



# Swan Falls Technical Working Group

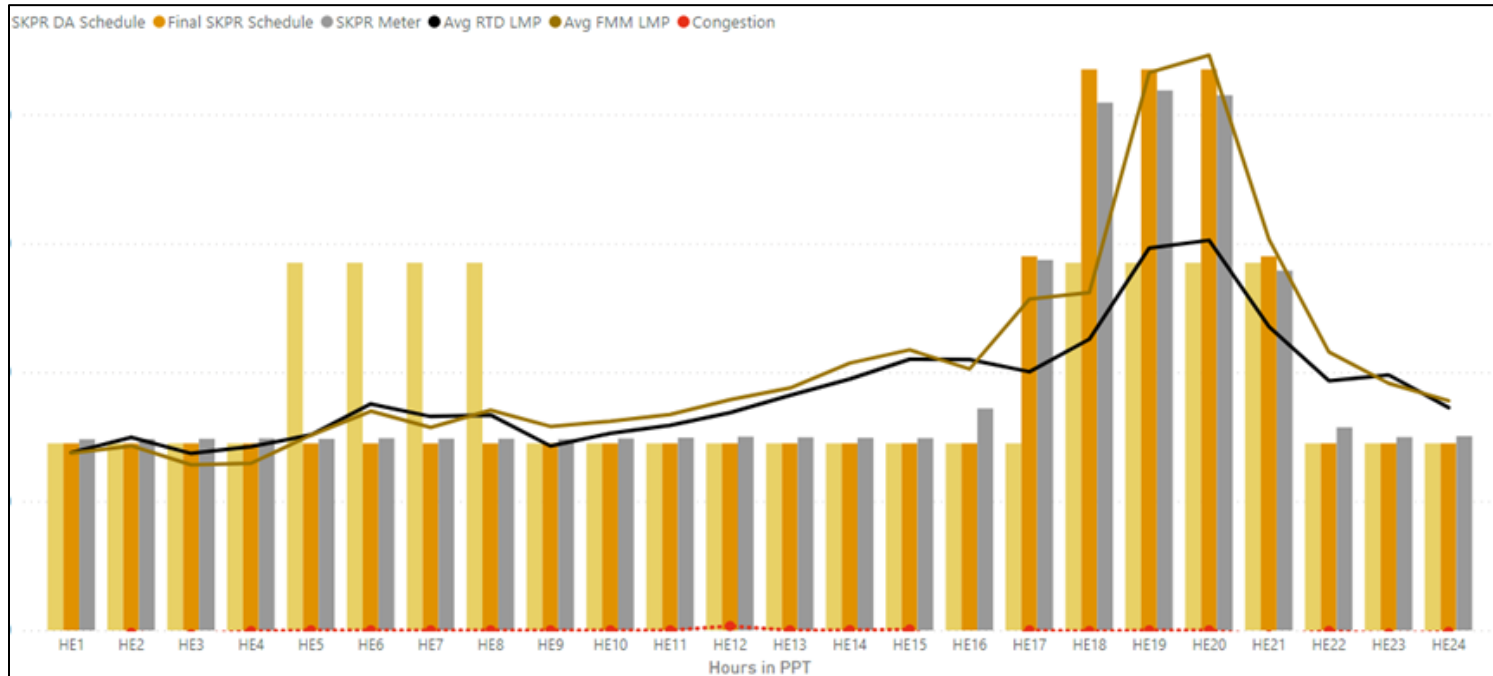
# CJ Strike Optimization



- To generate additional clean hydroelectric power during periods of high customer demand, changed the way we operate CJ Strike
  - Supports keeping power supply costs down
  - Helps maintain system reliability
  - Quick response to variable energy resources
- Our license allows the reservoir level to fluctuate up to 1.5 feet and the Snake River downstream to fluctuate 2.5 feet per hour but no more than 4 feet per day
- Changes to expect
  - Higher frequency of 3-unit operations over critical energy hours
  - Larger fluctuations of CJ Strike headwater up to 1.5 feet for short periods of time

