
To: WEI Meeting Participants

From: Brodie Smith and Rahul Ray

Date: July 23, 2021

Re: Rio Tinto WEI Table Meeting 22 (Videoconference) Summary, July 14, 2021

A videoconference for the Rio Tinto Water Engagement Initiative (WEI) was held on Wednesday, July 14, 2021, from 9:00 am to 1:35 pm. The videoconference was held instead of an in-person Main Table meeting to promote social distancing in response to COVID-19, while making progress on aspects of the WEI.

This document is a summary of the videoconference and 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. Brodie Smith, also from EDI, took notes during the meeting and prepared this summary. Jayson Kurtz (JK) and Jennifer Carter (JCa) from Ecofish Research participated as the Technical Working Group (TWG) coordinators. Katie Healey (KH) from Ecofish Research participated as technical support. Michael Harstone (MH) from Compass Resource Management participated as a decision analyst. Clayton Schroeder (CS), also from Compass Resource Management, participated as technical support.

Andrew Czornohalan (AC), Operations Director - Power and Services, Kitimat and Kemano participated as a WEI Table member. Andy Lecuyer (AL), Senior Environmental Advisor, and Devrie Sanghera (DS), Communities & Social Performance Advisor, from Rio Tinto, participated in the videoconference as support.

A draft agenda was included in the invitation, and outlined the anticipated meeting topics:

- Meeting summary comment review
- Action items from Meeting 21
- WEI Elements Update
 - Communication improvements
 - Reservoir Working Group (Southside Working Group) update
 - Flow-related activities, including Technical Working Group (TWG) summary
 - Related initiatives: NWSRI
- Michael Harstone introduction
- Trial alternative exercise
 - Review of trial alternatives: dam pre-1981, 1981 to present, 100% Skins Lake Spillway flow
 - Flow modelling
 - Consequence Table
 - Preliminary alternative analysis Review draft WEI process update

- Review and finalize draft WEI process update
- Discussion of WEI participation in World Rivers Day and Working Group report
- Confirm next Main Table meeting dates

At the meeting, WEI Participants reviewed the draft agenda. No revisions were made.

Table 1 lists the participants that were involved in the videoconference and the organizations they represent.

Table 1. July 14, 2021 - WEI Videoconference Participants

Individual	Organization
John Alderliesten	Public participant
Lyla Brophy	Nechako Regional Cattlemen's Association
James Jacklin	BC Government-FLNRORD
Donna Klingspohn	Public participant
Ray Klingspohn	Public participant
Clint Lambert	Regional District of Bulkley Nechako
Gina Layte-Listen	Public participant
Kim Menounos	Fraser Basin Council
Kevin Moutray	District of Vanderhoof
Jerry Petersen	Regional District of Bulkley-Nechako
Tim Plesko	Public participant/Southside representative
Ray Pillipow	BC Government-FLNRORD
Charlie Rensby	Village of Burns Lake
Wayne Salewski	Public participant / NEWSS
Carrie Smith	MLA John Rustad's office
Dan Sneep	Department of Fisheries and Oceans

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

- RR opened the meeting by welcoming participants and reviewing the draft agenda.
- RR reviewed the Main Table 21 Meeting Summary. There were no suggested revisions to the meeting summary from WEI participants. All meeting summaries are available on the Get Involved Nechako website: <https://www.getinvolvednechako.ca/wei>
- RR reviewed action items from Meeting 21:
 - **Action Item:** Kevin Moutray (KM) will provide additional photos of flooded trails near Vanderhoof and RR will make them available to the Main Table participants. **Update:** Email exchange with Kevin, “Unfortunately for taking more photos the river was down to 342 cms by the time I made it there two days after the meeting. 348 is where it starts to cover the trail.”
 - RR asked KM if there were any other updates. KM responded that the STMP period will start soon, and he expects this will result in water on the trail again. He will try to get more photos.
- **ACTION ITEM: Kevin Moutray to take additional photos of the Vanderhoof trails if they become flooded again during the STMP period.**
 - **Action Item:** JK to find out if there is a concern of ice jams and flooding near Prince George, possibly near Cottonwood Park, and its relation to operations. **Update:** JK stated that he has not been able to get in touch with anyone at the city yet. Through previous discussions, he learned that the city is currently happy with the existing measures and there were no concerns about ice jams. JK will attempt to follow up again.
- **ACTION ITEM: JK will continue to attempt to talk to the City of Prince George to find out if there are concerns of ice jams and flooding, possibly near Cottonwood Park, and its relation to operations**
 - **Action Item:** Andy Lecuyer will provide an update on the Ootsa Lake Forestry Camp campsites. **Update:** AL stated that work on the campsites is currently on hold due to fires in the reservoir. The current plan is for Rio Tinto to provide rock for the campsite improvement, and he thinks Cheslatta will be offering the use of equipment. Conversations will begin again when it is feasible to move ahead.
 - **Action Item:** Devrie Sanghera will organize the working group for World Rivers Day with WEI participants. **Update:** WEI World Rivers Day Working Group was formed and held a meeting on Tuesday, July 6, 2021. The outcomes will be discussed later in this meeting. There is interest in having a presence at the Vanderhoof World Rivers Day event

