

EPA Region 10 Clean Water Act Section 401(a)(2) Evaluation and Recommendations on the Proposed NPDES permits for Lower Columbia River Federal Hydroelectric Projects

June 7, 2022

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Executive Summary

This paper presents the U.S. Environmental Protection Agency (EPA) Region 10's evaluation and recommendation to Oregon Department of Environmental Quality's (DEQ's) objection under Clean Water Act (CWA) section 401(a)(2) to EPA Region 10's issuance of four National Pollutant Discharge Elimination System (NPDES) permits that would authorize discharges from federal hydroelectric projects (i.e., dams) on the Lower Columbia River (EPA 2021b; 2021c; 2021d; 2021e). The hydroelectric projects at issue are Bonneville Project, The Dalles Lock and Dam, John Day Project, and McNary Lock and Dam. All facilities are operated by the U.S. Army Corps of Engineers (Corps).

EPA Region 10 is the NPDES permitting authority for federal facilities in Washington. The jurisdictional boundary between Washington and Oregon is approximately the middle of the Lower Columbia River. EPA Region 10's NPDES permits apply to outfalls from the federal dams that discharge to Washington waters. Oregon DEQ will issue NPDES permits for the outfalls from the federal dams that discharge to Oregon waters¹. These are the first NPDES permits the Corps is receiving for these facilities.

On March 18, 2020, EPA Region 10 began a public comment period on the draft NPDES permits for the Lower Columbia River federal dams (EPA 2020a). That same day, EPA Region 10 sent a request for a CWA section 401 certification to the Washington State Department of Ecology (Ecology) (EPA 2020b) and sent a notification letter to Oregon DEQ pursuant to CWA section 401(a)(2) that the discharges from the four Lower Columbia River federal dams "may affect" the quality of Oregon's waters (EPA 2020c). EPA Region 10 ended the initial public comment period on the draft NPDES permits on May 4, 2020.

¹ There are no outfalls that discharge to Oregon waters at The Dalles Lock and Dam; thus, Oregon DEQ will only be issuing NPDES permits for outfalls discharging to Oregon waters at the Bonneville Project, John Day Project and McNary Lock and Dam.

On May 7, 2020, Ecology issued a CWA section 401 certification for each of the NPDES permits for the Lower Columbia River federal dams with conditions² (Ecology 2020a; 2020b; 2020c; 2020d). The temperature-related conditions in these certifications required the Corps to:

- Implement temperature control strategies and meet temperature load allocations from the Columbia and Lower Snake Rivers Temperature Total Maximum Daily Load (TMDL), once this TMDL is issued; and
- Develop and implement a water quality attainment plan (WQAP) that meets Washington’s temperature water quality standards within two years of the effective date of the permits to reduce temperatures behind reservoirs.

On May 15, 2020, Oregon DEQ notified EPA Region 10 in a letter (“May 2020 objection letter”) that it had determined that the discharges from the dams “will affect the quality of Oregon’s waters and violate state water quality requirements in the State of Oregon.” Oregon DEQ further stated that it was objecting to the issuance of the NPDES permits and requested a public hearing. In the May 2020 objection letter, Oregon DEQ identified concerns regarding the following pollutants: temperature, total dissolved gas (TDG), biocriteria and statewide narrative criteria, and polychlorinated biphenyls (PCBs). Oregon DEQ also proposed example conditions that included studies and actions related to temperature behind reservoirs, TDG, cooling water intake structures, and PCBs (Oregon DEQ 2020). If these example conditions were included in the permits, Oregon DEQ stated that its water quality concerns would be addressed.

On May 18, 2020, EPA Region 10 issued the Columbia and Lower Snake Rivers Temperature TMDL,³ which included wasteload allocations and load allocations for the federal dams (EPA 2021g). EPA Region 10 held a second public comment period for the draft NPDES permits for the Lower Columbia River federal dams that incorporated the wasteload allocations established in the TMDL from January 15, 2021 through February 16, 2021 (EPA 2021a).

On July 26, 2021, EPA Region 10 provided a draft of the Bonneville Project permit, which included Ecology’s CWA section 401 certification conditions. On October 8, 2021, Oregon DEQ sent EPA Region 10 a follow-up letter⁴ (“October 2021 letter”) that reiterated its objection to issuance of the NPDES permits regarding temperature of the water behind the dams (i.e., the reservoir water), but withdrew all other objections that were set forth in the May 2020 objection letter pertaining to other pollutants. Oregon DEQ stated that when it sent the May 2020 objection letter, the public comment period for the permits was not complete, the Columbia and Lower Snake Rivers Temperature TMDL had not been issued, and Oregon DEQ had not had an opportunity to review the conditions from Ecology’s CWA section 401 certification that would be included in the final permits. Considering the July 26, 2021 draft permit that EPA Region 10

² <https://www.epa.gov/system/files/documents/2022-04/r10-npdes-usace-bonneville-wa0026778-ecology-401-cert-2020.pdf>

³ <https://www.epa.gov/columbiariver/tmdl-temperature-columbia-and-lower-snake-rivers>

⁴ <https://www.epa.gov/system/files/documents/2022-04/r10-npdes-usace-lower-columbia-hydroelectric-facilities-odeq-cwa-objection-2021.pdf>

provided, Oregon DEQ concluded that only the discharges from the dams *related to temperature* “will affect the quality of Oregon’s waters and violate state water quality requirements in the State of Oregon.” Specifically, Oregon DEQ stated that “Oregon needs the permit to contain additional specificity to ensure its water quality standards will be achieved,” and “that absent conditions compelling [the Corps] to identify, evaluate, and adopt additional specific alternatives for reducing thermal loads in its operation of these facilities, Oregon does not have an adequate assurance that the requirements will attain Oregon’s water quality standards for temperature” (Oregon DEQ 2021).

