



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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August 19, 2020

Chris Hladick, Regional Administrator  
U.S. Environmental Protection Agency, Region 10  
Park Place Building  
1200 6th Avenue  
Seattle, WA 98101

Re: TMDL for Temperature in the Columbia and Lower Snake River

Dear Regional Administrator Hladick:

The Washington Department of Ecology (Ecology) appreciates the opportunity to provide comment on EPA's Total Maximum Daily Load (TMDL) for Temperature in the Columbia and Lower Snake Rivers. The Columbia and Snake Rivers serve as prime freshwater habitat for salmon and other aquatic species and salmon rely on these rivers for spawning, rearing, and migrating. Protecting and restoring salmon is a priority for Washington and is a critical component of recovering endangered orca whales. We must address the temperature issues on the Columbia and Snake Rivers in order to provide cool, clean waters for salmon.

The Columbia and Snake Rivers provide a critical migration corridor that connects salmon spawning streams throughout the basin with the Pacific Ocean. We have been working in these river basins for decades, and while improvements have been made, significant work remains. Temperature standards are regularly exceeded and can reach lethal temperatures for salmon.

We do not agree with EPA's recommendation to weaken our water quality standards, and are asking for the statement to be removed from the TMDL. It is imperative that we not give up protecting Columbia and Snake Rivers for our salmon and orca before we have even started to address the key sources of temperature pollution. The TMDL study identifies climate change and dams as the biggest contributors to temperature pollution in the Columbia and Snake Rivers and highlights the importance for action. However, instead of outlining a pathway to addressing these sources and focusing on what we can do to lower temperatures and protect salmon, EPA suggests that we simply lower our standards. We believe that suggestion is unwarranted and unhelpful.

Addressing temperature is complex, but if we all work together towards the same goals, we will see progress in the Columbia and Snake Rivers. We should focus on implementing actions that can reduce temperatures and help us meet our water quality standards.

Since dams are identified as a key source of temperature pollution in the TMDL, focusing on how to better control this source is critical to successfully reducing temperature in the Columbia and Snake Rivers. We have issued 401 certifications to Washington nonfederal dam operators with Federal Energy Regulatory Commission (FERC) licenses and they have been working to implement those 401 certifications through actions to address their temperature impacts for the last 12 years. In order to address our water quality standards, including temperature, we need to address all impacts associated with dams and hydropower operations. We need to build resiliency in our rivers to prepare for the ongoing impacts of climate change.

On May 7, 2020, we took the important first step of issuing 401 certifications to the eight federal dams on the Columbia and Snake Rivers. Our 401 certification authority for the federal dams is a key piece in ensuring the federal dams are meeting the water quality standards. Unfortunately, instead of stepping up to the challenge, the Army Corps has challenged our authority to protect state waters in an appeal to the Pollution Control Hearings Board. The decision to appeal means that a federal agency isn't willing to do its part to address temperature pollution and instead believes that all other Washington sources should bear the burden of heat contribution from the federal dams. We struggle to see a path forward to implementation of the TMDL without 401 certifications as a regulatory tool to address the federal dams.

This TMDL identifies climate change as a dominant contributor to temperature to the Columbia and Snake Rivers, but EPA does not include a plan for addressing climate change impacts in the TMDL. It is clear that EPA recognizes the significance of climate change as a source of temperature pollution, and it is therefore incumbent upon EPA to develop measures to address it. Instead, the TMDL fails to detail a single action the federal government can take to address climate change. This is unacceptable.

We are also disappointed that this TMDL identifies Idaho and Canada as sources of temperature to the Columbia and Snake Rivers without any guidance on how to address them. EPA and the federal government have a key continuing role to play in reducing temperature pollution from the operation of federal dams, Idaho, and climate change. We struggle to understand how the TMDL provides reasonable assurance that water quality standards will be met when multiple temperature sources are identified with no identified actions to address them. EPA should include more clarity and guidance on how to implement temperature reductions in this TMDL and explicitly explain how they will continue their role in helping Washington meet our temperature water quality standards. Doing so will advance the very important work of implementing the TMDL and ensuring that we effectively address temperature pollution in the Columbia and Lower Snake Rivers.

