



Governance & Services Committee

TO: Governance and Services Committee

FROM: Todd Cashin
Director of Community Services

DATE: February 13, 2020

SUBJECT: Climate Projections Report for the Okanagan Region (6430-40)

Purpose: To present the Climate Projections Report for the Okanagan Region.

Executive Summary:

In 2018, the Regional District of North Okanagan in partnership with the Regional District of Central Okanagan and Regional District of Okanagan-Similkameen initiated a project to complete a Climate Projections Report that will provide quantitative indicators on the future impacts of climate change and climate variability for the Okanagan region. Results from this work will provide regional districts, municipalities, nonprofits, and interested citizens with the information they need to develop plans and actions for mitigating the risks associated with a changing climate.

A consulting contract to complete the project was awarded to Pinna Sustainability Inc. (Pinna). A collaborative process was utilized through the project that involved RDCO, RDNO, and RDOS staff, member municipalities, and various other regional partners and organizations.

Gillian Aubie Vines, Principal and Founder of Pinna, will provide a presentation regarding the Climate Projections Report for the Okanagan Region.

RECOMMENDATION:

THAT the presentation by Gillian Aubie Vines, Principal and Founder of Pinna, on the Climate Projections for the Okanagan Region be received for information.

Respectfully Submitted:

A handwritten signature in black ink, appearing to read "Todd Cashin".

Todd Cashin
Director of Community Services

Approved for Committee's Consideration

A handwritten signature in black ink, appearing to read "Brian Reardon".

Brian Reardon, CAO

Prepared by: Brittany Lange, Environmental Planner

Implications of Recommendation:

Strategic Plan:	Receiving the presentation on the Climate Projections for the Okanagan Region achieves the Regional Board's Strategic Priorities 2019-2022 as follows: <ul style="list-style-type: none">• Values: Collaboration, Regional Perspective, and Resiliency.• Priorities: Environment.
Policy:	Receiving the presentation on the Climate Projections for the Okanagan Region meets several of the goals and objectives of the Regional Growth Strategy Bylaw No. 1336.

Introduction:

Despite global efforts to reduce greenhouse gas emissions, the world is facing a different climate future. Canada is warming at twice the global average rate and impacts are already being felt and anticipated to worsen. This warming is linked to a broad range of impacts on local communities, including flooding, storms, summer heat, and increased incidence of wildfire¹. It is now imperative that governments and individuals act to minimize, prepare for, and adapt to these future extremes.

The Regional Districts of North Okanagan, Central Okanagan, and Okanagan-Similkameen are working together to understand how the climate is projected to change across the Okanagan Basin (including the Similkameen) as a critical step in enhancing regional resiliency. This project will provide the scientific foundation to enable the region to make informed decisions that support community action to prepare for climate change over time.

Background:

This project was initiated by the Regional District of North Okanagan, in collaboration with the City of Vernon, when it was identified that a Climate Projections Report developed by the Pacific Climate Impacts Consortium (PCIC), would provide the basis from which member municipalities and the Regional District could understand and adapt to the anticipated climate changes ahead.

The RDNO reached out to both the Regional District of Central Okanagan and Regional District of Okanagan-Similkameen to see if they wanted to partner on this initiative and all parties agreed that taking a basin wide approach would be valuable. On February 25, 2019 the Central Okanagan Regional Board endorsed the RDNO, RDCO, and RDOS application to the Okanagan Basin Water Board Water Conservation and Quality Improvement Grant Program for the Project.

The development of a Climate Projections Report is a technical exercise relying on highly sophisticated models to simulate how the earth's climate will respond to changes in greenhouse gas concentrations. The Climate Projections Report is based on a subset of climate models selected to provide the widest range of projected change for a set of climate parameters. Information from the large-scale global climate models is then translated into predictions at the local scale using a procedure called downscaling.

¹ IPCC, 2018: Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press.

The model projections are downscaled to a 10km grid and daily temperature and precipitation observations and future projections are provided at a 10km resolution that are then draped over an 800 m grid, providing high-resolution maps. It is this scale of mapping that enables local governments to assess potential impacts on a geospatial scale.

