To:	WEI Meeting Participants
From:	Brodie Smith, Jason Collier, and Rahul Ray
Date:	June 8, 2021
Re:	Final Rio Tinto WEI Table Meeting 20 (Videoconference) Summary, May 19, 2021

A videoconference for the Rio Tinto Water Engagement Initiative (WEI) was held on Wednesday, May 19, 2021, from 9:00 am to 1:00 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 facilitators were Rahul Ray (RR) and Jason Collier (JC) 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 from Ecofish Research 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 19
- WEI Elements Update
    - Communication improvements
    - Reservoir Working Group (Southside Working Group) update
    - Flow-related activities, including Technical Working Group (TWG) summary
    - Related initiatives: Nechako White Sturgeon Recovery Initiative (NWSRI)
- Process walk through
    - Overview of the process: Ash River Water Use Plan
    - Main Table discussion
- The WEI process to date and path ahead
    - Interests to Objectives
    - Performance Measures
    - Creating alternatives
    - Flow modelling

  - Trade-off analysis
  - Structured Decision Making exercise
- Confirm next Main Table meeting dates

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

Table 1. May 19, 2021 - WEI Videoconference Participants

Individual	Organization
John Alderliesten	Public participant
Lyla Brophy	Nechako Regional Cattlemen's Association
David Creighton	Northern Health
Stephen Dery	UNBC
Jennifer Howell	District of Fort St. James
James Jacklin	FLNRORD
Henry Klassen	Public participant
Donna Klingspohn	Public participant
Ray Klingspohn	Public participant
Phillip Krauskopf	FLNRORD
James Jacklin	FLNRORD
Clint Lambert	Regional District of Bulkley-Nechako
Gina Layte-Listen	Public participant
Jason Llewellyn	Regional District of Bulkley-Nechako
Kim Menounos	Fraser Basin Council
Kevin Moutray	District of Vanderhoof
Mark Parker	Regional District of Bulkley-Nechako
Jerry Petersen	Regional District of Bulkley-Nechako
Tim Plesko	Public participant/Southside representative
Ray Pillipow	FLNRORD
Trevor Rhodes	Nechako White Sturgeon Recovery Initiative
Charlie Rensby	Village of Burns Lake
Wayne Salewski	Public participant / NEWSS
Dan Sneep	Department of Fisheries and Oceans
Carrie Smith	MLA John Rustad's office
Dennis Wood	Public participant
June Wood	Public participant

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 19 Meeting Summary. There were no suggested revisions to the meeting summary from WEI participants. RR encouraged all Main Table participants to review the meeting summaries and provide any feedback or changes. All meeting summaries are available on the Get Involved Nechako website: https://www.getinvolvednechako.ca/wei

- RR reviewed action items from Meeting 19:

    - **Action Item:** Participants who provide input during WEI Main Table meetings will be identified by their initials in the meeting summaries. **Update**: Main Table meeting summaries, starting with the most recent Main Table 19 Meeting summary included speaker's initials. Future meeting summaries will also include speaker's initials.
    - **Action Item:** Turbidity will be added to the list of interests and reviewed by the Technical Working Group. **Update:** JK stated that not much progress has been made by the Technical Working Group in addressing this interest, but it has been added to the list of interests.
    - **Action Item:** WEI Main Table to work through examples of how the process works at the next meeting, including interests, objectives, performance measures, and trade-offs. **Update:** Main Table to work through the process today.
    - **Action Item:** JK to reach out to Deborah Jones-Middleton about the backwatering interest. **Update:** JCa called and left a message but has not heard back. JCa will reach out to Deborah Jones-Middleton again soon.
    - **Action Item:** JK to follow up with Kevin Moutray (KM) to get more information about hiking trails around Vanderhoof and how they are affected by flooding. **Update:** JK contacted KM. KM stated that the water height at which the trails are flooded were recorded this year; it is good to know when this occurs. RR requested the photos of the trails from KM.
    - **Action Item:** The Technical Working Group will investigate including low water and safety issues in the Human Health related interests. **Update:** JK stated that low water has been added to the list of interests.