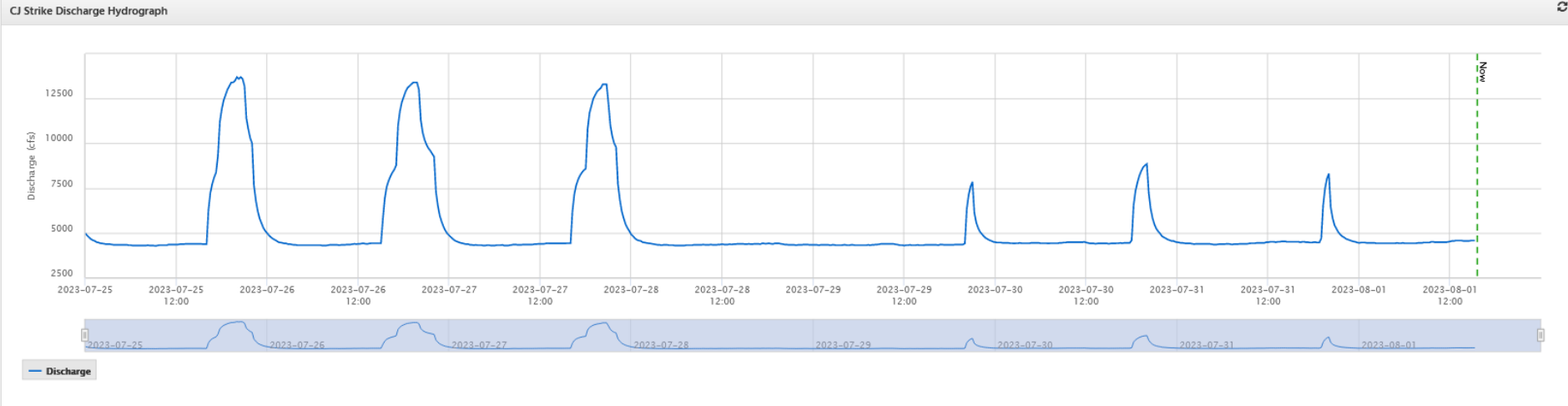
# CJ Strike 2022/2023 Summer Operations

- Good window of operations that coincided with Idaho Power storage releases at Milner
  - 3-unit operations each day over the super peak hours



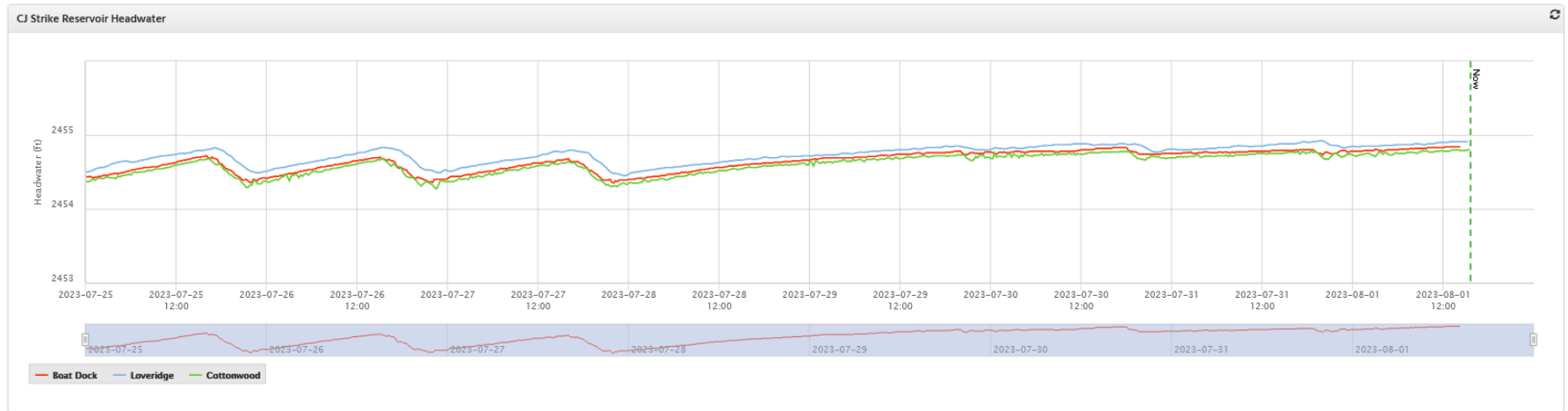
# Idaho Power WebPortal

- <https://idastream.idahopower.com/Data/Dashboard/36>
- Discharge from CJ Strike shown for last 7 days

