

Big Moves CLIMATE ACTION IMPLEMENTATION PLAN



TERRITORIAL ACKNOWLEDGEMENT

The Resort Municipality of Whistler is grateful to be on the shared, unceded territory of the Lil'wat People, known in their language as Líl'wat7úl, and the Squamish People, known in their language as Sḵwxwú7mesh.

We respect and commit to a deep consideration of their history, culture, stewardship and voice.



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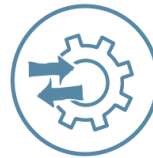
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2.0 EXECUTIVE SUMMARY



Mitigation Goal / GHG emissions reduction target:

To reduce Whistler's GHG emissions by 50% below 2007 levels by 2030.



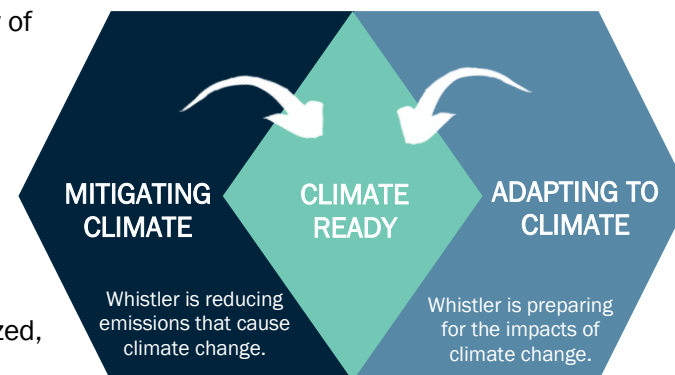
Adaptation Goal:

To increase Whistler's resilience to the impacts of climate change.

Whistler's vision is to be a place where our community thrives, nature is protected and guests are inspired. Our mountain resort community has a special dependence on weather patterns that deliver sufficient snowfall throughout the winter season and summers that are free of wildfires and associated smoke. This intrinsic relationship to the weather has heightened awareness about Whistler's shared responsibility to manage our greenhouse gas (GHG) emissions—and the potential impacts on our community and our economy if we do not. Whistler has been a leading community on climate action since 1997. Over time, the increased knowledge and experience we have gained, from both our successes and our shortcomings, have led us here – to this Big Moves Climate Action Implementation Plan which strategically prioritizes the actions that Whistler must undertake to meet our climate goals and increase resilience in the face of climate change.

Current climate modelling projections for Whistler include increased intensity and frequency of rain storms, longer, hotter, drier summers and milder winters with less snow at lower elevations. Impacts of these climate changes may affect the resort community in numerous ways, ranging from potential risks to the integrity of our infrastructure and transportation systems, health and safety risks, threats to the natural environment and biodiversity, and small and large-scale economic impacts.

This Big Moves Climate Action Implementation plan (the Plan) is building on the Resort Municipality of Whistler's (RMOW's) previous climate work as it consolidates the detailed complexity of the 2016 Community Energy and Climate Action Plan (CECAP) with the prioritized, strategic simplicity and community momentum of the 2020 Big Moves Strategy. This consolidation addresses both Whistler's climate change mitigation and adaptation planning, two key components of a comprehensive, integrated approach to climate action. Mitigation entails taking steps to reduce our GHG emissions. Adaptation involves taking action to reduce vulnerability and risks associated with the impacts of climate change.



Mitigation efforts in this plan are based on the 6 Big Moves outlined in the 2020 Climate Action Big Moves Strategy which focuses on the transportation, buildings and waste sectors (see Figure 1).

The Big Moves and key initiatives aim to achieve the 2030 goal to reduce Whistler's community-wide GHG emissions by 50 per cent below 2007 levels.

Adaptation efforts in this plan originate in the 2016 Community and Climate Action Plan (CECAP) and have been consolidated and prioritized into three main adaptation goals (see Figure 1). All adaptation goals and key initiatives in this plan have the goal of increasing the resilience of our natural, built and socio-economic systems to withstand the impacts of climate change that we know are coming or are already underway.

This Climate Action Implementation Plan is Whistler's latest effort to advance progress towards our climate goals. Combining Whistler's Big Moves Strategy and core initiatives from the CECAP with a focus on our top priorities, this Plan will serve as Whistler's climate action map as we strive towards our goal of being a low carbon resilient community.

Co-benefits of climate action and low carbon resilience

Taking action to reduce our emissions and increase Whistler's resilience to climate change will move us closer to the community vision described in the Official Community Plan. Climate action also creates benefits to our community such as: improved personal health, improved local air quality, protected natural areas, social and economic equity advancements, energy resilience and affordability, recirculating savings into local economy and reducing traffic congestion.

The Big Moves and Adaptation Goals laid out in this plan seek to enhance climate equity and ensure that our whole community can participate in and benefit from positive climate action.

3.0 WHISTLER'S APPROACH TO MITIGATE AND ADAPT TO CLIMATE CHANGE

FIGURE 1: SUMMARY GRAPHIC



4.0 INTRODUCTION

Since 1997, Whistler has been committed to reducing, tracking and reporting annually on community GHG emissions. In 2016, RMOW Council adopted the Community Energy and Climate Action Plan (CECAP) to help Whistler more effectively mitigate GHG emissions and begin strategically adapting to climate change. The CECAP, developed with the engagement of a Community Advisory Group and core RMOW staff, established a list of 94 actions for climate mitigation and 40 actions for climate adaptation. This was Whistler's most comprehensive and strategic approach yet to addressing the challenges of climate change mitigation and adaptation in one plan.

Despite these efforts, it soon became clear that Whistler was still going to fall significantly short of its GHG emission reduction targets, and the current reality of increasing wildfire threats and extreme weather events pushed climate adaptation more firmly into the spotlight. Globally, the need to address climate change became even more urgent. An Intergovernmental Panel on Climate Change report with new warnings and a more demanding target and timeline heightened public concern and spurred increased climate action efforts. Around the world, students went on climate strikes and communities declared climate emergencies around wildfires and floods – all indications that the time to act in a very focused, strategic and collaborative way is now.

Arising from this heightened context in 2020, Whistler's Big Moves Climate Strategy emerged to identify the top priority climate change mitigation actions that would result in the highest GHG emission reductions and have the highest potential to help Whistler achieve its climate targets. The Big Moves Climate Strategy established a strong planning and communications platform with simple, compelling language and understandable high-level goals for more strongly pursuing prioritized corporate and community climate actions.

Building upon the RMOW's previous climate work, and leaning on leading climate planning frameworks¹², this Big Moves Climate Action Implementation plan merges the detailed complexity of the 2016 Community Energy and Climate Action Plan (CECAP) with the prioritized, strategic simplicity and community momentum of the 2020 Big Moves Strategy.

Our vision is a resilient, lower carbon Whistler. This consolidation merges Whistler's mitigation and adaptation planning, implementation and reporting initiatives and provides a streamlined path to more effectively and efficiently move toward our climate goals.

Acronym Guide

AWARE - Association of Whistler Area Residents for the Environment

BAU - Business as Usual

BCESC - B.C Energy Step Code

CAIP - Climate Action Implementation Plan

CCF - Clean Communities Fund

CECAP - Community Energy & Climate Action Plan

CWRP - Community Wildfire Resiliency Plan

EV - Electric Vehicle

GHG - Greenhouse Gas Emission

GJ - Gigajoule

IPCC - Intergovernmental Panel on Climate Change

LCES - Low Carbon Energy System

OCP - Official Community Plan

RMOW - Resort Municipality of Whistler

SLRD - Squamish Lillooet Regional District

TAG -Transportation Advisory Group

tCO_{2e} -Tonnes of Carbon Dioxide Equivalent

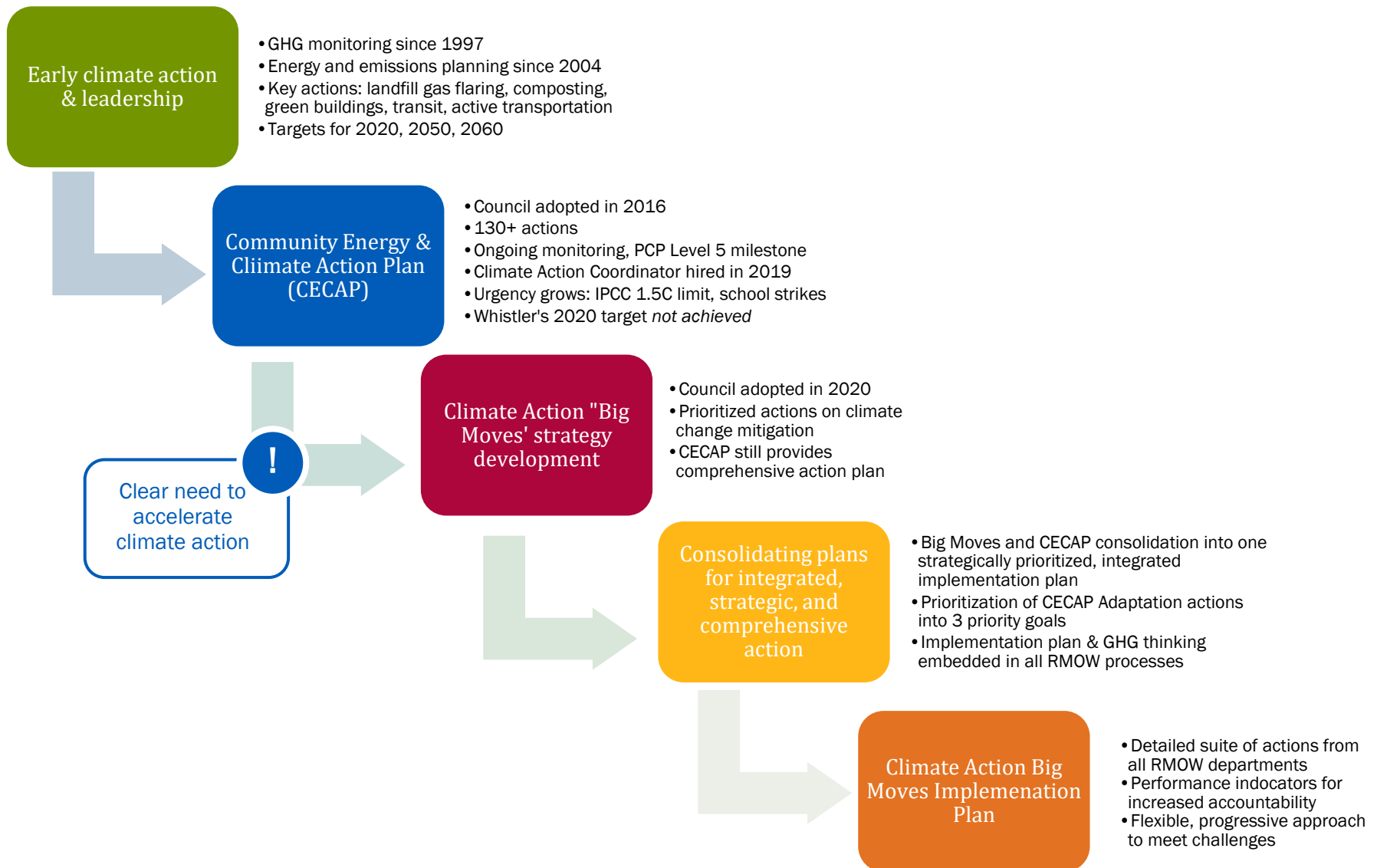
VKT - Vehicle Kilometres Travelled

ZEV - Zero Emission Vehicle

¹ [HTTP://ACT-ADAPT.ORG/WP-CONTENT/UPLOADS/2018/12/2.2_LCR_BEST_PRACTICES_WEB.PDF](http://act-adapt.org/wp-content/uploads/2018/12/2.2_LCR_BEST_PRACTICES_WEB.PDF)

² <https://resourcecentre.c40.org/climate-action-planning-framework-home>

TIMELINE ON WHISTLER'S CLIMATE ACTION AND STRATEGY DEVELOPMENT



5.0 ANTICIPATED CHANGES TO WHISTLER'S CLIMATE

A sound understanding of potential changes to Whistler's future climate is the fundamental basis for climate change mitigation and adaptation efforts to be relevant and effective. Adaptation to climate change in the Whistler area requires specific information such as how warming temperatures and changes in precipitation may differ throughout the seasons and how it will translate into incidents of climate extremes. BC and Whistler's climate is already changing and even more significant change is anticipated in the future.

In 2022, the RMOW retained BGC Engineering Inc. (BGC) to summarize climate change projections and associated potential vulnerability and risks for the resort community of Whistler. The primary purpose of the report was to more clearly understand the climate change projections for Whistler over the next 50-80 years. These local climate projections provide clear rationale for taking bold climate action to reduce community emissions. These projections also inform our adaptation strategies to prepare for changes that are expected - and already happening.

The key climate changes expected for Whistler are as follows:



Warmer and wetter weather with increasing frequency and intensity of heavy rain events.






Longer, hotter, drier summers.



Milder winters, with increased precipitation falling as rain near valley bottom, and increasing weather variability year to year.