Similar to the May 2020 objection letter, Oregon DEQ included example permit conditions in its October 2021 letter that would address its continued objection regarding temperature. The example conditions would require the Corps to conduct modeling of different reservoir levels (operating pools) and “develop and submit an implementation plan that would include a timeframe and milestones for implementing actions that EPA, Washington Ecology, and Oregon DEQ agree would provide substantial improvements to thermal conditions without impairing other requirements that [the Corps] must meet in operating the facility.” Oregon DEQ also stated that alternative language to the example conditions could be acceptable, “but some form of the analysis and evaluation provided for in these proposed conditions is necessary in order to make significant progress toward meeting Oregon’s water quality requirements” (Oregon DEQ 2021). Without including additional conditions, however, Oregon DEQ concluded that the permits do not ensure that Oregon’s temperature water quality standards are met. Oregon DEQ, therefore, maintained its objection from its May 2020 objection letter on the issuance of the permits *related to temperature* and requested a public hearing (Oregon DEQ 2021).

Under CWA section 401(a)(2), EPA is required to evaluate the objection(s) of a neighboring jurisdiction⁵ and submit an evaluation and recommendations with respect to the objection(s) at a public hearing conducted by the federal licensing or permitting agency. This is a separate and distinct obligation from EPA Region 10’s permitting authority under CWA section 402.

Information considered by EPA Region 10 in its evaluation and recommendations includes:

- May 2020 objection letter and October 2021 letter (Oregon DEQ 2020; 2021);
- CWA section 401 certifications for the four Lower Columbia River federal dam permits issued by Ecology on May 7, 2020 (Ecology 2020a; 2020b; 2020c; 2020d);
- Temperature water quality standards in the states of Washington (WAC 173-201a) and Oregon (OAR-340-041); and
- Implementation authorities for the Columbia and Lower Snake Rivers Temperature TMDL (EPA 2021g).

EPA Region 10 recommends that the WQAP conditions in the draft NPDES permits be modified to require the Corps to develop a plan that will ensure that both Washington and Oregon’s water quality standards for temperature are met. Further, EPA Region 10 recommends the WQAP conditions be modified to require that Ecology and Oregon DEQ

⁵ “Neighboring jurisdiction” means any other state or authorized tribe whose water quality the Administrator determines may be affected by a discharge for which a certification is granted pursuant to Clean Water Act section 401 (40 CFR 121.1).

review and approve the WQAP. EPA Region 10 recommends that the scope of Oregon DEQ’s review and approval of the WQAP be limited to actions that are needed to meet Oregon’s water quality standards for temperature, where those standards are different from Washington’s temperature water quality standards, in three areas that EPA Region 10 has identified:

- **13°C for the salmon and steelhead spawning through fry emergence designated use at RM 141.5-143.5 in the Lower Columbia River (to protect chum salmon spawning) from October 15 – March 31 below Bonneville Dam [OAR-340-041-0101-Table 101B; OAR 340-041-0028(4)(a)];**
- **“The seasonal thermal pattern in Columbia and Snake Rivers must reflect the natural seasonal thermal pattern.” [OAR 340-041-0028(4)(d)]; and**
- **“...waterbodies must have cold water refugia that are sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the waterbody.” [OAR 340-041-0028(4)(d)].**

EPA Region 10 recommends that Oregon DEQ’s WQAP review and approval authority apply only to actions related to meeting the three areas listed above. Where Washington’s water quality standards for temperature are substantially similar to Oregon’s, Oregon DEQ would not have review and approval authority on the WQAP.

This document discusses the history of EPA Region 10’s issuance of NPDES permits for these facilities, the CWA section 401(a)(2) process, and the process and rationale for EPA Region 10’s evaluation and recommendations with respect to Oregon DEQ’s continued objection to the issuance of the NPDES permits on the basis of temperature.

[Background](#)

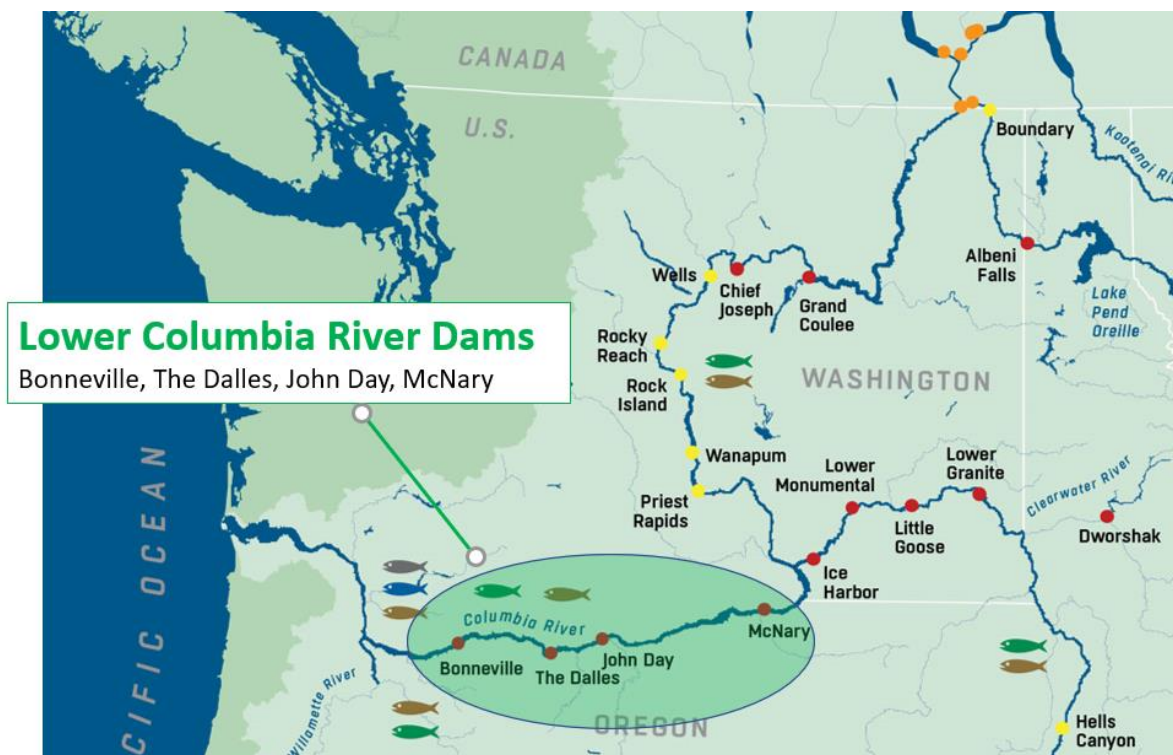
[Project Area](#)