Chris Hladick  
August 19, 2020  
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Attached are our comments on the TMDL. We have divided the comments into two sections: our general comments on the TMDL, and specific details identified as errors within the TMDL.

If you have questions or would like to discuss further, please contact Kelly Ferron at [kelly.ferron@ecy.wa.gov](mailto:kelly.ferron@ecy.wa.gov) or (360) 764-3583 (work cell).

Sincerely,

A handwritten signature in blue ink, appearing to read "Vincent McGowan".

Vincent McGowan, P.E.  
Water Quality Program Manager

Enclosure: Comments on the TMDL

cc: Dan Opalski Director, Water Quality Division, Region 10, EPA  
Richard Whitman, Director, Oregon Department of Environmental Quality  
Kelly Ferron, Water Quality Specialist, Ecology

# Washington State Department of Ecology's Comment on EPA's TMDL for Temperature in Columbia and Lower Snake Rivers

We appreciate the opportunity to provide comment on EPA's Total Maximum Daily Load (TMDL) for Temperature in the Columbia and Lower Snake Rivers. However, we would have preferred to have worked collaboratively with EPA and Oregon from start to finish on the development of this tremendously important TMDL. We hope that this is not a model for developing TMDLs moving forward.

We had limited time to review the TMDL and our comments are focused on what we believe are the key issues and concerns with the TMDL. The first section of this document includes general comments and the second section includes corrections for tables and figures in the TMDL.

## General Comments

### Water Quality Standards Attainment

In Section 1.1, EPA suggests a use attainability analysis due to the potential inability to meet temperature water quality standards, stating *“One option for addressing the conflict created by the inability to achieve applicable water quality criteria at all times and all places is for the States to make changes to their applicable designated uses.”*

We are disappointed that EPA is telling the states to weaken their water quality standards as part of the temperature TMDL. Ecology does not intend to do a use attainability analysis (UAA) at this time. We must first focus on implementing actions that can improve water quality. The goal of a UAA is to determine what designated use is attainable. Without the process of reviewing and implementing improvement measures to achieve TMDL goals in the Snake and Columbia rivers, the level of use attainment that can be gained will not be fully understood. By suggesting a UAA now, EPA is prematurely suggesting that we weaken the current level of protection which is designated for salmon rearing and migration. Protecting and restoring salmon is a priority for Washington and for these rivers, and adaptive management through the TMDL process must be our first priority rather than rushing to weaken the standards.

We want EPA to modify language of Section 1.1 to clarify that after implementation actions are taken to address temperature pollution, a UAA is a tool to be considered if temperature water quality standards are not met. We also request that EPA articulate the basis and process of a UAA, given that this regulatory action would require EPA review and approval along with formal ESA consultation.

## Standards Interpretation

We want EPA to explain in greater detail which water quality standards are relied upon to allow the 0.3°C allowance in figures 6-2 through 6-4. How are the allowances in the bar graphs related or not related to the aggregate allocations in Table 6.3? It seems from these figures that each dam is provided an allowance based on the ‘measureable change’ condition referenced in WA Standards described in Section 2.1. If the 0.3°C allowance is already applied to account for error based on the measureable change language, from where is the 0.3°C aggregate allocation in Table 6.3 derived?

## Temperature sources

*Appendix D, Section 4.0 states: “This RBM10 model assessment considered temperature impacts to the Columbia and Snake Rivers from point sources, tributaries, dams, climate change, and an agricultural water withdrawal. The assessment results indicate that climate change and dam impacts are the dominant sources impacting river temperatures, with impacts that are an order-of-magnitude higher than point sources, agricultural withdrawals (Banks Lake project), and tributaries.”*

This TMDL study identifies climate change and dams as the biggest contributors to temperature pollution in the Columbia and Snake Rivers. This study highlights the importance for implementation of actions to address temperature impacts from dams and to take action on climate change because both are causing impacts to the Columbia and Snake Rivers. While we appreciate that this TMDL highlights these temperature sources and recognizes the need to *collectively* take steps to address both of these contributors, we are disappointed that EPA has not articulated what can be done to address these significant sources of heat.