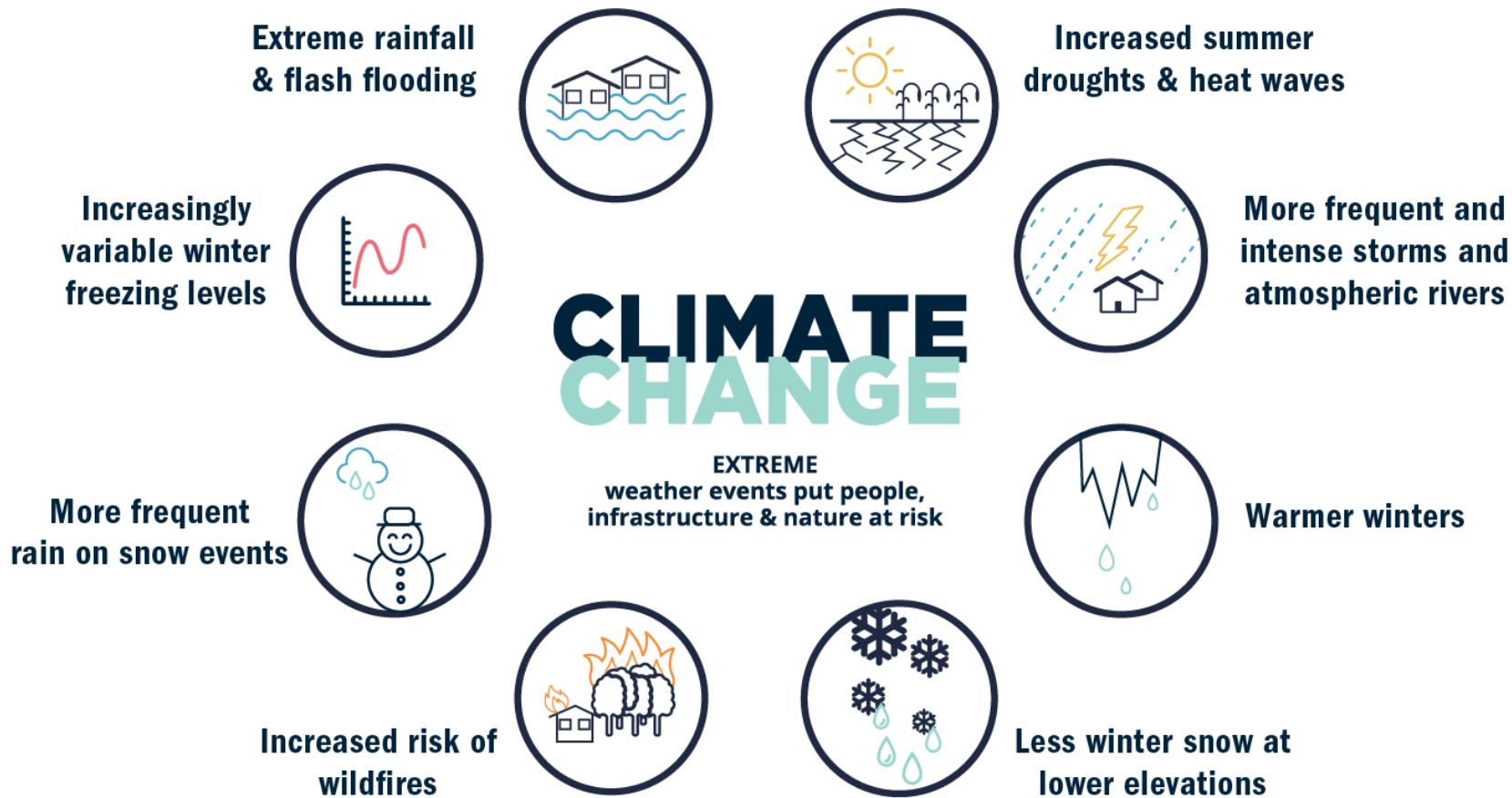
To view a more detailed list of climate change projections for Whistler, see [Appendix A](#) (Key Climate Changes Projected for Whistler). The full BGC report can be found on the [whistler.ca website here](https://www.whistler.ca).

TABLE 1: KEY RISKS & POTENTIAL IMPACTS FOR WHISTLER FROM KEY CLIMATE CHANGES

	Key Risk	Expected Changes	Potential Impacts
 Longer, hotter, drier summers	Heatwaves	More frequent and intense	<ul style="list-style-type: none"> • human health and safety • wildfire risk • energy demand • early snowmelt • infrastructure damage • wildlife health and ecological losses • tourism economy losses
	Drought	More frequent, intense, and long lasting	<ul style="list-style-type: none"> • insufficient water supply • wildfire risk • habitat and ecological losses • tourism economy losses
	Wildfires	More frequent and widespread	<ul style="list-style-type: none"> • human health and safety • habitat and ecological losses • post-fire landslides and debris flows • infrastructure and built environment damage and disruption
 Warmer and wetter weather	Flash flooding, atmospheric rivers, severe storms and rain on snow events	More frequent and intense	<ul style="list-style-type: none"> • human health and safety • geo-hazards such as landslides and debris flows • infrastructure damage • habitat and ecological losses • disruption to mobility infrastructure
	Snowpack	More variable; later onset; earlier melt; less consistent; and decreased accumulation	<ul style="list-style-type: none"> • decreased water availability (i.e. potable water and firefighting supply) • ecological disruption • winter recreation disruption
 Milder winters	Cold snaps	Less frequent	<ul style="list-style-type: none"> • human health and safety • ecological losses
	Freezing level	More variable and increased altitude	<ul style="list-style-type: none"> • disruption and cost to ski/tourism economy • snowpack and flooding • habitat impacts, ecological outbreaks and invasive species

Climate change puts people, infrastructure and nature at risk.

FIGURE 2: EXTREME WEATHER CAUSED BY CLIMATE CHANGE



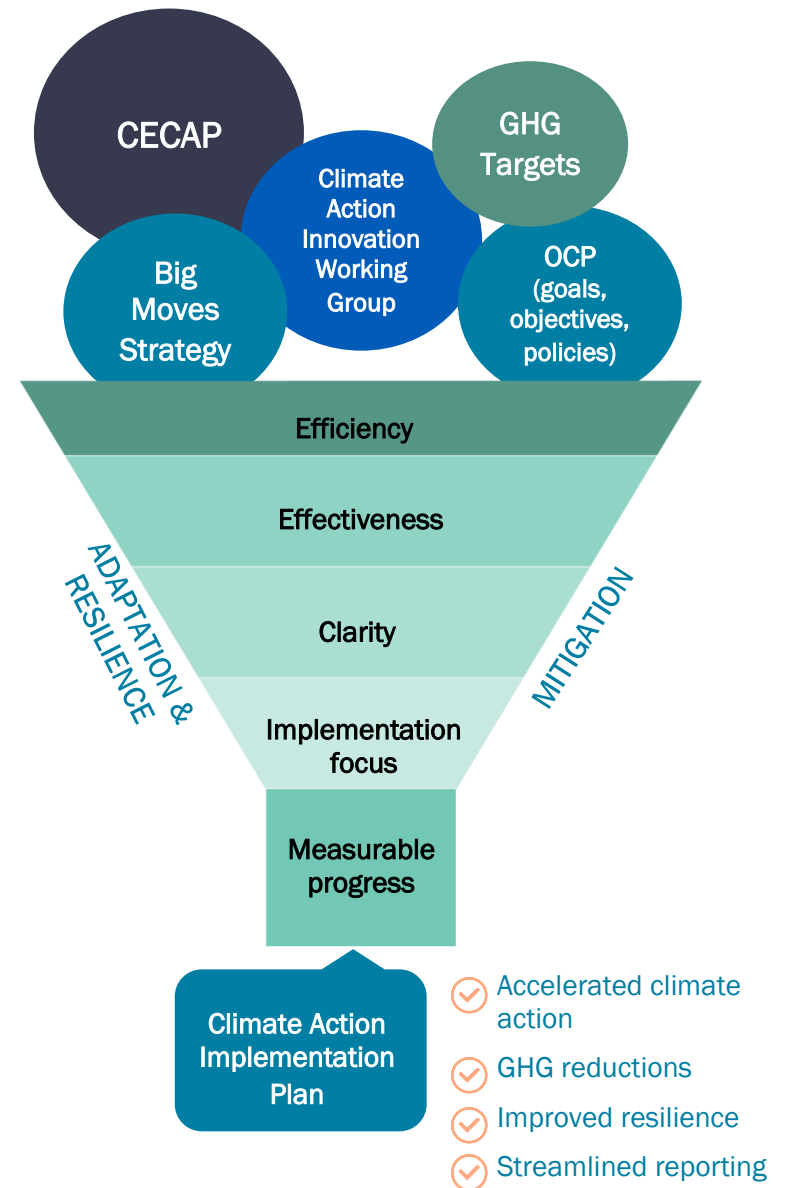
6.0 PURPOSE, SCOPE AND STRUCTURE

This Climate Action Implementation Plan (CAIP) provides a strategic path forward on the prioritized actions that the community of Whistler must take to meet our community’s climate goals. With a focus on climate change mitigation and adaptation priorities, this plan will guide accelerated climate action, achieve significant GHG emission reductions, deliver co-benefits and improve our resilience in the face of anticipated climate change impacts.

This implementation plan is led by the RMOW and will drive and facilitate the integration of climate action into our planning and operations, while engaging community partners and businesses to align their activities with our Big Moves. Building upon the RMOW’s previous climate work, and leaning on leading climate planning frameworks³⁴, this plan merges the detailed complexity of the 2016 Community Energy and Climate Action Plan (CECAP) with the prioritized, strategic simplicity and community momentum of the 2020 Big Moves Strategy. This consolidation merges Whistler’s mitigation and adaptation planning, implementation and reporting initiatives and provides a streamlined path to more effectively and efficiently move toward our climate goals.

This plan supports and integrates multiple goals, objectives and policies contained in Whistler’s Official Community Plan (OCP).

With a strong implementation focus that is clear and actionable, this plan provides measurable progress indicators towards achieving Whistler’s mitigation goals and a streamlined reporting process.



³ [HTTP://ACT-ADAPT.ORG/WP-CONTENT/UPLOADS/2018/12/2.2_LCR_BEST_PRACTICES_WEB.PDF](http://act-adapt.org/wp-content/uploads/2018/12/2.2_LCR_BEST_PRACTICES_WEB.PDF)

⁴ <https://resourcecentre.c40.org/climate-action-planning-framework-home>

In this plan, the key climate action steps for Whistler are laid out in the form of Big Moves and Key Initiatives (for mitigation) and Goals and Key Initiatives (for adaptation). All Key Initiatives are presented in prioritized order, from high to low priority. A prioritization exercise was completed to rate each Key Initiative according to the following criteria:

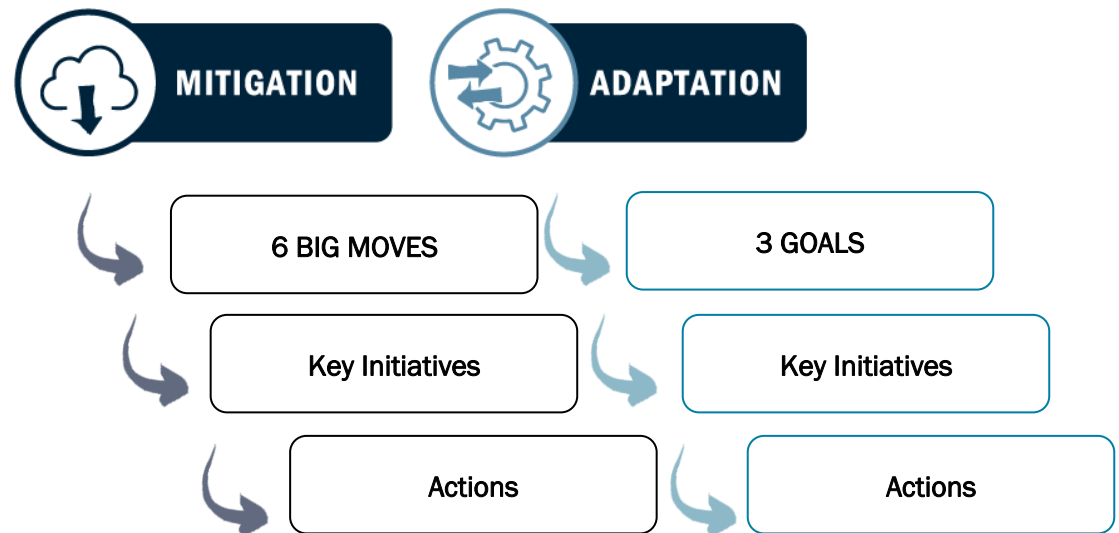
- Potential GHG emission reduction
- Potential risk reduction, climate resilience increase and equity support
- Achievability (E.g. RMOW control, jurisdiction, effort magnitude, already underway)

Specific to the RMOW, each Key Initiative is accompanied by a detailed and evolving series of specific actions, projects, and departmental initiatives - each with an identified budget, timeline and responsible department. These detailed action items live behind the scenes in a comprehensive RMOW internal work plan targeted at toward achieving the Key Initiatives.

This plan has an outlook to 2030, with room to adjust priorities at the action level as needed in order to achieve our climate goals.

Successful delivery of the implementation plan depends not only on accurate performance tracking but also on making strategic use of the existing governance structures within Whistler, and therefore relies on the jurisdiction the RMOW holds. Coordination with other plans, initiatives and implementing this plan in each departments work priorities will help to identify complementary efforts and foster collaboration within the RMOW and key partners. A strategic and collaborative approach to climate action will result in a stronger business case for prioritizing and accelerating the greatest mitigation and adaptation opportunities.

Communication, outreach, and advocacy efforts will ensure that there is widespread understanding, participation, and support. Key partners for the successful implementation of the plan are identified.