- **ACTION ITEM: RR will get photos and information about the Vanderhoof trails from Kevin Moutray and will make them available to Main Table participants.**

- RR reviewed the WEI Elements:

    - Communication improvements (Devrie Sanghera)
    - Reservoir Working Group (Southside Working Group) (Jason Collier)
    - Flow-related activities, including TWG summary (Jayson Kurtz)

- Related initiatives: Nechako White Sturgeon Recovery Initiative (NWSRI) (Trevor Rhodes)

- Devrie Sanghera (DS), Communities and Social Performance Advisor for Rio Tinto, provided an update. Rio Tinto is in the early stages of developing a new Get Involved Nechako website. This will be an enhanced version that is anticipated to be launched in fall 2021. Currently, all updates requested by WEI participants have been included on the Get Involved Nechako website, such as the inclusion of historical data. The website and data have been advertised broadly through email, Facebook, and newsletters. In June, information on the reservoir, and how to receive Flow Facts, will be announced on the radio. DS requested that if there is anything else specific to Flow Facts that is needed by the Main Table to please let her know. KM noted that he found the website timelier than Flow Facts, and that he checks the website daily. Mark Parker (MP) stated that the ranching community needs five to seven days advanced notice so that they can plan their work. DS thanked MP for his comment and noted that this information is being added. DS asked for Main Table participants to reach out to her at any time at Devrie.Sanghera@riotinto.com

- Jason Collier (JC) provided an update from the Southside Working Group.
  - JC reviewed the intent of the Southside Working Group:
    - Address non-flow related interests identified during the WEI Process
    - Process captured in the WEI Southside Report (living document)
  - JC reviewed the Southside efforts to date:
    - Identified Interests during WEI Meetings (open houses, meetings, break-out sessions)
    - Additional Southside Information Gathering Efforts
    - Developed Draft Southside Report
    - Formed Southside Working Group
    - Workshop #1 - Pathways/Action Items to address interests
    - Implement Pathways/Action Items
    - Workshop #2
  - JC reviewed Workshop #2 Goals:
    - Review progress and results on the pathways identified during previous Workshop.
    - Identify next steps to keep progressing towards addressing non-flow related interests.
    - Address other topics for discussion.
  - JC reviewed the Southside Workshop #2 information, which included a large pre-read package.

  - Many action items were developed at Workshop #2, including:
    - Detailed inventory of erosional hotspots on reservoir
    - Rio Tinto / Cheslatta addressing hazard at Saddle Dam
    - Navigation Table technical coordinator identified
    - Southside WEI Monitoring and Implementation Plan development
  - The Southside Report will be updated with the new action items. It will be reviewed by the Southside participants, and then sent to the Main Table participants for review.

- Tim Plesko (TP), a Southside participant, stated this was an accurate summary. RR asked TM if he thought the mechanism to address the non-flow issues was working. TM replied that yes it was working well, particularly since there was no mechanism to address interests before the WEI.

- Trevor Rhodes (TR), the chair of the Nechako White Sturgeon Recovery Initiative (NWSRI), presented an update from the NWSRI Technical Working Group. TR took over the position of Chair over a year ago. He is also the Associate Director of Fisheries for FLNRORD. He noted that he is not an expert in all the topics he will discuss, but that he is happy to help find answers to questions he is not able to answer. He also noted that the presentation is high level, and if anyone wants additional information, they can contact him.

- TR reviewed the NWSRI Goals:
  - Long-term - return Nechako sturgeon to a self-sustaining population.
  - Short-term - develop conservation aquaculture and breeding program to address immediate population decline.
  - Added Goal: Ensure minimal impact to other sturgeon populations.

- TR reviewed the NWSRI Objectives:
  - Restoration of habitat and ecosystem function.
  - Scientific studies to support recovery.
  - Promote education and awareness.
  - Collaboration and engagement with governments (First Nations, DFO) and stakeholders.
  - Hatchery Releases.

- TR reviewed the two bottlenecks for recovery that have been determined: Recruitment, and Juvenile Survival.

- TR reviewed sturgeon hatchery releases:

  - 2015-2018 cohorts (approximately 30,000 1-year old at approximately 40 cm) captured in Upper Fraser and Mid-Fraser 300 km downstream of release site.
  - Stocking 200 juvenile sturgeon at 2-years old/5-year equivalent (>70 cm): appears to improve survival, better at avoiding predation impacts, broader use of habitat and distribution, and stay within Nechako.
  - Modeling suggests survival is too low.