The Bonneville Project, The Dalles Lock and Dam, John Day Project, and McNary Lock and Dam are located on the Columbia River between the states of Washington and Oregon. The middle of the Columbia River separates Washington and Oregon. **Table 1** and **Figure 1** below show the locations of each facility on the Lower Columbia River. The Lower Columbia River federal dams are shown in **Figure 1**.

Table 1. Facility Location

Facility (NPDES Permit No.)	Location	Approximate River Mile Discharge Location in Columbia River
Bonneville Project (WA0026778)	Cascade Locks, Oregon	140
The Dalles Lock and Dam (WA0026701)	The Dalles, Oregon	190
John Day Project (WA0026832)	Rufus, Oregon	214
McNary Lock and Dam (WA0026824)	Umatilla, Oregon	291

Figure 1. Dams in the Columbia River Basin



U.S. Army Corps of Engineers, Northwestern Division,
<https://www.nwd.usace.army.mil/Media/Images/igphoto/2002118951/>

The facilities, with the exception of The Dalles Lock and Dam⁶, discharge to both Oregon and Washington waters. Oregon DEQ has jurisdiction to issue NPDES permits to federal facilities in Oregon. However, Ecology does not have authority to issue such permits, and thus, EPA Region

⁶ The Dalles Lock and Dam discharges only to Washington waters.

10 is the permitting authority for federal facilities in Washington⁷. EPA Region 10's permits apply only to the outfalls discharging to Washington waters for the four federal dams. Oregon DEQ permits will apply to outfalls discharging to Oregon waters, which include outfalls at Bonneville Project, John Day Project, and McNary Lock and Dam.

Description of the CWA section 401(a)(2) process

Under CWA section 401(a)(1), any federally licensed or permitted activity that may result in a discharge into navigable waters requires the jurisdiction in which the discharge originates to either issue CWA section 401 certification or waive certification. Upon receipt of the permit or license application and CWA section 401 certification, the federal permitting or licensing agency must provide notification of such application and certification to EPA pursuant to CWA section 401(a)(2). The EPA Administrator has 30 days upon receiving this notification to make a determination as to whether the discharge may affect the water quality of any other jurisdiction, referred to as a “neighboring jurisdiction.”

If the EPA Administrator determines that the discharge may affect a neighboring jurisdiction's water quality, CWA section 401(a)(2) requires the EPA Administrator to notify that jurisdiction. The notified jurisdiction then has 60 days to determine whether the discharge will affect the quality of its waters so as to violate any of its water quality requirements. If the jurisdiction determines that the discharge will violate its water quality requirements, then it must notify the EPA Administrator and the federal licensing or permitting agency in writing of its objection to the issuance of the permit and request a public hearing on its objection.

Pursuant to CWA section 401(a)(2), once a neighboring jurisdiction requests a public hearing on its objection, the “licensing or permitting agency shall hold such a hearing.” The federal licensing or permitting agency must provide the EPA Administrator with notice of the hearing at least 30 days prior to the hearing. At the hearing, the EPA Administrator is required to submit an evaluation and recommendations with respect to the objection. The federal licensing or permitting agency, based upon the recommendations of the objecting jurisdiction, the EPA Administrator's evaluation and recommendations, and any additional evidence presented at the hearing, must condition the license or permit as may be necessary to ensure compliance with applicable water quality requirements. If the imposition of conditions cannot ensure compliance with applicable water quality requirements, then the license or permit cannot be issued. Water quality requirements are defined at 40 CFR § 121.1(n) as the applicable provisions of CWA sections 301, 302, 303, 306, and 307, and state or tribal regulatory requirements for point source discharges into waters of the United States.

Here, EPA Region 10 is the federal permitting agency for the Lower Columbia River federal dam NPDES permits. However, EPA Region 10 is also providing this written evaluation and

⁷ NPDES Memorandum of Agreement Between the State of Washington and United States Environmental Protection Agency Region 10, July 2018. <https://www.epa.gov/sites/default/files/2013-09/documents/wa-moa-npdes.pdf>

recommendations consistent with its role under CWA section 401(a)(2). The EPA Administrator’s role under CWA section 401(a)(2) has been delegated to EPA Region 10; as a result, EPA Region 10 is responsible for evaluating Oregon DEQ’s objection and providing recommendations.

Project History

On March 18, 2020, EPA Region 10 began the public comment period for the four Lower Columbia River federal dam NPDES permits (EPA, 2020a). At that time, EPA Region 10 requested certification of the permits from Ecology pursuant to CWA section 401(a)(1) (EPA 2020b). EPA Region 10 also determined that the permits may affect Oregon’s waters and, thus, notified Oregon DEQ as a neighboring jurisdiction pursuant to CWA section 401(a)(2) (EPA 2020c).

Ecology provided CWA section 401 certifications for the permits with conditions on May 7, 2020 (Ecology 2020a; 2020b; 2020c; 2020d). The temperature-related conditions in these certifications required the Corps to:

- Implement temperature control strategies and meet temperature load allocations from the Columbia and Lower Snake Rivers Temperature TMDL, once this TMDL is issued; and
- Develop and implement a WQAP that meets Washington’s temperature water quality standards within two years of the effective date of the permit to reduce temperatures behind reservoirs.