When the TMDL’s silence on actions to address climate change and dams is combined with the recommendation that we change the water quality standards to make them “more achievable” it appears EPA is trying to skirt its responsibility under the federal Clean Water Act. The purpose of a TMDL is to describe a plan for restoring impaired waters.

The TMDL should include more specific recommendations for how the federal dams and climate impacts can be addressed.

## Reasonable Assurance

The EPA repeatedly states in this TMDL that temperature water quality standards cannot be met in all places at all times. But meeting water quality standards is a critical element of an approvable TMDL.

When the EPA establishes or approves a TMDL that allocates pollutant loads to both point and nonpoint sources, it determines whether there is reasonable assurance that the load allocations (LAs) will be achieved and water quality standards (WQS) will be attained. EPA does that to be

sure that the wasteload allocations (WLAs) and load allocations (LAs) established in the TMDL are not based on overly generous assumptions regarding the amount of nonpoint source pollutant reductions that will occur.

This is necessary because the WLAs for point sources are determined, in part, on the basis of the expected contributions to be made by nonpoint sources to the total pollutant reductions necessary to achieve WQS. If the reductions embodied in LAs are not fully achieved because of a failure to fully implement needed nonpoint source pollution controls, or that the reduction potential of possible BMPs or actions was overestimated, the collective reductions from all sources will not result in attainment of WQS. As a result, EPA must demonstrate whether a TMDL provides reasonable assurance that nonpoint source controls will achieve expected load reductions.

When EPA Region 10 evaluates our TMDLs for reasonable assurances, they consider the following questions: “One practical way to evaluate reasonable assurance is to consider whether it addresses these questions: 1) Do practices capable of reducing specified pollutant load exist? 2) Does the TMDL describe a plan or process to implement such practices?”

**If this TMDL consistently states that water quality standards cannot be met, how can EPA show the necessary reasonable assurances required by the Clean Water Act?**

In particular, we are concerned that reasonable assurances are lacking for the following elements of the TMDL:

### Climate change

This TMDL names climate change as a dominant source of temperature pollution to the Columbia and Lower Snake Rivers and demonstrates, yet again, the impact climate change is having on Washington’s valuable natural resources. The TMDL identified a strong link between air temperature and Columbia River water temperature and showed increases in air temperature and water temperature since the 1960’s. By naming climate change as one of the biggest two sources of temperature pollution, it is important that EPA include information on what the federal government can do to address it. But the current TMDL is completely silent on the actions that the federal government can take to address climate change.

Washington is committed to addressing climate change and is taking measurable actions. EPA should take a larger role in identifying concrete measures to address climate change in regards to this TMDL. This TMDL should put heightened scrutiny on other actions that can be taken to address the impacts of climate change on warming air temperature that subsequently increase river temperatures.

### Load allocations for federal dams

This TMDL identifies dams as one of the biggest impacts to increased temperatures in the Columbia and Snake Rivers. However, the TMDL does not include actions that the federal dams can take to meet their load allocations, nor is there any certainty that any actions will be

implemented. We would like the EPA to clarify what actions can be taken by federal dams to reduce their temperature impact.

Specifically, we would like EPA to include in this TMDL how they envision federal dams meet their load allocations. 401 certification serve as a crucial administrative tool for requiring temperature reductions. To address temperature impacts from dams, Ecology issued 401 certifications to federal dams to address temperature pollution on May 7, 2020. The Army Corps of Engineers has appealed these certifications. This appeal demonstrates that federal dams do not think they need to meet Washington Water Quality Standards or the federal Clean Water Act. Without 401 certification authority, how can there be reasonable assurance that the LA assigned to dams will be implemented?