- TR reviewed sturgeon movement:

  - Telemetry shows low rates exchange between Nechako, Mid-Fraser and Upper Fraser units.
  - Providing important information on spawning use.
  - Providing information of juvenile survival, abundance, habitat use and overall distribution within watershed.
  - Indicates larger fish size (>70 cm) tend to remain in Nechako R. = mitigated downstream impacts

- Henry Klassen (HK) asked if many dead or stationary fish were found through tracking programs and asked what the survival rate of the tagged fish is. TR responded that if the tag is not moving, then it is assumed that the fish is dead, or the tag has been expelled. Tags are recovered when possible. There is about 10% predation mortality, and survivorship is about 50% overall per year. He noted that after 15 plus years, keeping juveniles alive is an issue.

- TR reviewed sturgeon predation:

  - 1170 pit tags recovered 2016-2020
  - 59 latrines identified
  - Otter predation as high as 10% for released fish
  - Predation occurs up to 70 cm
  - Predation is occurring not just after release

- TR reviewed what work was being done in 2021

  - Strategic Planning: Habitat Restoration Plan, Long-term Hatchery Release Plan, Survival Plan
  - Habitat Studies: Habitat manipulation (substrate restoration), Multi-year egg planting and survival experiments, adding gravel patches and looking at infill dynamics (time, how, quality and conditions change), additional measurement devices at bridge/just downstream, winter habitat use - how changes with discharge, models (CSTC), large scale spawning monitoring - retrospective data set analysis (correlation with temp, discharge, moon cycles/light etc.).
  - Continue telemetry: Spawn and juvenile monitoring (movement, habitat use & distribution), and predation.
  - Stock assessment- abundance and density

- Risk assessment of hatchery fish in Fraser (genetic, ecology)

- HK noted that the Nechako system is unique in terms of volume and timing of flows, size of fish, and the historical reduction of flows. He asked if there were any other places in the world that have fish this size, with similar habitat and reduced flows, that has been successful at restoring fish, like sturgeon. TR responded that he was not aware of any other systems or dynamics that are similar.

- HK asked if there were a minimum number of years of monitoring needed, in regard to survivability, and how much work needs to be done to understand what is needed for all life stages of sturgeon to survive throughout the year. TR responded that HK has identified a key aspect. There is a definite need to better understand habitat needs, including flow, throughout the year. He also noted that HK identified an information gap: the habitat productive capacity for each life stage. There is a need to better understand what a sustainable adult target is. A number of pieces are being worked on to better understand these topics, but there is still some work to be done.

- HK asked what the mortality of adults in the river is. He expressed concern that the limited number of adults remaining results in a limited genetic pool. He asked how much time is left to use the limited genetic pool. TR responded that there is an abundance report coming out soon. He stated there are approximately 500 Nechako sturgeon. Once the ages are known, then the year-over-year mortality rates can be determined. He noted that there is still some time left to act, but that the clock is ticking. The hatchery needs to be successful, and natural recruitment needs to be established.

- June Wood (JW) asked if they were not expecting the habitat to improve if they are only expecting 1000 total adults through the recovery program. TR responded that the increase of 500 adults is based on current habitat availability, they are not saying that is the final goal. Right now, the quality of the spawning habitat is the bottleneck. The intent is to look at the habitat and enhance it, but it is not known yet what that will look like. Work is still being done on that piece. The current capacity has implications for the stocking program.

- AC asked if there was a link between the ice jams in the river and the overwintering holes. TR responded that this question has been identified, but that the NWSRI technical working group is not actively working on it. They will keep an eye on the issue. AC added that there is a paper being finalized regarding the 2021 ice survey. Wayne Salewski (WS) noted that they are working on mapping the area, including the location of known holes and collecting base data on the holes. He added that these holes were known about in the 70s, suggesting that they do not move around.

- HK asked if the high rate of movement of juveniles from the Nechako to Fraser River was caused by high summer flows, and if overwintering in the deep pools led to the predation of the juveniles by adult sturgeon. TR responded that do not yet understand all the details surrounding the out migration of juvenile Nechako sturgeon. To the second question, TR responded that there is some evidence of adults feeding on juveniles, but he did not have more information at this time. TR added that they are putting together a proposal for a bioenergetics food study that will look at the food budget and determine if it is a

limiting factor. They think it may be linked to salmon, but do not know for sure. WS added that it is known that sturgeon are less predatory during the winter.

- WS noted that the historical range of the Nechako sturgeon is unknown. They could have moved to and from the Fraser River. There is currently a female that moves between the two systems. TR added that genetic analysis will be completed on this female. She has been documented in the Nechako River twice, and they are unsure if it is related to spawning movement.