Co-Benefits to Integrated Climate Change Mitigation and Adaptation Planning

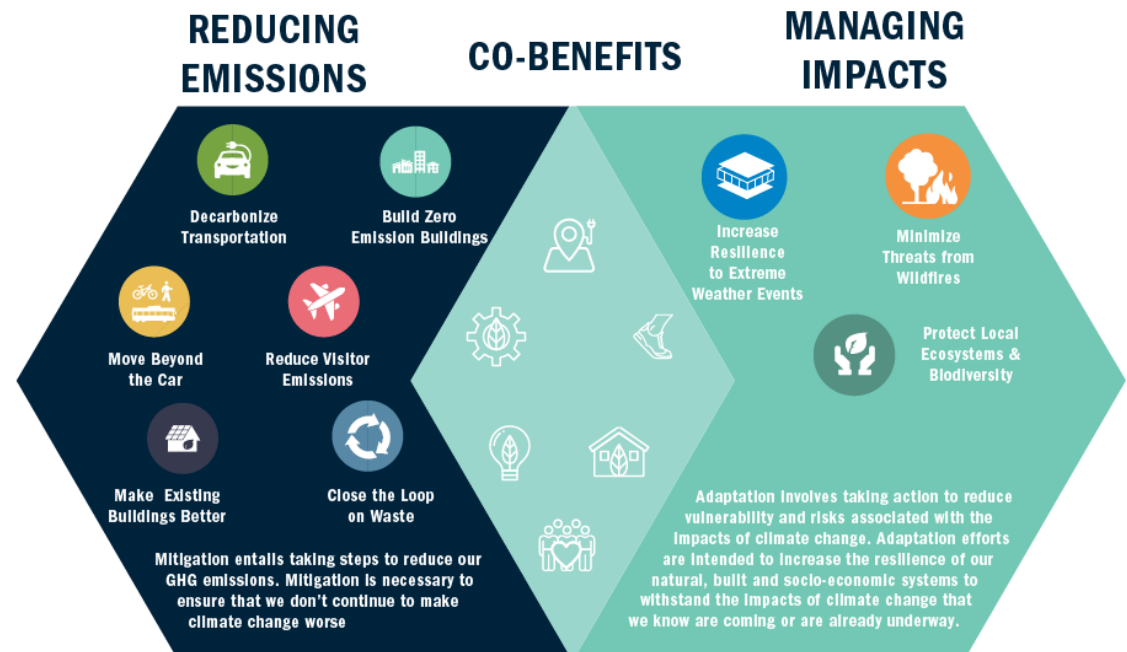
Taking an integrated approach to climate change mitigation and adaptation planning leads to efficiencies and **co-benefits**. Always keeping the other in mind when planning for one aspect is an important part of effectively addressing climate change.

Climate change adaptation and mitigation often overlap and taking action for one aspect can result in co-benefits (i.e. positive impacts/side effects) for the other.

For example, taking action to prevent/minimize wildfire threat is a key adaptation action for Whistler. In doing so, we also help prevent/minimize GHG emissions that would result from potential wildfires, thereby supporting mitigation objectives.

Similarly, climate mitigation actions can have **co-benefits** for climate adaptation objectives. For example, concentrating development into dense areas helps achieve GHG reductions by minimizing transportation. Simultaneously, concentrated development helps avoid urban sprawl and supports the preservation of natural areas to help maintain local ecosystem resilience. Indeed, it can be said that one of the best forms of climate adaptation is climate mitigation.

Most importantly, climate action can help address systemic inequities that benefit and favour some while negatively impacting vulnerable or marginalized groups. The impacts of climate change tend to disproportionately affect vulnerable or marginalized populations. As such, one of the most important things we can do to support equity and social justice is to take action on climate change and enact significant climate mitigation and adaptation initiatives.



Co-benefits are identified and included as highlight boxes next to the Key Initiatives of all Big Moves and Adaptation Goals.



Partnerships, Stakeholders, and Engagement

This Big Moves CAIP represents a consolidation of the detailed climate change mitigation and adaptation actions of the 2016 CECAP with the prioritized, strategic Key Initiatives of the 2020 Big Moves Strategy. Development of the 2016 CECAP involved public collaboration in the form of open houses and a specifically-formed Community Advisory Group. The Big Moves Strategy that was adopted by Council in 2020 involved expert and public engagement initiatives. As such, all Key Initiatives in the Big Moves CAIP reflect the input and feedback received by key stakeholders, subject-matter experts and residents.

This Big Moves CAIP has a strong focus on implementation that is clear and actionable by the RMOW. While this plan focuses mainly on actions the RMOW can take independently, climate change affects our entire community and collaboration with key partners, stakeholders, and our community is fundamental in achieving our climate goals. All Key Initiatives in this plan that involve collaboration with community stakeholders and partners will include thorough engagement and discussion with those stakeholders, key partners, and the Whistler community. Where beneficial, committees and working groups will be consulted and/or established to guide implementation efforts and ensure strategic alignment towards achieving our community-wide climate goals.

Economic Considerations and Risk Management

The financial impacts of climate change in Whistler are rising with projected increasing threats of local wildfires, frequency and intensity of heavy rain events, and the resulting impacts and degradation of our community's natural and built assets. Globally, disasters like floods, storms, and wildfires are becoming more frequent, more extreme, and more expensive to recover from. In 2022, the Intergovernmental Panel on Climate Change (IPCC) released a summary report on climate change impacts, adaptation and vulnerability⁵. The report, which is the result of two years of work from 330 scientists around the world, covers climate change globally but it also looks at what rising levels of GHG emissions specifically mean for Canada. Based on this report, the costs of climate change impacts have been rising in Canada since 1983, from an average of about \$0.4 billion to \$1.9 billion annually. Wildfires are a top threat to Canada with millions of dollars spent in BC alone on fire management and significant additional costs associated with evacuations, property losses, declining tourism, and impacts on agriculture⁶.

The cost from the impacts of uncontrolled climate change has been estimated to equate to at least 5% of global GDP, yet studies consistently highlight that it would cost less to make the deep emission cuts needed to avoid the worst impacts⁷. In fact, most recent studies show that for every

⁵ IPCC Sixth Assessment Report: Climate Change 2022: Impacts, Adaptation and Vulnerability, <https://www.ipcc.ch/report/ar6/wg2/>

⁶ Jennie Wang and Katharine Strong, "British Columbia's forest fires, 2018," Statistics Canada, May 29, 2019, <https://www150.statcan.gc.ca/n1/pub/16-508-x/16-508-x2019002-eng.htm>

⁷ Matthew Bramley "Why should Canada act on climate?," The Globe and Mail, Dec. 14, 2010, <https://www.pembina.org/op-ed/2139>

dollar invested in climate change adaptation measures, \$6 are saved in future damages⁸. Therefore, investments in reducing emissions and increasing resilience today will limit the future costs our community could face.

How much will it cost the RMOW to move beyond business as usual and implement the actions outlined in this plan?

Implementing all climate change mitigation and adaptation actions outlined in this plan will require investments by the RMOW and all local climate action stakeholders such as residents, businesses, institutions, and developers. These investments in addition to supporting climate mitigation and adaptation, will realize co-benefits and will serve to strengthen our local economy and our community.

Some climate investments are easier to predict in the short term (E.g. installation of new EV charger infrastructure, financial incentives for building retrofits, climate outreach and education activities) and are part of the RMOW 5-year financial plan and workplans of the respective responsible RMOW departments. Estimating the cost of long-term actions however, will rely on in depth analysis of complexities (e.g. infrastructure improvements, restoring local natural habitat), innovation in technology (E.g. low carbon materials), collaboration within the RMOW and with other municipalities, and evolving legislation of all levels of government. While these long-term actions have the potential to achieve deeper and long lasting GHG emission reductions and are necessary to achieve our climate goals and targets, cost estimates are difficult to project beyond the RMOW 5 year financial plan or out to 2030.

Economic considerations and high level cost estimates have been included for all Big Moves and Adaptation goals in this plan. These considerations and cost estimates were developed in collaboration with all responsible RMOW departments and are part of their respective 5-year financial and work plans. All economic considerations and cost estimations in this plan are high level and based on current-day knowledge without specifying funding sources or staff time implications. Through the municipal budget process, business cases will be prepared for specific actions at the time of implementation, which will provide an opportunity to evaluate these with the most up-to-date costs, resource requirements, available grants, and other identified funding sources. A long-term, flexible, dynamic perspective will be necessary to ensure that all RMOW spending today aligns with the climate goals outlined in this plan and helps lower the cost of reducing emissions and adapting to climate change in the future.



ECONOMIC CONSIDERATIONS AND ESTIMATED COST OVER THE NEXT 5 YEARS TO WORK TOWARDS IMPLEMENTATION

Economic considerations and high level cost estimates were developed in collaboration with all responsible RMOW departments and are part of their respective 5-year financial and work plans.

Note that all estimations in this plan are high level and based on current-day knowledge without specifying funding sources or staff time implications. Through the municipal budget process, business cases will be prepared for specific actions at the time of implementation, which will provide an opportunity to evaluate these with the most up-to-date costs, resource requirements, available grants, and other identified funding sources.

7.0 MITIGATION- WHISTLER'S BIG MOVES

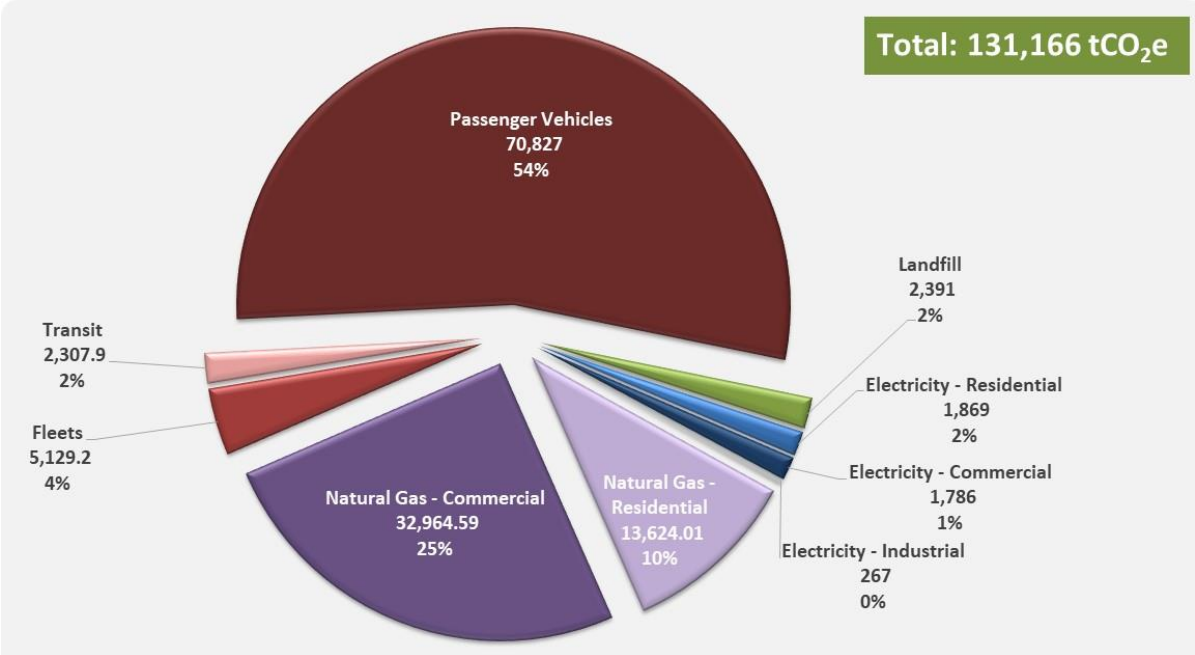
GHG Emissions Profile – Our starting point

Each year, the RMOW completes an Energy and GHG Inventory Report. This report is a key monitoring tool and information resource that provides current and historically comparative data on Whistler's performance and progress toward its energy and GHG targets. All relevant information on Whistler's current energy use and GHG emissions profile may be found in the latest [Energy and GHG Inventory Report](#).

The majority of Whistler's emissions are from vehicle transportation and natural gas use in buildings. Personal transport was Whistler's biggest source of GHG emissions, accounting for 54 per cent of the community's total in 2019 and 40 per cent in 2020, while natural gas use in buildings accounted for 35 per cent of community emissions in 2019 and 40 per cent in 2020.

To address Whistler's primary sources of GHG emissions, the Big Moves strategy focuses on the core sectors of transportation, buildings and closing the loop of consumption.

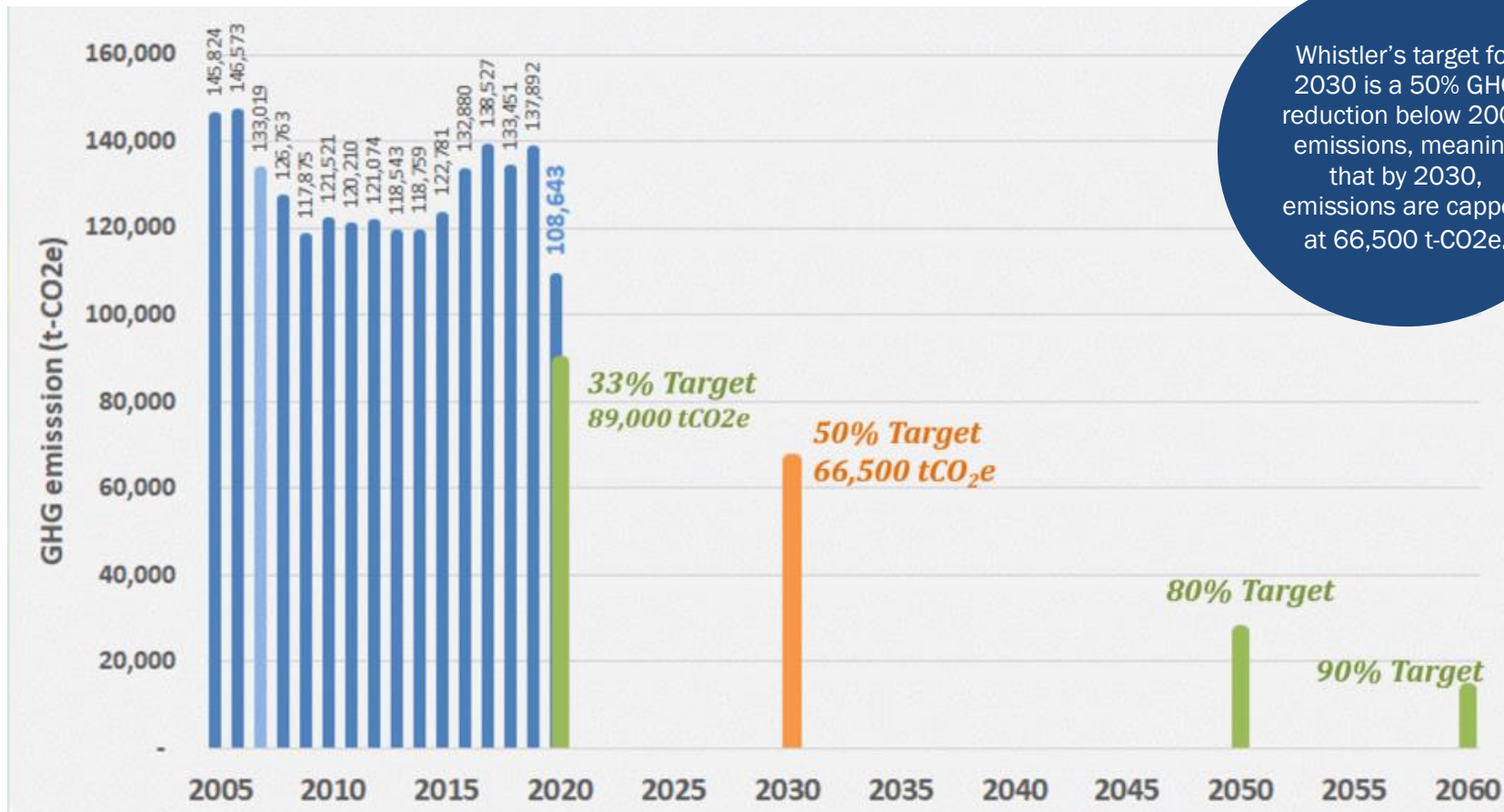
FIGURE 3: 2019 ESTIMATED WHISTLER COMMUNITY-WIDE GHG EMISSIONS*



*The Big Moves strategy was adopted in 2020. We will use the 2019 data as baseline for many actions as 2020 was a data outlier due to COVID - 19

