



August 18, 2020

Submitted via E-Mail

Mr. Daniel Opalski
U.S. Environmental Protection Agency, Region 10
Mail Code 10-C09
1200 Sixth Ave
Seattle, WA 98101
ColumbiaRiverTMDL@epa.gov

Re: Total Maximum Daily Load for Temperature in the Columbia and Lower Snake Rivers

Dear Mr. Opalski:

The Northwest Hydroelectric Association (NWAHA) welcomes the opportunity to comment on the Total Maximum Daily Load (TMDL) for Temperature in the Columbia and Lower Snake Rivers issued by the U.S. Environmental Protection Agency (EPA) on May 18, 2020. This comment period is critically important, particularly given the time constraint placed on EPA to issue the TMDL. The TMDL covers almost 900 miles, with both river segments encompassing many point and non-point source dischargers from a wide variety of facilities and operations. Moreover, these rivers are significantly influenced by external factors. NWAHA thanks EPA in advance for its careful consideration of these comments.

NWAHA's Interest in the TMDL

NWAHA members own and operate hydropower projects on both of these rivers and thus are directly affected by the TMDL. Our members have long partnered with other stakeholders and regulatory agencies to engage in efforts to protect water quality and aquatic life in these watersheds. They are at the forefront of habitat restoration and other activities to promote the recovery of many aquatic species; the vitality of these species is often the foundation of state water quality standards, including those established in Washington and Oregon for temperature.

More broadly, NWAHA is dedicated to the promotion of hydropower in the Northwest region. Hydropower is a clean, efficient source of energy. NWAHA's membership represents public and private utilities; independent developers and energy producers; manufacturers and distributors; local, state, and regional governments including water and irrigation districts; consultants; and contractors. Collectively, the hydropower sector supplies a significant portion of the electricity generation in both Oregon and Washington.

NWAHA is uniquely suited to comment on the impact of hydropower facilities on river temperature, the measures employed by hydropower facilities to address

BRENNA VAUGHN
Executive Director

PO Box 441
Lake Oswego, OR 97034

(503) 502-7262
(866) 329-6525 Fax

www.nwhydro.org
brenna@nwhydro.org

*For a list of Directors,
please visit our website.*

temperature impacts, and the feasibility of implementing temperature controls at hydropower facilities. Our members have a direct, concrete stake in the final load allocations and waste load allocations of the TMDL, and will play a vital role in helping state and federal agencies implement the TMDL. NWA's comments below are also supported by the National Hydropower Association.

Overview of TMDL

In line with a schedule provided by court order, EPA issued the current TMDL for public comment on May 18, 2020. The TMDL is no small undertaking, analyzing hundreds of miles of river from the Canadian and Idaho borders of Washington to the Pacific Ocean. The river segments within the TMDL are subject to a series of numeric temperature criteria varying by several degrees Celsius for summer months. In all segments, however, the TMDL and the underlying state water quality standards permit a cumulative increase of 0.3°C above the basic criteria. The TMDL splits this allowance into three aggregate allocations: (1) a 0.1°C waste load allocation for existing and future point sources, (2) temperature impacts from tributaries, and, most importantly for NWA's purposes, (3) impacts from dams as non-point sources.

The TMDL Appropriately Recognizes the Infeasibility of Addressing Temperature Through a TMDL

The TMDL acknowledges that sources of heat loading outside its allocation structure are significant, if not the most significant, influences on river temperatures during the critical summer months. Chief among these sources are elevated air temperatures and heat loading upstream in either Canada or Idaho. NWA agrees that it is entirely reasonable and appropriate for EPA to recognize that, due to these external factors, it is impossible to achieve the applicable numeric water quality standards for temperature in the Snake and Columbia Rivers.

Ignoring that fact would put the TMDL on unstable ground. At least one federal court has held that a TMDL should not be designed so that it is "inequitable" to downstream jurisdictions within the study area, and the same court held that a TMDL should not be "impractical" or "impossible." Imposing a heavier burden on regulated entities in Washington and Oregon on account of actions in Canada and Idaho would be both inequitable and impractical.

The TMDL is just as poor a means of addressing long-term trends in air temperature. The Clean Water Act provides no means for curbing global phenomena like climate change or even for curbing regional greenhouse gas emissions that might contribute to climate change. At best, an allocation for increased air temperatures would be a largely symbolic gesture. Neither EPA nor the state implementation agencies could leverage the Clean Water Act to require reduced air emissions, and no enforcement mechanism exists to address exceedances of an allocation for air temperature. The U.S. Court of Appeals for the Ninth Circuit has looked unfavorably on allocation structures that are "unenforceable."