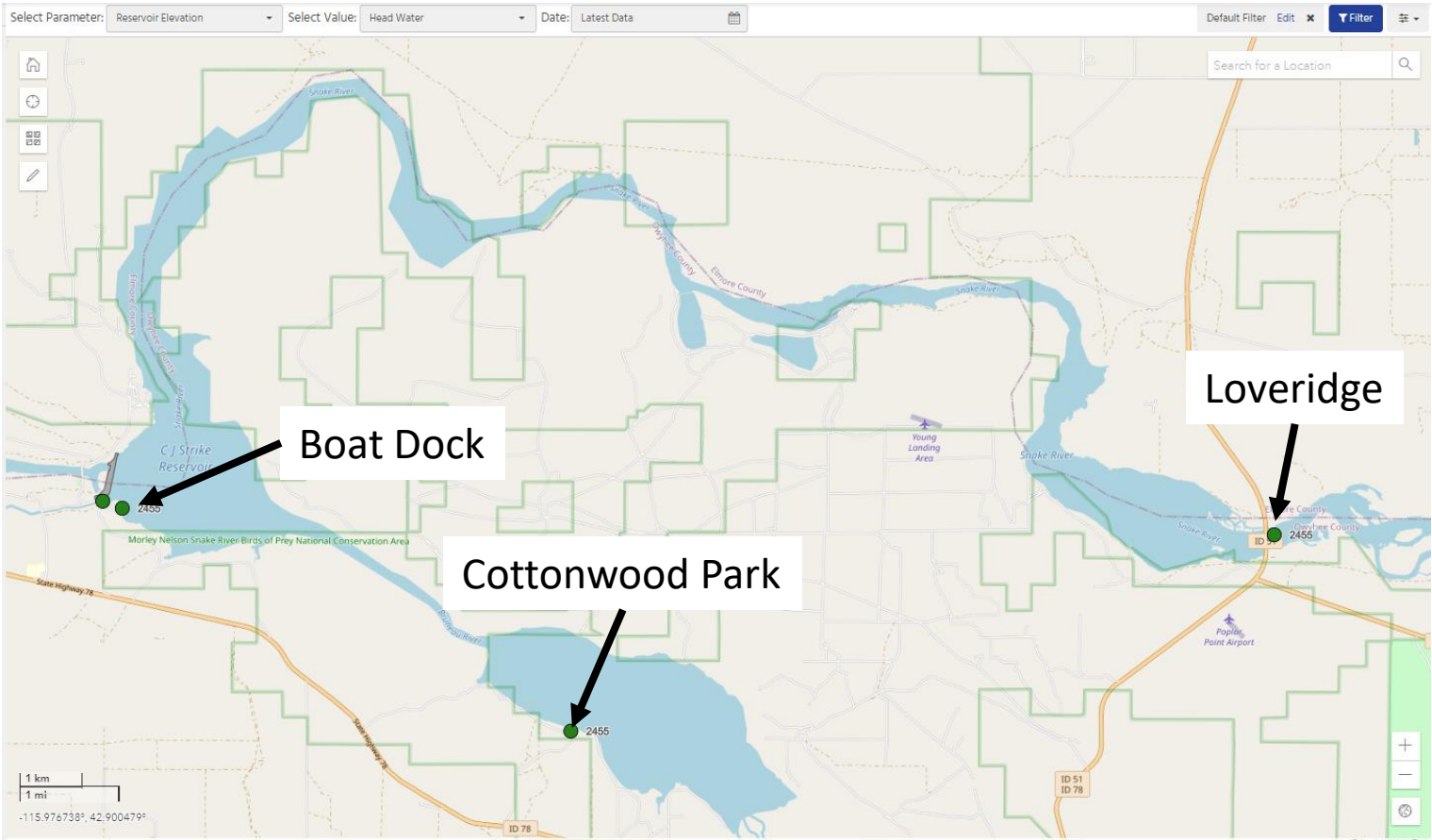


# Idaho Power WebPortal

- Headwater shown for Loveridge, Cottonwood Park, and Boat Dock (less impacted by turbine on/off cycles) locations for last 7 days