On May 15, 2020, Oregon DEQ notified EPA Region 10 that the discharges from the dams “will affect the quality of Oregon’s waters and violate state water quality requirements in the State of Oregon” and that it was objecting to the issuance of the permits and requesting a public hearing. In its May 2020 objection letter, Oregon DEQ provided example conditions that would address its objections regarding the following pollutants: temperature, TDG, biocriteria and statewide narrative criteria, and PCBs. The example permit conditions would require each facility to develop the following:

- Temperature Monitoring Plan (TMP) with monitoring and annual water quality reports, and implementation of the plan after Oregon DEQ approval;
- Temperature Adaptive Management Plan with measures to attain TMDL load allocations, if monitoring indicates load allocations are not being attained, and implementation of the plan after Oregon DEQ approval;
- Plan to protect cold water refugia locations from impingement by thermal plumes from the dam operations, and implementation of the plan after Oregon DEQ approval;
- TDG Monitoring Plan and annual water quality reports, and implementation of the plan after Oregon DEQ approval;
- TDG Adaptive Management Plan, if monitoring indicates the TDG and TMDL load allocation are not being met, and implementation of the plan after Oregon DEQ approval;

- Cooling water intake structure (CWIS) annual report and operation and maintenance manual⁸;
- CWIS Adaptive Management Plan, if Oregon DEQ does not agree with EPA’s best technology available determination, and implementation of the plan after Oregon DEQ approval⁸;
- PCB Plan with monitoring, a list of sources that would come into contact with water and be discharged, and actions the facility is taking to prevent, track, and address PCB releases;
- PCB annual reports describing implementation of the PCB Plan and an evaluation of the effectiveness of the actions; and
- PCB Adaptive Management Plan, if actions are not effective in addressing PCB releases, and implementation of the plan after Oregon DEQ approval (Oregon DEQ 2020).

On May 18, 2020, EPA Region 10 issued the Columbia and Lower Snake Rivers Temperature TMDL⁹ (EPA 2021g). The TMDL included temperature targets (wasteload allocations and load allocations) for the federal dams. Wasteload allocations at the dams pertain to point source discharges of cooling water from outfalls. Load allocations at the dams pertain to nonpoint source discharges related to reducing water temperatures behind reservoirs. EPA Region 10 held a second public comment period from January 15, 2021 through February 16, 2021 for the draft NPDES permits that incorporated the wasteload allocations established in the TMDL (EPA 2021a). EPA Region 10 took comment on proposed heat limits in the permits consistent with wasteload allocations in the TMDL (EPA 2021f).

On July 26, 2021, EPA Region 10 transmitted a draft final NPDES permit for Bonneville Project to Oregon DEQ. The proposed permit conditions for temperature from Ecology’s CWA section 401 certification in the draft final permit included the following:

1. The permittee must implement temperature control strategies and meet the load allocations in the Columbia and Lower Snake Rivers Temperature TMDL (RCW 90.48.080 and WAC 173-201A-510(5)).
2. The permittee must consult with Ecology to develop a water quality attainment plan (WQAP) per the conditions below:
 - a) The WQAP shall include all applicable requirements in WAC 173-201A-510(5) Compliance schedule for Dams, and must include a detailed strategy for achieving Washington’s water quality standards for temperature and associated designated uses, including but not limited to, conditions in fish bypass systems of the dam.
 - b) The permittee must provide the scope of the WQAP to Ecology for review one year after the permit effective date.

⁸ Example conditions for CWIS are not included in the CWA section 401 certification for McNary Lock and Dam.

⁹ <https://www.epa.gov/columbiariver/tmdl-temperature-columbia-and-lower-snake-rivers>

- c) The permittee must provide the final WQAP to Ecology for approval within two years of the permit effective date.
- d) The permittee must submit a progress report to Ecology for approval within six years of the effective permit date. The permittee must submit a summary report to Ecology for approval within nine years of the permit effective date and prior to the end of the ten-year dam compliance period.

The draft final permit also incorporated other conditions from Ecology’s CWA section 401 certification that addressed TDG, biocriteria and statewide narrative criteria, and PCBs.

On October 8, 2021, Oregon DEQ sent a follow-up letter to EPA Region 10 to clarify that since the Lower Columbia River federal dam permits would include Ecology’s CWA section 401 certification conditions, Oregon DEQ was withdrawing its objection for all pollutants except temperature. Oregon DEQ stated that when it sent the May 2020 objection letter, the public comment for the permits was not complete, the Columbia and Lower Snake Rivers Temperature TMDL had not been issued, and Oregon DEQ had not had an opportunity to review the conditions from Ecology’s CWA section 401 certification that would be included in the final permits.

However, Oregon DEQ concluded that *for temperature*, the discharges from the dams “will affect the quality of Oregon’s waters and violate state water quality requirements in the State of Oregon” and that “a general requirement to meet the load allocations in the Columbia River Temperature TMDL is insufficient for Oregon to conclude that the permit requirements and conditions will attain the State of Oregon’s water quality standards” for temperature. Further, “Oregon needs the permit to contain additional specificity to ensure its water quality standards [for temperature] will be achieved,” and “that absent conditions compelling [the Corps] to identify, evaluate, and adopt additional specific alternatives for reducing thermal loads in its operation of these facilities, Oregon does not have an adequate assurance that the requirements will attain Oregon’s water quality standards for temperature.” Similar to its May 2020 objection letter, Oregon DEQ provided example conditions that would resolve its objection and specifically stated that an alternative condition could satisfy its objection. Oregon DEQ, therefore, reiterated its objection and request for a public hearing (Oregon DEQ 2021).

Oregon’s Objection Related to Temperature

As explained above, Oregon DEQ’s May 2020 objection letter included the following example conditions for temperature:

- Temperature Monitoring Plan (TMP) with monitoring and annual water quality reports, and implementation of the plan after Oregon DEQ approval;
- Temperature Adaptive Management Plan with measures to attain TMDL load allocations, if monitoring indicates the load allocations are not being attained, and implementation of the plan after Oregon DEQ approval; and

- Plan to protect cold water refugia locations from impingement by thermal plumes from the dam operations, and implementation of the plan after Oregon DEQ approval (Oregon DEQ, 2020).