The TMDL Appropriately Recognizes the Minimal Role of Dams in Contributing to Elevated Temperatures or to Impairing Designated Uses

A. Dams Have Minimal Impact on Temperature

NWHA supports the recognition in the TMDL that dams play a minimal role in any temperature criteria exceedances. Evidence compiled by the National Oceanic and Atmospheric Administration (NOAA) indicates that parts of the Lower Snake River routinely experienced temperatures between 20°C-25°C in the 1950s, far earlier than recent concerns over the abundance of salmon or other species.

Dams within the Columbia and Snake River basins have been demonstrated to moderate extreme water temperatures by shifting some of the summer heat into the fall and thereby reducing temperature variability. Further, temperature levels before and after dam construction have been demonstrated to remain steady or even decrease, even as air temperatures increase. In many instances, dams reduce water temperatures by storing cooler water and releasing it when ambient temperatures have increased. That might often be the case, for instance, when ambient temperatures begin to increase in early summer months, and while the reverse scenario might sometimes occur (with stored water being warmer), evidence indicates that any such effect is not a key reason why water quality standards might be exceeded.

Relying on RBM-10 modeling conducted by the U.S. Army Corps of Engineers, NOAA concluded that breaching dams along the Lower Snake River would have a near-trivial impact on temperature exceedances. The “near-natural condition[s]” reduced exceedances of a 20°C standard in that reach by only 5 of 64 days. If that same basic effect holds for other reaches with lower numeric criteria, it seems likely that the number of exceedances might be reduced even less (and perhaps not at all).

EPA’s conclusion that temperature exceedances are largely driven by factors other than dams should be reflected throughout the TMDL. As discussed in more detail below, the manner in which some data is presented and certain assumptions made by EPA are inconsistent with this important conclusion.

B. Dams Have Minimal Impact on Aquatic Life Uses

The temperature criteria established by Washington and Oregon were driven in large part by the goal of protective aquatic life, and specifically salmon. However, there is evidence that the salmon are not adversely impacted by the temperature exceedances, and certainly not by the operation of dams. Different salmon migrate at different times of year, and in at least some dammed stretches of the Columbia River, according to NOAA, the critical period for salmon migration—and temperature impacts on that migration—is the month of June.

The TMDL does not formally study this month. Yet it might be precisely when the release of cooler water from dam impoundments helps to ameliorate rising ambient temperatures. In fact, the TMDL illustrates that in July, the current temperature in the Columbia River is lower than that during the free-flowing scenario for many of the river segments; it is not until the confluence of the Snake River that the temperature exceeds the water quality standard. NOAA also found

that some species have shown abundance above historic levels in some recent years. In fact, a recent NOAA study found that 2014 was the best year for salmon since 1938.

NWHA notes there is some evidence of adult salmon deaths occurring in 2015 during the months of June or July. However, in recognition of the fact that dams have minimal effects during those months, NOAA concluded that the dams had no contribution to those salmon deaths. Rather, the agency found that it was natural sources of heat that caused the issue. In fact, cool water discharges from stratified hydroelectric power project reservoirs were one of the short-term measures employed as part of the emergency response strategy.

Even if dams were contributing to exceedances of the standard, those exceedances are not causing adverse impact on aquatic life. NOAA studies have concluded that adverse impacts to salmon occur when water temperature reaches 21-22 degrees. Both the Washington and Oregon water quality standards are below this number. Thus, the standard is more stringent than needed to protect salmon. This is consistent with the experience in the rivers.

C. Dams Provide Vital Support to Other Waterbody Uses

Dams are also vital to realizing other uses of the Columbia and Snake Rivers. Dams of course provide an exceptionally large share of clean electricity for the Pacific Northwest; in Washington, for example, hydropower facilities produced nearly five times as much net generation as the next closest source (natural gas) during March 2020. As a non-emitting source of electricity, the hydropower projects of NWHA members will also be particularly important to achieving Washington's goal of one hundred percent clean electricity by 2045.

Beyond their core hydroelectric function, dams support other designated uses. Reservoirs provide recreational and boating opportunities to the public. Dams and their storage also support water supply or storage for residential, industrial uses, and they enable agricultural irrigation as well. Given these benefits, any regulatory course that might severely impact dam operations would ultimately undermine the designated uses of the Columbia and Lower Snake Rivers.

