Report to Council

Date:	April 3, 2023
To:	Council
From:	City Manager
Subject:	Climate Resilient Kelowna Strategy: Vulnerability and Risk Assessment and Public Engagement Kickoff
Department:	Policy & Planning

Recommendation:

THAT Council receives, for information, the report from Policy & Planning dated April 3, 2023 with respect to the Climate Resilient Kelowna Strategy: Vulnerability and Risk Assessment and Public Engagement Kickoff.

Purpose:

To update Council on the outcomes of Phase 2 of the Climate Resilient Kelowna Strategy, the Climate Vulnerability and Risk Analysis. To also inform Council of the public engagement planned for Phase 3, drafting the Climate Resilient Kelowna Strategy.

Background:
The Climate Resilient Kelowna Strategy is being developed over three phases as illustrated in the diagram below.

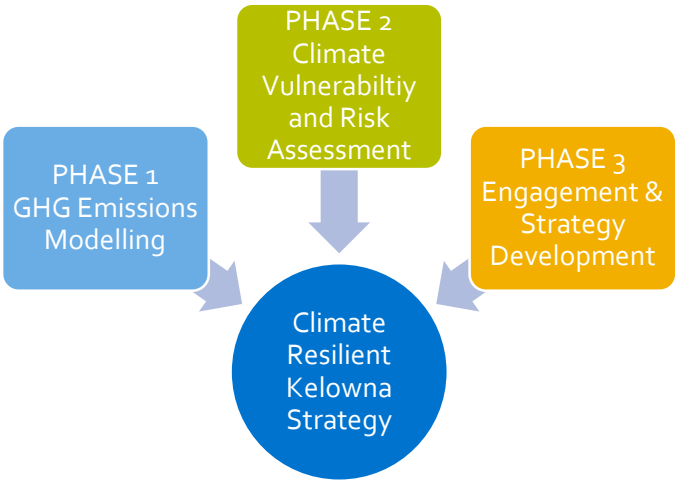

Figure 1: Phases to develop the Climate Resilient Kelowna Strategy

The first phase, completed and presented to Council in mid-2022 (see previous Council Resolution below) was a technical study that modelled the types of action that would be necessary to achieve greenhouse gas (GHG) emission reductions that would align with provincial reduction targets (i.e., 40 per cent below 2007 levels by 2030 and net zero by 2050). Phase 2, a Climate Vulnerability and Risk Assessment (CVRA) has recently completed. The CVRA is a technical analysis that examines the vulnerabilities and risks our community is exposed to due to the changing climate. These two technical studies together with input from the community will inform the third and final phase, the development of a Climate Resilient Kelowna Strategy (the Strategy), which will develop a series of recommendations on how our community can become resilient by reducing GHG emissions (climate mitigation) and preparing for the impacts of climate change (climate adaptation).

Previous Council Resolution

Resolution	Date
R0442/22/06/20 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.	June 20, 2022

Climate Vulnerability & Risk Assessment Key Findings:
In recent years Kelowna and area has repeatedly experienced climate change hazards: wildfire, flooding, drought, and heat domes, all of which have had significant impacts on our community. The *Climate Projections for the Okanagan Region* report predicts that in the coming decades the region will experience hotter temperatures, drier summers, more precipitation (in all seasons except summer), and warmer winters. Seasons may shift, meaning an earlier spring or later fall driving a longer growing season and higher water demand. These changes in climate may exacerbate the hazards our community faces.

The recently completed CVRA highlights the scope of Kelowna's community adaptation challenges by modelling the climate risks and vulnerabilities to existing and planned growth, out to 2070 (see *Appendix A: Climate Vulnerability and Risk Assessment Executive Summary*). The assessment quantitatively assessed the impacts of three climate hazards: extreme heat, wildfire, and flooding; modelling the hazards potential impact on Kelowna's people and infrastructure now and in 2070. Table A in Appendix A provides a summary of the impacts to services, the environment, and the economy. Sample potential impacts include:

- **Extreme heat:** Higher average temperatures and more frequent heat domes will result in nearly 100 per cent of the population exposed to heat warning temperature thresholds established by Interior Health (heat above 35° Celsius during the day and above 18° Celsius at night for a period of two or more consecutive days) in 2070 compared to just 25 per cent today.
- **Wildfire:** Determining the risk of wildfire is difficult, as no one can predict where lightning might strike (or where a human caused fire might originate). Due to population growth, nearly three times more people will be exposed to areas that have potential for moderate to extreme wildfire behavior.
- **Flooding:** Increased total precipitation as well as an increase of extreme storms could result in increased frequency and magnitude of flooding. By 2070, flood modelling indicates that damages from frequent floods (10 to 25 year event) could be over 20 per cent higher than those from a rare flood today (50 – 100 year event).

