

# **Sandy River Basin**

## **Total Maximum Daily Load (TMDL) & Water Quality Management Plan (WQMP)**

### **Response to Public Comments**

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## Introduction

This Response to Public Comments document addresses comments received regarding the Draft Sandy River Basin Total Maximum Daily Load (TMDL) and Water Quality Management Plan (WQMP) dated September 2004. Grammatical, editorial, and formatting errors noted by reviewers are not addressed here but corrections have been made in the document where necessary. The Oregon Department of Environmental Quality (ODEQ) appreciates the time and effort that all the commenters put into reviewing the document. All comments have been considered by ODEQ and, where appropriate, have been addressed in the final document that has been submitted to the Environmental Protection Agency (EPA). EPA will then either approve or disapprove the TMDL.

### Background

The public comment period on the proposed TMDL and WQMP opened on September 27th, 2004. Written comments were received during the public comment period that extended through December 10<sup>th</sup>, 2004. All comments received by ODEQ were submitted in written (paper and electronic) form. A formal public hearing was held on November 9<sup>th</sup>, 2004 at 7:00 p.m. at the Clackamas County Bank Auditorium in Sandy, Oregon. Two members of the public were present at the hearing, although no oral comments were received.

The TMDL and WQMP were available for downloading from ODEQ's website throughout the comment period. Hard copies of the document were also available for viewing at ODEQ's Northwest Region and Headquarters offices in Portland. Copies of the document were also provided to those individuals who requested copies.

### List of Comments provided on the Sandy Basin TMDL

The following entities provided comments on the TMDL during the Public Comment Period.

Comments Received From	Date Received	Media
US Environmental Protection Agency	11-28-04	Mail, email
Sandy River Basin Watershed Council	12-2-04	Mail, email
Water Environment Services of Clackamas County	12-3-04	Mail, email, fax
Multnomah County*	12-1-04	Mail
The Confederated Tribes of the Warm Springs	12-8-04	Mail, email
* Multnomah County comments are of an editorial nature.		

### General

In the following section, ODEQ provides our responses to the comments received. Each comment is included in its entirety, organized by the individual or organization that provided the comment. We have included the full text of comments to guard against confusion over intent of the comment or the response. Responses immediately follow each comment and are in *italic* font to avoid confusion. The changes indicated in the following responses to comments have been made to the TMDL submitted to EPA.

## Summary of Comments

### **U.S. Environmental Protection Agency Comments**

Page 2, Table 1.1 303(d) Listed Stream Segments in the Sandy River Basin- In some waterbodies in Table 1.1, the river miles in the listed reaches column are slightly different from those on the 303(d) list. On the 2002 303(d) list, Bull Run River is listed as RM 0-5, the unnamed tributary to Cedar Creek is RM 0-3, and Beaver Creek is listed from RM 0-8. Please include the season of the listing, since the table should reflect the listings exactly as listed on the 2002 303(d) List.

*Response: River mile designations were corrected and the season for each listing was included in the table so that they match the 2002 303d list.*

In some places, it is difficult to understand how the new temperature standard applies to the loading capacity and allocations. While the summary of allocations in Table 3.11 and in the Executive Summary is helpful, more clarification within the chapter would be helpful.

*Response: Additional language was added to this section.*

#### Page 22, Table 3.1 Waterbodies and Load Allocations

Waterbodies - Please clarify whether this TMDL applies to "perennial and fish bearing" streams (thus requiring both to be present) or "perennial or fish bearing" streams. I believe the desired language would be "Perennial and fish bearing intermittent streams".

*Response: Language changed to "To perennial and to fish bearing intermittent streams".*

#### Page 60, Table 3.8 Non-point Source Solar Radiation Heat Loading

Table 3.8 shows the ZigZag River has a significantly higher percentage of current solar radiation from anthropogenic nonpoint sources. It appears that the Zigzag River is located primarily on USFS lands. What are the anthropogenic sources of the ZigZag River?

*Response: The Zigzag River does receive relatively higher amounts of solar radiation exposure compared to the other rivers that ODEQ analyzed in the upper watershed. This is most likely due to its East-West orientation and the fact that riparian areas in the lower portion of the Zigzag River were heavily impacted by the record flooding that occurred in 1964. Flood waters removed much of the near-stream riparian vegetation and the current vegetative assemblage is largely early seral stage alder stands. However, results of Heat Source modeling predict that stream temperatures will not change significantly even when system potential vegetation (late seral stage) is achieved.*

#### Page 62, Decision Tree

The decision tree is helpful to understand the different ways wasteload allocations are developed, and how these allocations still meet the new temperature standard. However, it would be helpful to clarify a few points:

Pre-TMDL Limits - It appears that this box is used to evaluate what the discharge is under current permit limits. It may be good to change the title of the box to "Under Current Permit Limits."

