

# Report to Council



**Date:** June 20, 2022  
**To:** Council  
**From:** City Manager  
**Subject:** Climate Modelling: GHG Reduction Targets and Next Steps for the Climate Resilient Kelowna Strategy  
**Department:** Policy & Planning

---

## **Recommendation:**

THAT Council receives for information, the report from the Policy & Planning Department dated June 20, 2022, with respect to Climate Modelling: GHG Reduction Targets and Next Steps for Climate Resilient Kelowna Strategy;

AND THAT Council direct staff to update the 2040 OCP with new GHG reduction targets as outlined in the report;

AND THAT Council direct staff to use these new GHG reduction targets as a basis for developing a Climate Resilient Kelowna Strategy;

AND FURTHER THAT the 2022 Financial Plan be amended to include \$95,000 to complete the *Climate Resilient Kelowna* strategy from Intact Insurance's Municipal Climate Resiliency Grant program, if successful, or \$80,000 from the Climate Action Reserve should the grant not be approved, as outlined in the report.

## **Purpose:**

To update Council on initiatives to support the development of the Climate Resilient Kelowna strategy, the outcomes of the GHG Modelling Study and to recommend new greenhouse gas emission reduction targets.

## **Background:**

In 2018 Council endorsed Kelowna's *Community Climate Action Plan (CCAP)*, a five-year GHG emissions reduction strategy which targets 4, 25, and 80 per cent GHG emissions reduction below 2007 levels by 2023, 2033 and 2050 respectively. Understanding how the community has progressed on these targets has been challenging due to issues with data availability.

As part of a recently completed GHG Emissions Modelling Study, emission inventories were updated for 2007 and 2016, and a new inventory was created for 2018 as illustrated in Table 1. The community reduced absolute GHG emissions nearly four per cent between 2007 and 2016, however, emissions rose nearly four per cent above 2007 levels in 2018. While an absolute reduction in GHG emissions is critical to reduce the impacts of climate change, progress is being made on a per capita basis. By 2018, the community achieved nearly 17 per cent reduction in per capita GHG emissions compared to 2007, providing a basis for future GHG reduction success.

	Absolute GHG emissions (tonnes CO <sub>2</sub> e)	
	Total Emissions	% absolute change since 2007
2007	841,789	-
2016	808,874	↓ 3.9%
2018	874,156	↑ 3.7%

Table 1: Kelowna GHG Emission Inventories Summary

Soon after Council's endorsement of the CCAP significant changes happened because of the Intergovernmental Panel on Climate Change (IPCC) findings on the significant action needed to limit global warming below 1.5 degrees Celsius. As illustrated in Figure 1, governments at all levels have responded, adopting more aggressive emission reduction targets and actions. Kelowna's current plan and targets no longer align with the evolving policy landscape, and as it approaches the end of its span, staff have initiated a process to update the CCAP that is more encompassing. Developing a *Climate Resilient Kelowna* strategy will put the community on the path to a low carbon future while preparing to be resilient to the forecasted changes in climate.