In its October 2021 letter, Oregon DEQ clarified its objection on temperature since the following actions had occurred since the May 2020 objection letter: public comment periods for the draft permits were complete, the Columbia and Lower Snake Rivers Temperature TMDL was issued by EPA Region 10, and Oregon DEQ had an opportunity to review the conditions from Ecology's CWA section 401 certification that would be included in the final Lower Columbia River dam permits.

Oregon DEQ's October 2021 letter states that there has been inadequate action by the Corps to address high water temperatures from reservoirs in the Lower Columbia River federal dams. Without conditions in the permits to compel the Corps to identify, evaluate, and adopt additional specific alternatives, Oregon DEQ states there is inadequate assurance that Oregon's water quality requirements for temperature will be met, even though the permits will contain conditions that require the facilities to meet the load allocations of the Columbia and Lower Snake Rivers Temperature TMDL and to develop and implement a WQAP (Oregon DEQ 2021).

Oregon DEQ's October 2021 letter states that it "expects these permits to meet federal requirements for complying with applicable water quality standards and TMDL load allocations for temperature in the mainstem Columbia River," and "that the requirements are in place to protect fish and aquatic life." Oregon DEQ concluded that "EPA must incorporate specific requirements for the development and implementation of actions to reduce temperature increases resulting from the operations of [these facilities], in order to ensure that applicable Oregon's water quality standards are met" (Oregon DEQ 2021).

In its October 2021 letter, Oregon DEQ describes two CWA section 401 certification conditions from Ecology that address Washington's temperature requirements and will be included as conditions in the final permits: the development of a WQAP to implement temperature control strategies and a requirement to meet the load allocations in the Columbia and Lower Snake Rivers Temperature TMDL. Oregon DEQ further explains that the permits must include additional specificity to ensure that Oregon's temperature water quality standards will be achieved because of inadequate progress by the Corps to address high water temperatures from the dams and because of worsening conditions in the Columbia River. Oregon DEQ states that the Corps must identify, evaluate, and adopt specific alternatives for reducing thermal loads from the federal dams.

Finally, Oregon DEQ provides example permit conditions that it asserts would ensure discharge from the permitted activity satisfies Oregon's temperature water quality requirements. The example conditions are shown in **Figure 2**.

Figure 2. Oregon DEQ Example Conditions for Temperature from October 2021 Letter (Oregon DEQ 2021)

- I. Initial Study of Temperature. Impacts of Facility Operations. Within the first year of receipt of the NPDES permit for the Bonneville Project² USACE shall study alternatives actions to reduce thermal loading resulting from the operation of the facility. The study shall focus particularly on water temperatures during the period from July 15 to September 30, but also shall include analysis for other times of the year that are during key periods of salmonid migration. Such actions must include, but are not limited to, changes in operating pools during this period (limited by minimum operating pool). USACE must submit the results of that analysis to EPA, Washington Ecology, and Oregon DEQ within this one-year period. With regard to changes in operating pools, the study shall include, but is not limited to, the following components:
 - A. An estimate of how much the surface area of the reservoir would change when operating the reservoir at the Minimum Operating Pool;
 - B. An analysis of how the reduction in surface area and reduction of water residence time in the reservoir would affect discharge temperatures;
 - C. An analysis of the extent to which changes in reservoir pool elevations would affect the frequency, duration, and magnitude of state water quality standards exceedances in the lower Columbia River; and
 - D. An analysis of operational tradeoffs resulting from lower operating pools, and whether such changes would significantly impair other goals, including, but not limited to:
 - i. The ability of USACE to meet operational needs for congressionally authorized purposes.
 - ii. The potential effects of such changes on USACE’s ability to meet other federal requirements, including requirements under the federal Endangered Species Act for spill.
- II. Development and Submission of an Implementation Plan. Within one year of submitting the Initial Study of Temperature Impacts, USACE must develop and submit to EPA, the Washington Department of Ecology and Oregon DEQ an implementation plan (for EPA’s review and approval). The Implementation Plan must include a timeframe and milestones for implementing actions that EPA, Washington Ecology and Oregon DEQ have agreed will provide substantial improvements to thermal conditions without impairing other requirements that USACE must meet in operating the facility. The Implementation Plan must include:
 - A. Provisions for adequate monitoring of water temperature over the term of the permit.
 - B. Provisions for evaluating the thermal benefits achieved and any resultant effects from the change in operations.
- III. Following EPA review and approval, USACE will carry out the implementation plan, and will provide regular reporting to EPA, Washington Ecology and Oregon DEQ regarding changes in thermal loading resulting from the plan.

Oregon DEQ’s October 2021 letter also states that “alternative language to these conditions could be acceptable to Oregon DEQ, but some form of the analysis and evaluation provided for in these proposed conditions is necessary in order to make significant progress toward meeting Oregon’s water quality requirements” (Oregon DEQ 2021).

EPA Region 10's Evaluation and Recommendations

EPA Region 10 considered the following information in its evaluation and recommendations:

- May 2020 objection letter and October 2021 letter (Oregon DEQ 2020; 2021);
- CWA section 401 certifications for the four Lower Columbia River federal dam permits issued by Ecology on May 7, 2020 (Ecology 2020a; 2020b; 2020c; 2020d);
- Temperature water quality standards in the states of Washington (WAC 173-201a) and Oregon (OAR-340-041); and
- Implementation authorities for the Columbia and Lower Snake Rivers Temperature TMDL (EPA 2021g).