- WS noted that one of the challenges with keeping fish in the hatchery for several years is that the fish become "dumbed down" since they do not learn survival skills in the natural environment. The hatchery is critical, but it is not the final solution. TR agreed, the goal is a self-sustaining population. HK noted that when the Watershed Council originally supported the hatchery, the understanding was that the hatchery was temporary and the end goal was a self-sustaining population, which is in line with the NWSRI.

- TR reviewed the current information gaps:

    - Habitat productive capacity (by life stage)
    - Habitat & use vs. discharge/flow correlations (also other factors)
    - Role of hatchery releases in Fraser R. for recovery goal
    - Bioenergetics (food budget), significance of salmon declines
    - Risk of hatchery releases to Fraser R. population, genetics
    - Key survival factors and mitigations
    - New gaps (plans, new information)

- Collaboration with WEI:

    - Information exchange
    - Support for project funding and capacity
    - Linkage with salmon recovery initiatives
    - Future adaptive management

- JK asked how the WEI and Technical Working Group can best collaborate with the NWSRI over the next 6 to 12 months. TR responded that the NWSRI is open to suggestions. This presentation today is a good start. Sharing information, crossover with members and sharing of reports and information will be helpful. They can be more proactive in presenting information as it becomes available. He suggested a representative from the WEI do a presentation for the NSWRI technical working group. JK responded that he would be able to present. He asked if regular meetings should be set up throughout the year. He suggested that they should make sure there are steps in place to make this happen. JK extended an open invitation to the NWSRI from the WEI Technical Working Group and stated that the Technical Working Group will reach out to the NWSRI if they have any questions.

- Clint Lambert (CL) began asking a question but was cut off due to poor internet connection. The question was around predation when young sturgeon are released. TR responded that there is currently extensive research being conducted on otter predation. A report was just published and can be shared.

- **ACTION ITEM: RR to get report on otter predation of newly released sturgeon from Trevor Rhodes and will share with the Main Table participants.**

- JK asked, with regards to the study for assessing habitat capacity, if funding was not an issue, does the NWSRI have the capacity to complete the study. TR responded that they have the capacity to guide the study but would need assistance from a University or consultants. JK acknowledged this and noted that the WEI Technical Working Groups is core, but a lot of the technical work is also supported by consultants. AC replied that it is worth keeping the discussion open and noted that funding can be found. The NWSRI should keep sharing if technical resources or money are needed.

- Contact Trevor Rhodes with any questions at info@nechakowhitesturgeon.org

- This presentation is available on the Get Involved Nechako website https://www.getinvolvednechako.ca/7037/widgets/27362/documents/57823

- JK provided an update from the Technical Working Group. He reviewed the studies being completed by the Technical Working Group to support the list of interests:

    - Fish and Wildlife:

        - Naturalized hydrograph (complete)
        - Salmon temperature tolerance review (drafted)
        - Ramping assessment River (drafted)
        - Entrainment assessment (drafted)
        - Reservoir standing trees summary (drafted)
        - Wetland assessment (drafted)
        - Review of wildlife species & habitat use (drafted)
        - Productivity, water quality, temperature assessment (in progress)
        - Habitat suitability assessment (in progress)
        - Temperature/flow analysis (in progress)
        - Habitat/side channel confirmation (pending)
        - Detailed bathymetric/topographic mapping study (pending)

    - Human Health (100% complete):

        - WQ site summary (complete)
        - Water Intake BMPs (complete)

- Culture and Heritage: No studies.
- Flooding and Erosion (40% complete):
    - Naturalized hydrograph (complete)
    - Vanderhoof ice jam study (drafted)
    - Detailed bathymetric/topographic mapping study (pending)
    - RDBN flood mapping (in progress)
    - Canvass landowners (pending)
- Recreation and Navigation (50% complete):
    - Float plane bathymetry (complete)
    - Reservoir navigation assessment (pending)
- Rio Tinto Operations: studies still to be determined.
- AC stated the development of the Rio Tinto objectives is ongoing. Reliability is a key driver. They are also looking at other operational constraints and how they fit in the trade-off analysis.

- JK provided an update on the Naturalized Hydrograph study. The objective was to understand what flows in the Nechako River at Vanderhoof would have looked like in the absence of diversion to Kemano. Findings from the study include:
    - Model assumed flow would travel from reservoir through the SLS and the Cheslatta Lake system
    - Created annual hydrographs from 1981-2018 with average, and 5th and 95th percentiles
    - Interactive plot tool that can select a given year or multiple years, and show natural and actual hydrographs

- Donna Klingspohn (DK) asked if it was known what the flows were like prior to the dam being built. JK responded that yes, but that the information is limited.

