

A group of approximately 20 people are gathered on a rocky, pebbly shore next to a large body of water. The people are dressed in casual outdoor attire, including jackets, hats, and sunglasses. Some are standing and looking towards the water, while others are in small groups. In the background, a dense forest of evergreen trees lines the far shore of the water. The sky is filled with large, white, fluffy clouds. A small wooden structure, possibly a dock or a small boat, is partially visible in the water near the shore.

RioTinto

WEI – Operations & Reflection 2021 Illustration

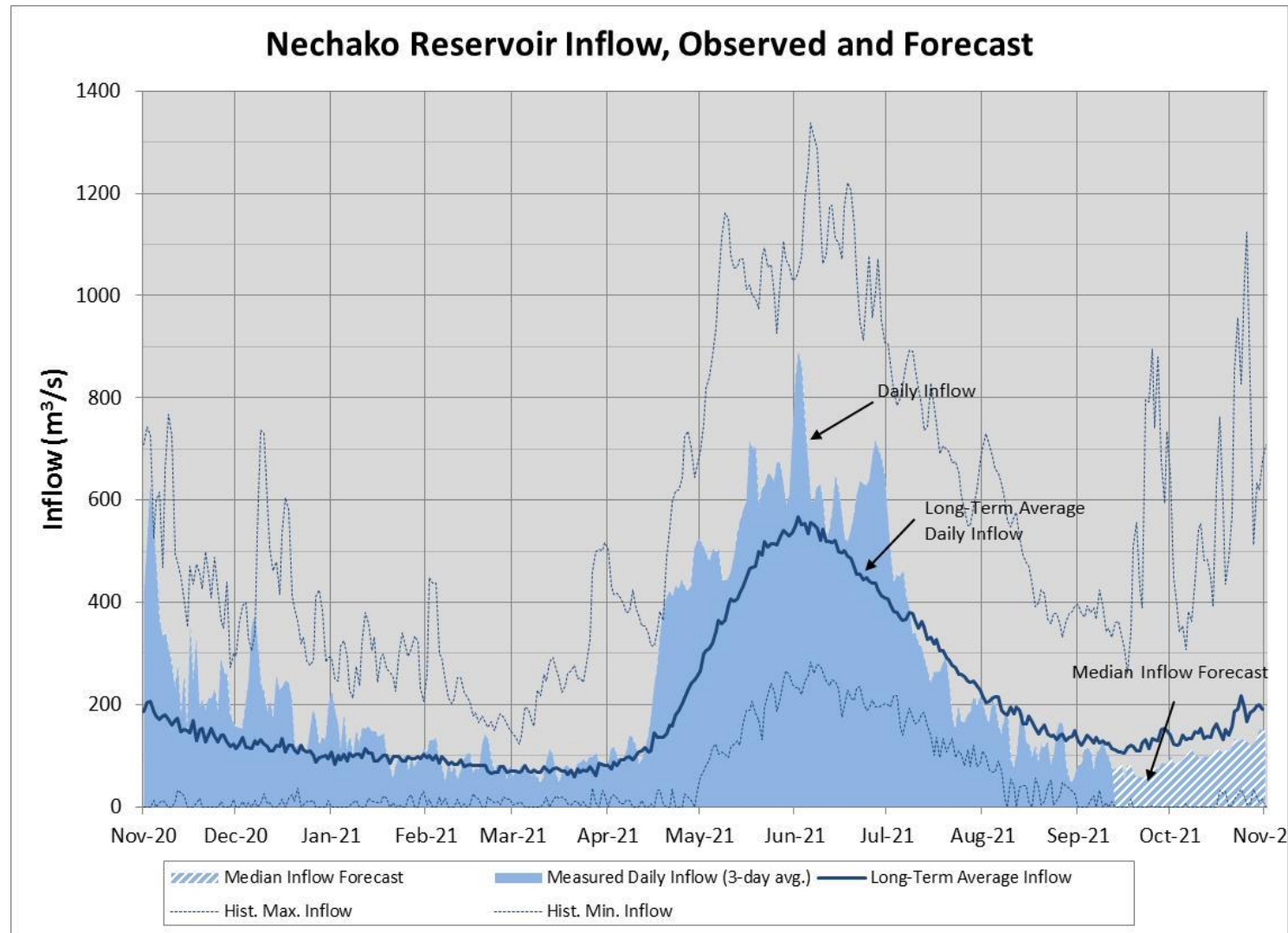
Prepared by Andrew Czornohalan
and Alec Mercier
27 September 2021