- **Action Item:** Rahul Ray to circulate Michael Harstone’s bio to the Main Table. **Update:** Michael’s bio provided as part on the pre-reading package.
- **Action Item:** RR will circulate the updated Draft WEI Process Update to the Main Table for review. **Update:** Track changes summary provided as part of the pre-reading package.
- **Action Item:** RR to send out per diem claim form next week with the draft meeting summary. **Update:** Claim form provided as part of the pre-reading package.
- RR reviewed the WEI Elements:
 - Communication improvements (Devrie Sanghera)
 - Reservoir Working Group (Southside Working Group)
 - Flow-related activities, including TWG summary (Jayson Kurtz)
 - Related initiatives: NWSRI
- Devrie Sanghera (DS), Communities and Social Performance Advisor for Rio Tinto, provided an update on Communication improvements. The survey has been completed. It ran for a few weeks in June to find out what is and is not working with Flow Facts, and to gain insight into how to improve the Flow Facts website. These improvements fall under some of the WEI communications improvements. The survey found that users were generally satisfied with the frequency of Flow Facts (currently once per week). Some people noted that more frequent information in the spring would be useful. The survey found there was low awareness of the Get Involved Nechako website. Of those that were aware of it, the website was well liked. A timeline for the WEI process was requested as additional information for the website. Outside of the survey, temperature data and cameras at various locations providing real time images were also noted as beneficial updates. The next steps for the Rio Tinto communication team will be to make these updates to the Flow Facts website and integrate with the Get Involved Nechako website. The expected launch of the new website is October 2021. DS asked for Main Table participants to reach out to her at any time at Devrie.Sanghera@riotinto.com
- AC noted that KM had requested the real time temperature data to be added to the Flow Facts website. The Rio Tinto team is working on this now. The data has been pulled, and they are working on the website side of things to get it going.
- Donna Klingspohn thanked DS for the update. She likes the idea of the integrated platform.
- RR provided an update on the key actions from the Southside Working Group.
 - Boat tour (Rio Tinto, Southsiders) – AL noted that the trip was being pushed to a later date based on smoke and fire conditions in the reservoir. He will keep an eye on the situation,

and the trip will go ahead when it is safe to do so. He will provide another update at the next meeting.

- Ootsa Lake Forestry Camp campsites – RR noted that this was already addressed earlier in the meeting. AL offered to provide ongoing updates as things progress.
- Rio Tinto making their properties fire smart – AL reached out to the Province and talked to a representative in Smithers. There is availability from someone in Smithers to inspect the Rio Tinto properties. Since the properties are quite large, there is a potential for putting in fire guards. Since this may have visual impacts, AL will reach out to the Main Table to discuss before it is completed. He also noted that there is funding available from the Province for FireSmarting, and he can provide contact information if anyone is interested. Tim Plesko (TP) noted that fire guards may not have much impact since there is already so much logging and debris along the lake.
- **ACTION ITEM: Andy Lecuyer to provide an update on the Boat Tour.**
- **ACTION ITEM: Andy Lecuyer to provide an update on the Ootsa Lake Forestry Camp campsites.**
- **ACTION ITEM: Andy Lecuyer to provide an update on the FireSmarting of the Rio Tinto properties.**
- AL provided an update on the related initiatives: Nechako White Sturgeon Recovery Initiative (NWSRI).
 - He met with NWSRI representatives a few weeks ago and discussed their questions about Rio Tinto infrastructure, including questions about the T2 tunnel. AL noted that they do not anticipate the T2 tunnel using more water than is currently being used by the existing Kemano Tunnel.
 - AC added some clarification about the use of the tunnels. The T2 project is about structural integrity. It does not result in more water being diverted from the Nechako, and no details have changed since the project went to the review process. Tunnels degrade over time, and when T1 was originally created, it already had some weak spots. T2 will help lessen the stress on T1 and decrease the risk of catastrophic failure.
 - AL told the NWSRI that any changes made to flows will be science based and that Rio Tinto is working with the WEI. He offered for the members of the NWSRI to join the WEI at any time.
 - RR also reminded participants that the Main Table put together a letter seeking to collaborate and be more integrated with the NSWRI.
- JK provided key updates from the Technical Working Group:
 - Bi-weekly meetings will continue through the summer
 - Finalize issue scoping and summaries

