



To: WEI Participants

From: Tanya Guenther and Rahul Ray

Date: April 17, 2023

Re: Final Rio Tinto WEI Alternative and Performance Measure Review Meeting Summary, March 7, 2022

A hybrid session was held on Tuesday, March 7, 2023, from 2:30 p.m. to 5:30 p.m. for members of the WEI to walk through the modelled alternatives and performance measure results ahead of WEI Main Table Meeting 30 the following day. The hybrid meeting was held to offer participants the option of meeting in person or virtually in response to COVID-19. The WEI Main Table will continue to adapt meeting options for participants and will follow current public health recommendations for meetings or gatherings.

This document is a summary of the meeting and is not word-for-word “meeting minutes.” The information presented highlights the topics raised, key discussions, and identified action items.

The facilitator was **Rahul Ray** (RR) from EDI. He facilitated the meeting remotely. **Tanya Guenther**, from EDI, took notes during the meeting remotely and prepared this summary.

Colin Parkinson, from EDI, attended to provide support (remote). **Jayson Kurtz** (JK) from Ecofish Research participated as the Technical Working Group (TWG) coordinator (remote). **Katie Healey** (in-person) and **Kirsten Lyle** (remote) from Ecofish were process technical support. **Michael Harstone** (MH), from Compass Resource Management, participated as a decision analyst (in-person). **Clayton Schroeder** (CS), also from Compass Resource Management, participated as SDM support (in-person). **John Russell** from Russell Audio-Visual provided AV technical support (in-person).

A draft agenda was provided to WEI members prior to the session.

Table 1 lists the participants attending in person. Table 2 lists the participants joining via videoconference.

Table 1. March 7, 2023—WEI In-Person Participants

Individual	Organization
Denis Wood	<i>Public participant</i>
Gerd Erasmus	<i>Public participant</i>
Gina Layte Liston	<i>Public participant</i>
Henry Klassen	<i>Public Participant</i>
Jim D’Andrea	<i>Cheslatta Carrier Nation</i>
Kevin Moutray	<i>District of Vanderhoof</i>
Kim Menounos	<i>Fraser Basin Council</i>
Lila Brophy	<i>Public participant</i>
Mike Robertson	<i>Cheslatta Carrier Nation</i>
Shirley Moon	<i>Public participant</i>
Steve Gordon	<i>Ministry of Land, Water, Resource Stewardship</i>

Table 2. March 7, 2023—WEI Online Participants

Individual	Organization
Alec Mercier	<i>Rio Tinto</i>
James Jacklin	<i>Ministry of Forests</i>
Justin Greer	<i>Regional District of Bulkley-Nechako</i>
Clint Lambert	<i>Bulkley-Nechako Regional District</i>
Maria Sotiropoulos	<i>Department of Fisheries and Oceans</i>
Matthew Pruett	<i>Ecofish</i>
Ray Klingspohn	<i>Public participant</i>
Stephen Dery	<i>UNBC, TWG</i>
Tim Plesko	<i>Public participant</i>
Wayne Salewski	<i>Public participant</i>
William Elkins	<i>Cheslatta Carrier Nation</i>

The following provides a summary of the topics discussed during the videoconference.

WELCOME AND UPDATES

Attendees were welcomed to the meeting and a roundtable of introductions were completed with in-person and online attendees. The intent of this session was to provide a deeper dive into the alternatives and performance measures prior to the Main Table meeting scheduled for the following day.

PRE-MEETING READING PACKAGE REVIEW

It was noted that there has been a shift with a new naming convention for the alternatives. We are looking at Alternatives 1, 1-2, 1-3, 1-4, and 1-5.

Observations from the last meeting were shared and will also be reviewed at the Main Table 30 meeting.

Questions and comments from the pre-reading package and review of the structure and sequencing included the following:

- Within Phase 1, are we working only with the current annual water allocation? Is there a certain amount of water dedicated to the river?
 - There is some water from tier 2 power sales that has been allocated to the river and the alternatives (equivalent to 8 m³/sec). There is some additional flow from tier 2 which is not a contractual obligation.
- Discussion about changes in flow and how sturgeon react. There is a proposal being brought to the Main Table meeting tomorrow and there will be an opportunity to discuss further.
- Note was made to change the reference to Cheslatta Falls to Cheslatta Lake to avoid confusion.

The development of the flow alternatives were reviewed for Round 1. There were four alternatives highlighted to carry forward from the six bookend alternatives. A survey was sent out to member to provide new flow alternative ideas. The TWG used this input to develop a total of 8 flow alternatives. These were then reviewed by Ecofish and Compass.

Results of Flow Alternative Modelling

The proposed bookends and direction forward were reviewed (pre-meeting reading package page 12). Eight new alternatives were developed with four alternatives meeting phase 1 criteria. These have been numbered Alt 1, Alt 1-2, Alt 1-3, etc. The remaining four alternatives will be reviewed in future phases.