Photo credit: Avison

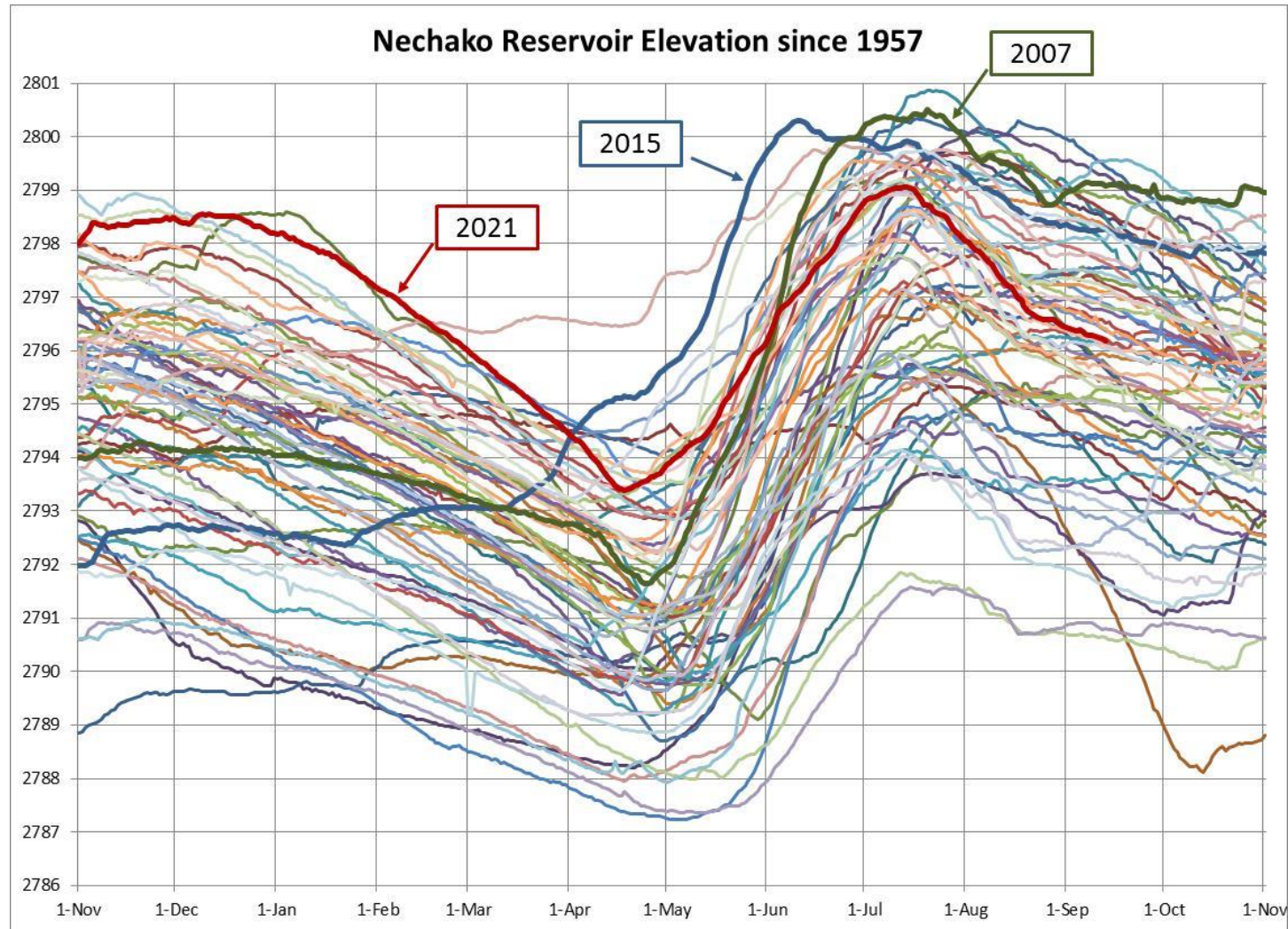
2021 Reservoir Operations



Observed Inflows vs Historical, and Forecast

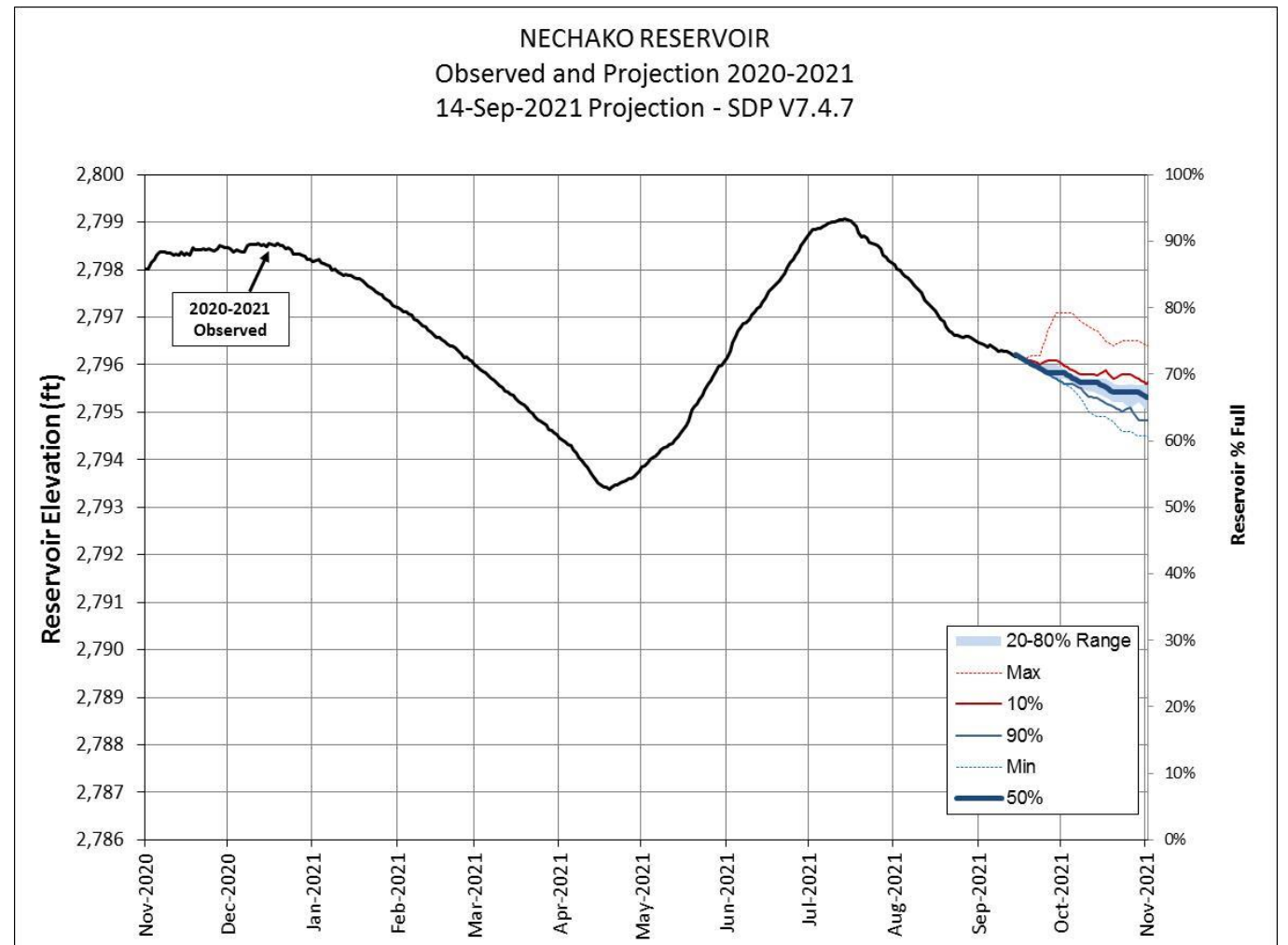


Historical Reservoir Elevation

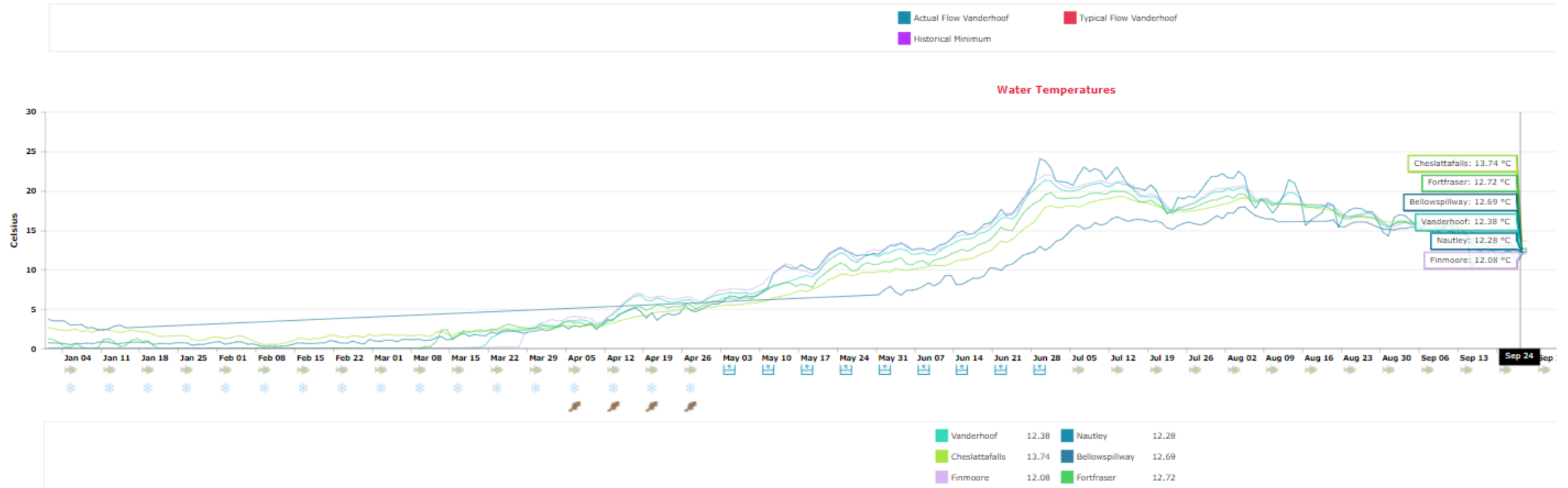


Reservoir Level Projection

- Inflow projections are used to estimate reservoir levels over time considering current hydrology and historically observed additional snow and rain.



Water Temperatures – Now on Flow Facts Portal



Consideration for September Spill (Re-cap)

- Reduced Smelter Production given labour dispute
- NFCP technical committee provided guidance with 2 criteria
 - September > min spawning flow (31.1cms) up to max (125cms) for Chinook spawning
 - At end of September need to consider maintaining a minimum of 50% flows as determined in September through winter for incubation
- The current Rio Tinto reservoir management model suggests spilling on average 120 cms for the month of October.
- Historically spill would be 14.2 cms at the end of the STMP period in August and then 32 cms for the month of September and throughout the winter aligned with the NFCP requirements.
- Critical Dam Safety Spillway maintenance – See following
- Feedback and interests from First Nations and Community Engagement (WEI) factored into the decision making