- Advance Performance Measures for MT consideration
 - Advance modeling to support flow alternative analysis and consequence tables
 - Support development of flow alternatives
 - Mock exercise: bookend flow alternatives and consequence table
- RR introduced Michael Harstone, the newest member to the resource team.
 - Michael Harstone will support WEI participants as a decision analyst
 - 20 years of experience working in the water sector as a decision analyst, environmental planner, water resources engineer, and facilitator
 - Led the development and implementation of regional, provincial, and transboundary water resource management technical and public planning processes
- MH thanked RR for the introduction. He added that he used to be a water resource engineer, and he worked for BC hydro where he designed and facilitated five water use plans. Sixteen years ago, he joined Compass Resource Management. Since then, he has been running many Water Use Plans and other community and participant-based projects in BC, Alberta and in the US. The team supporting the WEI will be himself and Clayton Schroeder. CS is a software engineer and an associate at Compass. He is a master of developing support tools to help through these types of processes. CS greeted the Main Table participants.
- MH added that decision analysts help groups of people to make decisions that cannot be winged. They use decision science to help groups navigate and explore their values to support deliberations and help make decisions. MH and CS will bring several tools to the table to help participants through the next stages of the process. He noted that he and CS work for the Main Table and encourage participants to reach out to him as needed. If participants require information to distribute to their constituents or organizations, he and CS can package up the information to assist with this.
- MH presented the steps of Structured Decision Making (SDM):
 - 1) Clarify the Decision Context
 - 2) Define Objectives and Measures
 - Includes issue scoping and turning the issues into a shortlist of objectives
 - The objectives are used to create performance measures
 - 3) Develop Alternatives
 - Alternatives will be assessed through several rounds
 - Some alternatives will be discarded at each round. Lessons learned from these will still be important
 - Some alternatives will be carried forward, and new alternatives will be added in successive rounds, based on what was learned from the previous round
 - A “menu” of items will be developed to help assess the alternatives

- 4) Estimate Consequences – a four step approach will be used:
 - Review changes in hydrological conditions (i.e., water levels and flows)
 - Review performance measure values
 - Review supplemental information – this will help inform the discussions about the alternatives
 - Structured decisions
- 5) Evaluate Trade-Offs and Select
 - Interactive tools will be provided to help with this part of the process.
 - This will include reaching an agreement on a collective solution
 - Of all the projects MH has worked on, consensus was found in all but one Water Use Plan.
- 6) Implement, Monitor and Review
- MH noted that the next step involves shifting gears towards performance measures to develop the consequence table.
- KH presented Consequences for Trial Alternatives Under Interim Performance Measures.
- KH reviewed the Purpose of Trial Alternatives:
 - Demonstrate how performance measures respond to flow management decisions
 - Demonstrate some of the trade-offs that may be required in the SDM process
 - Provide a starting point to inform discussion of potential alternatives
 - **May not represent future hydrological conditions** – climate change
 - **Not intended as a future operational regime**
- JK noted that this is a good opportunity for the group to be thinking about the implications of alternatives. Today, the group will be looking at bookend scenarios, showing the outer extent the flows can be taken in each direction. These are just examples, but that does not mean they should be discounted. The performance measures are rooted in the interests from this table and are currently preliminary. He requested that participants not get attached to the performance measures and results. They may or may not be used, but are handy to use as examples for now. However, they will somewhat represent what will be used for the real process.
- KH reviewed a sample consequence table, including
 - Example performance measures:
 - Flooding – Number of days where flow exceeds 550 m³/s
 - Flushing flows – Number of days where flow exceeds 468 m³/s
 - Salmon – Average daily flow
 - Caribou – Days where reservoir elevation is less than 852 m.

- Boat access – average reservoir elevation
- Power generation – average daily flow

- Period – the times of year when this performance measure is implemented. i.e., all year, or July 1 to September 30.
- Location – what areas are included in the performance measure. i.e., Nechako at Vanderhoof, or Nechako Reservoir.
- Units – what units are used to measure the performance measure. I.e., days per year, m³/s, or m.
- Preferred direction – the preferred direction of the performance measure i.e., Low or High.
- Possible scenarios. The term scenarios will be used interchangeably with alternatives. For this example, three scenarios are used:
 - Pre-1981
 - Post-1981
 - 100% flows via Skins Lake Spillway (SLS)

- Note: PM values are calculated as average over all years of record, values presented use interim PMs and are subject to change, and flow scenarios are for demonstration purposes and not intended as future operational regime.

