Kurt Miller

Hi,

Thank you for this opportunity to provide comments. Please see the attached document.

Take care,

Kurt

Kurt Miller
Northwest RiverPartners
9817 Northeast 54th St, Suite 103
Vancouver, WA 98662

April 13, 2020

Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

RE: Comments on Lower Snake and Lower Columbia River Dams 401 Water Quality Certifications

To whom it may concern:

Thank you for the opportunity to comment on behalf of Northwest RiverPartners ("RiverPartners") regarding 401 Water Quality Certifications for the lower Snake River and lower Columbia River dams.

RiverPartners represents not-for-profit, community-owned utilities across Washington, Oregon, Idaho, Montana, and Wyoming. We also proudly represent supporters of clean energy, low-carbon transportation, and agricultural jobs.

Our mission is to lead the charge for the Northwest to realize its clean energy potential using hydroelectricity as the cornerstone. Our goals are to help fight climate change, restore healthy fish populations, include vulnerable communities, and maintain an affordable and dependable electric grid.

The focus of this letter is to suggest the appropriate parameters for the Washington Department of Ecology ("Ecology") to consider in response to the Environmental Protection Agency (EPA) requested final 401-certification from Ecology on March 18, 2020.

DESCRIPTION OF REQUEST FOR COMMENTS BY ECOLOGY
Per Ecology's 401-certification website, "*We [Ecology] ask for your feedback on what water quality conditions we should consider to make sure EPA's permits meet Washington state's water quality standards.*"

HISTORY
EPA is proposing to issue the first National Pollutant Discharge Elimination System ("NPDES") permits for the aforementioned facilities on the lower Snake River and the lower Columbia River. This step is being taken pursuant to a July 2013 lawsuit, filed in federal district court by Columbia Riverkeeper against the US Army Corps of Engineers ("USACE") for discharges of oil and grease without NPDES permits.[1]

On August 4, 2014, the USACE and Columbia Riverkeeper reached a settlement agreement where, among other things, the USACE agreed to submit NPDES permit applications for outfalls with potential pollutant discharges

[1] EPA NPDES 2020 Fact Sheet p 13

for the facilities listed above. The USACE submitted NPDES permit applications to the U.S. Environmental Protection Agency Region 10 ("EPA") on April 21, 2015 for all four hydroelectric generating projects. USACE also sent supplementary materials on August 29, 2018. The EPA has determined that the applications are complete. [2]

As noted above, EPA requested final 401-certification from the Washington Department of Ecology on March 18, 2020.[3]

RECOMMENDATIONS FOR ECOLOGY

Remain In-Scope of NPDES Intent

The scope of Ecology's 401-certification should be limited to the scope of EPA's request and should not be conditionally granted based on prerequisites not envisioned under the NPDES intent.

Pursuant to the terms of the settlement agreement between Columbia Riverkeeper and USACE, the NPDES permits are limited to potential pollutant discharges, such as the release of substances like oil used to lubricate equipment or water used to cool equipment within the dam.

In defining effluent water, the EPA lists,

> *…water [that] is diverted internally and re-routed to cool equipment before being discharged through discrete outfalls ("cooling water"). Drainage sumps in hydroelectric generating facilities also collect water inside the facilities that include Snake River water leaking into the dam, turbine oil, and other water from equipment and floor drains, before being discharged through discrete outfalls ("equipment and floor drain-related water"). Unwatering sumps collect water when equipment submersed in water are being maintained or repaired and need to be dewatered ("equipment and facility maintenance-related water"). This water is also discharged through a discrete outfall.*[4]

As Ecology is aware, the existence and operation of dams can potentially affect water quality not included within the definition of effluent water, such as reservoir water, water that is used for spill and fish bypass systems, and water that is used to power hydroelectric turbines.

However, these water quality issues are specifically excluded from NPDES permitting requirements, because they are not considered a "point source" of pollution by the EPA. The EPA references two federal court decisions in support of this conclusion: *National Wildlife Federation v. Consumers Power Company*, 862 F.2d 580 (6th Cir. 1988); *National Wildlife Federation v. Gorsuch,* 693 F.2d 156 (D.C. Cir. 1982).

Accordingly, it would be inappropriate for the 401-certificaion process to attempt to regulate water quality beyond the effect of effluents. Doing so would go beyond the NPDES intent and beyond legal precedent. It could also unintentionally limit the ability of the USACE to implement adaptive management measures in response to in-river conditions for fish. Furthermore, such restrictions could prohibit the USACE from meeting the congressionally-mandated multiple objectives of each dam.

Lastly, we note that water flows for spill and generation are specifically within the purview of the governing Columbia River System Biological Opinion.