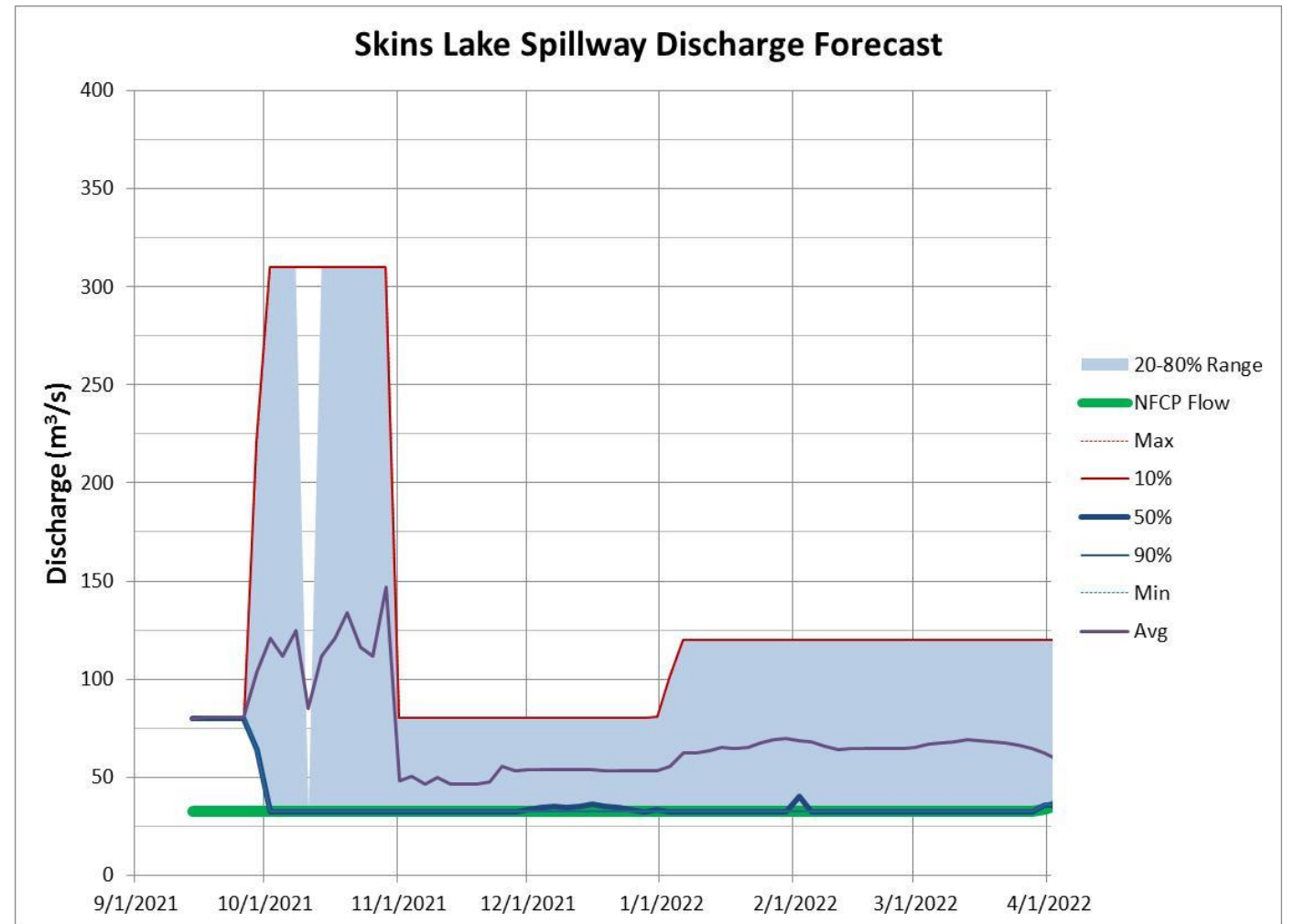
Upcoming Radial Gate Inspection

- The inspection is scheduled for week of September 27th and typically would require low flow through the gates.
- Worked on 3 Options to lessen or eliminate the impact:
 1. **Maintain 80cms through one gate, and switch sides as needed – confirm with contactor any increased risk and controls required**
 2. Day & Night approach – 40cms 12hours throughout the day then 120 12 hours overnight seeing the same average across a 24 hour period. To be reviewed with Cheslatta and Eco Fish
 3. Pre-Load approach – increase spill for days / week prior to works and keep spill low throughout. Least preferable given downstream interests
- Option 1 is confirmed and work will start as planned on the 28th