- JK noted that these three scenarios are being used because they are simple to model. The Pre-1981 scenario was chosen because operations changed around then, and water availability changed. This scenario is used to show some contrast and because it is easy and available data to use. The 100% SLS scenario shows what would happen if all the water was diverted down the Skins Lake Spillway. It is not a scenario that involves removing the dam.

- KH reviewed the Trial Alternatives Inputs and Methods:
 - Simplified calculations, based on data from:
 - Measured discharge at Nechako at Vanderhoof (pre/post 1981)
 - Modelled discharge at Nechako at Vanderhoof (100% flow to Nechako via SLS)
 - Nechako Reservoir elevation
 - Kemano powerhouse

 - Calculations are completed for individual years and summarized
 - Figures show the distribution of PM values over years
 - Tables provide average across all years

- KH reviewed various hydrographs from the three scenarios, which included median flows, 10th to 90th percentile flows, a high flow year (2007) and a low flow year (2013). She compared the median flows and flows from specific years of all three scenarios.
 - Flow scenarios are for demonstration purposes and not intended as future operational regime. The 100% SLS flow hydrograph is based on modelled data of a hypothetical flow routing scenario.
- JK noted that the median year means that half of the years the flows were higher, and half of the years the flows were lower. Specific years were highlighted because, when looking at alternatives, it is important to look at dry and wet years. Each line in the hydrograph represents actual flows from those years.
- RR asked KM if 2007 and 2013 (the years representing high and low flows) were memorable. KM responded, yes, he remembered both years for their high and low flows.
- MH noted that the hydrographs had different scales from each other and reminded participants that it is always important to keep the scales in mind.
- Wayne Salewski (WS) asked why Tahtsa Narrows, and its influence, had not been built into these scenarios. JK responded that these hydrographs show actual flows and that is what the modeling is based on. Factors such as climate change and Tahtsa Narrows could be included in models to help understand how they affect the flows, outside of what has happened before. These can be considered for future modeling, but for now, these scenarios are being used as examples because the data already exists and is easy to use.
- KH reviewed the interim calculations for performance measures. She showed how the interim performance measures would do in the three scenarios.
 - **Objective:** Minimize open-water, overbank flooding. **Interim Performance Measure:** Number of days at Vanderhoof where flow exceeds 550 m³/s. **Preferred Direction:** Low.
 - **Objective:** Maximize flushing flows. **Interim Performance Measure:** Number of days at Vanderhoof where flow exceeds 200% MAD. **Preferred Direction:** High.
 - **Objective:** Minimize temperature effects on salmon migration. **Interim Performance Measure:** Average daily flow at Vanderhoof between July 1 and Sept 30. **Preferred Direction:** High.
 - **Objective:** Minimize land connections to caribou calving islands. **Interim Performance Measure:** Days where reservoir elevation is less than 852 m (2795 ft) between May 1 and June 30. **Preferred Direction:** Low.
 - **Objective:** Maximize access to boat docks and launches. **Interim Performance Measure:** Average reservoir elevation between March 1 and October 31. **Preferred Direction:** High.

- **Objective:** Maximize RTA power generation. **Interim Performance Measure:** Average Kemano Powerhouse flow. **Preferred Direction:** High.
- Interim PMs provided for demonstration purposes and are subject to change.

- KH reviewed what a boxplot is:
 - The top line is the largest value. The bottom line is the smallest value and is within 1.5 times interquartile range below the 25th percentile.
 - The box represents the interquartile range. The middle 50% of the values are with in the box.
 - The top of the box is the 75th percentile.
 - The middle of the box is the median or 50th percentile.
 - The bottom of the box is the 25th percentile.
 - Any value that is farther than 1.5 times the interquartile range below the 25th percentile is an outlier.

- MH noted that when looking at an alternative in its entirety, it is important to think about what the most meaningful value is to use. It could be the median, or some other number. For example, for flooding, the concern would be about high flood years, and for salmon spawning, looking at low flow/drought years is more important. It is important to determine the best statistic to use for each performance measure.