Whistler's GHG Emission Reduction Target

FIGURE 4: WHISTLER'S TOTAL ESTIMATED COMMUNITY-WIDE GHG EMISSIONS (2000-PRESENT, WITH FUTURE TARGETS INDICATED)



Whistler's target for 2030 is a 50% GHG reduction below 2007 emissions, meaning that by 2030, emissions are capped at 66,500 t-CO₂e.

As per the Whistler OCP, the community of Whistler has targeted community-level greenhouse gas reductions of 33 per cent by 2020, 80 per cent by 2050; and 90 per cent by 2060, all compared to 2007 GHG emission levels. The 2030 GHG emission reduction target was developed in 2020 in addition to the OCP targets to reflect the increasing urgency to address climate change, with a focus on the nearer term to motivate action and increase accountability. This current target for 2030 is in line with Intergovernmental Panel on Climate Change (IPCC) recommendations of

achieving 45 per cent reduction below 2010 levels and is even more proactive than the target set by the Province of British Columbia, i.e. 40 per cent reduction below 2007 levels.

Figure 3 highlights these targets along with Whistler's reported community emissions since 2000. Unfortunately, since 2014, Whistler has not been on trend towards these targets and the level of GHG reduction required to meet the 2020 GHG emission reduction target has not been achieved. Achieving 50 per cent reduction below 2007 levels by 2030 means reducing 2019 emissions by 65,000 t-CO₂e in just ten years – a formidable challenge. Whistler's climate action Big Moves outlined herein are ambitious and it is estimated that, if successfully achieved, they will achieve a 34% reduction from 2007 emissions – 70 per cent of the way to the 50 per cent reduction target. To close the gap, additional action at the municipal, provincial and federal levels will be needed in the next decade.

Estimated Impact of the Big Moves

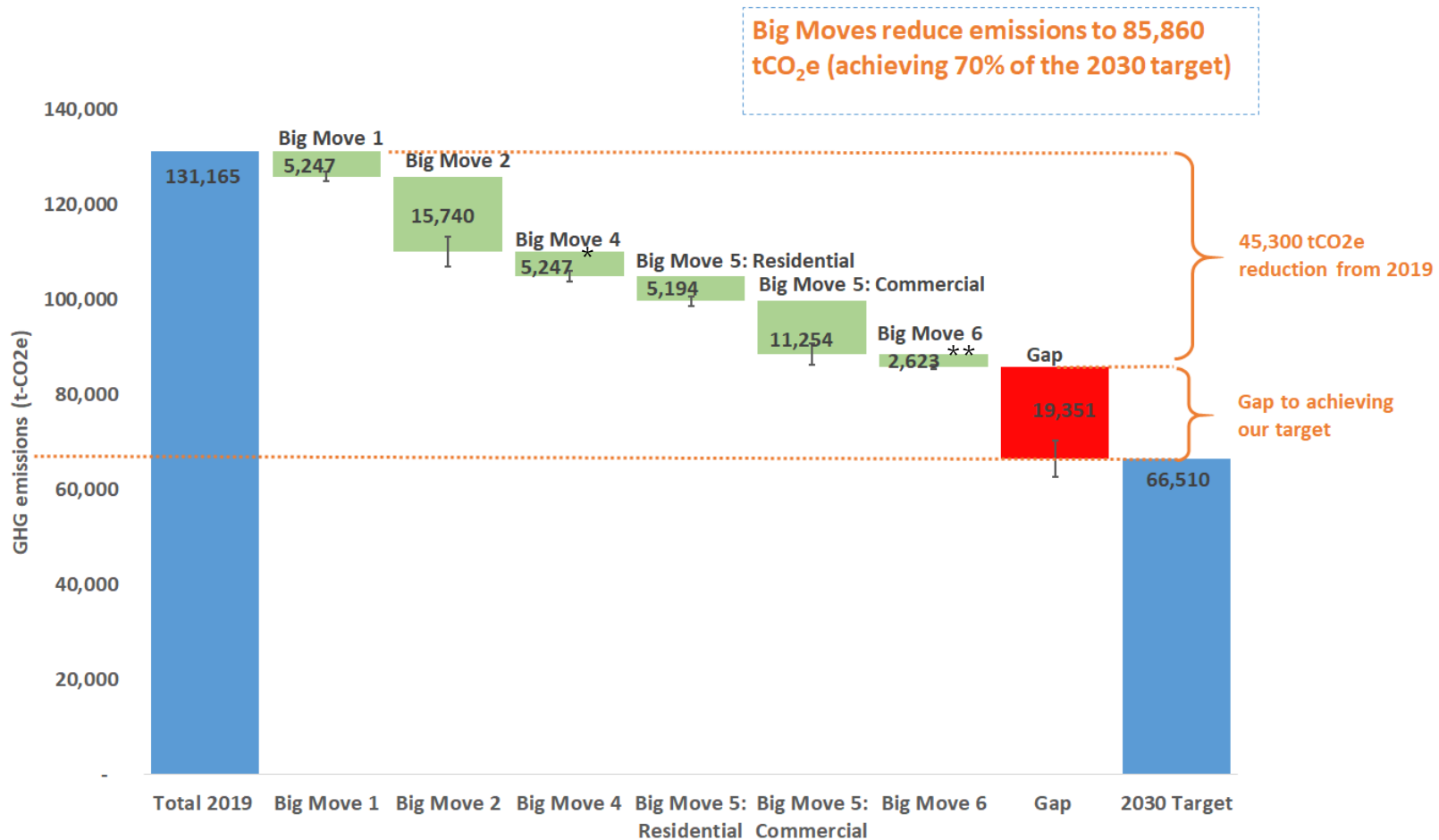
Whistler's Big Moves are ambitious and it is estimated that, if successfully achieved, they will reduce emissions by 45,300 tCO₂e compared to 2019, resulting in 2030 emissions of around 86,000 tCO₂e, which is 70 per cent of the way to the 50 per cent reduction target. It is important to acknowledge this shortfall – even with our best efforts as currently planned, we project that we will not meet our targets. We are actively working to find innovative ways to close this gap. Furthermore, policy and legislative support from Federal and Provincial governments is anticipated and will likely be a significant factor in enabling us to reach our targets.

Figure 4 shows the estimated impact of each Big Move by 2030. Note that while the proposed target is based on 2007 emissions, reductions for each Big Move are calculated based on 2019 data which is the last emission inventory year prior to implementing the Big Moves. In addition, GHG emission reductions in percentage are calculated using a Business as Usual (BAU) scenario following the Community Energy Association's (CEA) Climate Action Planner tool⁹. A BAU scenario represents Whistler's projected GHG emissions if there was no action on climate change and no efforts to reduce Whistler's emission.

All GHG emission reduction estimations resulting from implementing the Big Moves are given as a range due to the high uncertainty and necessary assumption for these calculations. The lower and upper limit of the emission reduction ranges are based on a conservative and optimistic climate action scenarios that assume that trends on technology, funding availability, Provincial and Federal action, and public interest and pressure to decelerate or accelerate, respectively.

⁹ <https://www.communityenergy.ca/climate-action-planner/>

FIGURE 5: GHG EMISSION REDUCTION POTENTIAL OF EACH BIG MOVE UNTIL 2030



*Accounts for reductions from building operations in a business as usual scenario, not the embodied carbon of building materials. Estimated reductions are based on replacing buildings and reducing the expected new emissions from operating new buildings.

**For Big Move 6, the reductions cited are just from lower landfill transport and lower transport of waste. It does not include other indirect emissions from more sustainable consumption, which are likely much higher, but primarily occur outside the RMOW boundary.



Whistler's BIG MOVES

As you explore the Big Moves section, you will see there are “Community Goals” and “RMOV Corporate Goals”. This is to ensure that as a local government we are leading by example and contributing to our community journey to a low emissions, resilient Whistler.

1 MOVE BEYOND THE CAR [Pg. 21](#)

2 DECARBONIZE PASSENGER & COMMERCIAL TRANSPORTATION [Pg. 26](#)

3 REDUCE VISITOR TRAVEL EMISSIONS [Pg. 30](#)

4 BUILD ZERO EMISSION BUILDINGS [Pg. 34](#)

5 MAKE EXISTING BUILDINGS BETTER [Pg. 38](#)

6 CLOSE THE LOOP & SHIFT TOWARD LOWER CARBON CONSUMPTION [Pg. 42](#)



Percent that each Big Move contributes to Whistler's 2030 emissions reductions goals.

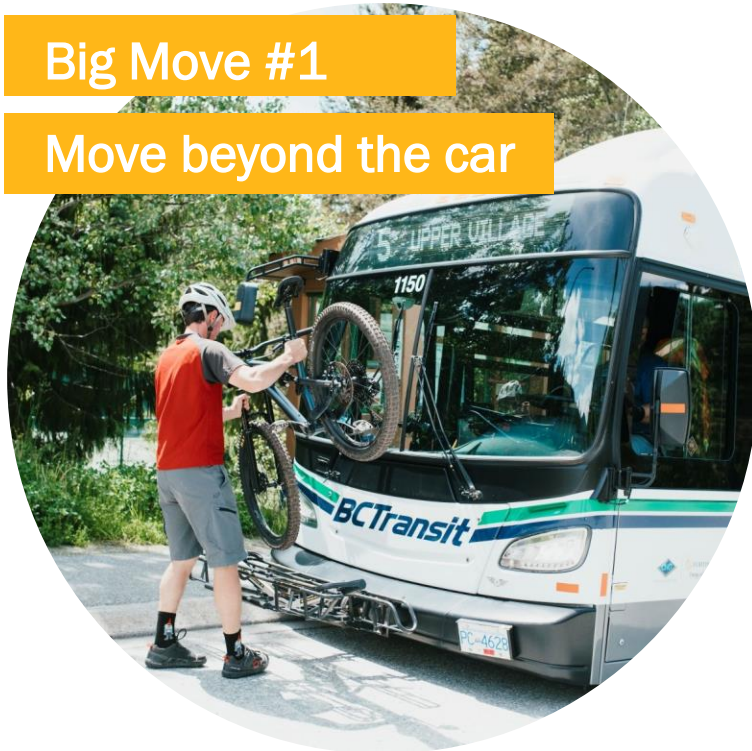
Combined, by 2030, the Big Moves could decrease emissions by 36,200 - 54,400 tCO₂e,

This is a 32% - 41% reduction from BAU*

TRANSPORTATION: The Way We Move

Big Move #1

Move beyond the car



GOAL: By 2030, 50% of all trips in Whistler are by transit and active transport

Personal vehicles are Whistler's largest source of GHG emissions, accounting for 54 per cent of Whistler's total emissions in 2019. Moving beyond car-based transport to active transport and increased transit use is a key opportunity to reduce transport related emissions. Averaging out summer and winter 2019 survey results, 67 per cent of full-time residents make most of their trips to work in cars, while 33 per cent travel to work primarily using transit or active transport¹⁰.

A shift towards more transit and active transportation is also a shift towards more climate equity. Ongoing investments in Whistler's transit systems for a reliable and affordable service allows low-carbon transportation choices for all Whistler residents. In addition, further expanding the transit system beyond Whistler for effective regional transit will allow for low carbon commuting to and from Whistler.

Walking and cycling are increasingly seen as a viable opportunity to get around Whistler. Further investments in safe and well-maintained active transport infrastructure is needed to increase their share of travel, especially by addressing gaps in current connections. Supporting the adoption of e-assist transport choices – such as e-bikes – must also be prioritized through infrastructure investments and continued policy support.

How we design our community has major implications on how we get around Whistler. Designing and creating compact and complete developments that are also well connected to transit and active transport infrastructure is critical to ensuring that Whistler transitions from a predominantly car-based town, to one in which trips are reduced and most trips are done by active transport and transit use.

¹⁰ Whistler currently doesn't have data on non-work trips. In other cities and communities, these trips generally make up 75-80% of all trips. Typically, a lower percentage of these non-work trips are made with transit or active transport.