Discussion and questions included:

- Are tier 2 sales always negative?
 - The model is trying to generate as much power as possible within the constraints. It will end up generating less because there is less water available for power generation. In some years, there will be no difference but will vary from one year to the next.
- In years like 2010 or 2015, where there is lots of water, would that impact the maximum exports?
 - For those years, there would be no impact on tier 2 exports.
- Is tier 1 mainly November to March?
 - Currently yes. BC Hydro typically requests that volume over the winter months; however, they could request it at any time of the year.
- Modelling for alternative 7 showed some difficult to explain and unexpected results. There needs to be more work done to get a better understanding of why that is. Need to note that flood thresholds are built into the model as an operational constraint. When we try to alter those constraints or push the modelling to a scenario when we want to avoid flooding it is not always reacting in the way we think it should. With the mathematical model, we have hit a bit of a roadblock to complete the modelling.
- It was noted that there are some inconsistencies in the units of measurements show some in meters and some m³/sec. Can we be consistent and use the same measurements for better comparison?

Feedback received on the new alternatives in the pre-reading package on pages 12–13. The alternatives were reviewed in detail beginning with page 15 of the pre-reading package.

Questions and feedback included:

Alternatives 1-2:

- Ramping consumes a certain amount of water. If the minimum is not changed, the max would need to be brought back a bit?
 - Additional water in the increase and decrease is coming from tier 2 power sales and instead is being used for ramp up and down. The parcel of water is being used in a different way, and it is timed differently.
- Values show the minimum required flow. For STMP flows, this is probably the average value in July and August, but it does vary year to year. We were able to correlate flow to air temperature so that we could go back to pre-1987 to model years between 1957 and now.

Alternative 1-3

- Shows a bump in early fall, winter, and spring flows by 20%. This is what would happen if we take some water used for tier 2 and allocated it for lower flow periods.

- From the Cheslatta perspective the ramping is important.
- Important that we get more water in the river in the winter. There is a thought there is a lot of fish eggs frozen. Main priority is to get water in the river in the winter to save salmon eggs.
- There is a Performance Measure (PM) to address incubation flows at least 50% of the amount of water in the winter compared to when spawned. It does not specifically look at icing and if that is causing mortality.
- Increased winter flows would create more capture of run off which could fill the ramping gap.
- If we look at one alternative, it may be good for one part of the system, but may not be good for all.
- This alternative results in the fasting draw down over the winter and spring.
- Low winter flows are not only concerning for ice. Previously mentioned, the trumpeter swan population and their impact on the reds. Need to take a look at the impact of the swans and what depth needs to be out of reach for swans.
- Previously discussed the eggs are 0.5 m in the gravel. Are the swans going that far into the gravel to get the eggs?
- May need to look at what the swans are eating.

Alternative 1-4 and 1-5:

- Some fall and winter flow has been reallocated to freshet.
- Intention to provide more flow release at the natural freshet.
- Could we get flow regime at the Nautley? What would it look like if we add the natural flows as well?
- Discussion about STMP flows and it sounds like more additional flow will be needed to ramp.
- Intention of Alt 1-5 is to fill the reservoir as quickly as possible.
- Are we only measuring the volume of water productivity and not the bottom and shore productivity?
 - It also includes deep water pelagic. It does not really change the range of operations. We do not have enough information to have a PM for the reservoir bed. It is a current data gap understanding what species are there and how they will react to the amount of water.
 - www.getinvolvednechako.ca website has productivity work available for those who are interested. TWG has worked to determine where information may be available. In other cases there may be 2 or 3 potential PMs that could be applied but we have chosen the most sensitive one for the scenario.

Assessing Phase 1 Round 1 Flow Alternatives

The rules and data used to assess the phase 1 flow alternatives were reviewed. Year 2007 shows a discrepancy between the modelling and the historical amounts. This is due to water not being

diverted (a power-transmission line was down) during that year. The model makes the assumption that it is being maximized for power.

Discussion/comments included:

- Why was the reservoir not drawn down between 2013 and 2015?
 - Other factors are not considered in the modelling such as maintenance, eulachon runs, need to lower diversions, ice storms, request from BC Hydro, etc.

Hydroviz

- Wondering about the influence of mountain pine beetle, wildfires and inflow? Is there a way to look at that?
- The biggest difference in flow is the STMP. What would happen if we removed that? At one time we heard that salmon are affected differently by the temps. STMP was put in under what I consider to be odd circumstances. Have we looked at ways to get rid of that? What would happen? Would the salmon all die? Is it worth looking at?
- With Site C online, would the amount of tier 1 power be on the table?
- Phase 2 will look at other changes outside of the existing requirements.
- Would like to look at STMP and the BC Hydro Rio Tinto purchase agreement as part of Phase 2.

MEETING ADJOURNED

The meeting was adjourned at 5:30 p.m.