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[2] EPA NPDES 2020 Fact Sheet p 13

[3] Public Notice: Proposed Discharge Permits for Federal Hydroelectric Projects in the Lower Columbia River

[4] EPA NPDES 2020 Fact Sheet p 14

Granted Without Conditions

We encourage Ecology avoid conditions for approval that are not directly related to the NPDES outcomes, because conditional approval may inhibit adaptive management principles or may fail to envision technological advancements at the dams.

For example, a hypothetical condition that requires the addition of fish bypass screens at dams might be inappropriate given a recent installation of a high fish passage turbine at Ice Harbor Dam. An article from International Water Power & Dam Construction notes:

> *Preliminary testing on a new turbine installed by Voith at the Ice Harbor Dam on the Snake River in Washington state, US, shows the new design has achieved a survival rate of 98.25% for Chinook salmon passing through the turbine - a significant improvement over similarly sized conventional Kaplan turbine installations which typically see survival rates in the low 90 percent range, says Voith.*
>
> *One of the primary goals of the new Unit 2 turbine design was to improve the fish passage survival rate, and this was accomplished while simultaneously increasing the turbine's hydraulic performance and extending the life cycle of the unit. Voith says the turbine achieved a 4% boost in hydraulic efficiency.*[5]

As a result of these types of technological advancements, it is important that Ecology avoid being overly prescriptive of the way the NPDES outcomes are achieved.

Mixed Science on Dam-Related River Temperatures

As noted above, it would not be appropriate to attempt to regulate water quality, such as in-river temperatures, beyond the effects of effluents under the 401-certification process. Additionally, we note that the effort to do so in other venues may be unnecessary.

The lower Columbia and lower Snake river dams are all considered run-of-river dams, with little storage capacity, so their ability to aggravate water temperatures is quite minimal.

In terms of scientific research, a 2003 EPA study indicated that dams *may* exacerbate temperature issues on in the Columbia River Basin, but a 2002 study performed by Pacific Northwest National Laboratory showed that dams within the Columbia River and Snake River basins moderate extreme water temperatures.[6]

> *…the reservoirs decrease the water temperature variability. The reservoirs also create a thermal inertia effect that tends to keep water cooler later into the spring and warmer later into the fall compared to the un-impounded river condition.*

Also, in 2002, a team of researchers conducted a water temperature study on behalf of the U.S. Army Corps of Engineers. The team compared pre-lower Snake River dam measurements of water temperature from 1955-1958 to measurements taken after the LSRD were constructed. They found no evidence that river temperatures had increased as a result of the dams, and instead appeared to have remained unchanged or slightly lower. The team identified air temperature and flow levels as the

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[5] "Test shows Ice Harbor turbine achieves high fish passage survival rates". International Water Power & Dam Construction. 3/3/2020.

[6] Summary: Regional Scale Simulation of Water Temperature in the Columbia River Basin
Richmond, et al: Regional Scale Simulation of Water Temperature and Dissolved Gas Variations in the Columbia River Basin

biggest influences on temperatures in the river.[7]

In fact, air temperatures have trended upward significantly since 1955. Data available through the University of Washington's climate change tools show that the average air temperature recorded near Kennewick, Washington, has increased at a rate of 0.37 degrees Fahrenheit per decade.

These conditions would suggest higher water temperatures in the river over time, but as noted above the river temperatures have remained unchanged or slightly lower. There have been occurrences of spikes in temperature due to soaring air temperatures during heat waves, but these events are outliers, not the norm.

Appendix 1 of this document includes a graph provided through the University of Washington's Pacific Northwest Temperature, Precipitation, and Snow Water Equivalent Trend Analysis Tool.

Based on this evidence, the dams are highly unlikely to cause high water temperatures capable of harming salmonids. Rather, their impoundment effect may actually help buffer against extreme temperatures because larger water volumes are more difficult to heat.

Additionally, damaging water temperatures are not unique to the impounded rivers.

While it was widely reported in 2015 that 250,000 returning adult Snake River sockeye perished during an exceptionally dry and hot summer, mass die-offs have been observed in undammed rivers as well.

In 1994, due to record high water temperatures, approximately 466,000 adult fish perished in the undammed Fraser River before reaching their spawning grounds.[8]

More recently, record breaking temperatures in Alaska led to die-offs in several undammed rivers. One event in particular, originally reported by NPR, highlighted the problem. An official estimate was not released, but biologists believe as many as 200,000 to 300,000 fish were in the river during the extreme heat event.[9]

As noted above, studies have shown that Northwest dams may mitigate these harmful temperatures.