Recommendation

EPA Region 10 recommends that the WQAP conditions in the draft NPDES permits be modified to require the Corps to develop a plan that will ensure that both Washington and Oregon's water quality standards for temperature are met. Further, EPA Region 10 recommends the WQAP conditions be modified to require that Ecology and Oregon DEQ review and approve the WQAP. EPA Region 10 recommends that the scope of Oregon DEQ's review and approval of the WQAP be limited to actions that are needed to meet Oregon's water quality standards for temperature, where those standards are different from Washington's temperature water quality standards, in three areas that EPA Region 10 has identified:

- **13°C for the salmon and steelhead spawning through fry emergence designated use at RM 141.5-143.5 in the Lower Columbia River (to protect chum salmon spawning) from October 15 – March 31 below Bonneville Dam [OAR-340-041-0101-Table 101B; OAR 340-041-0028(4)(a)];**
- **“The seasonal thermal pattern in Columbia and Snake Rivers must reflect the natural seasonal thermal pattern.” [OAR 340-041-0028(4)(d)]; and**
- **“...waterbodies must have cold water refugia that are sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the waterbody.” [OAR 340-041-0028(4)(d)].**

EPA Region 10 recommends that Oregon DEQ's WQAP review and approval authority apply only to actions related to meeting the three areas listed above. Where Washington's water quality standards for temperature are substantially similar to Oregon's, Oregon DEQ would not have review and approval authority on the WQAP.

In addition to the information listed above, EPA Region 10's recommendations are based on the following considerations and factors that EPA Region 10 evaluated:

1. **Ecology's CWA section 401 certification conditions require the Corps to meet TMDL load allocations. The specific actions, studies, and timelines to meet TMDL**

load allocations are not specified in these conditions, and will be determined during TMDL implementation discussions led by Oregon and Washington.

Ecology’s CWA section 401 certification conditions require the federal dam facilities to meet the load allocations for the Columbia and Lower Snake Rivers Temperature TMDL (Ecology 2020a; 2020b; 2020c; 2020d). As noted by Oregon DEQ, however, specific actions, studies, and timelines to meet the load allocations are not detailed in Ecology’s CWA section 401 certification conditions (Oregon DEQ 2021). Instead, these actions will be determined during TMDL implementation discussions that will be led by Oregon DEQ and Ecology, since they are the regulatory authorities responsible for TMDL implementation and the development of a TMDL implementation plan.

The load allocations in the Columbia and Lower Snake Rivers Temperature TMDL allow the dams to increase temperature from their operations by 0.1°C in the tailraces (downstream of the dam) (EPA 2021g). Although the TMDL estimated the reductions needed at each dam location to meet the load allocation, and those estimates account for migration and Oregon’s spawning criteria, the TMDL does not specify the actions needed to reduce water temperature, meet load allocations, and attain Oregon’s water quality requirements.

The Columbia and Lower Snake Rivers Temperature TMDL notes that implementation “is the responsibility of state governments because states with applicable water quality standards retain sole authority for development and oversight of implementation plans to meet the wasteload allocations and load allocations included in the TMDL” (EPA 2021g). Oregon’s authority to implement TMDLs is contained within its regulations at OAR 340-042-0040(4)(1). Ecology and Oregon DEQ have initiated discussions with the public on TMDL implementation. Ecology and Oregon DEQ are leading the development of the TMDL implementation plans, as explained in Oregon DEQ’s October 2021 letter.

Since both Ecology and Oregon DEQ are responsible for TMDL implementation, it is EPA Region 10’s view that both Ecology and Oregon DEQ should have review and approval authority over plans that will be used to meet load allocations from the Columbia and Lower Snake Rivers Temperature TMDL. The WQAP required in the permits will identify actions needed to address temperature and meet the load allocations in the TMDL. Therefore, the WQAP condition in the permits should align with the TMDL implementation process by explicitly requiring the WQAP to meet both states’ standards for temperature and providing Oregon DEQ review and approval authority over the WQAP in circumstances where Oregon’s water quality standards are different than Washington’s in the three areas EPA Region 10 has identified.

- 2. Ecology’s CWA section 401 certification conditions requiring a WQAP provide a broad framework to ensure Washington’s temperature water quality standards are met, but do not require that Oregon’s temperature water quality standards are met. Nor does the WQAP require specific actions and studies (Ecology, 2020a; 2020b; 2020c; 2020d). The specific actions, studies, and timelines to address temperature in the WQAP will be determined during discussions and reviews of the WQAP.**

The broad framework of the WQAP requires the federal dams to meet Washington’s temperature water quality standards. However, the WQAP framework does not guarantee that specific actions will be included to meet Oregon’s temperature water quality standards in a timely and substantive way. Nor does the WQAP require that Oregon’s temperature water quality standards are met.

Adding an additional permit condition that the WQAP must meet Washington *and Oregon’s* water quality standards will ensure that Oregon’s water quality requirements must be considered and implemented in the WQAP, where Oregon’s water quality standards are different from Washington’s in the three areas EPA Region 10 has identified. Further, adding an additional permit condition that the WQAP must be submitted to Ecology *and Oregon DEQ* for review and approval will enable Oregon DEQ to determine whether its standards are met by the proposed WQAP studies and actions in the three areas EPA Region 10 has identified. Oregon DEQ is in the best position to determine whether the proposed studies and actions in the WQAP will ensure that the discharges meet Oregon’s temperature water quality requirements, in the three areas EPA Region 10 has identified where Oregon’s water quality standards for temperature are different from Washington’s.

- 3. Oregon and Washington’s temperature water quality standards are similar. However, the differences between the two states’ water quality standards warrant additional permit conditions to ensure Oregon’s water quality requirements for temperature are met. Oregon DEQ is the more appropriate entity to determine the specific actions necessary to meet Oregon’s water quality requirements in the WQAP, where Oregon’s water quality requirements for temperature are different from Washington’s.**

Ecology’s CWA section 401 certification conditions require that the WQAP meet Washington’s temperature water quality standards (Ecology 2020a; 2020b; 2020c; 2020d). This does not ensure that Oregon’s water quality standards for temperature will be met. Although Washington and Oregon’s water quality standards for temperature applicable to the Lower Columbia River are similar, there are some distinct differences, as outlined below. Appendix A of the Columbia and Lower Snake Rivers Temperature TMDL (EPA 2021g) describes Washington’s and Oregon’s water quality standards for temperature in the Lower Columbia River. EPA Region 10 analyzed applicable water quality standards from June to October, the time period of the TMDL, when high temperatures occur in the Lower Columbia River and can impact aquatic life uses.