The CVRA assessed four additional climate hazards qualitatively. These included landslides, water security, invasive species, and extreme cold. As illustrated in Appendix A, these hazards also have a variety of impacts on our community such as:

- Human health impacts associated with extreme cold or changes in water quality;
- Agricultural impacts due to water availability or introduction of invasive species;
- Transportation impacts due to disruptions from landslides or frost heaving; and
- Ecosystem changes due to changes in temperature, water scarcity, and invasive species outcompeting native plants and animals.

Next Steps:

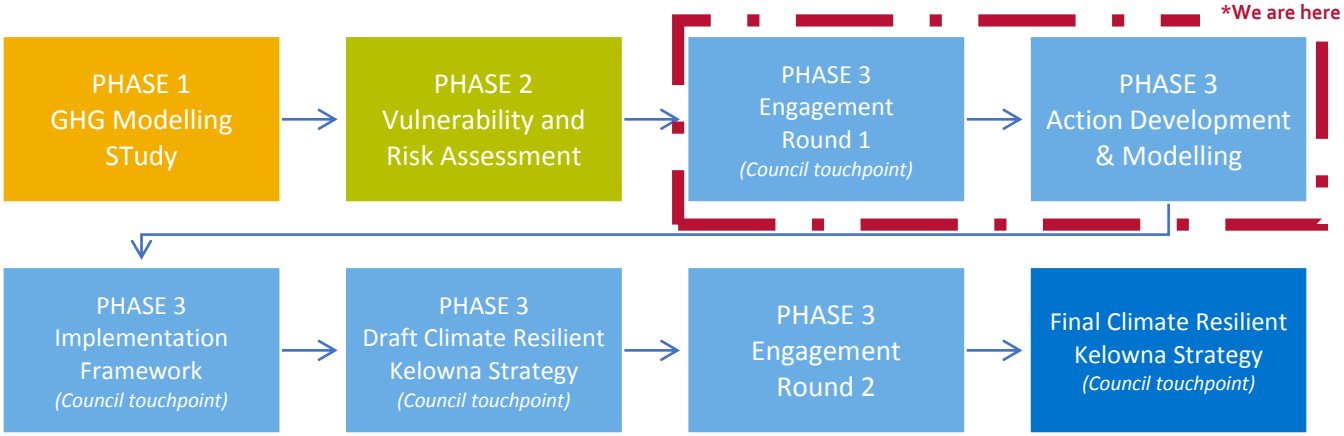

Figure 2: Timeline for developing the Climate Resilient Kelowna Strategy

Phase 3, the development of the Climate Resilient Kelowna Strategy, recently commenced (see Figure 2 above). Staff are working to identify actions that when implemented will reduce community GHG emissions and help the community prepare for the changing climate. Phase 3 also provides the first opportunity for community input to the Strategy development. This first round of engagement is to understand the opportunities and challenges facing the community and how the City can support and encourage climate action. Engagement opportunities include a variety of virtual and in person options.

The results of this engagement, together with input from staff and the technical analysis will build out a series of recommendations that the City and community can implement to both mitigate and adapt to climate change.

As the Climate Resilient Kelowna Strategy is developed, it will focus on climate interventions with multiple benefits from both a climate mitigation and adaptation perspective, but also benefits to other sectors including improving natural systems, infrastructure, public health, and enhanced livability. As illustrated in Figure 3, the Strategy will build upon existing plans, policies & initiatives and inform other work that will benefit our community. The draft strategy is expected to be presented to Council in early fall, followed by the second round of engagement.