Objectives:

The Climate Projections Report for the Okanagan Region is intended to:

- Provide a plain language description of how the Okanagan Basin's climate is projected to change over time.
- Enable organizations to include future climate projections in planning processes throughout the region.
- Highlight changes of particular concern that will require significant collaboration and mitigation to address.
- Support public and stakeholder education and climate-informed decision making.
- Improve regional resilience and mitigation planning for climate change.

Process Outline

The following steps were completed to develop the Report:

1. Background Review
 - a. Consultant reviewed applicable background information.
2. Climate Projections Modeling
 - a. The Pacific Climate Impacts Consortium (PCIC) was retained to produce tables of projected climate change for the 2050s and 2080s following the standard three greenhouse gas emissions scenarios (Representative Concentration Pathways 2.6, 4.5, 8.5) as well as selected statistical mapping.
3. Regional Stakeholder Workshops
 - a. In the fall of 2019, each participating Regional District hosted a workshop with senior staff and regional stakeholders to introduce the project, review target audiences, and discuss regional context and impacts for further consideration.
4. Review and Refine:
 - a. An iterative cycle of drafts and reviews were completed, which involved RDCO, RDNO, and RDOS staff, member municipalities, and representatives from other organizations.

Regional Stakeholder Workshop

On September 26, 2019, the Regional District of Central Okanagan hosted a workshop, facilitated by Pinna and PCIC, that included representatives from: the City of Kelowna, City of West Kelowna, District of Lake Country, District of Peachland, Westbank First Nation, Okanagan Nation Alliance, Okanagan Basin Water Board, Okanagan Collaborative Conservation Program, Black Mountain Irrigation District, Kelowna Fire Department, and the University of British Columbia.

Regional Board Strategic Priorities 2019-2022:

Receiving the presentation on the Climate Projections for the Okanagan Region complies with the following policies of the Regional Board Strategic Priorities:

Environment

- Support efforts to reduce our environmental footprint and adapt to climate change.

Regional Growth Strategy Bylaw No. 1336:

Receiving the Climate Projections Report for the Okanagan complies with the following policies of the RGS:

Our Climate

- Consider greenhouse gas reduction and climate adaptation/mitigation in decision-making as well as in planning policies and regulatory measures.
- Encourage cooperation with regional partners, provincial ministries, and stakeholders on initiatives that improve efforts to reduce greenhouse gas emissions, improve energy conservation, and mitigate climate change impacts.

Financial Considerations:

Funding for this project was provided by the Regional District of North Okanagan, Regional District of Okanagan-Similkameen, the Okanagan Basin Water Board, and Natural Resources Canada, in partnership with the Fraser Basin Council.

The Director of Community Services also approved in-kind staff time of approximately 42 hours (7 hours each month for 6 months) to assist with the Climate Projections Report Technical Writing Committee during the development of the report and hosting the Central Okanagan regional stakeholder workshop.

External Considerations:

This will be the fourth Climate Projections Report developed in the Province of British Columbia. Other reports have been developed in the Capital Regional District, the Cowichan Valley Regional District, and Metro Vancouver. The scale for this project is unprecedented in that it will be the first time that multiple jurisdictions will come together to identify ways to enhance climate change adaptation, making it unique to the Okanagan basin.

General Considerations:

The Climate Projections Report for the Okanagan Region will be featured at the upcoming event “*Building Community Resilience in a Changing Climate – an evening with Sheila Watt-Cloutier and guests*” held on February 26, 2020. This event is hosted by the Regional District of Central Okanagan and presented in partnership with OBWB-Okanagan WaterWise, UBC's Okanagan Institute for Biodiversity, Resilience and Ecosystem Services, and the Okanagan Nation Alliance.

Considerations not applicable to this report:

- *Legal/Statutory Authority*
- *Organizational*
- *Alternative Recommendation*

Attachment(s):

- Climate Projections Report for the Okanagan Region