Washington’s and Oregon’s temperature water quality standards are substantially similar in that both include criteria of 20°C [Washington Administrative Code (WAC) 173-201A-602-Columbia River, Note 1; Oregon Administrative Rules (OAR) 340-041-0028(4)(d)] with the same allowable incremental increase of 0.3°C [WAC 173-201A-320; OAR 340-041-0028(12)(b)(B)].

However, EPA Region 10 identified three areas with substantial differences between the two states’ temperature water quality standards applicable to the Lower Columbia River including the following:

- Oregon has a numeric criteria of a 7-day average daily maximum of 20°C for salmon and steelhead migration corridors designated use [OAR-340-041-0101-Table 101B; OAR 340-041-0028(4)(d)] and 13°C for the salmon and steelhead spawning through fry emergence designated use at RM 141.5-143.5 in the Lower Columbia River (to protect chum salmon spawning) from October 15 – March 31 below Bonneville Dam [OAR-340-041-0101-Table 101B; OAR 340-041-0028(4)(a)]; Washington has a numeric criterion of a 1-day daily maximum of 20°C for spawning and rearing uses for aquatic life [WAC 173-201A-602-Columbia River Note 1].
- Oregon’s migration corridor criterion includes the following supplementary narrative temperature criterion, “The seasonal thermal pattern in Columbia and Snake Rivers must reflect the natural seasonal thermal pattern.” [OAR 340-041-0028(4)(d)]; Washington’s water quality standards do not include this criterion.
- Oregon also includes the following narrative temperature criterion: “...waterbodies must have cold water refugia that are sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the waterbody.” [OAR 340-041-0028(4)(d)]; Washington’s water quality standards do not include this criterion.

Ecology’s CWA section 401 certifications require that the WQAP meet Washington’s water quality standards for temperature. In some cases, Washington’s temperature water quality standards are substantially similar and/or slightly more protective than Oregon’s. For instance, Washington’s water quality standard of 20°C as a 1-day daily maximum, is more stringent than Oregon’s water quality standard of 20°C as a 7-day average daily maximum.

However, Oregon’s temperature water quality standards include provisions that are not in Washington’s water quality standards and would not be addressed by the WQAP, unless additional provisions are added that require the WQAP to ensure compliance with *Oregon’s* water quality requirements for temperature. For example, Washington’s criterion for spawning and rearing is 20°C as a 1-day daily maximum, while Oregon has a specific 13°C 7-day average daily maximum criterion to protect the designated use of salmon and steelhead spawning through fry emergence that applies to a specific river reach (RM 141.5-143.5) below the Bonneville Dam from mid-October to the end of March. Further, narrative provisions related to the natural thermal pattern and sufficient cold water refugia are not included in Washington’s water quality standards.

Therefore, to ensure that both states’ water quality standards for temperature are met, the WQAP conditions should be revised to require that the Corps develop and implement a WQAP that meets both *Washington and Oregon’s* temperature water quality standards in this shared water, consistent with CWA requirements. In addition, requiring Oregon DEQ to review and approve the plan allows Oregon DEQ, rather than Ecology, to assess whether the actions are sufficient to meet Oregon’s water quality requirements, where Oregon’s water quality requirements for temperature are different from Washington’s in the three areas EPA Region 10 has identified. Oregon DEQ’s review and approval of the WQAP, however, would not apply to where Washington’s and Oregon’s water quality standards for temperature are substantially similar.

4. The example conditions proposed by Oregon DEQ in its October 2021 letter are unnecessarily limiting.

EPA Region 10 considered the example conditions that Oregon DEQ provided in its October 2021 letter, which would require the Corps to study lower operating pools. However, this study is not the only action that could be taken by the Corps to ensure compliance with applicable temperature water quality standards and the TMDL load allocations. While it is possible that Lower Columbia River federal dams running at lower operating pools will assist in meeting the load allocations in the TMDL and both states' water quality standards for temperature, there could be other actions that could achieve this outcome. As such, it is EPA Region 10's view that it would be premature to require the Corps to focus on only one possible solution where a suite of actions may better meet Oregon's water quality requirements for temperature and decrease water temperatures in the Lower Columbia River. Therefore, EPA Region 10 does not recommend adopting the example conditions in Oregon DEQ's October 2021 letter, as these conditions are unnecessarily limiting. However, EPA Region 10's recommendation does not preclude the Corps from undertaking a study of lower operating pools, as proposed by Oregon DEQ.

Conclusion

Given these considerations, EPA Region 10's recommendation is that the WQAP conditions in the draft NPDES permits for the federal dams be modified to require the Corps to develop a plan that will meet both *Washington's and Oregon's* water quality standards for temperature, and also require that *Ecology and Oregon DEQ* review and approve the WQAP, as discussed above. EPA Region 10 further recommends that the scope of Oregon DEQ's review and approval of the WQAP be limited to actions to meet Oregon's water quality standards for temperature, where those standards are different from Washington's temperature water quality standards in the following three areas:

- 13°C for the salmon and steelhead spawning through fry emergence designated use at RM 141.5-143.5 in the Lower Columbia River (to protect chum salmon spawning) from October 15 – March 31 below Bonneville Dam [OAR-340-041-0101-Table 101B; OAR 340-041-0028(4)(a)];
- “The seasonal thermal pattern in Columbia and Snake Rivers must reflect the natural seasonal thermal pattern.” [OAR 340-041-0028(4)(d)]; and
- “...waterbodies must have cold water refugia that are sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the waterbody.” [OAR 340-041-0028(4)(d)].