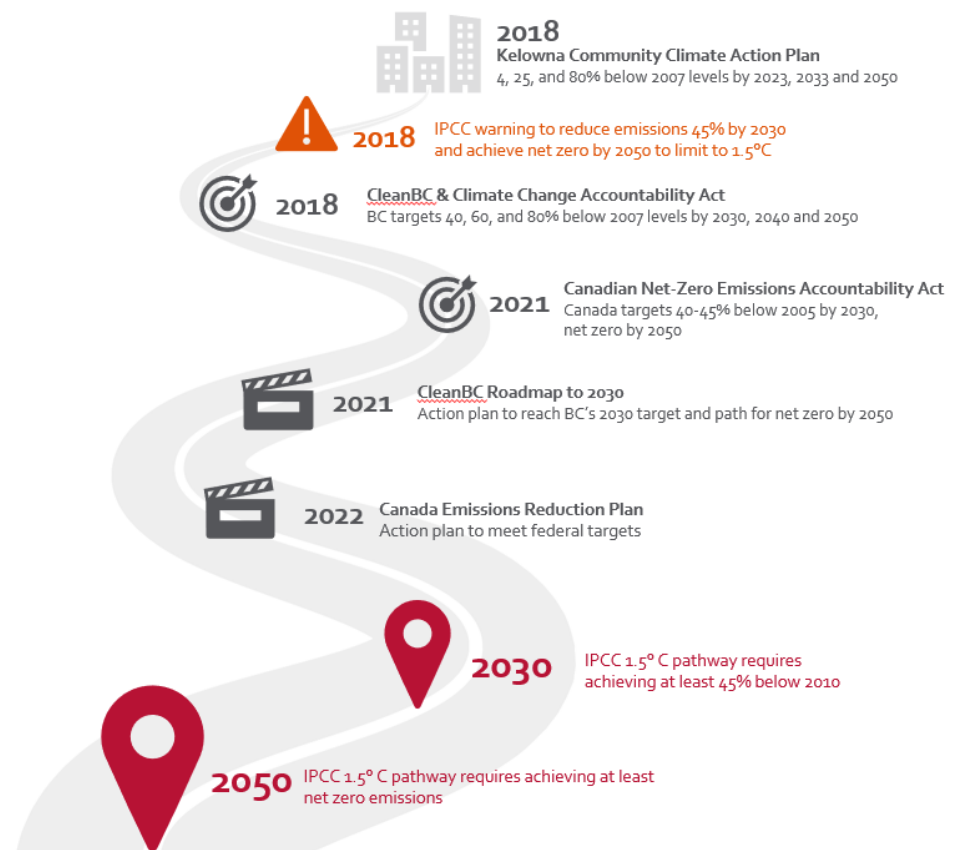


Figure 1: Changes to climate policy and targets since endorsement of Kelowna's Community Climate Action Plan (2018)

Phase 1 of the strategy development recently concluded – a *GHG Emissions Modelling Study* to understand how the community could reduce its share of GHG emissions to align with senior government and IPCC 1.5 degrees Celsius pathway.

## Discussion:

Working with a consultant, the *GHG Emissions Modelling Study* modelled the low carbon actions that could be undertaken to help the community align with long-term national and international climate targets (see Appendix A for an Executive Summary).

### ***Towards 2030: how Kelowna can meet more ambitious targets***

The *GHG Emissions Modelling Study* assessed three community GHG emissions scenarios for Kelowna, compared to a business as usual (BAU) scenario. The scenarios, which each build on the results of the previous, estimate the potential GHG emission reduction possible in the community due to senior government announced initiatives, City policies and plans (such as the Official Community Plan and Transportation Master Plan) and what would be needed to align with the senior government targets and the IPCC's 1.5 degree Celsius pathway.

As illustrated in Figure 2, the modelling shows the importance of the local implementation of provincial and federal climate policies, but that additional action is needed. Overall, the modelling demonstrates the possibility for community GHG emissions reduction targets to align with provincial and federal targets. Some of the larger GHG emission reductions could be achieved through:

- Reduction in vehicle kilometers travelled
- Mode shift
- Cleaner fuel
- Electric vehicle uptake
- Net zero emission in the electricity grid
- Efficiency improvements in new and existing buildings
- Increased tree canopy.

