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March 6, 2018

### MEMORANDUM

**TO: Council Members**

**FROM: Tony Grover**

**SUBJECT: Briefing by Chelan PUD and WDFW on Upper Columbia Spring Chinook Migration and Passage**

### BACKGROUND:

**Presenters:** Alene Underwood, Fish and Wildlife Program Manager, Chelan County PUD, Lance Keller, Fish Biologist Chelan County PUD and Andrew Murdoch, Fish Biologist, WDFW

**Summary:** The panel of presenters will provide supplemental information to more clearly describe Upper Columbia Spring Chinook juvenile emigration timing from the Wenatchee River into the Columbia River and passage through Rock Island Dam

**Relevance:** Follow up information after the ISAB Upper Columbia Spring Chinook presentation to the Council in February 2018.

**Background:** Chelan County Public Utility District operates its Rock Island Project (Project) under FERC License No. 943 and consistent with its related Habitat Conservation Plan (HCP). The objective of the Rock Island HCP is to achieve No Net Impact (NNI) for each Plan species, including yearling Chinook, affected by the Project. NNI consists of two components: (1) 91% Combined Adult and Juvenile Project Survival achieved by project improvement measures and, (2) 9% compensation for Unavoidable Project Mortality provided through hatchery and tributary programs.

More Info: Rock Island is located at river mile 453, and stands 71 feet high and 4,041 feet long, creating a reservoir with an approximate surface area of 3,120 acres. Rock Island consists of Powerhouse 1 (10 units) on the left bank/East side of the river, Powerhouse 2 (8 units) on the right bank/West side of the river, a spillway with 31 gates, and 3 separate adult fishways (left bank, right bank, and middle spillway). Spring spill is provided for juvenile fish passage amounting to 10% of the daily average riverflow past Rock Island Dam. The HCP requires that the District spill to encompass 95% of each Plan Species' juvenile emigration and is verified using run timing estimates derived from daily index samples collected at the juvenile fish bypass trap located at Powerhouse 2.

Survival standards were met for juvenile spring/yearling Chinook in 2006 under 20% spill, and again in 2010 under 10% spill. Juvenile and adult project survival, and combined adult and juvenile project survival for HCP phase designation is included below.

Table 1. Juvenile Project Survival Results for spring/yearling Chinook Salmon at Rock Island Dam for 2007, 2008, and 2010.

	Project Survival (SE)
2007	97.25% (1.85)
2008	89.72% (1.57)
2010	94.28% (.0.81)
<b>Average</b>	<b>93.75%</b>

Table 2. Adult Project Survival for spring/yearling Chinook Salmon at Rock Island Dam for 2010, 2011, and 2012.

	Project Survival (SE)
2010	100.00% (0)
2011	100.00% (0)
2012	99.66% (0.0034)
<b>Average</b>	<b>99.89%</b>