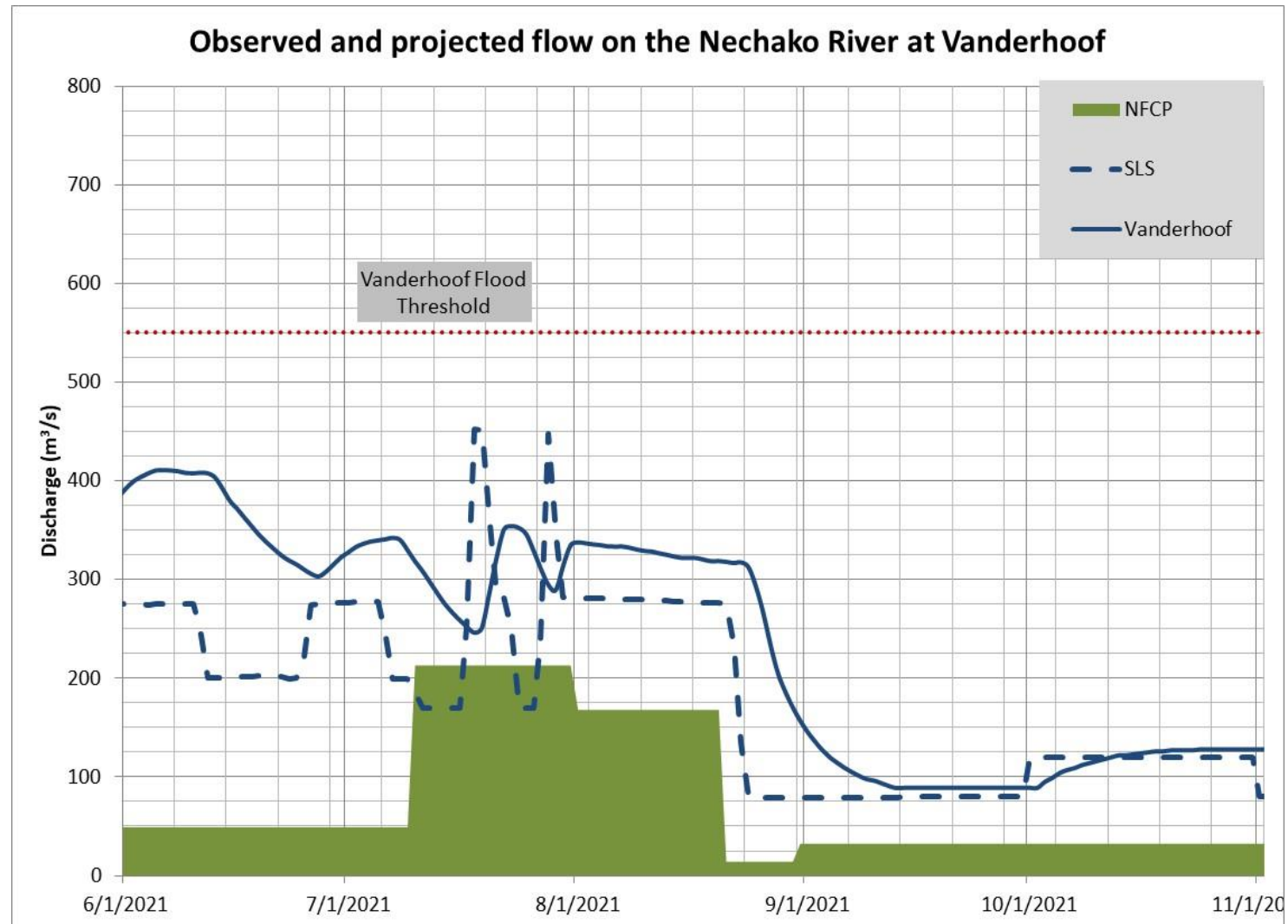


Spillway Management – Looking to Winter

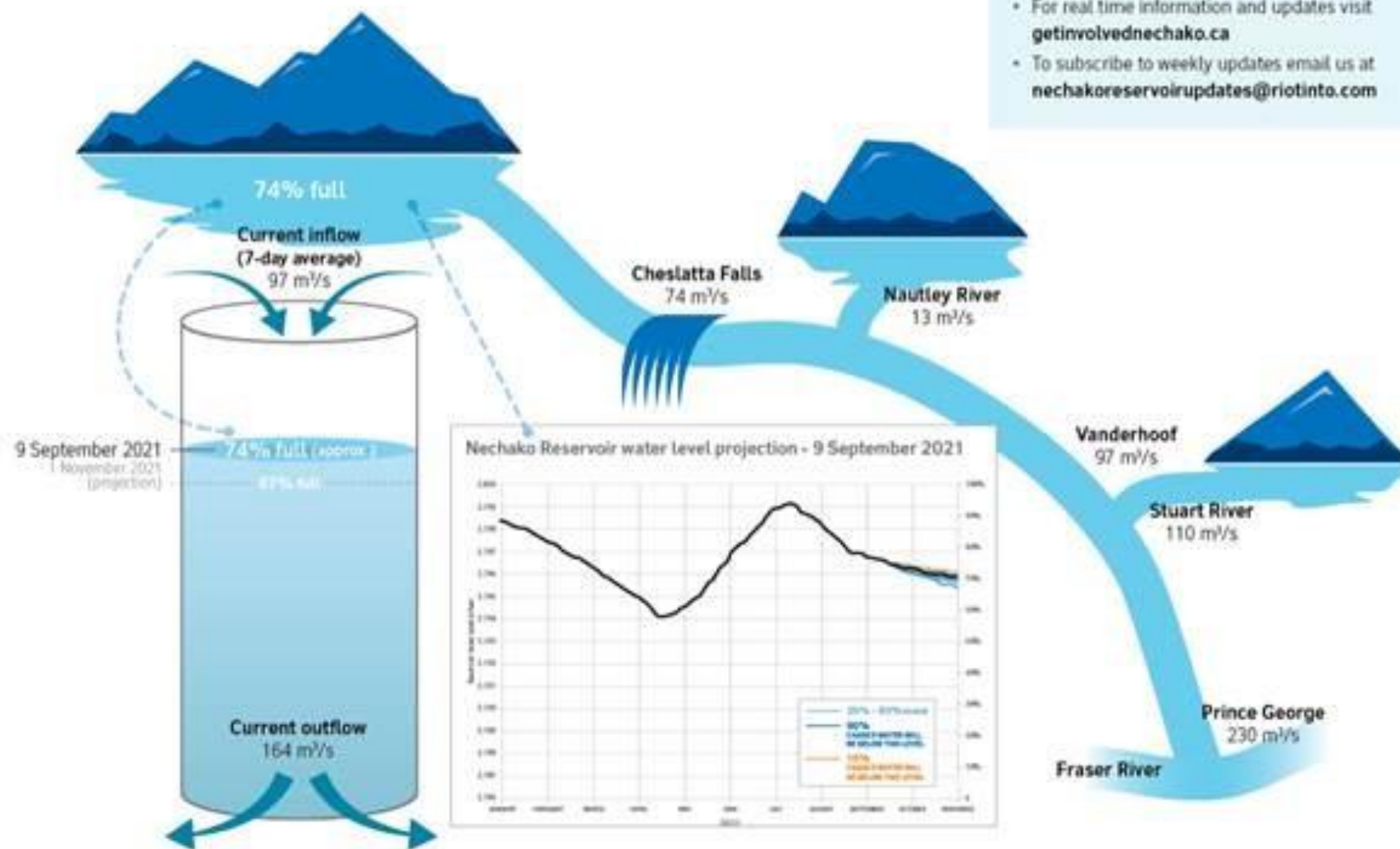
- SLS discharge expected to be held at 80 m³/s for the month of September; likely ± 120 m³/s in October
- Fall inflows will be a significant driver of late fall / early winter releases
- Detailed review of the 2020 / 2021 Freeze-up Observations Report to be considered with NHC
- Review of fisheries data and technical team feedback
- Spring Freshet flood risk - Murray Cheslatta System and Vanderhoof



