
To: WEI Technical Working Group

From: Jennifer Carter and Rahul Ray

Date: March 11, 2020

Re: Final Technical Working Group meeting summary: Wednesday, February 26, 2020

The Water Engagement Initiative (WEI) Technical Working Group (TWG) held a teleconference on Wednesday, February 26, 2020.

The attendees recorded included Wayne Salewski, Justus Benckhuysen, Stephen Dery, Sydney Raison, Phillip, Krauskopf, Dan Snee, Jayson Kurtz (Jayson attended a portion, due to phone connectivity issues), Jennifer Carter and Rahul Ray.

The draft agenda was:

1. Review meeting agenda and previous meeting summary
2. Discuss Flooding Backgrounder
 - a. Any feedback? Level of detail? Helpful?
 - b. Commitment to provide 1 week in advance of meetings
3. Ice Jam update
 - a. Any update from Phillip, Justus or PG?
4. Healthy River
 - a. Overview by Dan Snee
 - b. TWG discussion: priorities, current state, natural state, data gaps, next steps
 - c. TWG agreement on level of detail to present to Main Table
 - d. Fact Sheets
5. RT Operations/Hydrograph
 - a. Presentation to main table
 - b. Monthly/seasonal description flows and the of operational and regulatory constraints/drivers
 - c. Comparison to natural hydrograph
 - d. Relevance to Healthy River factors

Flooding backgrounder

- Wayne commented that he would still like a list of milestones to be created. He suggested developing an outline listing targets that need to be investigated – running list of targets (i.e., viable sturgeon population, healthy river system). The goal is to have a list of topics that we should be exploring and obtaining information.

Action item: Rahul to follow-up with Wayne regarding the concept of “milestones”.

- The TWG discussed information background documents. The flooding backgrounder was useful, but for subsequent backgrounders:
 - The next steps should be outlined,
 - Key questions for the TWG should be put forward, and
 - Tangible information should be outlined to help provide knowledge and inform decision-making.

Ice Jams

- The discussion turned to ice jams.
- Sydney provided information on the current ice jam status:
 - The ice jam risk has been downgraded from high to normal because Nechako waters have opened up.
 - Water levels are lower and flowing well.
 - Warmer temperatures will reduce risk even further.
- A question was asked about how this information is being communicated. Comment that the information is flowing through this TWG and if an issue arises, through the river forecast centre.

Action item: Rahul to obtain the most relevant link to the river forecast centre from Phillip and share it with the TWG and Main Table.

Healthy river discussion

- Dan Sneep presented information about the components of a “healthy river” based on his experience from other planning processes.
- He said that a “healthy system” is broad concept that varies by system. People may want to see Nechako return to a natural state, but the reality is that a hydro project limits the ability to return to a natural state, so we need to figure out the constraints and identify what measures we can take to mitigate impacts. We need to understand what effects hydro projects have on a river and what are mitigations for these issues.
- Dan worked through the following list, compiled from 20 years of planning experience:

Hydro Effects On Aquatic Ecosystems

Footprint: related to original project construction

- Physical habitat displacement
- Reservoir formation: dead storage, thermal stratification
- Sediment retention: channel morphology
- Fish passage barrier: downstream, upstream
- Fish entrainment, outmigration
- Infrastructure constraints: water delivery mechanisms

Operational: related to ongoing water management, and maintenance of facilities

- Reservoir levels: fish stranding, habitat dewatering, tributary access, redd inundation
- Instream flows: hydrograph shape (discharge, timing), base flows, peak flows
- Downramping: fish stranding, habitat dewatering
- Upramping: fish displacement
- Downstream passage: fish outmigration, entrainment
- Upstream passage: fish in-migration
- Habitat access: tributaries, side channels, off-channel
- Channel morphology: simplification, incising, substrate armoring, floodplain
- Thermograph: reservoir stratification, release temperatures
- Total dissolved gas: gas bubble trauma
- Water quality, chemistry
- Riparian function: shade, food supply, woody debris recruitment
- Productivity: primary, secondary, invertebrates, fish, wildlife
- Fish physical habitat requirements: for migration, spawning, incubation, rearing, feeding, overwintering
- Need for a fish life history and requirements for each stage and species overview

Action item: Jayson to provide over flight photos to Dan.

- Comment about the need to distinguish between the project footprint and operational impacts. Past Water Use Planning (WUP) processes focused on how to work within operational constraints.
- Footprint includes habitat covered by dam and infrastructure of project including reservoir and temperature regime in reservoir (some issues cross over into operational footprint).

- Operational aspects are focused on ongoing water management.
- The list provided a generic set of issues related to hydro projects with the intent that this group can narrow them down to specific issues related to the Nechako system.

Action item: TWG members to annotate the list of typical issues related to systems with hydro electric facilities for the Nechako system.

- Discussion of the need to pick indicator fish species for the Nechako system.
- Need to cover off biological and physical requirements of resident species
- Fish identified to serve as indicators included:
 - Sturgeon
 - At least one anadromous fish
 - Mountain whitefish: in part due to the strong First Nations linkage
 - Burbot: in reservoir and accessed for winter fishing
 - Inconnu: unique and rare fish known to live in the reservoir. Not known to be provincially listed
 - Kokanee: in the reservoir and jeopardized by wildfires
 - Bull trout
- Suggestion that a fish biologist from the province can work with Dan to present fish species of interest. Comment that David Levy can help with salmon.
- Dan suggested we have a meeting focused on learning the background/status of the various indicator fish species. At the meeting that follows, discuss the mitigation needed for fish species overall, which will include the needs of each species.
- Water flow is not the only topic to discuss. We should discuss other necessary needs.
- Comment that a fish periodicity chart table for species in the Nechako should be prepared as a guidance tool.

Action item: Jayson to coordinate the preparation of a fish periodicity table. *Phillip provided a table as an example on Thursday, February 26, 2020. Justus provided a sample Kemano table.*

- Comment that a Nechako morphology overview of the Nechako would be useful outlining that current state of the system, including the effects of the dam.

Action item: Jayson to scope and coordinate a presentation by NHC on river morphology.

- Question about historic migration of sturgeon through the “Grand Canyon”. Comment that sturgeon were not thought to migrate upstream of the canyon. Question, “did any fish migrate through” the this stretch?

Comment that the thinking is that nothing did. There must be some pictures / observations. I believe the RT / Alcan archives might be helpful.014

Action item: Jayson to review available information to confirm historic presence of sturgeon upstream of the grand canyon.

- Comment that the Rio Tinto WEI process will be able to help improve certain aspects of the Nechako system. However, there will be issues that cannot be addressed through the WEI process, and will need be addressed through other initiatives.
- Comment that the Province should identify other processes where non-WEI issues can be addressed and the Main Table should make recommendations.
- Comment that there is a need for a commitment from other entities that they will act on recommendations that comes out of this process.
- Statement that through this process, we should focus on actions Rio Tinto can undertake to improve their operations. If Rio Tinto operations cannot address an issue, then a recommendation needs to be brought forward through other avenues.
- Discussion of the hydrograph presentation.

Action item: Justus to send reminder of the hydrograph presentation he gave previously, outlining key elements when things happen and why

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