**Big Move 1:
IMPLEMENTATION**

Big Move 1 – Move beyond the car: Implementation

Priority initiatives are indicated as:


HIGH	MEDIUM	LOW
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Key Initiative	Lead department	Timeline
1.1 Increase public transport use by keeping fares affordable and service frequent and efficient through finalizing and implementing the BC Transit Future Action Plan (BC TFAP) and its outlined coordinated approach to make transit a preferred choice for personal transport.	Transit and Transportation Demand Management	<u>2021 onwards</u> 2022- BC TFAP adoption 2022 onwards implementation of plan
1.2 Shorten trip times through phased implementation of actions and infrastructure improvements such as queue jumper, bus acceleration lanes, or dedicated bus lanes as identified in the Transit Future Action Plan. Implementation phases are: 1. Gain understanding of critical locations and causes for delays. 2. Improve key intersections and locations. 3. Tackle more difficult to improve sections.	Transit and Transportation Demand Management	<u>2023 onwards</u> 2023/24- infrastructure study & plan development 2024 onwards beginning potential project work
1.3 Engage with the Provincial government and continue to collaborate with neighbouring communities on efficient and affordable regional transit.		Ongoing
1.4 Continually improve accessibility, inclusiveness and the overall travel experience of public transit.	Transit and Transportation Demand Management	Ongoing
1.5 Continue to improve transit stop infrastructure such as shelters, benches, and accessibility.	Resort Parks Planning	Ongoing

Public Transit & Shared Transportation

Co-Benefits for key initiatives related to public transit and shared transportation:

- Supports equity by providing affordable and accessible transit options for all community members to get around safely and efficiently.
- Improves infrastructure resilience





Big Move 1: IMPLEMENTATION

	Key Initiative	Lead department	Timeline
	1.6 Implement affordable and accessible vehicle sharing programs.	Climate Action	2022 onwards
Active Transit	1.7 Prioritize development and maintenance of safe and accessible active transportation infrastructure, such as closing gaps in the Valley Trail Network, considering new connections that support commuting by bike, increasing secure bike parking, encourage installation of end of trip facilities and improving route safety.	Transit and Transportation Demand Management	<u>2022 onwards</u> 2022 – Active Transportation Plan adoption 2023 onwards project work as per plan
	1.8 Scale up use of e-bikes and other e-mobility devices and address barriers to progress (E.g. Implement e-bike share program, improve route safety, add secure bike parking and e-bike charging infrastructure).	Resort Parks Planning	<u>2022 onwards</u> 2023 e-bike share program
	Key Initiative	Lead department	Timeline
Land use Considerations	1.9 Continued commitment to ensuring that Whistler is made up of increasingly complete and compact neighbourhoods.	Planning	Ongoing
	1.10 Ensure the development of compact neighbourhood nodes, by only considering development within the WUDCA ¹¹ and prioritizing development in existing neighborhoods with access to transit, employment, and services.	Planning	Ongoing

Co-Benefits for key initiatives related to active transportation:

- Supports community health and wellness
- Supports equity by providing affordable transportation options.
- Increases resilience of active transport infrastructure



Co-Benefits of key initiatives related to land use considerations:

- Increases resiliency of infrastructure & neighbourhoods
- Includes climate-adaptation as part of policy development
- Helps avoid urban sprawl and related impacts to natural habitat & biodiversity



¹¹ Schedule A (Whistler Land Use Map and Designations) establishes the Whistler Urban Development Containment Area (WUDCA), which focuses Whistler’s urban development within the Whistler valley corridor between Cheakamus Crossing and Function Junction to the south, and Emerald Estates to the north, and is consistent with Whistler’s Settlement Area Map (Map 1b) of the RGS. Within this corridor, the OCP seeks to maintain a comprehensive network of natural areas, open space and parks that separate and provide green buffers between developed areas. Residential accommodation, visitor accommodation, commercial, light industrial, institutional and community facilities are directed to be located primarily within the WUDCA. More information here: <https://www.whistler.ca/ocp/introduction-and-planning-context>



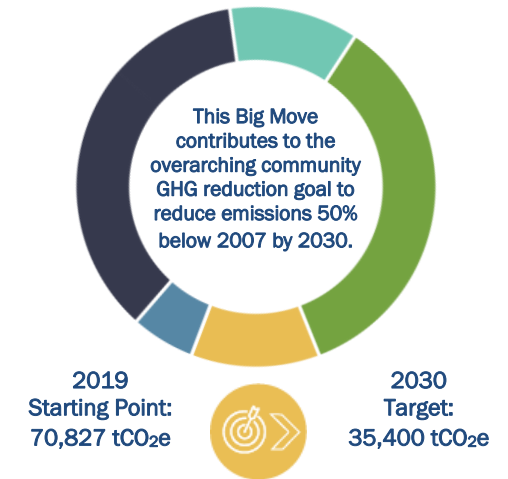
Big Move 1: IMPLEMENTATION

Big Move 1: What does success look like?

Below are the annual metrics to measure if we are on track to meet the *Big Move goal of 50% of all trips in Whistler are by active transport or transit.*

Big Move 1: Shift Beyond the Car

Community 2030 Goal	Indicator	2019 starting point	2030 target
50% of all trips in Whistler are by transit and active transport	Annual transit ridership (# of paid fares)	3 M	4.5 M
	Proportion of residents traveling to work via public transit, carpooling, walking or biking	41%	50%
RMOW Corporate Goal			
50% below 2007 by 2030	GHG emissions from RMOW fleet transport in tCO _{2e}	680	340



RMOW Divisions and Key Partners:

- Lead: RMOW Transit and Transportation Demand Management
- Support: Environmental Stewardship – Climate Action, Planning, Infrastructure Services (Roads)
- Partnerships: Transportation Advisory Group (TAG), BC Government, Municipalities within the Sea to Sky Corridor, BC Transit

Links to existing work:

- Whistler Transportation Action Plan 2018 – 2028
- E-mobility device policy
- OCP
- Active Transportation Plan
- Transit Future Action Plan



Big Move 1: IMPLEMENTATION



ESTIMATED COST FOR 5 YEARS OF WORK TOWARDS IMPLEMENTING BIG MOVE 1: \$10 -15 MILLION

Economic considerations:

- Cost to **incentivize transit** through actions such as free transit for high school students and on summer weekends are well understood and current programs are included in the RMOW 5 year plan.
- Cost estimates for improvements to **transit and active transport infrastructure** are based on current-day knowledge, planning, and data availability and will require further analysis which will likely lead to a significant increase in estimated costs. A forward-thinking approach to infrastructure budgeting will be necessary to ensure that RMOW infrastructure investments today align with the long-term climate goals outlined in this plan.
- Reducing the reliance on single occupancy vehicles in Whistler through actions such as implementing the Active Transportation Plan, the BC Transit Future Action Plan, or providing a public e-bike share program are estimated to result in moderate costs to the RMOW upfront but can save Whistler households considerable funds in car ownership and maintenance costs, as well as supporting our progress towards our community GHG reduction targets

Big Move #2

Decarbonize passenger and commercial transport



GOAL: By 2030, 50% of all motor-vehicle km travelled are from zero-emission vehicles

Passenger transportation is the only major sector that has seen an increase in GHG emissions and increases in personal vehicle travels account for 85 per cent of the total gap towards meeting Whistler's 2020 climate targets. Transit and larger commercial fleets account for another 6 per cent of emissions making transportation account for 60 per cent of Whistler's emissions.

Electric and low carbon vehicles are growing quickly in market share and have reached almost 10 per cent of new vehicle sales in BC in 2019. This is ahead of BC's new Zero Emissions Vehicle mandate and the highest level in North America, beyond even California. With prices continuing to decline, and price parity for EVs expected as early as 2022, the adoption of electric vehicles has the potential to further grow.

To achieve the Big Move of 50 per cent of all motor-vehicle kilometer travelled (vkt) by zero emission vehicles will require that, by the end of the decade, nearly all new light-duty vehicles will need to be zero emissions. It will also require that highly used vehicles - such as taxis, ride hailing and business fleets - lead the adoption of zero emission vehicles, with almost all vehicles zero emissions by 2030.

This Big Move can also effectively influence GHG emissions outside the RMOW's borders. A main barrier to broad EV adoption is for drivers to know they can find reliable and convenient charging at the places they visit. With over 3 million annual visitors, 70 per cent of whom arrive by car, Whistler can have an outsized impact by enabling electric transport beyond the municipal borders. It is also a key opportunity to reduce tourism related GHG emissions and thereby Big Move 3.

Success for this Big Move will require a comprehensive approach that provides accessible and reliable public charging, provide business incentives to accelerate the shift to low carbon fleets, and increasingly require supportive parking policies and zero-emission zones.



**Big Move 2:
IMPLEMENTATION**

Big Move 2 – Decarbonize passenger & commercial transport: Implementation

Priority initiatives are indicated as:

HIGH

MEDIUM

LOW

Key Initiative	Lead department	Timeline
2.1 Expand accessible and affordable public EV charging network for residents and visitors as laid out in the Whistler EV Strategy.	Climate Action	<u>2021 onwards</u> 2022 -2025 installing 25 municipal EV chargers
2.2 Incentivize residential (single-family and multi-unit) building EV charging installations by providing top-ups to Provincial incentives or by adopting ZEV-ready building requirements.	Climate Action / Planning	Ongoing
2.3 Electrify private and public fleets to take on a leadership role and establish Whistler as an EV-friendly community.	Climate Action	<u>2022 onwards</u> 2022 RMOW fleet electrification plan 2023 onwards begin electrification of RMOW fleet
2.4 Work with BC Transit to move to a zero emissions transit fleet.	Transportation Demand Management	Ongoing
2.5 Support the shift to low carbon transportation options (E.g. EVs) through awareness, partnerships and outreach initiatives for residents, businesses, commuters and visitors.	Climate Action	Ongoing

Co-Benefits related to key initiatives of Big Move 2:

- Supports public learning around climate change
- Supports healthy air quality
- Supports employment opportunities
- Improves infrastructure resilience





Big Move 2: IMPLEMENTATION

RMOW Divisions and Key Partners:

- Lead: Environmental Stewardship – Climate Action
- Support: Transit and Transportation Demand Management, TAG, Planning, Central Services
- Partnerships: BC Hydro, Whistler Blackcomb, Municipalities within the Sea to Sky Corridor, Whistler Housing Authority, taxi/transportation suppliers

Operators	Climate Action	2023 onwards
Single	Day Lot operating committee	Ongoing

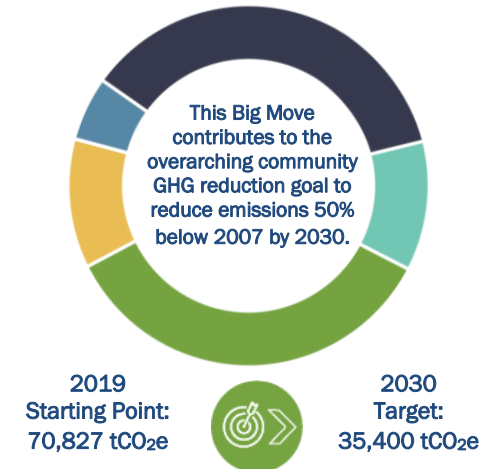
Links to existing work:

- Whistler Transportation Action Plan 2018 – 2028
- OCP

Big Move 2: What does success look like?

Below are the annual metrics to measure if we are on track to meet the **Big Move goal of 50 per cent of all motor-vehicle km travelled are from zero-emission vehicles by 2030.**

	Community 2030 Goal	Indicator	2019 starting point	2030 target
Big Move 2: Decarbonize Passenger & Commercial Transportation	50% of all motor-vehicle km travelled are from zero-emission vehicles	# of ZEVs registered in Whistler	77	3,300
	RMOW Corporate Goal			
	100% of light duty fleet electrified by 2030		TBD	TBD
	50% below 2007 by 2030	RMOW fleet GHG emissions in tCO _{2e}	680	340





Big Move 2: IMPLEMENTATION



ESTIMATED COST FOR 5 YEARS OF WORK TOWARDS IMPLEMENTING BIG MOVE 2: \$3 - 4 MILLION

Economic considerations:

- The costs for the planned EV charger network expansion is estimated to be about \$2 million over the next 4 years. The RMOW, in collaboration with regional partners, has received funding for about 75% of the cost from the Clean BC Communities Fund.
- Implementation of the EV Charger User Fee Strategy ensures that costs related to operation, maintenance and unit replacement are recovered.
- The costs to support the installations of home EV chargers are well understood and included in the RMOW 5-year financial plan.
- The costs of electrifying the RMOW fleet will be determined through the fleet electrification assessment and are not yet included in the RMOW budgeting process.

TRANSPORTATION: The Way We Move

Big Move #3

Reduce visitor travel emissions



Our resort community is successful because of our vibrant tourism amenities that attract visitors from around the world. Emissions associated with tourist travel to and from Whistler are estimated significantly higher than Whistler's total community emissions. While the vast majority of these emissions occur outside of Whistler's municipal boundaries, they should be considered since they are a result of Whistler's success and because there are increasing expectations for the tourism industry to address travel emissions.

Achieving significant GHG emissions reductions related to tourism travel presents a big challenge for the tourism industry as a whole, Whistler included. As such, this Big Move and most of the associated key initiatives are high level to help stimulate discussion and engagement and allow for learning and research to inform stronger next steps.