# Idaho Power WebPortal



# Optimization Tool Development

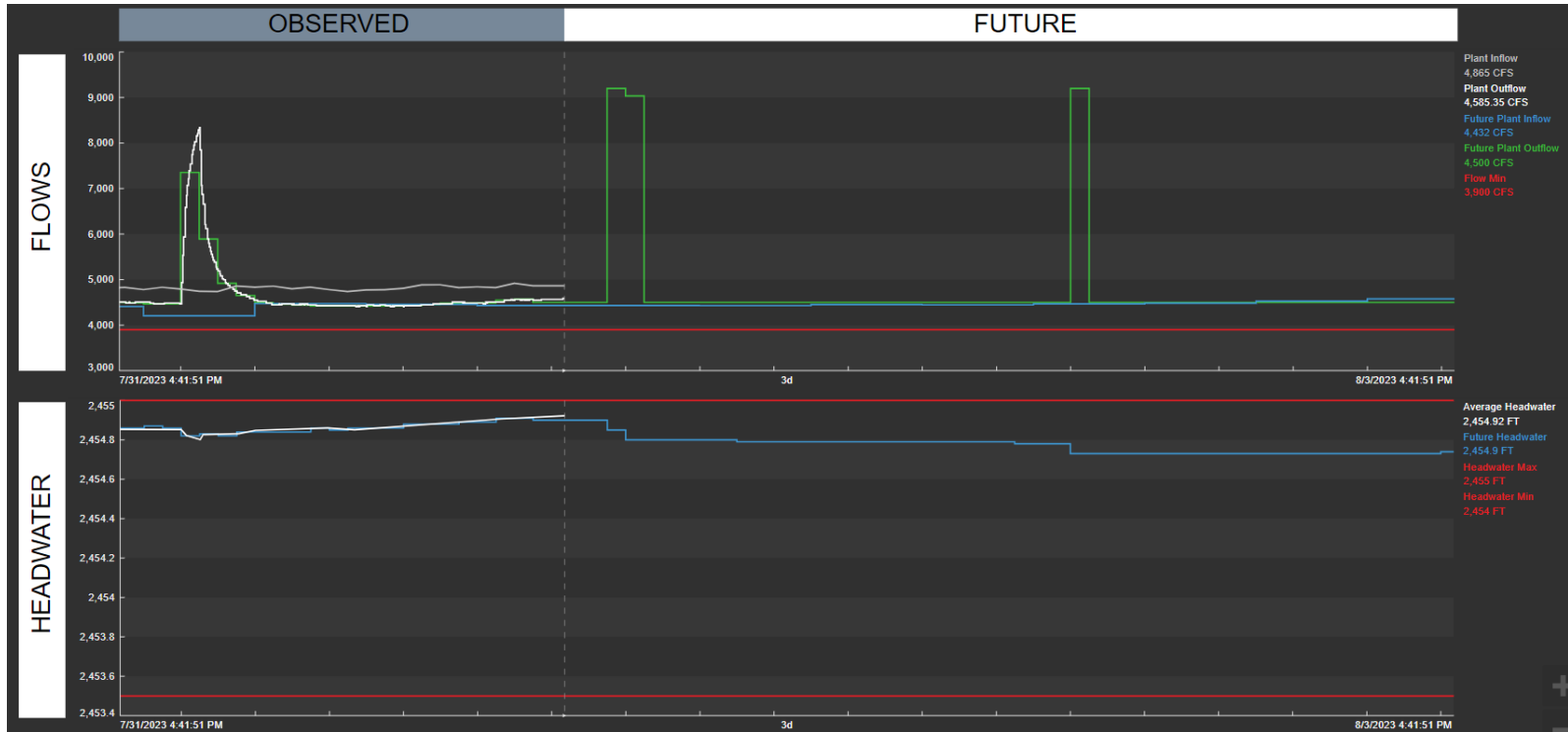
- Feedback from Day-ahead planning and Real-time operation groups
- Setup an automated run in RiverWare every hour
  - Uses initial conditions from previous hour
  - Uses forecast inflows and reach gains
  - Live feed into PI System

The screenshot displays the RiverWare 8.3.2 software interface. The main workspace shows a simulation model with five objects connected in a line: SnakeBelowSwanFalls, SWA, CJStrikeToSwanFalls, SnakeBelowCJStrike, and CJS. Below the model are two data input boxes labeled 'Observed\_Data' and 'Input\_Forecast\_Data'. The right-hand side features a 'Simulation Object List' panel with a search filter and a list of objects including CJS, CJStrikeToSwanFalls, Input\_Forecast\_Data, Observed\_Data, SnakeBelowCJStrike, SnakeBelowSwanFalls, and SWA. At the bottom, there are two data tables for '19:00 July 14, 2023'. The left table shows observed data for SWA and CJS, and the right table shows forecast data for SWA and CJS.

