



Socio-Economic Integration in Columbia River Treaty Scenario Modelling Backgrounder – January 2023

Introduction

The Columbia River Treaty (CRT) is a water management agreement between Canada and the United States that regulates Columbia River flows for flood control and power generation. Negotiations to modernize the Treaty began in November 2018. The CRT Negotiating Advisory Team (NAT) is led by the federal government and includes representatives from the province and the three regional Indigenous Nations.

See the [CRT Engagement website](#) for more information.

To understand how U.S. proposals for Treaty changes will impact Basin interests (Figure 1) and explore how the Treaty can be modernized to increase flexibility and improve conditions in B.C., the NAT has customized a computerized river management model to assess different operations (scenarios) for the dams along the Kootenay and Columbia Rivers.

Terms

Community interests: What matters to Basin communities with regards to Columbia and Kootenay River management – these are described in goals and objectives.

Performance measures: Metrics that measure achievement of objectives that are used to compare and contrast how different scenarios meet community interests over time.

Scenarios: Different combinations of water management operations alternatives.



Figure 1: Basin Interests

This model will include performance measures (PMs) to assess how each scenario impacts Basin interests.

Indigenous Nations are leading the development of ecosystem function information, with funding and other supports from the Province. Basin residents support ecosystem function being added as a first-order priority within the Treaty, alongside flood control and power production. Indigenous Nations are also providing Indigenous cultural values information. Power generation information is coming from BC Hydro. This Backgrounder describes the integration of socio-economic performance measures in CRT scenario modelling that is being led by the CRT Local Governments Committee, with funding support from the Province. This is the beginning of a long-term process that will continue over multiple years, beyond the CRT negotiations.

Who is the CRT Local Governments Committee?

The CRT Local Governments Committee (Committee) was created in 2011 by local governments in the region that were impacted by the Treaty. Two members are appointed from each of the four regional districts in the Columbia Basin, as well as one member from the Village of Valemount and one from the Association of Kootenay Boundary Local Governments. The primary purpose of the Committee is to assist local governments and Columbia Basin residents to engage in decisions about the future of the Treaty. Since 2012, the Committee has worked closely with the BC CRT Team to consult with residents and local government in the region. The goal of this consultation has been to fully understand residents' concerns and issues related to the Treaty. In January 2021, the Committee provided updated recommendations to the CRT Negotiating Team that are based on this consultation process with Basin communities. See the [Committee webpage](#) for more information.

Who is the Project Team?

Project lead - **Cindy Pearce**, Executive Director, Columbia River Treaty Local Governments Committee

Scenario modelling advisor – **Ryan MacDonald**, Ph.D. Hydrology, MacDonald Hydrology Consultants Ltd.

Researchers – **Lauren Rethoret**, lead – Columbia Basin Rural Development Institute/Selkirk Innovates, Selkirk College

Engagement coordinator – **Avery Deboer-Smith**, sub-contractor

What are the Community Socio-Economic Interests Related to the CRT?

The Team reviewed reports from past CRT community consultation processes to identify community socio-economic interests related to the CRT. These reports include the [CRT Summary of Canadian Dam and Reservoir Issues](#) (2014), the [Arrow Lakes Reservoir Mid-Elevation Scenarios: Scoping Evaluation](#) (2018) and the summaries for the CRT community meetings in [2018](#) and [2019](#).

Figure 2 shows the community interests that were identified in this process.

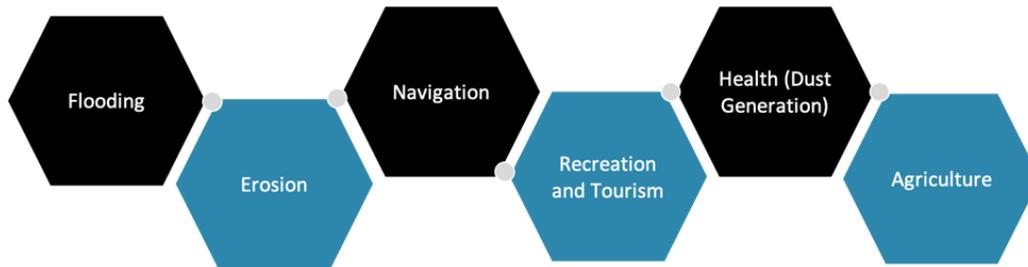


Figure 2: Draft community interests identified from past community consultation.

What information is included in a Socio-Economic Performance Measure?

The graphic below describes the information needed for a socio-economic performance measure and provides an example of an existing PM.