We thought that there was a clear implementation pathway for federal dams, but the tool we were relying on to protect state water quality is unfortunately being litigated. Although we are confident in our legal case, if the Army Corps does prevail, what tools are available to Ecology to regulate and address federal dam temperature impacts? The TMDL should be revised to explain how there is reasonable assurance that the reductions necessary to meet the LA assigned to the federal dams will be achieved.

## Dams

EPA assigned a 0.1°C temperature allocation collectively for all dams on the Columbia and Lower Snake Rivers. This collective allocation means that Ecology's implementation plan will need to determine how to divide this 0.1°C load allocation amongst the dams. We ask that the EPA outline options for how this division of the allocation could be accomplished. In an earlier presentation about this TMDL, the EPA shared temperature allocations given to individual dams. We understand that dams and their temperature impacts are interconnected, and we request EPA acknowledge this by including potential allocation divisions. We request that EPA include this information in the TMDL as it will be beneficial information for Ecology as we develop our implementation plan.

The Lower Snake River dams provide a certain challenge for temperature reductions. Again, this TMDL fails to identify specific actions that can address temperature pollution from these dams. The identification of specific actions would be helpful as we plan to implement this TMDL and determine what temperature reductions dams in the Snake River can achieve in an established timeline. Again, there needs to be reasonable assurances that all dams will achieve the assigned LA.

## Achieving Load allocations (LAs)

We ask that EPA explain in the TMDL how the load allocations assigned in this TMDL are achievable. This explanation should answer these questions: 1) Do practices capable of reducing specified pollutant load exist? 2) Does the TMDL describe a plan or process to implement such practices? There is no description in the TMDL of practices that are capable of reducing the

pollutant load necessary to achieve the LA. We would like EPA to identify what practices exist to reduce temperature pollution and describe potential implementation actions that could meet the LAs assigned to the dams and the tributaries.

## Idaho

Multiple times in this TMDL, EPA identifies Idaho's upstream influence on temperatures in the Snake River (6.4 Boundary Conditions). We would like more clarity on how EPA will use their role in Idaho's regulatory program to work with Idaho to address downstream standards in Washington. In particular, we request clarity and answers to the below questions:

- What is EPA doing to make sure Idaho's regulatory programs, such as TMDLs or NPDES permits, are designed to meet downstream water quality standards?
- Can EPA articulate potential changes that could occur in Idaho to prevent upstream temperature impacts that impact our downstream water quality?
- Can EPA explain the influence of the Dworshak dam on this TMDL in more detail? The TMDL does not clearly communicate the assumptions EPA used for the Dworshak dam influence on downstream temperature. We would appreciate the TMDL providing clear background information on how the Dworshak dam operates and the important role that dam operation plays in addressing temperature impacts.
- Can EPA ensure that the Dworshak will stay operating at current conditions? What should be done in this TMDL if Dworshak operations changes?

## Canada

It is our understanding that the Grand Coulee generally acts as a reset on temperature conditions, in regards to Canada's temperature impacts on the Columbia below Grand Coulee. This would mean that Canada's temperature impacts are largely confined from the Canadian border to Lake Roosevelt.

If our understanding is correct, we ask that EPA make this more explicit in the TMDL to demonstrate that Canadian temperature impacts do not have a significant effect below the Grand Coulee dam. If we are misunderstanding this element of the TMDL, we ask that EPA discuss in the TMDL the actions the federal government can take to address temperature impacts from sources outside of our border.

## Water withdrawals

Water withdrawal at Grand Coulee Dam for the Banks Lake Project constitutes about 10% of the River. The TMDL estimates that this withdrawal for the Banks Lakes Project has a 0.1°C impact in July and August (Appendix D, Section 3.9.2). This is a significant impact when compared to the 0.3°C total temperature allocation in the TMDL. We note that the Banks Lake Project impact is not explicitly referenced in the main part of the TMDL and appears to be an unaccounted source in the TMDL allocations.