The TMDL Appropriately Recognizes the Need for Flexible Alternative Implementation Options

NWHA agrees with EPA that Oregon and Washington hold ultimate responsibility for implementing the TMDL. Yet EPA should still remain fully cognizant of limitations and flexibilities at the implementation stage, and it should develop final allocations with those considerations in mind. A TMDL must be "established at a level necessary to implement the applicable water quality standards[.]" It must also "established at [a] level necessary to attain and maintain the applicable" water quality standards. If final allocations require unrealistic or infeasible reductions in temperature impacts, they will not be able to "implement" the needed water quality improvements. Nor will they be able to "attain and maintain" the standards. They will instead be the sort of unenforceable allocations criticized by the Ninth Circuit.

Constraints on implementation are particularly important for any allocations to hydropower facilities. For example, at any dam, the Washington Department of Ecology must first focus on

“reasonable and feasible improvements[,]” and for federally licensed facilities—essentially all projects not operated by the Corps—the Washington Department of Ecology “may only require a person to mitigate or remedy a water quality violation or problem to the extent there is substantial evidence such person has caused such violation or problem.” If an allocation to dams effectively require reductions beyond the exceedances attributable to them, it might be largely unenforceable.

EPA should also develop allocations with an eye towards flexible, efficient implementation for hydropower facilities. Federal regulations and guidance have long considered Best Management Practices (BMPs), rather than direct limits on temperature impacts, as the default mechanism for implementing load allocations for non-point sources. In fact, EPA has traditionally urged improvements at non-point sources first through voluntary or incentive-based programs, and NWAHA applauds EPA’s decision to continue doing so here.

Finally, if a TMDL cannot provide a feasible path forward to reasonable compliance with numeric criteria, NWAHA agrees with EPA’s suggestion that a use attainability analysis or other reconsideration of the temperature water quality standards might be necessary. Reconsideration of those numeric criteria might be particularly appropriate where, as here, aquatic uses can persist despite technical exceedances.

Areas of Clarification Needed in the TMDL

NWAHA respectfully suggests that EPA consider making clarifications to several aspects of the TMDL. As discussed above, EPA properly concludes that temperature exceedances are largely driven by factors other than dams. However, some of the assumptions made by EPA in its analysis, inaccuracies in the model, and the graphical presentation of data, are inconsistent with that conclusion. For example, the technical appendices to the TMDL describe the 0.1°C allocation to dams as an aggregate allocation applicable to the sector as a whole. However, both the appendices and the main TMDL document appear to attribute portions of temperature exceedances to individual dams. EPA should make it abundantly clear to the States that these are not binding, project-specific load allocations.

These attributions may be the result of several assumptions made by EPA, which EPA itself acknowledges overstate a dam’s impact. For example, EPA recognizes that the assumptions made in determining the margin of safety are conservative indicators of dam impact. However, such conservative assumptions are not necessary given the acknowledgment that dams do not drive the temperature exceedances.

Additionally, EPA’s “free-flowing” scenario is problematic because it removes only those dams that are within the boundary of the TMDL, rather than applying the scenario all the way upstream. A true free-flowing scenario may further illustrate that the presence of the dams does not affect – or improves – temperature levels. Issues in how “free flowing” is defined likely skew the modeling results.

These conservative definitions and assumptions are applied to develop Tables 6-6 through 6-9, which could be read to suggest allocations for individual facilities. But this does not appear to be EPA’s intent, given the text and conclusions reached elsewhere in the document. As noted

above, the data in these tables also result from inaccurate modeling. Thus, clarity is needed that, given the conclusions regarding the minimal impact of dams on temperature, alternative implementation measures are more likely to address the temperature exceedances than individual allocations to dams. The suggestion of individual facility allocations is the result of inaccurate modeling, and conflicts with the greater body of information and analysis that results in EPA's conclusion that dams have minimal impact on temperature.

Conclusion

The TMDL appropriately recognizes and could even more clearly explain that (1) the temperature exceedances in the Columbia and Snake Rivers are caused largely by external factors; (2) dam operations have minimal impact on temperature; in fact, dam operations in many instances have a cooling effect during periods critical to salmon; (3) the temperature standards are not attainable and possibly more stringent than necessary to protect salmon; and (4) flexible implementation is appropriate, including the consideration of a use attainability analysis or site-specific water quality criteria. EPA's conclusions are consistent with the available data and studies, and NWAHA looks forward to a final TMDL that supports and adopts each of these four principles and clarifies the issues raised above.

NWAHA appreciates the opportunity to comment on the TMDL. We look forward to working with EPA to revise the TMDL as appropriate, and with the states of Washington and Oregon as they work to implement the TMDL. Please contact me if you have any questions about these comments or need any additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Brenna Vaughn". The signature is fluid and cursive, with a large initial "B" and a long, sweeping tail.

Brenna Vaughn, Executive Director