- Stephen Dery (SD) asked if the hydrograph at Vanderhoof could be applied elsewhere on the Nechako River. JK responded that current hydrograph is from the water survey station at Vanderhoof, and the hydrograph could be calibrated to some other points on the river. This would depend on what other data is available from these other locations. JK offered to bring in a modeller to talk more about this topic.

- JK provided an update on the Reservoir Erosion study. The objective was to understand causes of erosion, how large wood (LW) effects erosion, and best management practices to mitigate erosion. Findings from the study include:

- Shorelines of the Nechako reservoir are still dynamically adjusting and on-going erosion is to be expected as equilibrium beach profiles are reached.
- Erosion will be greater in areas of exposed headlands or with steep existing topography. Gently sloped shorelines will more effectively dissipate wave energy.
- LW plays a stabilizing role in beach and shoreline settings and, over time, may interact with vegetation to trap sediment, contribute to beach progradation, and further stabilize shores.
- Construction of shore protection features can mitigate erosion, but careful consideration should be made before removing LW as it may destabilize high-risk areas.
- There are three types of shoreline protection actions including passive, soft engineering, and hard engineering techniques.

- JK provided an update on the Modeling:
  - Predict how well different flow alternatives meet each interest (calculate consequence table)
  - Scientific approach calibrated with existing data
  - Allows us to manipulate variables (water volume, discharge timing, hard and soft constraints)
  - 3 main models:
    - Reservoir optimization model
    - River hydrodynamic model
    - Temperature model

- RR introduced the Process Walk Through:
  - As a WEI Table, we have been building on the approaches used in Water Use Planning
  - Structured Decision Making (SDM) is being used at an overview level so far
  - Currently in the process of working through the steps (e.g., identify interests, develop objectives, identify performance measures)
  - Today, we will walk through a similar effort (Ash River Water Use Plan) to demonstrate how what we have been doing relates to where we are going
  - Neither Jayson or RR were involved in the Ash River Water Use Plan
  - Intent is to show the entire process flow. Questions about the process are encouraged.

- RR introduced the Ash River Water Use Plan:
  - Plan completed in 2003, Vancouver Island
  - Consultative Committee consisted of 15 representatives
  - Representatives included BC Hydro, provincial and federal agencies, First Nations, local stakeholders, and industry
  - Built on Water Use Plan Guidelines

  - Held 23 meetings (in person, no COVID at that time)
  - The Main Table reached consensus on a preferred operating alternative for the Ash River

- RR reviewed the Ash River Water Use Plan interests:

  - Power
  - Fish
  - Wildlife
  - First Nations archaeology and traditional use
  - Recreation
  - Consumptive use and water quality, and
  - Flood control

- RR reviewed the Ash River Water Use Plan objectives. The Main Table developed and agreed to the following objectives for the Ash River Water Use Plan:

  - First Nations: Maximize protection of archaeological resources and opportunities for study and traditional use in Elsie Lake Reservoir drawdown zone; and Maximize traditional use in the Ash River below the Elsie Dam.
  - Fisheries: Maximize the abundance of fish in Elsie Lake Reservoir and in the Ash River below Elsie Dam.
  - Flood Management: Minimize adverse effects of flooding on personal safety and property.
  - Power: Maximize the value of power generation produced at the Ash River hydroelectric facilities.
  - Recreation: Maximize recreational opportunities in Elsie Lake Reservoir and in the Ash River below Elsie Dam.
  - Wildlife: Maximize the area of riparian habitat around Elsie Lake Reservoir.

- RR reviewed the Ash River Water Use Plan performance measures. Performance measures were developed by Ash River Consultative committee. A sample of the Performance Measures developed in the Ash River Water Use Plan process follow:

  - Flood control:

    - Objectives: Minimize the negative impacts of flooding on property.
    - Performance Measures: No. days discharge is less than 650 m^3/s over 38 years of simulated operations.
    - Location: Somass Water Survey of Canada gauging station
    - Minimum Significant Incremental Change: ± 1 day

  - Archeological Resources:

        - Objectives: Maximize protection of First Nation archaeological resources in Elsie Lake Reservoir.
        - Performance Measures: No. days reservoir is above 328 m year-round.
        - Location: Measured at intake to power diversion
        - Minimum Significant Incremental Change: ± 20 days

    - Support for Migrating Steelhead:

        - Objectives: Enable migrating steelhead to pass obstructions.
        - Performance Measures: Provide migration pulse flows of 10 m^3/s over 48 hours.
        - Location: Measured at Moran Creek gauge
        - Minimum Significant Incremental Change: Any difference is significant.