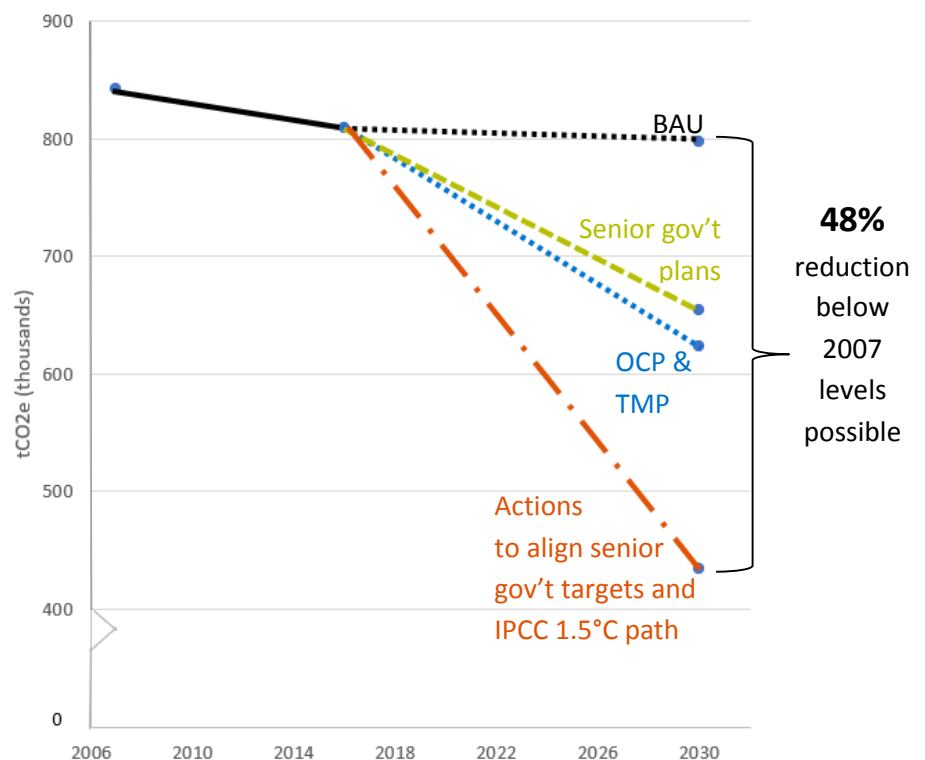


Figure 2: Potential GHG emission reductions possible by 2030

### **Climate Action yields multiple benefits**

A low carbon future has benefits that extend far beyond reducing GHG emissions to curb climate change impacts as illustrated in Figure 3. The *GHG Emissions Modelling Study* modelled two of these benefits in a longer time horizon out to 2050 and showed:

- Over \$2 billion in savings for the community due to energy efficiency savings, less maintenance, avoided carbon taxes and renewable energy revenues.
- Up to 33,000 person years of employment (1,200 annually), many of which attributed to the building sector due to retrofits and installation of more efficient heating systems.

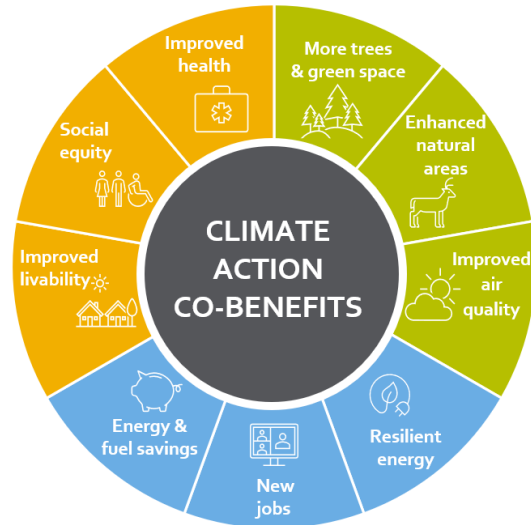


Figure 3: Co-benefits of climate action

### **A new path forward:**

#### **Recommended updates to Kelowna's GHG emissions reduction targets**

Based on the results of the *GHG Emissions Modelling Study*, staff recommend updating Kelowna's community GHG emission reduction target from 4 per cent, 25 per cent and 80 per cent below 2007 levels by 2023, 2033 and 2050 respectively to the following.

***In partnership with senior governments; local citizens and businesses; non-profits; external agencies; and utility providers; work towards reducing absolute community greenhouse gas emissions***

- ***40 per cent below 2007 levels by 2030; and***
- ***Achieve net zero by 2050.***

Revising the targets would align Kelowna with senior government direction and is best practice for communities across the province. In fact, a review of mid to larger BC municipalities targets, as illustrated in Appendix B, revealed that most communities who adopted targets post 2018 have at minimum selected targets that align with provincial direction. Achieving net zero on or before 2050 has also become common practice. Benefits of aligning with provincial targets could include:

- Positioning the City of Kelowna to be more favorably considered for select grant funding;
- Aiding in infrastructure resiliency planning;
- Advancing community partnerships that have a shared mandate to achieving climate goals and public health; and
- Long term financial savings.