- James Jacklin (JJ) stated that he understood that this is just a practice scenario, and a lot of the modeling and information is based on historical record. He asked how the future climatic state will be incorporated and how it might change runoff and flows, and how are future considerations will be integrated in the modeling. KH replied that this was a very good question, but asked, due to time constraints, if it could be addressed later in the meeting. JJ agreed. RR noted the question and tabled it for later in the meeting.

- WS noted that the Main Table agreed to an adaptive management plan, and that the plan that is decided upon will be reviewed. If climate change is affecting the system, then the Main Table comes back and has another conversation. RR responded that climate change will be integrated in the process, and then, as WS mentioned, there will also be future discussions. Dan Sneep (DSn) noted that in the Water Use Plans that he has worked on, they had changes in the hydrological system within a few years of developing the plans. Some years, the compliance with the WUP was not possible because of this. He noted that it is very important to consider climate change and build in flexibility and adaptability up front. JK stated that these were all really important points and suggested a longer conversation on the topic later in the meeting.

- KH reviewed a sample consequence table using the example objectives. She showed how they were affected by the various scenarios through the use of hydrographs and boxplots. The results from each scenario were compared to show how one scenario can work well for one objective but not another. The results from high inflow and low inflow years were used to populate the sample consequence table.

- PM values calculated as average over all years of record. Values presented use interim PMs and are subject to change. Flow scenarios are for demonstration purposes and not intended as a future operational regime

- WS asked about the performance measure related to caribou, stating that if there is water flow there is air flow, and predators may be attracted to the area regardless of if there is water or no water. JK said that is a good question and suggested it also get addressed later in the meeting when there is more time for discussion. WS agreed. RR noted the question and tabled it for later in the meeting.

- DK asked if, when talking about flushing flows, there are any other data to correlate or cross reference the performance measures. JK responded, that in some cases, yes. The data might be specific to the Nechako or it may be more general.

- AC noted that some performance measures may seem simple, but there are actually layers of complexity. For instances, there is bathymetry and lidar work ongoing in the reservoir now.

- WS noted that it is important to compare sturgeon and salmon. The need and location flushing flows for salmon are different for what is needed for sturgeon. AC responded that Dr. Zimmerman's study was looking into that. JK added that the Technical Working Group has been focusing their discussion on these nuances so they can bring them to the Main Table. There may be a need to have different performance measures for different parts of the river. The objective of the Technical Working Group is to bring this information to the Main Table and to help the Main Table find the answers. The Technical Working Group will identify the information gaps and areas with too much uncertainty to create a performance measure.

- The group took a break from 11:05 to 11:20

- KH had to leave the meeting. JK revisited some of the points in KH's presentation and asked for discussion and questions from the participants.

- JK discussed the Nechako Reservoir boat docks and launches performance measure. He noted it is a very simple performance measure. It can be determined that above a certain water level, navigation is easier, and below a certain level, the boat launch is usable. The current performance measure has a very broad window. The timing, location and duration will all be reflected in the performance measure. Depending on the flows the Main Table decides on, there will be different outcomes for the interests. There will be many ways to craft alternatives that serve the interests of the table.

- JK noted that it may become apparent that high or low water is more important, and this will be important to consider during the trade-off part of the process. For example, high water may not be needed for the whole year, but just for part of the year for boating.

- JJ asked how many different scenarios will be developed for each performance measure for the first round. He also asked when the modelling starts, how many scenarios can we expect. JK responded that it

depends on the table, and how many leading scenarios there will be. Typically, the models will be run against the base case/how things are operated now. He asked for follow up from MH, and what a workable number might be.