Slot Name	Value	Units
CJS_Obs_Pool_Elev	2,454.68	feet
SWA_Obs_Pool_Elev	2,313.26	feet
CJS_Obs_Flow	4,343.33	cfs
SWA_Obs_Flow	6,376.70	cfs

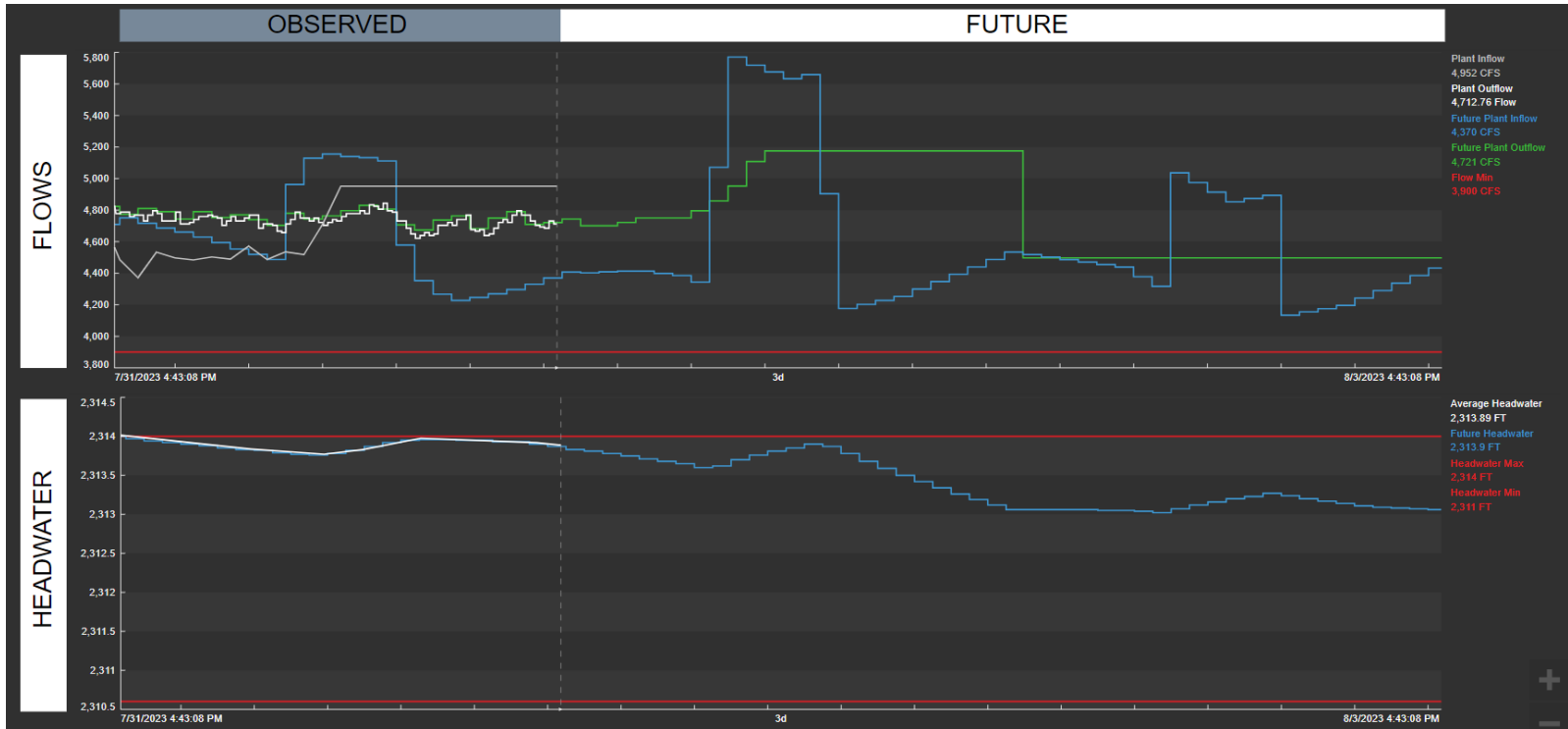
Slot Name	Value	Units
CJS_MWH_Fcst	29.00	MWH
SWA_MWH_Fcst	12.00	MWH
CJS_Inflow_Fcst	6,184.68	cfs
SWA_Inflow_Fcst	6,098.79	cfs

# CJ Strike





# Swan Falls





# Next Steps

- Investigating feasibility of Lower Salmon and Bliss optimization
- Further refinements of the automated tools and capabilities for the generation dispatchers (e.g. “what-if” runs)

# Questions?



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