Forecast – Vanderhoof Flows



Current Conditions - 9 September 2021



Nechako Reservoir operations update

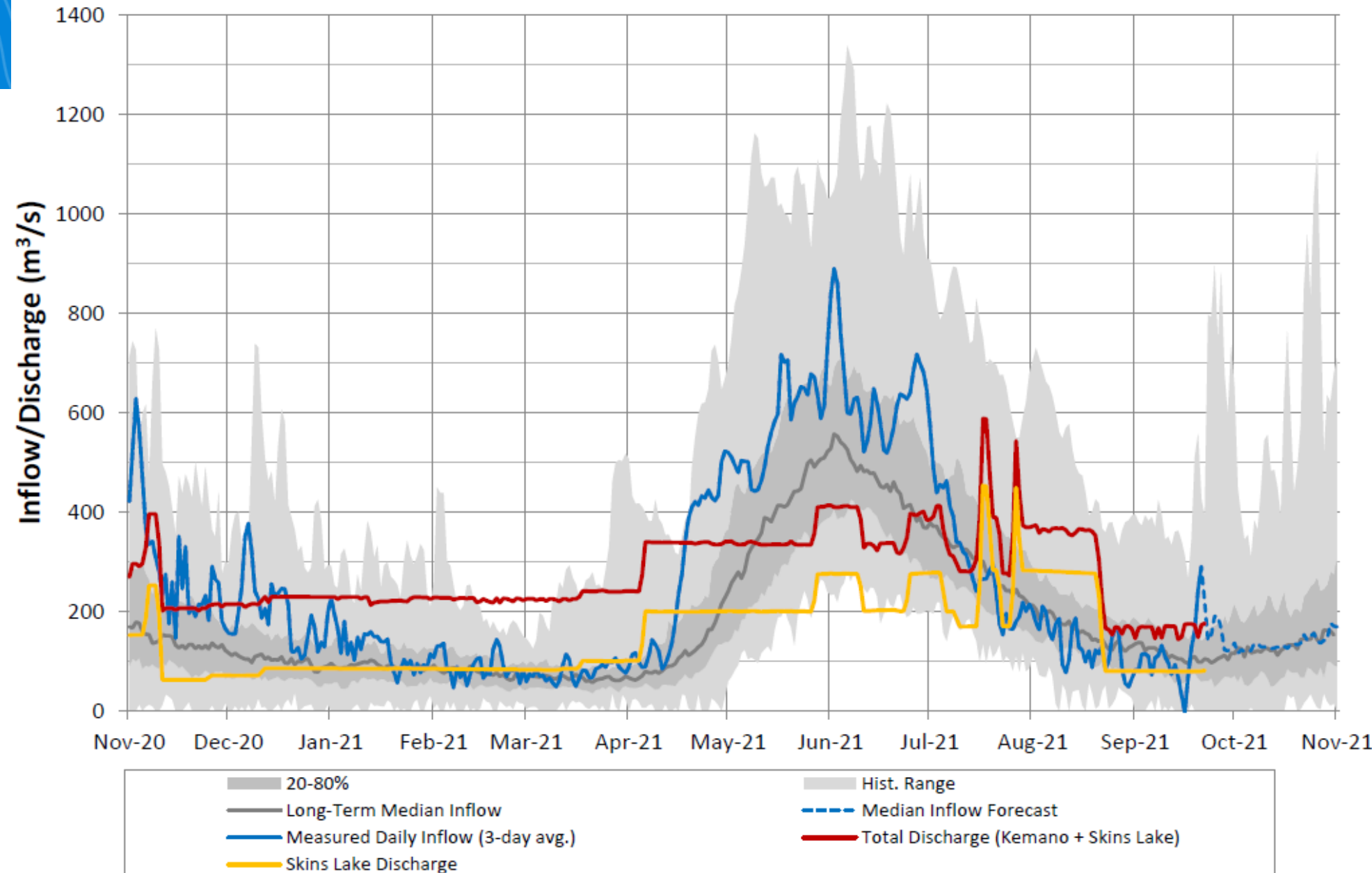
- Skins Lake Spillway discharge is expected to continue to be maintained at approximately 80 m³/s throughout September in consideration of the reduced power generation and Chinook spawning season.
- For real time information and updates visit getinvolvednechako.ca
- To subscribe to weekly updates email us at nechakoreservoirupdates@riotinto.com