- RR reviewed the Ash River Water Use Plan interim summary. The Consultative Committee developed 28 water use objectives. Performance measures were identified based on these objectives.

- RR reviewed the Ash River Water Use Plan alternatives:

    - The Consultative Committee created and evaluated a range of operating alternatives
    - The intent was to develop alternatives to address the objectives
    - Modelled the alternatives using the BC Hydro simulation model
    - Trial alternatives: demonstrated the process of specifying operating alternatives, and interpreting the model outputs and Performance Measures
    - Five trial alternatives, maximized for a single water use objective were developed, for example:

        - Maximize power generation (Alternative 3)
        - Specified desired flow for fish (Alternative 4)

    - The trial alternatives were not intended to be viable as they excluded other interests
    - The trial alternatives were for learning purposes

- RR reviewed the Ash River Water Use Plan round 2 alternatives. The Consultative Committee developed and evaluated more realistic alternatives in Round 2 to seek a balance between objectives.

- RR reviewed the Ash River Water Use Plan round 3 alternatives. Thirteen operating alternatives were developed. Each alternative was a combination of one or more constraints on operating the Ash River hydroelectric facility to achieve water use objectives. Alternatives specified up to four constraints:

    - Desired reservoir elevations
    - Desired fish flow(s) in the Ash River

  - Presence of pulse flow to assist fish migration in the Ash River
  - Maximum volume of water diverted for power generation

- RR reviewed the Ash River Water Use Plan alternative themes:

  - Theme: Power generation
  - Theme: Provide flows for fish habitat
  - Theme: Reservoir recreation
  - Theme: Restore vegetation to Elsie Lake reservoir drawdown zone
  - Theme: Naturalized flow pattern in Ash River
  - Theme: Protect reservoir archaeology resources
  - Theme: Fish, wildlife, and traditional use

- RR reviewed the Ash River Water Use Plan alternative option analysis:

  - Model flow curves
  - Understand physical limitations (e.g., spillway height, gate height, dam safety)
  - Ran each alternative through the flow model
  - Ran model via Consultative Committee constraints
  - Ran numerous iterations based on 38 years of data

- RR reviewed the Ash River Water Use Plan trade-off analysis:

  - Sought alternative that best satisfied suite of water use objectives
  - Trade-off process involved discussions of the relative value among water use objectives
  - Selection of the preferred operating alternatives involved 3 Steps:

    - Identify key Performance Measures
    - Assess trade-offs among operating alternatives and narrow down to better performing alternatives
    - Assess degree of Consultative Committee consensus on remaining

- RR reviewed an example from the trade-off analysis:

  - Many alternatives performed better than Alternative WL, the existing operation
  - Alternatives E and G2 improved rearing for steelhead
  - Other Alternatives were better for wildlife habitat, energy production and shoreline incubation
  - Poorer for archaeology susceptibility
  - Committee discussed options for archaeological facts

  - Eliminated Alternative WL
  - Worked to find alternative that met as many interests as possible

- RR reviewed the Ash River Water Use Plan monitoring programs. Six monitoring programs were recommended:

  - Archaeological Artifacts in Elsie Lake Reservoir Drawdown Zone Monitoring Program
  - Adult Steelhead Migration Monitoring Program, which shall also assess migration of other species (i.e., Coho and chinook).
  - Steelhead Parr Monitoring Program
  - Elsie Lake Reservoir Trout Rearing Habitat Monitoring Program
  - Elsie Lake Reservoir Riparian Wildlife Habitat Monitoring Program
  - Ash River Riparian Wildlife Habitat Monitoring Program

- RR reviewed the WEI process:

  - Compiled participant interests
  - Based on these interests, TWG developed draft objectives
  - Main Table reviewed and revised draft objectives at Main Table meeting 18 and 19 in April 2021
  - Confirmed objectives to advance
  - TWG is currently preparing draft Performance Measures. A subset will be reviewed today.

- RR asked DK to provide a summary of her concerns after reviewing the Ash River Water Use Plan report.

  - DK noted that there were only 15 members in the stakeholder group, and these were all selected by BC Hydro. DK suggested that a third party should have been involved when consulting and selecting for membership in the stakeholder group to avoid a conflict of interest. RR noted that the WEI process is open. DK agreed, and the community is more engaged and there are many representatives included in the process.