## Temperature averages, assessment periods, and locations

The RBM10 water temperature model applied in this TMDL cannot estimate water temperatures for a specific portion of the water column (i.e. is not applied when water column temperatures vary with depth). Instead, it estimates an overall average water column temperature. For this reason, only hydroelectric facility tailrace locations (downstream discharge) were used as model assessment points. Tailrace outflow tends to be highly mixed and uniform in temperature. However, the model output and assessment locations have the combined effect of depressing the actual level of temperature impact while posing a constraint to its application to Washington's water temperature criteria. This is because:

- Washington's water temperature criteria is based on an assessment of daily maximum temperatures not averages.
- Washington's temperature criteria is based on either a daily or a seven-day assessment period. This TMDL applied a monthly time scale for its temperature assessment.

Use of the tailrace as an assessment point ignores heating occurring in the upper water column of the forebay of each hydroelectric facility. The tailrace discharge reflects water temperatures from a portion of the water column far below the forebay surface and is largely buffered from the hydroelectric facility's real heating effect which tends to be observed most prominently in the forebay's upper water column.

Using tailraces as compliance points may underestimate exceedances or completely miss hotter areas of the river system. The TMDL does not discuss forebay temperatures relative to current conditions in the tailrace and meeting water quality criteria at the target sites. Forebays are important areas for juvenile and adult salmonids, as they spend a large portion of their stream migration there. So, it is important to understand changes in forebay temperatures and differences contrasted with tailrace temperatures.

## Temperature comparisons – given travel time differences

Given that hundreds of miles of the Columbia River are covered by this TMDL, an assessment of travel times should be provided in the analysis. The analysis applied a metric to determine the effect of each hydroelectric facility's effect on water temperature referred to as the cumulative impact (CI). It is based on the difference between monthly average tailrace temperatures with the dams in place (current condition) in comparison to the temperatures predicted given their removal. While most of the facilities operate as run-of-river (upstream storage is minimized), the reality is that during the critical period of July-October, the river volume has increased (wider and deeper) with reduced overall velocities now compared to a pre-dam condition. This results in increasing travel times. By assuming similar travel times, even given the monthly assessment period applied in the TMDL, the error of travel times increases the further the assessment point is located from the upper boundary used in the model. With increasing separation, water representing the river with dams in place in the current scenario and without dams in place are

subjected to differing meteorological and hydraulic heating and cooling effects. This impacts the intent of the exercise which was to solely examine the influence of the dams on water temperatures.

In addition, a cumulative impact metric was used to determine the periods and levels of temperature reductions required to achieve the relevant criteria. Given this importance, the level of analysis error resulting from scenario travel time differences should be examined and the TMDL should provide a justification to the analysis approach taken.

## Temperature Metrics

### Average versus maximum temperatures

The TMDL evaluated the level of temperature impact associated with each of the Columbia River facilities based on two metrics: the temperature exceedance (TE) and the cumulative impact (CI).

A rule was applied to these metrics: if the target exceedance level is greater in magnitude than the cumulative impact range, then the level of temperature reduction required is the cumulative impact temperature differential minus  $0.1^{\circ}\text{C}$ . The underlying assumption is that the exceedance is greater than what the dams can be reasonably considered responsible for. Therefore the reference, in terms of impact, becomes the cumulative impact differential.

If the target exceedance is less than the cumulative impact differential, then  $0.1^{\circ}\text{C}$  is subtracted from the target exceedance level. The underlying assumption here is that the target exceedance is entirely attributed to the dams.

This approach requires that the two metrics share some commonality – a common frame of reference. That link would assumed to be the maximum (from observed data) and the estimated model average temperatures, which are assumed to be equivalent in the TMDL. However, there is a disparity between these two temperature estimates. A comparison of the predicted monthly average temperatures (model predicted– current condition scenario) to the observed monthly maximums for July and August, indicates a median difference of  $1.3^{\circ}\text{C}$  and  $0.9^{\circ}\text{C}$ , respectively. Differences were largest at Rock Island ( $\sim 1.7^{\circ}\text{C}$ ) and lowest at Priest Rapids ( $\sim 0.5^{\circ}\text{C}$ ).