2021 Incorporating Feedback

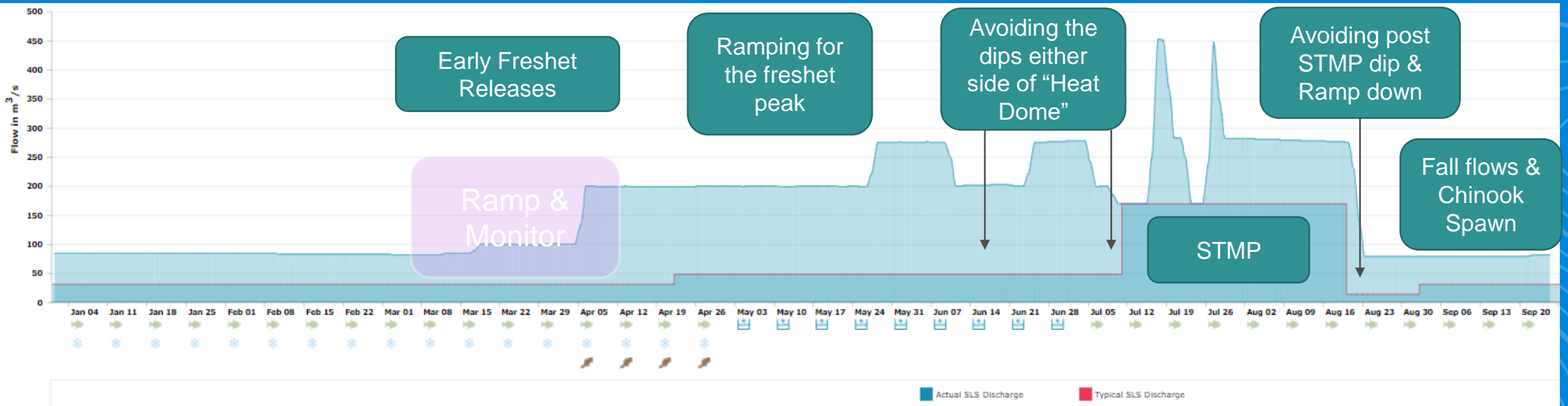


Full Year On a Page

Nechako Reservoir Operation Observed Inflow and Discharge 2020-2021

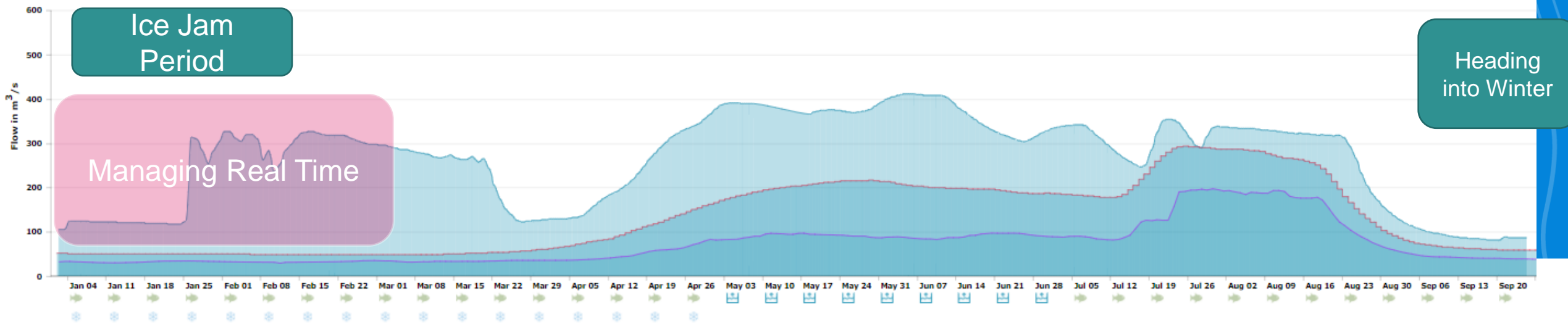


Incorporating Feedback



Note on Nechako River at Vanderhoof Metrics - Nechako River flow data is not accurate during winter months due to ice cover. Please do not rely on the data shown below from October to April.

Nechako River at Vanderhoof



2021 Freeze Up Observations Nechako River at Vanderhoof

There are 4 data gaps identified some of which have made some head way on. The four gaps are;

- Acquire Lidar data upstream would help modelers look at different flow regimes and better understand risk of ice jam formation. (This is scheduled for this fall).
- Develop a long term plan for maintaining the Bubilitz pump house This would help with real time data for residence for flood warnings.
- Develop a forecast system for river
- What does ice jam formation and movement mean for sturgeon, salmon and chinook, is it beneficial or harmful:

Lastly, the implications of ice dynamics (like the 2021 event) on the movement of gravel and quality of spawning habitat are unknown. While excessive frazil ice and anchor ice may pose a risk to chinook eggs and juveniles living in the substrate (Nechako Fisheries Conservation Program, 2005), local scour and gravel recruitment may be beneficial for white sturgeon given the recognized importance of gravel with clean interstitial spaces for larval survival (McAdam, 2011). Therefore, it would be valuable within the overall context of white sturgeon recovery to assess how the 2021 ice jams altered bed substrate within (or upstream of) the spawning reach.



Photo source: Chelton van Geloven and Chantelle Grafton (MFLNRD)

2021 Freeze-up Observations Nechako River at Vanderhoof Data Summary Report

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Feedback & Reflections

