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April 4, 2023

### **MEMORANDUM**

**TO: Council Members**

**FROM: Leslie Bach and Daniel Hua**

**SUBJECT: Basin Climate and Water Supply Outlook**

### **BACKGROUND:**

**Presenter:** Dr. Henry Pai, Senior Hydrologist, Northwest River Forecast Center, NOAA

**Summary:** Dr. Pai will provide an update on current hydrologic and climatic conditions and seasonal water supply forecasts for the Columbia Basin. He will provide a brief background on the methods used by NOAA to develop the forecasts, and discuss the current conditions and expectations for the upcoming water management season. This information is critical for informing decisions regarding dam management, hydropower production and fisheries operations across the Basin.

**Relevance:** The Mainstem Hydrosystem Flow and Passage strategy and the Climate Change strategy of the 2014/2020 Fish and Wildlife Program both call for the federal agencies to implement measures to better understand and track climate and river conditions and to use that information to identify and implement hydrosystem management actions that protect and improve conditions for fish. In addition, several applications of water supply forecasting for various seasonal time periods of a water year, which begins in October and ends in the following September, are in hydro-regulation planning studies. These include: (1) Biological Opinion (BiOP) operations at various hydropower projects such as setting the amount of spill, minimum and maximum flow constraints or flow in

turbines; (2) flood control operations which determine how much to draft various reservoirs to absorb the freshet runoff; (3) estimating the volume and timing of water to be released from Canadian reservoirs according to the Columbia River Treaty; and (4) setting hydro-regulations to ensure a high probability of refill for all reservoirs at the end of the water year. Results from these studies enable planners to determine operations of the hydrosystem projects, which include hydropower generation over the water year.

Background: Climate and water supply forecasting is a critical component of annual water management for Columbia River system operations. It also informs long-term planning and decision-making on operations that affect both hydropower supply and fish passage and survival. Annual planned actions for reservoir operations and fish passage during the fish migration seasons are described in the Corps of Engineers' [Water Management Plan](#) and [Fish Operations Plan](#). In-season adjustments on dam and reservoir operations to accommodate changing conditions are discussed and considered through regional forum processes such as the [Technical Management Team](#). All of these discussion and decision-making processes utilize the information provided on Basin water supply and runoff forecasting.

More Info: Forecast information and maps are available on the [Northwest River Forecast Center website](#).