The study did compare daily maximums to daily average temperatures and found only around a  $0.2^{\circ}\text{C}$  difference at the John Day dam tailrace based on 2016 data throughout the year with no discernable seasonal influences affecting this difference. However, based on the monthly maximums calculated from 2011-2016 hourly data in comparison to the model predicted average temperatures, the difference is  $1.9^{\circ}\text{C}$  and  $0.9^{\circ}\text{C}$  for July and August, respectively.

### Under prediction of temperature reduction required to achieve criteria

It appears like the TMDL allocation approach was to provide only  $0.1^{\circ}\text{C}$  to the hydroelectric facilities of the assumed  $0.3^{\circ}\text{C}$  increase allowed by the criteria. Based on how the temperature

exceedance metric (TE) is calculated it appears like an “allocation” of 0.3°C was already assigned. The TE is the observed maximum temperature (for a particular assessment location) above the combined appropriate criteria and an additional 0.3°C. If this is correct, subtracting a portion of that “allocation” or 0.1°C from the TE just further increases that “allocation” effectively by another 0.1°C. The net result is the allocation of 0.3°C to each facility and the estimated temperature reduction required to achieve the criteria falling short of that target. We request that EPA clarify their allocation approach and ensure that all allocations fit within the 0.3°C increase allowed by the criteria.

## Load allocations and flow levels

The heat loads estimated in the TMDL for each hydroelectric facility are based on 2011-2016 monthly average flow levels (Appendix D). This approach assumes that there will be little change to flow in the future. In reality, based on recent history of flow management for the Columbia River, addressing temperature issues will likely require an increase in summer and fall period flows. Increasing flow could result in an exceedance in the load allocation. Increasing system-wide (at Grand Coulee) critical period flows may have a much greater effect on the calculated heat load (the magnitude of flow is considerably greater than the 0.3°C maximum temperature increase allowed) and is, therefore, a controlling factor. From this perspective, the incentive to achieving the load allocation could be to reduce system flows, which is counter to positive fisheries enhancement measures. We request that EPA examine the potential impact of different flow level management decisions.

## Waste load allocations (WLAs)

Although we do not foresee large changes to our NPDES permits, it would be helpful to understand the assumptions behind the WLAs in this TMDL. Can EPA provide further guidance on how to interpret WLAs? Typically, TMDLs have text that explain this and we need to understand the assumptions for WLAs to know how to best interpret them.

## Table 6-15 and General Permittees

The list of general permittees and general permit types that are de minimis needs clarification (Table 6-15; and page 52, last paragraph).

In particular, it is not clear if the list of de minimis permittees is narrow (a subset of the particular permittees in Table 6-15 whose data is available); broad (permittees covered under the general permits listed in the last paragraph on page 52 as well as other general permits); or something in between.

Facilities who discharge to the Columbia River with coverage under Washington’s Sand and Gravel General Permit are missing from the list of facilities considered on page 52 and are not assigned WLAs. In regards to discharges for these permits, we would like to know:

- Will the states have to use reserves allocated for point source loads to accommodate those covered by the sand and gravel general permit that were not considered in EPA’s modeling, or would they (or could they) also be considered de minimis as many of the other general permit dischargers were?
- If considered part of the reserves or de minimis (in either case), what guidance do we provide to those permittees in regards to their discharge?

It would be useful also to clarify that stormwater permittees are de minimis, as they appear to be from language on pages 58 and 60 of the TMDL (page 60: *“Because the estimated temperature impacts from these sources are minimal and intermittent, EPA has not assigned a WLA to stormwater sources in this TMDL.”*)

It would be useful to clarify if new permittees might also be considered de minimis – for example, new fish rearing facilities and possibly other facilities covered under individual or general permits.

Finally, it would be useful to clarify if agencies must assign a thermal loading limit to facilities with an assigned WLA, whose effluent temperature is below aquatic life temperature criteria.