  - DK noted that the goal of the process was not clearly stated; however, it appeared that the process was mandatory in order to change the Water Licence to increase profits for BC Hydro.

  - DK noted that they only had 20 months to complete the process, which is much less than the time being taken to complete the WEI process.

  - DK noted that of the six objectives, First Nations were at the top of the list initially, but these objectives were not followed through in the end. She noted that she thinks the WEI process is much more transparent.

- DK noted that the objectives were presented as high-level goals.
- DK noted that once Alternate C was selected, with the provision to monitor, the monitoring was overseen by BC Hydro, DFO, two First Nations, and local government. The reporting was completed by BC Hydro. DK suggested that perhaps the reporting should have been completed by a third party.
- RR noted that the WEI plan will not be a plan that will sit on the shelf and will have continued improvements. The Main Table participants will be able to determine the reporting and monitoring mechanism. AC agreed and noted that the intent is to have ongoing participation. If the group wants a third party to oversee monitoring and reporting, and the adaptive management, then that can be defined by the WEI.
- DK responded that there are benefits for monitoring being tied to a university, such as UNBC. This shows credibility of this stage of the process. AC agreed and stated that they should continue to collaborate with universities, such as UNBC, UBC, UVIC, and Laval, and other organizations, such as NWSRI. He noted that holistic oversight and vision is important to the process.
- DK noted that in the 2018 BC Hydro report, monitoring and success was based on only one measure: steelhead.
- DK noted that given the extensive planning process and many hours of input, it was hard to justify the end report. There was very little scientific literature referenced, and mostly stated opinions. RR responded that went it came time to write the WEI report, more scientific references can be included. DK agreed, and noted that it would give more validity to the report.

- RR thanked DK for her comments. He noted that the intent of reviewing the Ash River Water Use Plan was to showcase the process.
- Dan Sneep (DS) noted that he was a participant in the Ash River process. There were many checks and balances throughout the process. He noted that BC Hydro gave up a lot in many processes to support other interests. RR noted that the final reports do not always show all the subtleties, but DK could only read the report as it was presented so did not have this information. DS noted that the WEI process is very similar. Including conflicting interests, trade-offs and incorporating and existing facility. He still really believes in the process and thinks it will work.
- HK noted that as he read the Ash River report, he looked for similarities with the WEI process. He was pleased with the commonality in identifying interests and trade-offs. He noted it was also similar to the Watershed Council. The group agreed to address the issues facing the most vulnerable fish species, then as a result the less vulnerable fish species also benefit. The similarity is really great.

- HK noted that monitoring and adapting the flow is a necessary part of long-term planning. Being open and transparent, including the representatives, gives credibility to the process. He is reassured that engaging in this process will get results that will find the best balance and will find a way of living with what we have left. It is important to make sure we are making intelligent and well-informed decisions.

- DK noted that she did not mean any offence to the participants in the Ash River process. She believed the Ash River report lacked references. If scientific background was used, it was not evident in the report. DS responded that the process is not academic science, it is applied science. When the science is not academic level, there are fewer resources. He noted that he hoped that provided some clarity. DK thanked DS. She stated that the WEI process needs to be defensible, and we need to show we have valid, defensible information to make proper decisions.

- DK noted that SDM is a business model and there are fewer options for feelings to be included. Research shows that people do not always make effective decisions this way. RR responded that SDM is not a business model used to maximize production. It is meant to capture interests and help with trade-off analysis. DS noted that it is used in many hydro systems. Small projects do not need this process, but SDM is used for the larger project Water Use Plans. RR added that this process has also been used in many other complex projects to make multi-interest decisions, other than Water Use Plans.

- JK noted that it is important to share your thoughts on the process, and it is important to understand each other's concerns. He asked if there were any pieces of the Ash River process that were not logical, and if there were pieces in the report they found interesting.

- KM responded that this is what he has been expecting from the process. Within the process, we make it the best we can. The results will not be academic because we are not academics. JK responded, that as DS said, the actual report does not need to be written as an academic paper, but it should be supported by other scientific investigations. A report can be generated that better references scientific reports.

- DK noted that she had a discussion with JK and RR to discuss the process. She does not think that it is appropriate to switch to another model, as the WEI process is too far along now. She noted that there is a lot of pressure to make sure the WEI decisions are supported, and we should write a report that reflects that. A lot of good work has been done, and we need to make sure we can defend our decisions. AL agreed, and noted that we cannot start making decisions without good science behind it. SDM will get us there. He stated he was really happy with DK's comments, and agrees with them.