GOAL: By 2030, Whistler demonstrates leadership in redefining tourism in a low carbon world



**Big Move 3:
IMPLEMENTATION**

Big Move 3 – Reduce visitor travel emissions: Implementation

Priority initiatives are indicated as:



Key Initiative	Lead department	Timeline
3.1 Partner with the tourism and outdoor recreation sectors to define tourism and outdoor recreation in the future low-carbon world and to show leadership in facilitating and marketing a low-carbon vacation destination.	Climate Action/ Economic development	Ongoing
3.2 Partner with resort organizations and regional partners to encourage alternatives to personal vehicles travelling to and within Whistler, for example through marketing and communication, to achieve at least 50 per cent of international visitors arriving by bus or shuttle.	Climate Action	Ongoing
3.3 Promote Whistler’s businesses that are leading on climate action.	Climate Action/ Economic development	<u>2023 onwards</u> 2023 planning and feasibility analysis
3.4 Partner with resort organizations to encourage high quality/gold standard greenhouse gas offset purchases and carbon neutral vacations used as a short-term approach until direct reductions in the emissions related to travel can be achieved.	Climate Action	<u>2023 onwards</u> 2023 planning and feasibility analysis
3.5 Partner with resort organizations to create marketing and communication about the benefits of longer duration travel and fewer annual trips.	Climate Action/ Economic development	Ongoing

Co-Benefits related to key initiatives of Big Move 3:

- Supports the resilience of Whistler as a tourism destination
- Supports local employment
- Reduces congestions on peak days and thereby improves guest experience
- Ensures business community is adapting to a changing climate and prepared for related emergency responses



**Big Move 3:
IMPLEMENTATION**

3.6 Partner with car rental agencies and shuttle bus companies to make EVs available for visitors, support the electrification of shuttle busses, and incentivize bus travel and capacity. Climate Action 2023 onwards

Big Move 3: What does success look like?

Below are the annual metrics to measure if we are on track to meet the Big Move goal of *Whistler demonstrating leadership in redefining tourism in a low carbon world.*

Big Move 3: Reduce Visitor Travel Emissions	Community 2030 Goal	Measure of success	2019 starting point	2030 target
	Whistler is a low carbon visitor destination	GHG emissions per population equivalent in tCO ₂ e/PE (goal is 50% reduction below 2007 levels)	3.6	2.5
	Total landfilled waste in tonnes per population equivalent	325	65	

RMOW Divisions and Key Partners:

- Lead: Environmental Stewardship
- Support: Economic Development, Cultural Planning and Development, Transit and Transportation Demand Management, Planning
- Partnerships: Municipalities within the Sea to Sky Corridor, Tourism Whistler, Whistler Blackcomb, Destination BC

Links to existing work:

- OCP



Big Move 3: IMPLEMENTATION



ESTIMATED COST FOR 5 YEARS OF WORK TOWARDS IMPLEMENTING BIG MOVE 3: \$300,00 - \$500,000

Economic considerations:

- Whistler's economy is based on a healthy environment, sufficient snowfall throughout the winter season and clean, wildfire smoke-free air during the summer. As such, every dollar spent on climate action is an investment into our economic success.
- Actions to implement this Big Move are primarily based on partnerships, leveraging the RMOW's facilitation role to open and direct discussions and planning towards shared climate action goals.
- The cost for RMOW-led actions are well understood and included in the RMOW 5-year financial plan. Examples include the Whistler 101 episode titled "Climate Change" and continuously improving our sustainability standards for RMOW events.

Big Move #4

Build resilient zero
emission buildings
(zero-carbon operations
& low embodied
carbon materials)



GOAL: By 2030, all new buildings achieve the top step in B.C.'s Energy Step Code, use only low carbon energy systems, and embodied carbon emissions drop by 40%.

Whistler has shown early leadership by requiring highly energy efficient buildings and adopting the BC Energy Step Code level 3 to 4 for Part 9 buildings. Moving forward, Whistler must broaden the coverage of the B.C. Energy Step Code to Part 3 buildings, and set a path to adopt the top step by or before 2030, which will reduce energy consumption by approximately 80 per cent below current energy consumption. While highest efficiency buildings might be initially more costly to build, the return over the building life cycle is positive and can be seen as a step toward addressing building resiliency and housing affordability during the occupancy of the building.

Despite prioritizing high energy efficiency in new buildings, the BC Energy Step Code does not currently regulate GHG emissions from new buildings. Energy benchmarking and GHG limits need to be addressed through further regulation in tandem with incentives that prioritize low carbon cooking, space heating and hot water heating systems to ensure maximum GHG reductions in new buildings.

While the B.C. Energy Step Code and low carbon energy systems address emissions from building operations, the embodied carbon emissions of materials in new buildings can be significant - typically equivalent to and sometimes more than two times greater than operational emissions. Whistler has also seen an increase in GHG intensive construction practices, such as space heating uninsulated construction projects in the winter, further increasing the emissions footprint of many new buildings.

Lowering embodied emissions will mean shifting to lower carbon materials (e.g. mass timber, lower carbon cement), eliminating spray foam with high carbon blowing agents, less underground parking and living space that is cement-intensive, and increased re-use of materials.



Big Move 4 – Build resilient zero emissions buildings: Implementation

Priority initiatives are indicated as:



Key Initiative

Lead department **Timeline**

4.1	Adopt progressively higher steps on the BC Energy Step Code to address new building envelope improvements and regulate GHG emissions from new buildings by either incentivizing low carbon energy systems or by adopting the Province’s GHG targets within the buildings code.	Building	<u>2022 onwards</u> 2022 planning and engagement 2023 adoption and implementation
4.2	Collaborate with the Province on low carbon performance requirements and GHG emission limits for new buildings.	Climate Action	Ongoing
4.3	Promote capacity building opportunities and develop outreach campaigns for step code and low carbon energy systems for the building industry, home buyers, and realtors.	Climate Action	Ongoing
4.4	Discourage carbon-based heating of outdoor spaces such as patio heaters, fossil fuel burning fire pits, heated driveways, outdoor hot tubs, pools and saunas, etc. through policy and/or permit changes.	Planning department	<u>2022 onwards</u> 2023 analysis of feasibility and potential mechanism for implementation
4.5	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.	Climate Action	2023 onwards

Co-Benefits related to key initiatives of Big Move 4:

- Life-cycle energy cost savings of more efficient buildings
- Combined education on climate change
- Increased building resilience to a changing climate
- Air quality benefits related to reduced burning of carbon fuel
- Supports equity through better building standards for all new homes/buildings
- Rebates help with affordability of low carbon buildings



Big Move 4: IMPLEMENTATION

4.6	Build RMOW staff capacity related to embodied carbon emissions.	Climate Action	2023 onwards
4.7	Demonstrate RMOW leadership when it comes to new municipal building construction with the goal to develop guidance and inspiration.	Facility Construction Management	Ongoing – no new municipal buildings planned
4.8	Streamline the municipal building permit process to minimize administrative burden for property owners, developers and RMOW staff as relates to additional GHG related tasks and requirements.	Building Department	2022 onwards
4.0	Provide financial incentives/rebates for testing air tightness during and after construction.	Building Department / Climate Action	Ongoing
4.10	Develop a roadmap to require embodied carbon calculations for Part 3 buildings as part of permit submissions.	Climate Action	2023 onwards



Big Move 4: IMPLEMENTATION

Big Move 4: What does success look like?

Below are the annual metrics to measure if we are on track to meet the *Big Move goal of all new buildings achieving 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*).

Big Move 4: Build Resilient Zero Emission Buildings	Community 2030 Goal	Indicator	2019 starting point	2030 target
	All new buildings achieve the top step in B.C.'s Energy Step Code	% new Part 9 buildings at highest BCESC step	0	100%
		% of new Part 3 buildings at highest BCESC step	0	100%
		GHG emissions from buildings in tCO ₂ e	51,000	35,000

Embodied carbon:
GHGs associated with the resource extraction, processing, manufacturing, and transporting of building materials and the building construction process.

RMOW Divisions and Key Partners:

- Lead: Building Department
- Support: Environmental Stewardship
- Partnerships: BC Energy Step Code, Canadian Homebuilders Association, Whistler Housing Authority

Links to existing work:

- Green Building Policy
- OCP



Big Move 4: IMPLEMENTATION



ESTIMATED COST FOR 5 YEARS OF WORK TOWARDS IMPLEMENTING BIG MOVE 4: \$300,000 - \$500,000

Economic considerations:

- Actions to implement this Big Move are primarily based on policy development and incur no cost, given that staff time is not included in these high level cost estimates.
- Costs related to this Big Move mainly result from education and outreach activities, consulting support for external policy reviews and legal advice.
- Costs incurred to build more efficient, low carbon buildings today will avoid significantly higher costs for retrofitting the building in the future. A long-term approach to new buildings is fundamental to ensure that investments today in resilient infrastructure help us achieve our climate goals in the future.



Big Move #5

Make existing buildings better

Reducing emissions from existing buildings is especially challenging. While technical solutions are available, from replacing individual building components such as windows or updating energy systems, to comprehensive overhauls of the whole building, few if any jurisdictions have successfully scaled up strong action that materially reduces emissions from the existing buildings sector.

Local governments in British Columbia have limited jurisdiction over requirements for existing building retrofits. In addition, markets currently do not adequately value investments in energy efficiency, in part due to absence of transparent data on energy performance and utility costs at the time of sale. Considering these challenges, Whistler pursues a wide range of initiatives that can facilitate investments in building energy efficiency.

While the existing buildings sector is acknowledged to be one of the tougher sectors to achieve GHG reductions, a significant opportunity lies in Whistler's commercial buildings. Natural gas usage in commercial buildings account for over 70% of the building sector GHG emissions in Whistler, with a disproportionate amount coming from the largest energy-using buildings, mostly large hotels. These large buildings have more technical opportunities to reduce emissions, offer economies of scale and learning, and are better suited to value the long-term benefits from energy efficiency and lower utility and carbon costs. Annual spending in 2019 on energy use by commercial buildings alone is \$22 million dollars.

Energy upgrades to the RMOW's Meadow Park Sports Centre have reduced emissions by over 60 per cent and also provide an attractive rate of return. Focusing on large buildings to advance proven and new technologies will be a critical strategy for reducing emissions from Whistler's existing buildings.



GOAL: By 2030, reduce emissions from residential buildings by 20% and from large commercial buildings by 40%.



**Big Move 5:
IMPLEMENTATION**

Big Move 5 – Make existing buildings better: Implementation

Priority initiatives are indicated as:



Key Initiative	Lead department	Timeline
5.1 Develop and implement a program that supports energy efficiency and low carbon heating system retrofits in single family homes. The program is to address barriers to retrofits, support energy assessments to identify the best retrofit opportunities, identify financial incentives, and provide municipal top ups.	Climate Action	<u>2021 onwards</u> 2022 Retrofit Assis Pilot 2023 onwards program expansion
5.2 Collaborate with the Province on the proposed retrofit code.	Climate Action	Ongoing
5.3 Demonstrate RMOW leadership for municipal building efficiencies and GHG emission reductions by identifying retrofit opportunities in all corporate buildings, developing a timeline and implementing.	Facility Construction Management	Ongoing
5.4 Develop education and outreach materials such as a retrofit toolkit on energy efficiency retrofits and low carbon energy systems for home and business owners as well as contractors and other retrofit stakeholders.	Climate Action	<u>2023 onwards</u> As part of Retrofit Assist outreach
5.5 Discourage carbon-based heating of outdoor spaces (e.g. patio heaters, fossil fuel burning fire pits, heated driveways, outdoor hot tubs, pools and saunas, etc.) and identify policy and/or a regulatory mechanism to regulate outdoor heating.	Planning Department	<u>2022 onwards</u> 2023 analysis of feasibility and potential mechanism for implementation

Co-Benefits related to key initiatives of Big Move 5:

- Increased building resilience to a changing climate with higher efficiency and low carbon energy systems
- Building comfort is increased through building retrofits
- Supports education on climate change
- Rebates & incentives help with affordability of energy retrofits so that more people can benefit
- Air quality benefits related to reduced burning of carbon fuel
- Supports local employment





Big Move 5: IMPLEMENTATION

5.6	Work with operators and managers of larger commercial buildings (especially hotels) to advance this Big Move in their building(s) by sharing information on best practices and benchmarking.	Climate Action	2023 onwards
5.7	Support strata residents, councils, and property management companies to implement energy efficiency and low carbon heating system retrofits. Explore the option to expand the retrofit program from single family homes to multi-unit buildings and other building types.	Climate Action	<u>2023 onwards</u> 2023 Study on Retrofit Assist expansion to multi-unit buildings
5.8	Advance a system of voluntary and mandatory energy benchmark reporting across Whistler's large energy consumers.	Climate Action	2023 - onwards

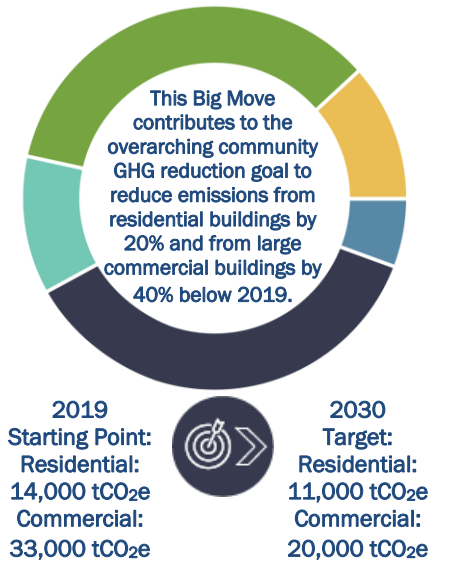


**Big Move 5:
IMPLEMENTATION**

Big Move 5: What does success look like?

Below are the annual metrics to measure if we are on track to meet the *Big Move goal of 20% GHG reduction from residential buildings and 40% from large commercial buildings* (as per OCP, Big Moves and CECAP).