- MH responded that it depends on several factors. If there are more than eight, then the consequence table will be very full and will be more complicated to navigate. A key point to keep in mind is that the first round will be developed to learn from. For the first round, it is likely that time will be put into alternatives that likely will not be suitable, but will act as bookends, and there might be two or three per interest area. The first round will be used to test the performance measures. The second round will use hybrid scenarios to start to find something more agreeable and feasible and will be more sophisticated. By the third round, the alternatives will likely be ones to be seriously considered. Overall, likely around eight alternatives will be used.
- Ray Klingspohn (RK) asked if Rio Tinto will make changes to benefit the Nechako if their main desire is still to maximize power generation. Some of these alternatives may not be used because they do not maximize power generation. He asked if, because of this, the WEI decision will be ignored even after the group has put a lot of time into the process. AC responded that it is important to understand all of the factors. He also noted that no viable business in 2021 can focus on only one metric, and there is a need to consider the environment, First Nations, and social expectations. These are not just add-ons but important like revenue and strategic growth. Proceeding in a way that includes maximizing power generation would be good, but it is understood that it is not the only factor that needs to be considered.
- RK added that he and DK talked about how it was too bad that these consequence tables did not exist back in the 50s when the dam was built! DSn noted that for another Water Use Plan for BC Hydro, there was an old film made in the 50s that was a propaganda style film to promote the hydro project. It showed how humans were harnessing the power of water and were conquering nature. It speaks to the legacy of the time. Those projects were not built to incorporate other interests, but society has changed since then. Now it can cost business if they do not include some of the other interests. They need consent to operate. AC agreed. He was reminded of a film that was produced in the 50s for this project, and it was also a man conquering nature type of story. He noted that the narrative is different today, and that is exciting. AC found the link to the video and provided it to the Main Table through the chat function:
<https://youtu.be/tuygdhHWmNg>
- JK noted that there might be flow scenarios that will be unacceptable to Rio Tinto, and that is part of the process. He suggested that a scenario is run that maximizes power or recreation to see how that effects other interests. Once the Main Table has that information it can be dialed back to make compromises. Similarly, Rio Tinto will not like the 100% Skins Lake Spillway scenario because it results in no power generation. But it can be looked at to see how it effects other interests and go from there. There will be several scenarios that people cannot live with and that is part of the process. Overall, it leads towards better collaboration for everyone.

- MH addressed RK's point by stating that the Main Table will build the business case for why it is worthwhile for Rio Tinto to change the flow scenarios. The parties will meet and see how values overlap. Once the trade-off analysis begins, it may become evident that not everyone will get what they want. For example, if the water level is lower so that the boat ramps are accessible, then money will be lost due to the decrease in power generation. Alternatively, a smaller sum of money can be spent on improving and raising the boat ramps so that the overall water level does not need to be lower.
- MH presented some interactive tools that the Main Table participants will be able to use in the phase of the process. He began with a consequence table. The table he is presenting is fictitious and a slightly different layout from the one that HK and JK presented. The key point is that it will serve as a dashboard and will summarize the information in the best way it can be characterized. The actual consequence table will reflect all of the interests that have been determined by the Main Table. The table is interactive and by clicking on different alternatives, it is possible to see how each performance measure will perform. The results are colour coded, where orange is the worst outcome, no colour is neutral and blue is a better outcome. MH clicked on several different rows in the table to demonstrate how the table works and looks.
- DK noted that many of the performance measures in the example tables are quantitative. She asked about how the cultural issues will be addressed, and if these qualitative interests will be made quantitative. MH responded that it will be important to characterize the cultural interests in the same way as the quantitative interests. There may be a need to come up with sophisticated metrics so that all these interests to be assessed. DK added that a satisfaction scale could be used, where if changes are made the needs of those interests would be met. MH agreed that this could be a possibility.
- WS asked what happens if there are two options but neither of them work, as seen in one of the examples in the consequence table. MH responded that the current alternatives are just test alternatives and are not meant to meet everyone's needs. These three alternatives are not meant to be representative of the actual alternatives that will be used.
- MH noted that in the fall, the Main Table will be looking more into the actual alternatives, and these tools will help to develop the performance measures. At that time, the participants will be looking to see if one alternative is dominant over another. If an alternative has orange or no shading compared to an alternative with blue shading, then it is likely that the former alternative will not be chosen. The tool will also help identify if there are any insensitivities between alternatives. If an interest and performance measure does not show any difference between two alternatives, then it can be said there is no sensitivity. It can then be removed as it will not help guide the choice between alternatives.
- MH presented a second tool and asked the participants to try a ranking exercise. The tool shows each alternative as a bar, and participants can set the slider on the bar to their preference for each ranking. The slider on the bar allows the participant to choose their least and most preferred alternative and the relativeness of their preferences.