- Gina Layte-Listen (GLL) noted that it has been 20 years since the Ash River process occurred, and a lot has probably been learned since then. The report clarified how objectives and performance measures are laid out. The WEI process will be able to use all these learnings. She did not think that the WEI report will have the same issues with the lack of scientific references. TP noted that he appreciates the process that is being followed. It provides an opportunity to give input and learn from other people. He believes we are

going down the right road. AC responded that he really appreciates the insights from everyone. It is good to check in and make sure we get input.

- RR added that the process will develop a meaningful product (and it will have been done while working through the pandemic!). He expressed his sincere thanks to all the participants and recognized that it is difficult to complete this work through video conferences. AC added that second vaccine shots may be available in Northern BC in the next few weeks, so there may be opportunities for face-to-face meetings soon.

- Dennis Wood (DW) stated that we are only creating winners and losers. Pre-1952 the system looked after itself. If we were on a natural river, then our interests would be dictated to us by the river. Now we are telling the river what to do. We should try cooperating with the river. The remaining water should be used as dictated by Mother Nature.

- HK noted that today, people do the best they can do with what they have. The same approach was applied 20 years ago. He reminded participants that there is a parallel activity happening on the river. A decision will be made in the court case that will affect the system and the flows. We need to be prepared for that. He is encouraged by what the Main Table is doing and what is occurring in the court case. RR noted that the Main Table work is still critical, and it will be necessary regardless of the outcome of he court case. It is intended to be collaborative. HK agreed.

- Charlie Rensby (CR) acknowledged that the process has been slowed by the pandemic. He noted that this is the first time in 70 years that the community has had input. He was raised to hate Alcan. Rio Tinto is stepping up to the table, and this is very important. Who knows when the next opportunity will occur? He agreed with DK that the final report needs to stand its own. He noted he has full faith in the process.

- AC stated that it is very useful to hear the thoughts and insights. He noted that the WEI work will be complimentary to the court case and is important for the future. He agreed with HK that there are many exciting pieces.

- JK thanked GLL for her comments, they are very useful. He noted in the Ash River plan there were many performance measures (34), and they were narrowed down to 18 for the consequence table, and from there were narrowed down further. This example was useful to help understand how to narrow down the performance measures. GLL responded that it took some back and forth reading and some time to fully understand how the alternatives were developed. But, the process was clear enough to understand how to get to the final product. JK said that was good to hear since these are the next steps for the WEI process.

- DS noted that the process is challenging, and a lot of it is verbal and includes brainstorming. A lot of work gets done through conversations. The report has an incomplete picture of the process due to the nature of the process. JC noted that the meeting summaries are important for this reason as they capture the

discussions. He noted it was important for participants to review the meeting summaries to make sure they are accurate.

- RR identified that Rio Tinto is going to post a message about the WEI that is going to be posted on their Facebook to direct people to the Get Involved Nechako website. He wanted to inform the Table, to avoid surprises. KM asked if the Main Table had a Facebook account. No, this is Rio Tinto's page. In that case, there was no objection.

- RR proposed that the WEI Main Table provide an update. RR can draft the post and circulate it to the Main Table participants for review and revision. He asked if participants had any objections. RR responded that it would be posted on the Get Involved Nechako website. KM had no objections, but would like to be able to review the summary ahead of posting. He noted it should not be overly positive and should accurately describe the WEI process and Main Table efforts to date. HK said he had no objections. DK noted it would be good for transparency. TP suggested sending it to the local newspapers as well to get better exposure. There were no objections to RR preparing a draft summary for Main Table review.

- **ACTION ITEM: RR will prepare a draft summary that will provide an update from the Main Table.**

- RR reviewed the next meeting dates. He noted that they are currently set to be six hours long but may be shortened depending on what needs to be discussed. The length of the meeting will be finalized closer to the date of the meeting.

    - Wednesday, June 16, 2021
    - Wednesday, July 14, 2021

- Meeting adjourned at 1:00 pm.

ACTION ITEMS

- **ACTION ITEM: RR will get photos and information about the Vanderhoof trails from Kevin Moutray and will make them available to Main Table participants.**

- **ACTION ITEM: RR to get report on otter predation of newly released sturgeon from Trevor Rhodes and will share with the Main Table participants.**

- **ACTION ITEM: RR will prepare a draft summary that will provide an update from the Main Table.**