Reasonable and Practicable Requirements

We also ask that Ecology adheres to reasonable and practicable requirements. Specifically, we request that Ecology not require additional costly monitoring conditions. We note from the EPA's 2020 NPDES Permit Fact Sheet:

> *Table 10 shows that given the limited data set, the hydroelectric generating facilities' permitted discharges have minimal impacts on temperatures in the Snake River, primarily because of dilution and effluent temperatures. In addition, note that influent temperatures are highly variable by depth. This*

[7] Water Temperatures and Passage of Adult Salmon and Steelhead in the Lower Snake River

[8] Foreman, M & B. James, C & C. Quick, M & Hollemans, Peter & Wiebe, Edward. (1997). Flow and Temperature Models for the Fraser and Thompson Rivers. Atmosphere-ocean
US Army Corps of Engineers - Lower Snake River Dams

[9] NPR - Why Are Salmon Being Found Dead In Rivers Across Western Alaska?
NOAA - Alaska had its hottest month on record in July,
Juneau Empire - Warm waters across Alaska cause salmon die-offs

evaluation is consistent with preliminary Columbia River temperature TMDL models that show minimal impact on temperature from point sources.[10]

Additionally, the EPA is already proposing year-round monitoring for temperature[11] including:

- continuous monitoring for any discharges with cooling water and monthly monitoring where a similar discharge already has continuous monitoring.
- continuous influent monitoring on cooling water for main units and large transformer units with continuous effluent monitoring.

CONCLUSION

RiverPartners advocates for the balanced use of rivers for the benefit of communities and the environment. We are supportive of measures that have proven scientific benefit for salmon and that consider the effect that the decisions have on the many users of the river system.

With this mission in mind, we ask that Ecology use this opportunity to create a 401-certification process that:

- remains within the scope and legal precedent of the NPDES requirements
- provides the necessary flexibility for the USACE to achieve the congressionally-mandated multiple objectives of the Columbia River System and for adaptive management principles
- allows for the adoptions of new technologies as they arise
- is not overly cumbersome in its execution and monitoring requirements
- is understanding of the relatively small magnitude of the risk associated with lower Columbia River and lower Snake River effluents related to the operation of the projects in question.

Thank you again for the opportunity to comment. RiverPartners looks forward to working with Ecology throughout this and other key regulatory processes.

Best,

Kurt Miller
Executive Director
Northwest RiverPartners

[10] EPA NPDES 2020 Fact Sheet p 29
[11] EPA NPDES 2020 Fact Sheet p 45

Appendix 1: University of Washington PNW Temperature, Precipitation, and SWE Trend Analysis Tool; Kennewick, WA, 1955-2018

Temperature	Precipitation	Snow Water Equivalent

Year Range
1955 to 2019

Variable Selection
Average Temperature

Time Frame
Annual

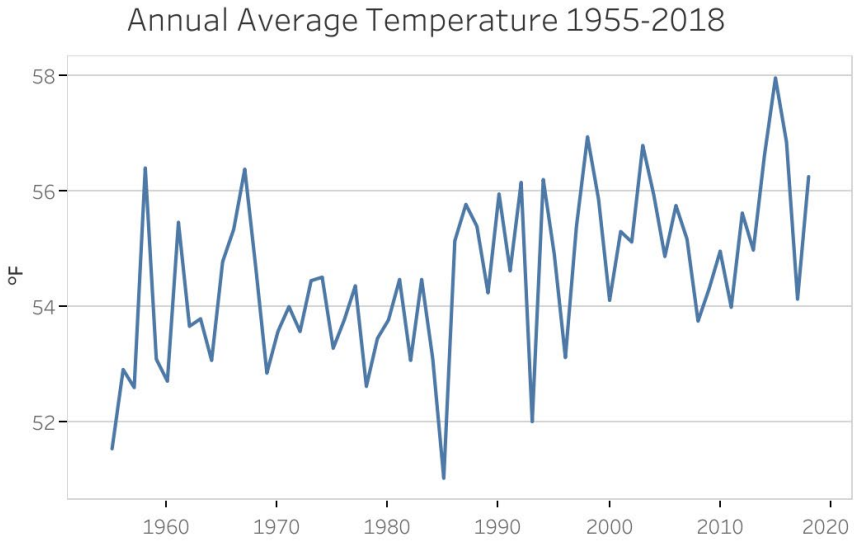
Trend Range
Per Decade

Trend	-	0	+
Significant (S)	●		●
Not Significant (NS)	●	○	●
Insufficient Data (I)	●	●	●

Add to Graph
- (●) None
- ( ) Average
- ( ) Statewide Average
- ( ) Trend Line

Trend Data (°F Per Decade)

Kennewick	WA	S	+	0.37



Station Data Source: NOAA's U.S. Historical Climatology Network version 2.5.5.20190405

Statewide Data Source: NOAA's US Climate Division Dataset (nClimDiv)