Big Move 5: Make Existing Buildings Better	Community 2030 Goal	Indicator	2019 starting point	2030 target
	20 homes in 2022 switch from fossil fuel heating to a heat pump, 61 per year thereafter	# of heat pump incentives accessed (goal 20 for 2022, 61 per year thereafter)	0	61
	20% reduction in natural gas use from residential buildings and 40% reduction from commercial buildings	Natural gas use from residential buildings in GJ	270	215
		Natural gas use from commercial buildings in GJ	660	400
RMOW Goal				
50% below 2007 by 2030	GHG emissions from RMOW buildings in tCO ₂ e	1,110	555	



RMOW Divisions and Key Partners:

- Lead: Planning or Building Department
- Support: Environmental Stewardship, Facility Construction Management, Corporate and Community Services (for existing buildings)
- Partnerships: BC Government, BC Hydro (for incentive programs), Canadian Homebuilders' Association, Whistler Housing Authority

Links to existing work:

- Green Building Policy
- OCP
- CECAP



ESTIMATED COST FOR 5 YEARS OF WORK TOWARDS IMPLEMENTING BIG MOVE 5: \$7 -10 MILLION



Economic considerations:

- Costs to provide the retrofit program and municipal retrofit incentives range between \$50,000 and \$100,000 per year. These costs are part of the RMOW 5-year financial plan. Investments in home retrofits are one of the key actions the RMOW can do to lower GHG emissions from existing buildings.
- For home owners, energy-efficiency retrofits can decrease energy bills and lead to healthier homes with better ventilation and thermal comfort levels. In addition, retrofits add value to homes. Providing incentives and support for energy retrofits benefits property owners and the community, as these steps move us closer to our climate goals.
- Demonstrating leadership by reducing the GHG emissions of existing RMOW buildings as necessary to achieve our climate goals is estimated to require an investment between \$6 and \$7 million over the next 5 years. Grant application and other funding sources will be pursued to support the RMOW in achieving these measures.

CONSUMPTION: Close the loop and shift toward lower carbon consumption

Big Move #6

Close the loop & shift toward lower carbon consumption



In many communities in British Columbia, the waste sector represents one of the largest contributors to GHG emissions but is one of the least expensive reduction opportunities. In many ways, Whistler has already done much of the heavy lifting related to waste by reducing emissions 90 per cent compared to 2005 due to landfill gas capture and destruction, and increasing organics diversion to 30 per cent. While this progress is encouraging, many challenges remain and more can be done. These include finding long-term sustainable solutions for landfill waste, securing customers for plastic recycling, increasing organic waste diversion from commercial operations and multi-unit residential buildings and addressing construction waste.

While good progress has been made on the waste side of the equation, the embodied carbon in the products we purchase accounts for two to three times our total community emissions. GHG accounting practices mean that these emissions are accounted for in the countries where they are produced, yet consumers have direct control over purchasing decisions, including lower carbon diets, environmentally certified products, product sharing, and less greenhouse gas intensive travel, among others.



GOAL: By 2030, reduce waste sector emissions by 95% and reduce embodied emissions from products and services.



Big Move 6:
IMPLEMENTATION

Big Move 6 – Close the loop & shift towards lower carbon consumption: Implementation

Priority initiatives are indicated as:

HIGH	MEDIUM	LOW
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Key Initiative	Lead department	Timeline
6.1 Continue commitment to implement Whistler’s Zero Waste Plan with its goal to move progressively toward Zero Waste in a cost-effective, efficient and environmentally sound manner, and substantially reduce GHG emissions associated with waste management, and embodied in products.	Solid Waste	Ongoing
6.2 Improve organic waste reduction and landfill diversion from commercial operations and multi-unit residential buildings.	Solid Waste	2022 onwards
6.3 Reduce construction waste focusing on organic materials such as waste wood.	Solid Waste	2022 onwards
6.4 Demonstrate RMOW leadership by embedding GHG emissions and waste considerations into municipal operations and procurement practices. Conduct regular interval audits and reporting to understand RMOW progress towards meeting and beating the 80 per cent waste diversion goal as outlined in the Zero Waste Plan.	Solid Waste/ Finance	<u>2022 onwards</u> 2023 RMOW procurement policy update
6.5 Engage with residents, visitors and local businesses to advance sustainable consumption, to support locally reusable products and packaging, a local shared economy, and other local carbon reduction projects.	Solid Waste	TBD
6.6 Develop a renewable energy strategy focused on exploring potential renewable energy production opportunities and partnerships.	Climate Action	TBD

Co-Benefits for key initiatives of Big Move 6:

- A more circular economy supports our local economy & community
- Increased community connections through sustainable consumption & re-use
- Supports local employment
- Benefits to natural habitat & biodiversity with reduced waste to landfill
- Education on climate change





Big Move 6:
IMPLEMENTATION

6.7	Use low carbon fuels for waste-related transportation to reduce transport emissions.	Solid Waste	2021 onwards In partnership with GfL
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Big Move 6: What does success look like?

Below are the annual metrics to measure if we are on track to meet the *Big Move goal to reduce waste sector emissions by 95 per cent and reduce embodied emissions from products and services.*

Big Move 6: Make Existing Buildings Better	Community 2030 Goal	Indicator	2019 starting point	2030 target
	Zero waste targets	Waste diversion rate	45%	95%
		Tonnes of waste to landfill	12,000	2,400
	Reduce waste sector emissions by 95%	GHG emission from waste sector	1,821	TBD
	RMOW Goal		TBD	TBD
80% diversion of waste	RMOW will monitor waste diversion rate and waste to landfill			

RMOW Divisions and Key Partners:

- Lead: Waste Management
- Support: Environmental Stewardship, Facility Construction Management, Corporate and Community Services
- Partnerships: BC Government, AWARE

Links to existing work:

- Solid Waste Management Strategy
- OCP
- CECAP



Big Move 6: IMPLEMENTATION



ESTIMATED COST FOR 5 YEARS OF WORK TOWARDS IMPLEMENTING BIG MOVE 6: \$100,000 – \$300,000

Economic considerations:

- Cost estimates to implement this Big Move include education and outreach as per the Zero Waste Plan, external support and reviews for strategy and policy development work (E.g. single-use item strategy, demolition and construction waste policy).
- Cost estimates related to actions supporting a circular economy approach or a renewable energy strategy require further analysis and planning before a reasonable cost estimate can be developed and included in the RMOW 5-year financial plan.

8.0 ADAPTATION– INCREASING RESILIENCE IN THE FACE OF CLIMATE CHANGE

Although global mitigation efforts are taking place to curb greenhouse gas emissions, climate change is already underway. Communities must take action to adapt to the changes that are already in motion, as well as those anticipated in the future. Building resilience to climate change taking actions in response to the projected impacts of climate change by reducing potential risks and/or taking advantage of potential opportunities.

In general, climate change adaptation is aimed at:

- minimizing the risk of damage/impacts posed by key climate change impacts;
- minimizing the extent of damages/impacts posed by key climate change impacts;and
- reducing vulnerability and increasing resilience by preparing adequately to deal with lesser risks and opportunities presented by climate change.





MINIMIZE WILDFIRE THREATS TO HUMAN HEALTH AND SAFETY, PRIVATE PROPERTY, INFRASTRUCTURE, WILDLIFE AND NATURAL AREAS.

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INCREASE THE RESILIENCE OF BUILT ASSETS, INFRASTRUCTURE AND SERVICES TO ENDURE EXTREME WEATHER AND ENVIRONMENTAL EVENTS.

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PROTECT, SUPPORT AND INCREASE THE RESILIENCE OF LOCAL ECOSYSTEMS, NATURAL ASSETS AND BIODIVERSITY.

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Effective adaptation means increasing the resilience of our natural and built environments in order to avoid, prevent or moderate potential harm related to projected local climate changes and related impacts. These Adaptation Goals have been developed to meet the challenges of climate change and achieve Whistler's vision of a resilient, low carbon community.

ADAPTATION

Adaptation Goal #1

Minimize threats from wildfire



GOAL: Minimize wildfire threats to human health and safety, private property, infrastructure, wildlife and natural areas.

With climate change comes the ever increasing threat of local wildfires and the potential for significant negative impacts and destruction within our community. Climate change is raising average global and local temperatures, resulting in longer droughts and cascading effects for forests and wildfires. Wildfires are simultaneously being exacerbated by climate change and contributing to it.

In Whistler's forests, increasing temperatures and reduced summer precipitation dry out fuels for wildfire, such as dead trees and fallen branches, more quickly and fully which makes them more easily incendiary. Local climate impacts are expected to reduce snowpack and speed up our spring snow melt period, leading to longer dry periods and increasing the risk of fire from dry vegetation in and around our forests.

Wildfires cause severe risk to human health and safety, damage to infrastructure and community services and harmful impacts to natural areas, wildlife and biodiversity. As we have seen, even wildfire smoke from distant places can drastically impair local air quality and result in potential health impacts for humans and wildlife. As a resort community, these events can have significant impacts on our tourism and outdoor recreation economy.

With an increasing risk of wildfire and wildfire smoke events due to climate change, it is in Whistler's best interest to prevent and plan for these occurrences to the best of our ability.



Adaptation Goal 1
IMPLEMENTATION

Adaptation Goal 1 – Minimize wildfire threats: Implementation

Priority initiatives are indicated as:



Key Initiative	Lead department	Timeline	Co-Benefits for key initiatives of Adaptation Goal 1:
<p>A1.1 Implement the Community Wildfire Resiliency Plan (CWRP) in collaboration with relevant partners.</p> <ul style="list-style-type: none"> a) Education - Ensure that Whistler residents are aware of how to FireSmart their property and encourage high-risk properties to apply FireSmart measures. b) Community planning - Incorporate FireSmart guidance into the RMOW's community planning and policy frameworks. c) Development considerations - Provide for the resilience of new developments in the RMOW through community land use and development-related plans and bylaws. d) Interagency cooperation - Seek the collaborative effort of multiple stakeholders within the RMOW to undertake wildfire risk reduction/resiliency tasks. e) FireSmart training & cross-training - Further train relevant individuals in the RMOW to better understand wildfire disciplines and wildfire management planning objectives, to achieve a safe and effective wildfire response. f) Emergency planning - Prepare the RMOW to holistically respond to a wildfire emergency and/or the threat of wildfire. 	Environmental Stewardship / Protective Services	<p><u>2022 onwards</u></p> <p>2022- CWRP adoption</p> <p>2022 onwards implementation of 32 recommendations in the CWRP</p>	<ul style="list-style-type: none"> • Preventing/minimizing wildfires significant supports climate mitigation, as wildfires release massive amounts of GHG emissions • Air quality benefits of preventing wildfires and enacting campfire restrictions Supports local employment • Fuel thinning removes some smaller trees, which makes room for other trees to grow bigger and healthier, bolstering our forests' resilience to adapt to a changing climate • Wildfire prevention means increased safety for infrastructure, people and wildfire and related cost savings





Adaptation Goal 1 IMPLEMENTATION

g) Vegetation management - Continue to remove hazardous vegetation and create resilient forests within the community, at the forest interface, and at the landscape level.

A1.2 Continue to implement Wildfire Protection Development Permit Areas through the OCP. Planning Ongoing

RMOW Divisions and Key Partners:

- Lead: Protective Services, Environmental Stewardship
- Support: Planning, Fire Services (Public Safety), Emergency Program Office
- Partnerships: BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Sea to Sky Fire Rescue Services, SLRD, Vancouver Coastal Health

Links to existing work:

- FireSmart voluntary program for private properties
- Community Wildfire Resiliency Plan
- Wildfire Protection Development Permit Areas (OCP)
- RMOW Emergency Program

ESTIMATED COST FOR 5 YEARS OF WORK TOWARDS IMPLEMENTING ADAPTATION GOAL 1: \$10 - 15 MILLION



Economic considerations:

- Wildfires are a significant threat to Whistler. The costs for wildfire management are budgeted in the RMOW 5-year financial plan, with over \$1.5 million annually. This amount is significantly less than the costs associated with potential wildfire damages to Whistler's built and natural assets.
- The FireSmart program represents an investment of about \$500,000 annually which helps reduce fire risks on private property and beyond.
- Additional costs related to implementing the Community Wildfire Resiliency plan result from actions such as emergency planning, collaborative efforts with stakeholders, and policy work.

ADAPTATION



GOAL: Increase the resilience of built assets, infrastructure and services to endure extreme weather and environmental events.

With projected escalations in the frequency and intensity of heavy rain events, Whistler aims to increase the resilience of our built environment to withstand related risks such as flooding, debris flows and storm water overflows. Such risks can pose a threat to human safety, property damage, transportation disruptions and broader social and economic impacts.

Anticipated climate changes also include longer, hotter, drier summers which can result in diminished drinking water supplies and extreme weather conditions such as heat domes. Wildfire smoke from nearby or distant wildfires is also becoming a more common summertime occurrence in Whistler, impacting local air quality and human and wildlife health.

Faced with increasing changes to local climate conditions, it is critical that Whistler’s built infrastructure – roads and trails, buildings, energy systems, water supply, stormwater systems – is designed or retrofitted to meet anticipated climate impacts like extreme weather and environmental events.

By working to increase the resilience of our built infrastructure and community services, we can minimize risks to human health and safety, damage to civic infrastructure and private property, transportation disruptions, degradation of natural areas and recreation assets, impacts to wildlife and negative economic impacts. Smart, forward-thinking land use, development patterns, design and building standards are necessary to meet this goal.



Adaptation Goal 2
IMPLEMENTATION

Adaptation Goal 2 – Increase resilience of built infrastructure to extreme weather events: Implementation


Priority initiatives
are indicated as:



Key Initiative	Lead department	Timeline
A2.1 Review and improve stormwater management plans to ensure capacity and resilience in consideration of anticipated climate changes.	Engineering, Environmental Stewardship	2023 onwards
A2.2 Update flood hazard plans in consideration of anticipated climate changes, such as storm frequency and intensity.	Flood Protection Systems, Planning	2022 onwards
A2.3 Update plans and policies to protect the quality and quantity of Whistler's potable water and fire-fighting water supply from potential contamination and drawdown related to the anticipated impacts of climate change (i.e. extreme rain/snow events and longer hotter drier summers).	Roads & Drainage, Emergency Planning, Parks & Village Ops	Ongoing
A2.4 Develop strategies to improve public safety measures related to the potential impacts of extreme rain/snow events, extreme heat events, and wildfire and smoke events (E.g. transportation/service disruption, emergency preparedness).	Roads & Drainage, Emergency Planning, Parks & Village Ops	2022 onwards

Co-Benefits for key initiatives of Adaptation Goal 2:

- Resilient infrastructure means less damage to repair (i.e. due to extreme weather and environmental events) and fewer GHG emissions associated with repair efforts.
- Resilient infrastructure helps to ensure water supply protection and self-reliance to avoid emergency import of drinking water and associated transportation and waste-related GHG emissions.