- WS asked how the science is involved in this tool, as it seems like it might be more of an emotional decision. MH responded that in the process both emotive and rational/logical thinking will be important. This exercise is more based on the emotive responses of the participants, but technical judgement should be used to inform an individual's decision. He added that when it comes to making the actual decisions, it will be done in more than one way. The process will include tools like this for emotive input and then other methods will use more logical rankings. The results will be compared between the methods and the individuals making the decisions. JK added that the science comes into this exercise when the participants consider how each of the alternatives perform over the range of interests. If a participant has only one interest, then they will be able to rank based on their preferred alternative.
- DSn noted that it would have been very helpful to have tools like this during the other Water Use Plans that he participated in. Before they had to use spreadsheets and lots of discussion. JK agreed that these tools will be very useful and are much more sophisticated than the previous methods. MH added that previously only 20 people could submit rankings at a time to be able to manually calculate the responses.
- A link was sent to each of the participants, and MH asked them each to try the ranking exercise. CS showed the results, both the overall results and the individual results. The tools show the distribution of the rankings of the three alternatives. MH noted that this allows them to focus on particular people and ask them why they chose a particular alternative. That person can then explain their thinking behind their choice. This tool will not tell the group what decision to make, but it will help facilitate conversation with the people in the room.
- MH noted that another important aspect of this tool is the ability to look for trends. It will be possible to see if people generally rank some alternatives over others and how much the group members prefer one alternative over the others. It will be possible to see patterns emerge based on the participants values.
- CS clicked on each participant to show how they ranked the three alternatives. DSn asked why AC had not ranked the 100% SLS alternative at zero preference since it would result in rendering the business null. AC responded that he only took three seconds to respond so that it was not a fully thought through decision for the exercise purposes. However, he also acknowledged that there might be a need for this alternative for some of the other interests, so he decided to rate it a bit higher. DSn responded that often in the Water Use Plans the corporate representatives will often choose nothing less than 100% full power generation. He understands that this was just an exercise and thought it was good to show that it can generate conversation. MH stated that it was important to ask these types of question so that the group can understand where people are coming from and then find some common ground.
- John Alderliesten (JA) asked how tools like this get used when the participants are all in one room during face-to-face meetings. MH responded that these tools will be sent to the participants in advance of the meeting so the participants can explore them then. When the Main Table is meeting together in the same room, there will be a screen with these tools projected on the wall. Also, some participants may bring laptops with them to the meetings.

- DSn stated that presumably the Main Table is not bound by the use of these tools. He noted that a lot of good work happens in real time with folks sitting around the talking and brainstorming, and progress can still also be made that way. MH agreed with this statement. He added that he and CS are trying to provide as many tools to the participants as possible to help make the decisions. It is the information that is shared and discussed that helps to figure out what is and is not working in terms of alternatives. There will be a lot of learning that goes, likely at least two or three rounds.
- RR asked the Main Table if a break was needed at this point in the meeting. Participants agreed that a break was not needed.
- RR reintroduced the question of how climate change will feed into the modeling. MH stated that he was not sure how it would be done for this process, but offered an example from a past project he worked on. The Cowichan Water Use Plan was created in response to effects caused by climate change. Climate change effects were exaggerated in that area due to loss of snowpack and early freshet, which lead to the lake no longer being able to provide flows for fish. The statistics used for the performance measure were focused on climate change effects. The alternatives were more conservative, specifically with climate change in mind. There was a very good data set available – 60 years of flow data. It was used to help estimate consequences. A synthetic dataset was also created that helped determine what they system might look like in the 2050s. Sensitivity tests were conducted to test the “future” scenarios to help understand natural variability. A monitoring committee meets in the spring and makes revisions based on the information provided through the water use plan. New input and advice are provided each year.
- JK stated that this was a great example. He noted that this issue is talked about at the Technical Working Group and with the process team and is a real concern. Adaptive management will be used. For example, the current summer temperature management program looks at live temperatures each year. Accounting for climate change in modeling and the consequence table will be important. Luckily, Stephen Dery is also available to help. He has done some work on this already. It will also be possible to make a synthetic data set and use part of the existing data set, perhaps the last 10 years. There are several groups looking at the effects of climate change on various issues, and some of these can be included in the modeling. There are also larger Canadian and global models that can be used to direct the WEI modeling.
- RR reintroduced WS’s question of the caribou performance measure – if there is water flow then there is also air flow that will be able to attract predators to the calving area. JK stated that this is a good point. It speaks to how much is known about this issue. The current impact hypothesis is that if the reservoir is low enough for a land bridge, then there is a mechanism that allows predators to cross. But there are other mechanisms as well. Predators can also swim across. The time frame is not known. WS added that the ministry may be able to provide information on the timing to help understand the issue. JK responded that the Technical Working Group has the data from the province. There is currently no research on what time frame during calving has the highest predation rates. The performance measure may be revisited if it is known that more information will be available.