## Next Steps:

Completion of the GHG emission modelling concludes the first phase in developing a resilience strategy. The next two phases, which will also be informed by community engagement, include:

- **Phase 2: Climate Vulnerability and Risk Assessment.** Working with a consultant, staff recently commenced a climate vulnerability and risk assessment which will provide the technical basis for climate adaptation planning. Using a combination of public input and data and GIS analysis, the assessment will examine the climate changes Kelowna is exposed to, the community's sensitivity to these changes, potential impacts, and the local capacity to adapt. The results of this assessment will also inform the development of the 2040 Infrastructure Plan highlighting what infrastructure and services could be at risk or be needed to address climate change events (e.g., wildfire, floods, storms, drought). This assessment will allow for the integration of climate considerations into long-range infrastructure capital planning processes.
- **Phase 3: Climate Resilient Kelowna Strategy.** This phase is a culmination of the first two phases to develop a *Climate Resilient Kelowna* strategy. The timing for implementation of Phase 3 is subject to funding. Staff have applied for a grant for \$95,000 through Intact Insurance's Municipal Climate Resiliency Grant program and if successful, work will begin late fall. Should the grant not be successful, staff recommend utilizing \$80,000 from the Climate Reserve (with the remainder covered from existing budgets) to continue the project's momentum and target completion of the *Climate Resilient Kelowna* strategy by mid-2023. An equity lens will be applied to this process to ensure that as the strategy is developed, it provides a just distribution of resources to alleviate unequal burdens created by climate change, providing fair opportunities to those most impacted.

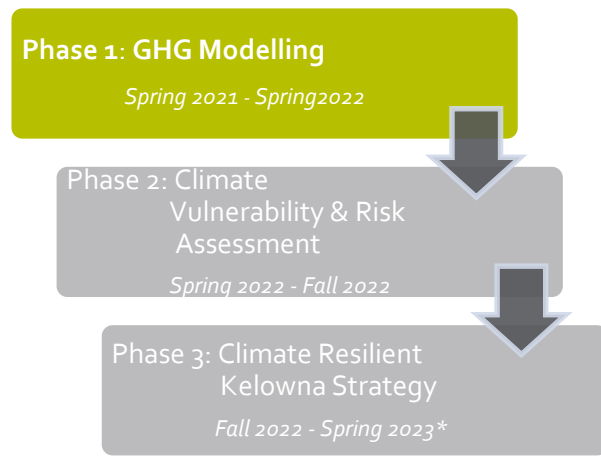


Figure 4: Climate Resilient Kelowna Strategy Phases  
\*subject to successful grant application or budget consideration

It should be noted that the City's Champion of the Environment is reviewing current City policies, programs, systems, and resources with respect to the broader climate and environment portfolio and investigating opportunities for improvement. Findings and recommendations from this review will be presented to Council this summer.

## Conclusion:

2021's combination of wildfire, drought, heat and flooding in British Columbia provided insight into the potential impacts climate change could have on our region and on our province. Significant impacts like these underscore the urgency for climate resilience planning and take more aggressive action to reduce greenhouse gas (GHG) emissions and to be prepared. Governments, businesses, utilities, academia, and others are responding with new legislation, policies, programs, and technologies. The completion of the *GHG Emissions Modelling Study* demonstrates a path for Kelowna to align with other communities from across the province, to target more aggressive GHG emissions reduction to help do our part to keep global warming below 1.5°C. The study also highlights that to be successful, this is not something that can be done in isolation. The vast majority of GHG emissions reduction can only be

achieved through joint action – by local, provincial, and federal government, various stakeholders, and the broader community.

Council's direction on GHG emissions reduction targets is needed to develop a *Climate Resilient Kelowna* strategy. These targets, together with the outputs of the GHG emission reduction modelling and the upcoming vulnerability and risk analysis, will provide direction on what action is necessary to create a low-carbon and resilient community. Ultimately, the final strategy will seek to identify actions with multiplier effects - those that deliver on both climate mitigation and adaptation, reduce emissions while improving affordability, and help the community adapt while enhancing livability.

**Internal Circulation:**

Planning & Development Services  
Strategic Transportation Planning  
Utility Planning  
Utility Services  
Urban Forestry  
Solid Waste  
Energy Management  
Data Services & Analytics  
Fleet Services  
Financial Services  
Communications  
Partnership Office  
Asset Management & Capital Planning

**Considerations applicable to this report:**

***Existing Policy:***

2040 Official Community Plan

- **Policy 12.1.1 GHG Emissions Reduction Targets.** In partnership with senior government; local citizens and businesses; non-profits; external agencies; and utility providers; work towards reducing absolute community greenhouse gas emissions below 2007 levels by:
  - 4% by 2023;
  - 25% by 2033; and
  - 80% by 2050.