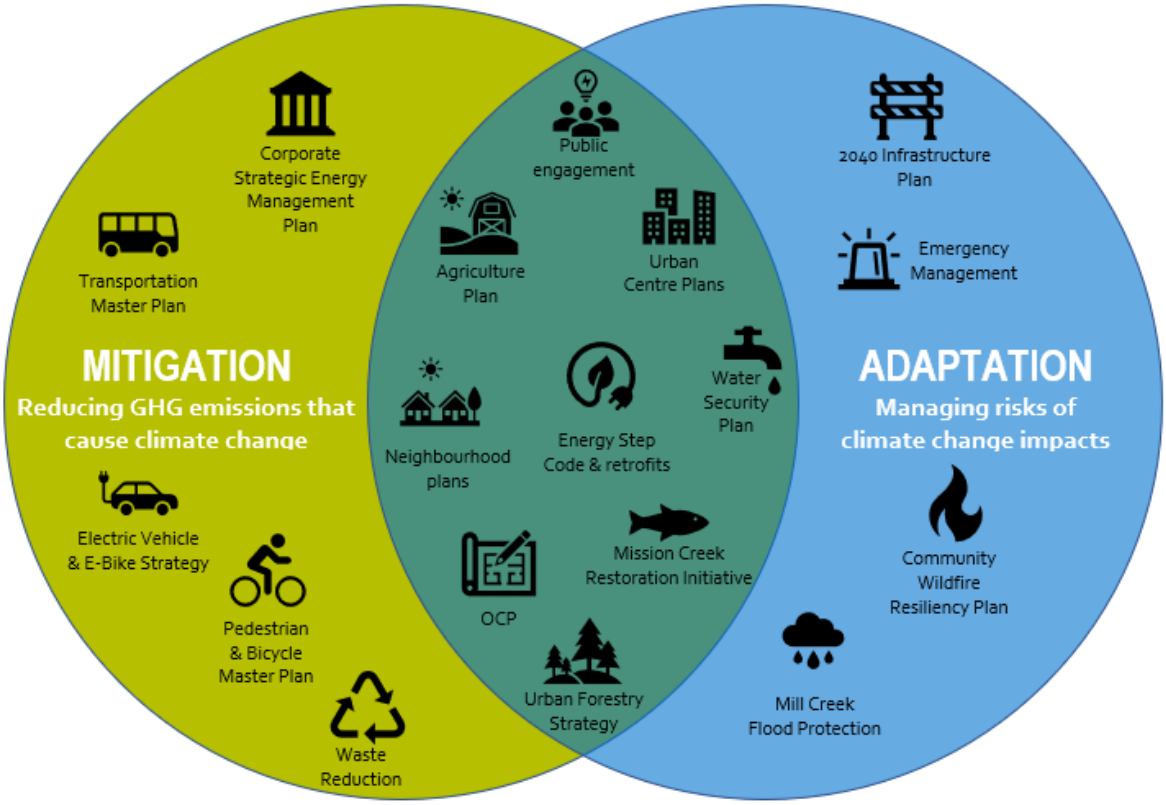

Figure 3: Sample of the relationship between climate resiliency planning and City of Kelowna plans and projects

Conclusion:
The recently completed CVRA reflects the current understanding of Kelowna's climate risks and vulnerabilities based on present conditions and anticipated projections. While this assessment is a "snapshot in time" it does serve as a strong foundation upon which to review and prioritize the proposed adaptation actions developed in Phase 3 of the project.

Ultimately, for Kelowna to become resilient to climate change, it will require joint action – by all levels of government, businesses and organizations, and the broader community. Local governments, however, are uniquely positioned to influence this shift as to how a community grows, commutes, interacts and protects natural assets for a continued quality of life.

Internal Circulation:
Utility Services
Utility Planning
Urban Forestry

Fire Communications & Emergency Management
Capital Planning & Asset Management
Risk Management
Development Engineering
Suburban & Rural Planning
Energy Management
Community Communications

Considerations applicable to this report:

Existing Policy:

2040 Official Community Plan

- Objective 12.1 Design the Community to be more resilient to a changing climate
- Objective 12.3 Encourage the community to take action to mitigate and adapt to climate change.
- Objective 12.8 Invest in ecosystem services and green infrastructure to mitigate and adapt to a changing climate.
- Objective 12.9 Support the community to prepare for and become resilient to the impacts of climate change.
- Objective 12.10 Adapt to a changing water supply.
- Objective 12.11 Increase resilience to extreme weather events

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.

Financial/Budgetary Considerations:

Early in 2022 staff applied for a grant from Intact Insurance's Municipal Climate Resiliency Grant program to complete phase 3, the development of the Climate Resilient Kelowna Strategy. Unfortunately, the grant application was not successful and Phase 3 is being funded through the Climate Action Reserve.

External Agency/Public Comments:

The first phase of public engagement for the Climate Resilient Kelowna Strategy will kickoff in early April with a variety of online and in person options. In addition, staff have also been gathering input from two Climate Resilient Working Groups (one of interested and affected parties and another with youth representatives). The public engagement results and the information gathered through the working groups will help inform the development of the Climate Resilient Kelowna Strategy.

Submitted by:

T. Guidi, Sustainability Coordinator

Approved for inclusion: D. Noble-Brandt, Policy & Planning Department Manager

Attachments:
Appendix A: Climate Vulnerability and Risk Assessment Executive Summary