## Reserve allocations

In section 6.5.4, the TMDL is not clear as to which river reaches are associated with the reserve allocations. We understand these reserve allocation reaches are the reaches between points (locations) identified in Tables 3-2 through 3-7, but clarification would be helpful.

We would like EPA to reassess the reserve allocations in this TMDL. These allocations should reconcile how nonpoint temperature reduction actions at dams will impact WLAs assigned via NPDES permits. Implementation actions at dams could increase point source temperature loads and this has not been factored into the waste load allocation given to the dams. We want assurance that the reserve allocation is sufficient to deal with these types of implementation actions in the future.

In terms of reserve management, we will work with Oregon DEQ to manage the reserve allocation in this TMDL. Since the TMDL model resides with EPA, we would require EPA’s assistance in tracking and assigning the reserve. Additionally, Ecology suggests that EPA develop procedures for obtaining reserve capacity and identify that you will do this in the TMDL.

## TMDL Corrections

### Section text corrections

2.3 “The Washington water quality standard for the Snake River is 19°C daily maximum.”

- Correction: The Washington water quality standard for the Snake River is 20°C daily maximum.

### Table and Figure corrections

#### Section 2

##### Figure 3-5

- Figure 3-5 should have the tributary points scaled based on proportional flow contribution. In the current figure, each point is given an equal weight, which is not as informative.

##### Table 3-9

Temperature disparity in the Lewis River between Table 3-9 (12.5°C) and Table 5-1 (16.6°C)

##### Table 6-1 TMDL target temperatures

- Why is June not included in this table?

##### Table 6-12 WLAs for “Major facility” NPDES permitted facilities on the Columbia River

Facility Name	Corrected daily maximum flow	Corrected daily maximum temperature	New WLA
Agrium-Kennewick	23.4 MGD	30.8° C	2.72E +09
Agrium-Finley	18.9 MGD	27.2° C	1.94E +09
Packing Corporation of America	37.5 MGD *37.5 MGD is the value that is used in their mixing zone study and was based on flow data during the three years prior to the study being performed.		

These values are from monthly discharge monitoring data reported in PARIS for the last five years, from May 2015 – April 2020.

Table 6-13 WLAs for “Minor facility” NPDES permitted facilities on the Columbia River

Agrium Bowles Road	WA0003671	322.6	15.0	30.8	1.74E+09
Agrium Game Farm Road	WA0003727	321.0	14.1	27.2	1.45E+09

- Change Grand Coulee WWTP to City of Grand Coulee WWTP
- Change City of Coulee Dam to City of Coulee Dam WWTP
- Change Interior, Reclamation to Grand Coulee Dam WWTP
- The two Agrium facilities listed in the minor table have the same permit numbers as two in the major table. Also, the river miles, flows, and temperatures are not consistent. It would be best to remove the Agrium facilities from the minor table and only have the Agrium facilities in the major table.
- Goldendale is listed at a “minor facility” NPDES permitted facilities on the Columbia River. However, the City of Goldendale discharges from a facility on the Little Klickitat River.
- TrueGuard (AKA All Weather Wood Treating) WA0040029 is missing in the TMDL Table 6-12), but probably needs to be added since the TMDL includes Exterior Wood (WA0040711), a similar facility in the same Washougal Industrial Park location. Both these facilities are individual permits for Stormwater only and neither is known to discharge any heat load, as there is no process wastewater discharge.
- Consider declaring Asotin diminimus or providing a WLA. Our records suggest a design flow of 0.164 MDG, and a maximum temperature discharge of 25°C. The thermal load appears to be about 1/3 of 1% of the reserve allocation in a single reach. We understand there are reserves associated with multiple river reaches.

Table 6-20

- Entiat River is listed as not having a TMDL but it is a 4B Temperature Project site.
- This table shows the Yakima River having a Water Quality Criteria of 17.5°C when it is noted as 21°C in WAC 173-201(a) table 602. This should be corrected.