Arrow Reservoir Dust Control Example

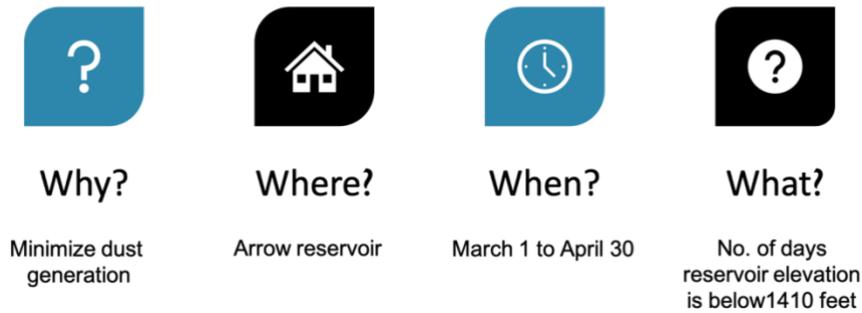


Figure 3: Basic information in a performance measure.

Where is information on Socio-Economic Performance Measures coming from?

Performance measures (PMs) for CRT modelling must be related to the outputs from the computerized river management model, which include river flows and reservoir elevations (such as maximum river flow rates and minimum, maximum or ideal reservoir levels). Community interests that are not related to these two factors cannot be evaluated through the model. Past scenario evaluation processes completed by BC Hydro, some with extensive public input were scanned to identify PMs that are relevant to the compiled community interests. These processes included the 2005 Consultative Committee reports for the [Duncan](#) and [Columbia](#) Water Use Plan, the resulting Water Use Plans (2007) and relevant studies; the [Non-Treaty Storage Agreement](#) consultation in 2010; and the 2013 [CRT Review Technical Studies](#), including Appendices [E](#), [G](#) and [H](#) were also reviewed.

This information has been summarized in an INITIAL SE PM Summary Table which has been reviewed by the Committee members and the [Columbia Basin Regional Advisory Committee](#), a diverse Basin-wide group representing a broad range of perspectives, interests and geography. This group helps inform hydroelectric operations in the Columbia Basin and potential future improvements to the CRT. Their feedback is being integrated into the initial summary. The next phase includes research to follow-up on new information and to get answers to questions that were raised, in order to refine the existing PMs and add new PMs that are essential.

Early in 2022 the team will host webinars to explain the process to the public and invite public input. Revisions based on this input will be included in recommendations to the CRT NAT before the end of 2022.

What is CRT Scenario Modelling?

CRT scenario modelling uses PM information and other data in the river management model to evaluate how alternative hydro operations affect interests. This will illustrate important differences between alternative hydro operations. The river management model shows impacts at the geographic level of individual reservoirs and river reaches, sub-regional scales (e.g. Kootenay River) and the Canadian portion of the Columbia Basin. The outputs from the model will be used by the NAT to inform CRT negotiations.

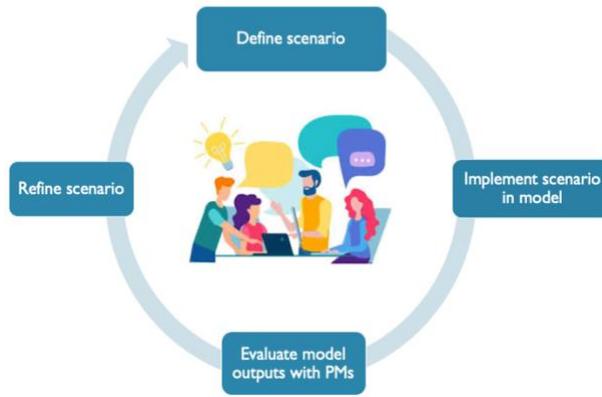


Figure 4: Scenario modelling process

What are the Timeline and the Steps for this Project?

The graphic below provides an outline of the current steps and timeline to fulfill this project.

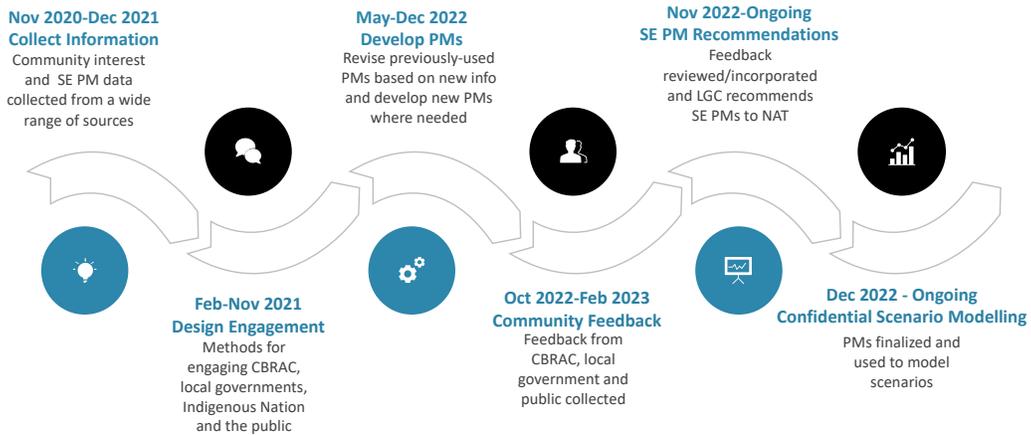


Figure 5: CRT SE PM Timeline