon construction practices (e.g. limited construction site heating) of new buildings.”
- Key Initiative 8: “Develop roadmap to require embodied carbon calculations for Part 3 buildings as part of permit submissions.”
- Key Initiative 9: “Build RMOW staff capacity related to embodied carbon emissions.”

Big Move 6, “Close the loop and shift toward lower carbon consumption”, with the 2030 goal to “reduce waste sector emissions by 95 per cent and reduce embodied emissions from products and services.”

- Key Initiative 2: “Reduce construction waste focusing on organic materials such as waste wood”
- Key Initiative 3: “Continue to reduce all streams of waste”
- Key Initiative 5: “Demonstrate RMOW leadership by embedding GHG emissions considerations into municipal procurement practices.”

Corporate Plan

The RMOW Corporate Plan is updated annually and articulates strategic direction for the organization. This section identifies how this report links to the plan.

Council Focus Areas

☐ Community Balance

*Effectively **balance resort and community needs** through deliberate planning, partnerships and investment*

☒ Climate Action

*Provide leadership to **accelerate climate action and environmental performance** across the community*

☐ Housing

*Advance strategic and innovative initiatives to enable and **deliver additional employee housing***

☐ Not Applicable

Official Community Plan

The Official Community Plan (OCP) is the RMOW's most important guiding document that sets the community vision and long-term community direction. This section identifies how this report applies to the OCP.

This initiative directly supports Whistler's Community vision and the following OCP goals:

5.4. Goal: Reduce the environmental and energy impacts of residential neighbourhoods to improve the quality of life and sustainability of the resort community.

10.1. Goal: Municipal decision-making is well-structured to achieve energy efficiency goals and GHG reduction targets.

10.3. Goal: Substantially reduce GHG emissions from buildings and infrastructure.

10.4 Goal - Substantially reduce GHG emissions associated with solid waste management

12.3 Goal - Move progressively toward zero waste.

BUDGET CONSIDERATIONS

There are no direct budgetary implications for this project, as the Game-Changer grant is for CEA staff time only. The RMOW will contribute in-kind staff time toward the project, mainly through the involvement of the Climate Action Coordinator. Other RMOW staff members in positions related to buildings, waste, planning, procurement and operations will participate and provide expertise and feedback. Total RMOW staff time over 2 years is expected to not exceed 126 hours.

Not including work to date, CEA has approximately 440 hours to dedicate to this project, which has a value of approximately \$63,000. It is anticipated that this project will take more CEA staff time than the 440 hour allocation, as well as involve other organizations (including the Pacific Climate Impacts Consortium, the BC Government and the BC Institute of Technology) who have committed or are in the process of committing in-kind resources and capacity to the project. The CEA intends to apply for additional funding to support the extra costs associated with this project. RMOW staff will assist in preparing these funding applications.

There may be small contributions from Squamish necessary to support activities such as: external expert involvement; capacity building sessions; public events; the development of communications materials. These expenditures will be covered within the Big Moves implementation operational budget. It is anticipated that these will cost less than \$5000 total over 2022 and 2023.

LIL'WAT NATION & SQUAMISH NATION CONSIDERATIONS

The RMOW is committed to working with the Lil'wat People, known in their language as *L'il'wat7úl* and the Squamish People, known in their language as the *Skwxwú7mesh Úxwumixw* to: create an enduring relationship; establish collaborative processes for Crown land planning; achieve mutual objectives; and enable participation in Whistler's resort economy.

Both the Squamish and Lil'wat Nations will be invited to participate in this project and are welcome as project partners.

COMMUNITY ENGAGEMENT

Level of community engagement commitment for this project:

☐ Inform ☒ Consult ☐ Involve ☐ Collaborate ☐ Empower

All actions will be developed in collaboration with internal and external key stakeholders, such as industry and other levels of government. Engagement will be done through a series of focus group workshops in Whistler and Squamish. The workshops will serve dual purposes of 1. Building awareness and knowledge and 2. Informing the Guide. An outcome of this step will inform the development of resources in Phase 3 that can be used to build capacity and/or determine which actions to take in other communities.

SUMMARY

The RMOW has an opportunity to receive 440 hours of senior staff time from the Community Energy Association through the Game-Changer grant to develop an Embodied Carbon Guide for BC Municipalities. This guide will support the overall prioritization and implementation of actions related to reducing embodied carbon emissions in Whistler and other BC communities and help move Whistler towards the newly adopted Climate Action Big Moves 4 goal to reduce embodied carbon emissions by 40 per cent by 2030.

SIGN-OFFS

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