- RR stated that he and TP talked about the boat tour of the reservoir to catalogue the ongoing erosion. He asked why the tour was not happening now when the water was high. AC responded that peak reservoir elevation will be happening soon, maybe in the next couple of days. The reservoir will stay at this level for four or five weeks. The boat tour is a matter of timing and planning. He is ready to make plans anytime while the water is high. TP agreed that it was important to complete the tour while the water is high. AL responded that Rio Tinto is tied up next week but proposed the first week of August. TP responded that sometime in the first two weeks of August would be good. DK asked if the evacuation order would affect the plan. AC responded that they would work around it.
- **Action item:** Andy to organize reservoir boat tour to see the effects of high water.
- RR introduced the draft WEI process update that was reviewed during the last meeting. He sent the document with track changes as part of the pre-reading package. He had received one additional comment:
 - **Current:** The Rio Tinto Water Engagement Initiative (WEI) continues to progress. The WEI was designed and continues to be an inclusive public process, where interests are shared to help identify ways to improve the health of the river by refining Rio Tinto operations in the Nechako region.
 - **Suggested change:** The Rio Tinto Water Engagement Initiative (WEI) continues to progress. The WEI was designed and continues to be an inclusive public process, where interests are shared to improve water management in the Nechako River. The process is led by independent facilitators and supported by technical specialists to identify opportunities to better address multiple interests related to Rio Tinto's operations.
- Participants agreed to the change. There were no additional comments. RR will finalize the WEI Process Update and post it soon.
- RR introduced World Rivers Day and asked KM for an update from Vanderhoof. KM said he took it to council and an \$18,000 budget was approved, which was the biggest yet. Planning is underway. They are hoping to delay the decision on the WEI and Rio Tinto involvement in the event until after the court proceedings advance. RR asked the participants if they had any thoughts on delaying the decision about including the WEI at the event. DK noted that some contingency planning can still be done but kept simple. If the council thinks the WEI should wait to be involved, then the WEI will have some things in our pocket for next year. RR asked if participants agreed with this. No one disagreed. RR asked if the event does go ahead, who, beyond the working group members, would like to volunteer if there is a WEI booth or table at the event. AC, JK and AL raised hands to indicate their interest.
- RR reviewed the next meeting date set for Monday September 27 in Vanderhoof. This will be the day after the World Rivers Day event. He asked for confirmation that this will work from participants. No one disagreed.

- RR reminded the participants about the per diems available for meeting preparation, travel and participation in the meetings. He sent out the expense form with the pre-read package. It can also be used when travel starts again.
- MH presented on the next phases of the process. This plan is conceptual but will provide an idea of what the game plan for the fall and winter might look like. It shows what different steps and topics might be covered at different meetings. MH presented a slide showing the Structured Decision Making steps and how they will relate to the next several meetings. Topics addressed during these meetings will include issues scoping and performance measure development, alternatives development, modeling and performance measure calculations, and the trade-off evaluation.
- DK asked if at some point the Main Table will need to meet more often than once a month to get through all of the steps of the process. MH responded that the schedule might need to be flexible. It will be important that the pre-read package gets reviewed thoroughly, so that the meetings are not taken up just by reviewing the data. They will need to ensure there is enough time between meetings to properly develop the pre-read package and modeling, and for all the participants to review the pre-read packages. With this in mind, there might be a two month turn around time when it comes to these steps in the process. The Main Table could still meet every month, but this part of the process will be dealt with every two months.
- DK asked if we are meeting face-to-face, will the meetings be full day meetings again. RR responded that yes this was likely. Other processes sometimes go to two-day meetings. They will see how it goes to determine what the WEI will need. DK noted that two-day meetings once a month would be more useful than one-day meetings twice a month. RR asked if there were any objections to two-day meetings. There were no objections.
- AL noted that it was really great to review this information and that this was a good meeting. He is really looking forward to getting together face-to-face. AC agreed, it was good to start to see the tools and the conversation around them. There was good interaction around the test, and he hopes to keep it going, He appreciated everyone's time!
- RR reminded participants that the next meeting will be face-to-face on September 27th in Vanderhoof, after the World Rivers Day even on September 26th.
- TP asked to please make sure he was part of the reservoir tour when it happened. Both AL and RR agreed to make sure of it.
- Meeting adjourned at 1:35 pm.

ACTION ITEMS

- **ACTION ITEM:** Kevin Moutray to take additional photos of the Vanderhoof trails if they become flooded again during the STMP period.
- **ACTION ITEM:** JK will continue to attempt to talk to the City of Prince George to find out if there are concerns of ice jams and flooding, possibly near Cottonwood Park, and its relation to operations.
- **ACTION ITEM:** Andy Lecuyer to provide an update on the Boat Tour.
- **ACTION ITEM:** Andy Lecuyer to provide an update on the Ootsa Lake Forestry Camp campsites.
- **ACTION ITEM:** Andy Lecuyer to provide an update on the FireSmarting of the Rio Tinto properties.
- **Action item:** Andy to organize reservoir boat tour to see the effects of high water.