Adaptation Goal 2
IMPLEMENTATION

A2.5	Develop strategies to increase the resilience of recreation trails and other outdoor recreation assets to better endure extreme rain/snow events.	Resort Parks Planning, Parks & Village Ops	Ongoing
A2.6	Facilitate and promote community economic diversification opportunities as a means to increase Whistler's climate resilience (E.g. cultural tourism development, learning & education opportunities, weather-independent tourism/recreation offerings).	Economic Development	Ongoing
A2.7	Integrate climate change considerations into the corporate asset management system.	Finance, Engineering	<u>2022 onwards</u> 2022 Natural Asset Management Plan adopted

Co-Benefits for key initiatives of Adaptation Goal 2, continued:

- Protecting our infrastructure and service network helps bolster against breakdowns that could be detrimental, particularly for vulnerable populations in our community.
- Retaining trees for shade canopy in developed areas can help reduce GHG emissions (i.e. lower cooling requirements).



Links to existing work:

- Green Building Policy
- Water Conservation and Supply Plan
- Integrated Stormwater Management Plan
- 21 Mile Creek Watershed Protection Plan
- Groundwater Protection Plan
- Recreation Trail Design Standards
- Emergency Program
- Emergency Preparedness Programs
- Whistler Sessions
- Whistler 101 online series
- Balance Model
- RMOW Emergency Program

RMOW Divisions and Key Partners:

- Lead: Infrastructure Services
- Support: Environmental Stewardship, Emergency Program, Parks Planning, Emergency Program Office
- Partnerships: BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Sea to Sky Fire Rescue Services, SLRD, Vancouver Coastal Health



Adaptation Goal 2 IMPLEMENTATION



ESTIMATED COST FOR 5 YEARS OF WORK TOWARDS IMPLEMENTING ADAPTATION GOAL 2: \$1.5 – 2.5 MILLION

Economic considerations:

- Investments now in increasing the resilience of Whistler's built assets aims to avoid costly repairs in the future.
- Preliminary cost estimates for the implementation of this goal include review and updates of plans related to RMOW infrastructure and services that are likely to be affected by climate change, such as storm water management, water supply, and flood hazards.
- Developing strategies to improve public safety as relates to extreme weather events is estimated to cost around \$800,000 over the next 5 years.
- Further planning and analysis is required for a more accurate and complete cost estimate related to this goal.

ADAPTATION



Adaptation Goal #3

Protect local ecosystems & biodiversity

Ecosystems are being impacted and are changing in response to climate change. To date, climate change has had a relatively modest effect on ecosystems and biodiversity, compared to the impacts of human activity. However, this is already shifting and the negative ecological impacts of climate change are becoming more apparent and expected to only intensify. Changes in temperature, precipitation patterns, water balance and the frequency of extreme dry and wet weather events is accelerating physiological and hydrological stress and ecosystem flammability. These conditions, coupled with other human impacts, are also accelerating the spread of invasive species which is a primary threat to biodiversity worldwide.

Ecosystems and biodiversity are vulnerable to climate change – and they also have an important role in adapting to climate change. Ecosystem protection, management, restoration and stewardship efforts can play important roles in both climate change mitigation and adaptation. For example, old growth forests and wetlands can clean our air and act as carbon sinks, while healthy riparian vegetation and wetlands can help prevent flooding and soil erosion.

Acknowledging and protecting Whistler’s natural assets, as well as the important infrastructure services they provide, can help increase the climate resilience of both natural and developed areas. Finding opportunities to protect and support ecosystems, such as protection and restoration of key natural areas, can help retain carbon, support ecosystem function, increase resilience of built and natural infrastructure and enhance wider scale ecological resilience to climate change.



GOAL: Protect, support and increase the resilience of local ecosystems, natural assets and biodiversity.



Adaptation Goal 3
IMPLEMENTATION

Adaptation Goal 3 – Protect local ecosystems & biodiversity: Implementation

Priority initiatives are indicated as:



Key Initiative	Lead department	Timeline
A3.1 Develop policy, planning and legislative strategies to protect and restore local ecosystem health and support continued provision of natural infrastructure services. E.g. develop/implement Priority Habitat Strategy and Species & Ecosystems at Risk Plan	Environmental Stewardship, Planning	<u>2022 onwards</u> 2022 priority habitat strategy complete
A3.2 Continue to monitor ecosystem health and biodiversity.	Environmental Stewardship	Ongoing
A3.3 Prevent and minimize the spread of invasive species.	Environmental Stewardship	Ongoing
A3.4 Manage the Cheakamus Community Forest in a way that prioritizes and supports healthy, biodiverse and climate resilient forests.	Environmental Stewardship	Ongoing
A3.5 Support environmental integration and education opportunities.	Environmental Stewardship,	Ongoing

Co-Benefits for key initiatives of Adaptation Goal 3:

- Protecting our natural areas has recreational, psychological and spiritual benefits, as well as environmental and economic
- Protecting natural areas within Whistler helps support equitable opportunities for all to enjoy and experience nature
- Healthy local ecosystems provide critical services such as flood protection, clean air, pest control, soil fertility & stability, food security (E.g. through pollination), fresh water and shade

RMOW Divisions and Key Partners:

- Lead: Environmental Stewardship
- Partnerships: BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Cheakamus Community Forest, Squamish Nation, Lil'wat Nation, Sea to Sky Invasive Species Council

Links to existing work:

- OCP Chapter 7
- Ecosystems Monitoring Program
- RMOW Invasive Species Management Plan
- Priority Habitat framework/plan



Adaptation Goal 3 IMPLEMENTATION

Co-Benefits for key initiatives of Adaptation Goal 3, continued:

- Protecting local biodiversity benefits future generations
- Protection of healthy forest and wetland ecosystems support Whistler's carbon sink capabilities
- Logging less in the CCF reduces equipment use, transportation and other activities, resulting in fewer GHG emissions
- Environmental stewardship initiatives support community learning about climate change and other environmental issues
- Habitat restoration projects can support local employment and strengthen community through volunteer engagement
- Opportunities to learn about and connect with nature may support more climate-friendly decision making when it comes to making personal decisions about energy, transportation and consumption/waste



ESTIMATED COST FOR 5 YEARS OF WORK TOWARDS IMPLEMENTING ADAPTATION GOAL 3: \$500,000 - \$800,000

Economic considerations:



- Whistler's economy is based on a healthy natural environment, healthy local ecosystems and thriving biodiversity. All investments in protecting these natural assets are investments in Whistler's economic success and the well-being of our community.
- Cost estimates for the implementation of this goal include policy and planning work to protect, monitor, and restore natural ecosystem health and biodiversity, invasive species management, collaboration with local organizations, and environmental education and outreach.
- Cost estimates for this goal are based on current day knowledge. Further research and planning is required for more complete cost estimates on anticipated future projects. Costs are anticipated to increase as planning efforts progress.

9.0 ACCOUNTABILITY, MONITORING AND REPORTING

Integrating Climate Action into the RMOW's Corporate Planning process

This Big Moves CAIP provides a strategic approach to implementing all climate mitigation key initiatives identified in the Big Moves strategy and all climate change adaptation key initiatives identified through prioritizing the CECAP actions. This plan was informed and developed based on an RMOW internal, comprehensive work plan that identifies detailed actions, projects, timelines, budgets and lead departments for each key initiative. Input, detailed discussion, and ongoing collaboration between all relevant RMOW departments will ensure that all key initiatives are implemented in the respective department workplans as well as RMOW corporate strategic planning and budgeting processes.

Implementation efforts of this key initiative will include ongoing meetings with the climate action implementation project managers or teams to review implementation progress and to establish course corrections if required.

Regular reviews of the RMOW climate workplan and regular reporting on progress indicators and action progress will ensure we are continually moving towards achieving the targets outlined in this plan.

Tracking progress on the Big Moves

Monitoring and evaluating progress is critical for the success of the Big Moves strategy implementation. The progress indicators as outlined below will enable RMOW staff to measure progress consistently, evaluate success and determine how to best allocate resources. There are two types of indicators that can be applied to each Big Move: Community indicators and RMOW corporate indicators.



Reporting

One of the main goal and benefits of this Big Moves CAIP is clearer and more informative climate reporting against specific targets and indicators. Semi-annual climate progress reports will clearly illustrate Whistler’s progress on climate action in a report card style and help keep Whistler on track to meeting our climate commitments. The RMOW’s annual Energy and GHG Inventory Report will serve as the main Big Moves monitoring tool, to highlight the main achievements towards each Big Move and Adaptation goal in addition to the community GHG and energy performance. A less formal progress update on each Big Move will be presented in the winter.

The table below is the reporting structure and frequency to monitor progress towards climate action implementation as outlined in this plan.

Annually	Semi – annually	Ongoing
<ul style="list-style-type: none"> • Community-wide GHG Inventory • RMOW corporate GHG Inventory • Report card on all progress indicators • Progress on actions • Actions completed • New actions identified • Summary of past and upcoming council decisions related to climate action 	<ul style="list-style-type: none"> • Progress on actions • Actions completed • New actions, projects, opportunities 	<ul style="list-style-type: none"> • Integration of Climate considerations in every departments work • Climate Innovation Working Group meetings as a vehicle to bring an climate of innovation into the entire RMOW • Collaboration within the RMOW and with community partners • Outreach and education



APPENDIX A

The following key climate changes are projected for Whistler:

1. **Warmer and wetter weather with increasing frequency and intensity of heavy rain events.**

- Whistler will experience a substantial increase in average air temperature of 4.5°C by the 2080-2100 period relative to the 1981-2010 average (67% increase) which exceeding average warming estimates for the globe.
- Whistler will see an increase in temperature in all months.
- Whistler's average total annual precipitation will increase by 11%, largely from a 30% increase in days with high intensity precipitation (≥ 20 mm), while projecting a decrease (-4%) in overall number of precipitation days (≥ 1 mm).
- Whistler will experience more frequent and intense extreme storms and atmospheric rivers.
- While cold snaps are likely to become less frequent, those that occur may be as intense as or even more intense than those at present.
- Increasing inter-annual variability in temperature and precipitation in the model projections suggests that warm/cold and wet/dry seasons may be more extreme – not only extreme in terms of magnitude but particularly in terms of swings from one year to the next (E.g. really wet to really dry or really warm winter to a really cold winter).

2. **Longer, hotter, drier summers.**

- While the continued emissions trajectory scenario suggests an overall increase in precipitation, there is a notable decrease in precipitation in the summer months of June through August.
- 2080-2100 average total summer (June to August) precipitation will decrease by 11%.
- Further, the maximum length of dry spells (consecutive days without measurable precipitation) is expected to increase by approximately 6 days (+28%), while the maximum length of wet spells (consecutive days with measurable precipitation) will increase by just 0.3 days (+1%).
- Whistler is expected to experience more frequent and intense heatwaves.
- The increase in dry spell length coupled with increasing summer temperatures suggest a potential increase in extreme heatwaves, drought and wildfire occurrences, while more frequent heavy precipitation supports increased debris flooding, landslides, and debris flows.

- In addition to high heat quickly drying 1-hr wildfire fuels (e.g., grasses and shrubs), heatwaves in the region pose a health danger to the community due to the normally high marine-layer humidity that inhibits overnight cooling coupled with a presumed low proportion of air-conditioned households.
- An increase in wildfires will have a negative effect on regional air quality, including elevated quantities of particulate matter (E.g. PM2.5, PM10), volatile organic compounds (VOC) and Nitrous Oxides.
- Increased temperatures year-round are also anticipated to raise the frequency and intensity of severe storms. This includes intense, localized summer thunderstorms that may spark wildfires, induce landslides and debris flows, and produce damaging debris flooding.

3. Milder winters, with increased precipitation falling as rain near valley bottom, and increasing weather variability year to year.

- Winter (December-February) average temperature will increase by 4.3°C (+237%) (Table 2-1). These increases are due to a roughly 300% increase (4.7°C) in average annual minimum temperature and a doubling (5.1°C) in winter average minimum temperature.
- The large increase in winter temperatures coupled with precipitation increases is expected to result in more frequent winter rain events and rain on snow events.
- This change in temperature regime will noticeably reduce the number of frost days (days with $T_{min} < 0^{\circ}C$) by 48% and the number of icing days (days with $T_{max} < 0^{\circ}C$) by 64% (Figure 2-3). Such reduction suggests a later onset of winter, more winter precipitation falling as rain and an earlier average freshet date.
- Average winter precipitation totals will increase by 14% (compared to average total annual precipitation, which will increase by 11%).
- The increase in both winter precipitation and temperature means a shift from snow dominated to a mixed rain-snow regime with a likely earlier and perhaps more hazardous freshet and a thinner and less consistent snowpack.
- The area will experience a transition from snow dominated winters to a mixed (rain and snow) regime, with earlier freshet and more rain-on-snow events.
- Winter storms are expected to produce more rain and less snow, which reduces but does not eliminate the chance of extremely snowy and stormy winters.
- Increases in winter surface layer temperature also raise the $0^{\circ}C$ isotherm (i.e., snow line), decreasing lower elevation snowpack.

- Increasing inter-annual variability in temperature and precipitation in the model projections suggests that warm/cold and wet/dry seasons may be more extreme – not only extreme in terms of magnitude but particularly in terms of swings from one year to the next (E.g. really wet to really dry or really warm winter to a really cold winter).