Council Priorities

- Environmental protection: Greenhouse gas emissions are decreasing

Imagine Kelowna

- Goal: Take Action in the face of climate change

***External Agency/Public Comments:***

Summarized below is engagement from other past projects which provides some insight into support for more aggressive targets.

### *Imagine Kelowna*

One of the goals resulting from the 4,000 resident contributions, is to “take action and be resilient in the face of climate change.”

### *OCP Phase 2 Engagement – Pick Your Path*

With respect to climate action, the OCP Phase 2 Pick Your Path showed that the top two actions the 577 respondents are willing to take to reduce their impact on climate change are to walk, cycle, carpool or take transit more often (34 per cent) and upgrade their home to be more energy efficient (19 per cent).

Similar to other respondents, the most important thing the 222 student participants (35 per cent) are willing to do to reduce their impact on climate change is to walk, cycle, carpool or take transit more often.

### *OCP Phase 4 Engagement - Survey*

With respect to survey questions on the “taking action on climate change” pillar, 74 per cent of the 450 respondents indicated that the key directions listed fully (52.8%) or mostly (21.4%) support the vision of demonstrating leadership and accountability on climate action, while building community resilience in the face of climate change. When asked how the key directions might be improved, common responses included:

- More aggressive timelines and goals related to climate action
- More energy efficient buildings
- Concerns that the pace of growth may negatively impact the environment due to congestion/vehicle emissions and unsustainable building practices or building types.

### *OCP Phase 4 Engagement – Climate action and environment focus group*

More aggressive timelines and stronger emission targets were identified during the focus group discussion, as well as different actions to support GHG emissions reduction.

### *TMP Phase 5 engagement*

One frequent theme from the Phase 5 engagement was the draft TMP was not ambitious enough to respond to the climate emergency. Participants thought that climate action should underpin every recommendation in the plan, or should have been highlighted in its own chapter or section

### **Legal/Statutory Authority:**

Division 4, Section 473 (3) of the *Local Government Act* states that “an official community plan must include targets for the reduction of greenhouse gas emissions in the area covered by the plan, and policies and actions of the local government proposed with respect to achieving those targets.”

*Focus Group #1: Climate action and environment*

DO MORE TO LIMIT SPRAWL DENSITY/CENTRALIZED GROWTH  
PROTECTING SENSITIVE LANDS/SPECIES AT RISK AG EMISSIONS  
GREENER CONSTRUCTION METHODS REDUCING CAR-DEPENDENCY  
SOLAR PROJECTS VALUES-ALIGNED REGIONAL APPROACH  
PRESERVING OKANAGAN LAKE STRONGER WORDING/CLARITY  
TREE COVER CAR-FREE ZONES ENHANCING BIODIVERSITY  
MORE AGGRESSIVE TIMELINES ADDRESSING ENERGY POVERTY  
ACTIVE TRANSPORTATION STRONGER EMISSIONS TARGETS  
ONGOING EDUCATION/OUTREACH/PROGRAMMING DATA/MONITORING  
EV STATIONS IN NEW BUILDINGS PASSIVE HOUSE DESIGN  
IMPLEMENTATION/FOLLOW THROUGH/STICK TO PLAN

*Figure 5: OCP Phase 4 engagement climate action and environment focus group feedback*

***Financial/Budgetary Considerations:***

Based on high level estimates, it is anticipated to cost \$155,000 to complete the climate resiliency strategy. Council approved funds in the 2022 budget process for the climate vulnerability and risk assessment phase, and a grant application has been submitted to the Intact Municipal Climate Resiliency Grant program for \$95,000 to cover the remainder of the costs. If the City is not selected for Intact's grant, staff recommend utilizing \$80,000 from the Climate Reserve, with the remainder of the required funds repurposed from existing budgets, to continue the project's momentum and target completion of the *Climate Resilient Kelowna* strategy by mid-2023.

Submitted by:

T. Guidi, Sustainability Coordinator

Approved for inclusion:



D. Noble-Brandt, Dept. Manager, Policy & Planning

**Attachments:**

Appendix A: GHG Emissions Modelling Study Executive Summary

Appendix B: Emissions reduction targets of mid and large sized BC communities