EPA Region 10 recommends that Oregon DEQ would not have review and approval authority of the WQAP in circumstances where Oregon's and Washington's temperature water quality standards are substantially similar.

References

EPA 2020a. NPDES Permit Fact Sheet, U.S. Army Corps of Engineers Lower Columbia River Hydroelectric Facilities. March 18, 2020. <https://www.epa.gov/sites/default/files/2020-03/documents/r10-npdes-usace-lower-columbia-hydroelectric-facilities-fact-sheet-2020.pdf>

EPA 2020b. Letter from Susan Poulson, EPA Region 10, to Vince McGowan, Washington Department of Ecology re: Public Notice of Draft Permit for the Federal Hydroelectric Generating Facilities on the Lower Columbia River and Lower Snake River in Washington and Request for Final Clean Water Action Section 401 Certification. March 18, 2020.

EPA 2020c. Letter from Susan Poulson, EPA Region 10, to Jennifer Wigal, Oregon Department of Environmental Quality re: Notification of 401(a)(2) requirements for Bonneville Project, WA0026778; The Dalles Lock and Dam, WA0026701; John Day Project, WA0026832; McNary Lock and Dam, WA0026824. March 18, 2020.

EPA 2021a. NPDES Permit Fact Sheet, U.S. Army Corps of Engineers Lower Columbia River Hydroelectric Facilities. January 15, 2021. <https://www.epa.gov/sites/default/files/2021-01/documents/r10-npdes-usace-lower-columbia-hydroelectric-facilities-fact-sheet-2021.pdf>

EPA 2021b. Draft NPDES Permit, Bonneville Project, Lower Columbia River. January 15, 2021. <https://www.epa.gov/sites/default/files/2021-01/documents/r10-npdes-usace-bonneville-wa0026778-draft-permit-2021.pdf>

EPA 2021c. Draft NPDES Permit, The Dalles Lock and Dam, Lower Columbia River. January 15, 2021. <https://www.epa.gov/sites/default/files/2021-01/documents/r10-npdes-usace-dalles-wa0026701-draft-permit-2021.pdf>

EPA 2021d. Draft NPDES Permit, John Day Project, Lower Columbia River. January 15, 2021. <https://www.epa.gov/sites/default/files/2021-01/documents/r10-npdes-usace-john-day-wa0026832-draft-permit-2021.pdf>

EPA 2021e. Draft NPDES Permit, McNary Lock and Dam, Lower Columbia River. January 15, 2021. <https://www.epa.gov/sites/default/files/2021-01/documents/r10-npdes-usace-mcnary-wa0026824-draft-permit-2021.pdf>

EPA 2021f. Public Comments Received on EPA's Draft NPDES Permits for Federal Hydroelectric Projects in the Lower Columbia and Snake Rivers, January 15 through February 16, 2021. <https://www.epa.gov/sites/default/files/2021-03/documents/r10-npdes-usace-lower-columbia-snake-river-hydroelectric-facilities-public-comments-2021.pdf>

EPA 2021g. Columbia and Lower Snake River Temperature TMDL. August 13, 2021. <https://www.epa.gov/columbiariver/tmdl-temperature-columbia-and-lower-snake-rivers>

Oregon DEQ 2020. Letter from Richard Whitman, Oregon DEQ, to Chris Hladick, EPA re: Notification to U.S. Environmental Protection Agency (EPA) Pursuant to 401(a)(2) for

EPA Region 10 401(a)(2) Evaluation and Recommendations: Proposed NPDES permits for Lower Columbia River Federal Hydroelectric Projects – June 7, 2022

Bonneville Project, WA0026778; The Dalles Lock and Dam, WA0026701; John Day Project, WA0026832; and McNary Lock and Dam, WA0026824. May 15, 2020.

Oregon DEQ 2021. Letter from Richard Whitman, Oregon DEQ, to Michelle Pirzadeh, EPA re: Pursuant to Section 401(a)(2) to Permits for Bonneville Project, WA0026778; The Dalles Lock and Dam, WA0026701; John Day Project, WA0026832; and McNary Lock and Dam, WA0026824. October 8, 2021. <https://www.epa.gov/system/files/documents/2022-04/r10-npdes-usace-lower-columbia-hydroelectric-facilities-odeq-cwa-objection-2021.pdf>

Oregon DEQ. Oregon Administrative Rules 340-041. Water Quality Standards. <https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=1458>

Washington Department of Ecology 2020a. Letter from Vincent McGowan, Washington Department of Ecology, to Susan Poulson, EPA re: Clean Water Act Section 401 Final Certification EPA National Pollutant Discharge Elimination System Permit No. WA0026778, USACE - Bonneville Project. May 7, 2021. <https://www.epa.gov/system/files/documents/2022-04/r10-npdes-usace-bonneville-wa0026778-ecology-401-cert-2020.pdf>

Washington Department of Ecology 2020b. Letter from Vincent McGowan, Washington Department of Ecology, to Susan Poulson, EPA re: Clean Water Act Section 401 Final Certification EPA National Pollutant Discharge Elimination System Permit No. WA0026701, USACE - The Dalles Lock and Dam. May 7, 2021.

Washington Department of Ecology 2020c. Letter from Vincent McGowan, Washington Department of Ecology, to Susan Poulson, EPA re: Clean Water Act Section 401 Final Certification EPA National Pollutant Discharge Elimination System Permit No. WA0026832, USACE - John Day Project. May 7, 2021.

Washington Department of Ecology 2020d. Letter from Vincent McGowan, Washington Department of Ecology, to Susan Poulson, EPA re: Clean Water Act Section 401 Final Certification EPA National Pollutant Discharge Elimination System Permit No. WA0026824, USACE - McNary Lock and Dam. May 7, 2021.

Washington Department of Ecology. Washington Administrative Code 173-201A. <https://apps.leg.wa.gov/WAC/default.aspx?cite=173-201A>