0.2 vs. 0.3°C - 0.2°C of the HUA is allocated to point sources. However, the box on the left states that allocations are based on 0.3°C for point sources whose discharges do not result in an increase of more than 0.3°C in the receiving water's temperature. Please explain.

In the same box for "Determination of No Reasonable Potential", it would be helpful to add a note that "Discharge to be allowed at current level." This will help to ensure that stakeholders do not interpret "no allocation" to be a zero heat load.

*Response: The term "Pre-TMDL Limits" on the decision tree was changed to "Current Permit Limits". The allocation strategy outlined on page 62 shows that the 0.3°C threshold is evaluated using the 25% of the 7Q10 low flow to determine the appropriate allocation. In cases where multiple sources have the potential to create cumulative impacts they are evaluated to determine the appropriate allocations that will result in no more than a 0.2°C increase at the point of maximum impact. "Discharge to be allowed at current level" was added to the "Determination of No*

*Reasonable Potential” section of the decision tree.*

#### Page 63, Temperature Equations

0.3°C is used in the equations, when it appears that 0.2°C was used to calculate allocations. Likewise, 25% of 7Q10 flow is in the equations, when in two instances, 100% of 7Q10 flow was used.

*Response: 0.3°C is used to determine allocations and 0.2°C is used to evaluate cumulative effects and to assign allocations when 100% of the stream flow is allowed for mixing. ODEQ did not find the potential for cumulative effects from point sources in the Sandy River Basin so, consistent with the decision tree on page 62, allocations were determined using either 25% or 100% of the stream flow and allowing a 0.3°C or 0.2°C increase, respectively.*

#### Section 3.8.2 or 3.8.3

Most of Oregon's temperature TMDLs have WLAs which only apply during the critical summer months. The second paragraph on page 63 suggests that the established WLAs may not apply during non-critical periods but this is never explicitly stated. If it is DEQ's intent for the WLAs to not apply year-round, this should be explicitly stated in either this section or the initial paragraphs of 3.8.3 and in Table 3.12, page 79.

*Response: TMDL wasteload allocations apply during the summer time period, June 1 through September 30 and during times when applicable numeric criteria are exceeded. Point source allocations – expressed as NPDES permit limits for individual facilities – are flow and temperature based regardless of the time of year.*

Please add an explanation of how the spawning criteria are addressed by the WLAs. This is especially critical for the Hoodland STP which discharges to waters where the spawning criteria applies from August 15 through June 15.

*Response: Additional language was added to Section 3.8.2 that clarifies how point source heat loads are evaluated relative to the spawning criteria.*

It appears that the Mt. Hood Community College discharge and the Legacy Mount Hood Medical Center discharge are located in close proximity to each other. Even though these two discharges are small, it would be helpful to add an explanation of why their cumulative impact will not exceed the 0.2°C HUA.

*Response: Neither Mount Hood Community College nor Legacy Mount Hood Medical Center regularly discharge to Kelly Creek and it is highly unlikely that they would both be discharging during the summer months. Legacy discharges to surface waters only when groundwater levels prevent them from discharging to a drywell – which typically occurs during the winter months. Also, the discharge from Legacy only amounts to approximately 1% of the 7Q10 low flow in Kelly Creek.*

#### Page 94, Table 4.1 Sandy Basin Bacteria TMDL Components

Waterbodies - Although there are only three waterbodies on the 303(d) list for bacteria for summer, the bacteria TMDL appears to apply to both the listed waterbodies and their tributary streams, and applies year-round. It would be helpful to specifically name the 3 waterbodies, include the tributary streams, and indicate the TMDL applies year-round, since the TMDL goes beyond the scope of what is listed.

*Response: Clarifying language was added to Table 4.1.*

#### Page 97, Section 4.2

Please clarify why “estimate”, “less than” or “greater than” values were not used. To not consider “greater than” data would appear to underestimate bacteria violations.

*Response: Only a small number of the reported bacteria sample results were estimated, greater than or less than values. ODEQ felt that the most defensible analytical methodology was to use only data that was assigned a specific value by the analytical laboratory. While not including “greater than” values may underestimate bacteria levels, it is also true that not including “less than” values may result in an overestimation of bacteria levels.*

#### Page 105, Impairment Data for Cedar Creek

Table 4.4 and Figure 4.10 show that Beaver, Kelly and Cedar Creeks are impaired, but does not show the seasons when impairment occurs. The creeks are believed to be impaired year-round, but are currently listed only for the summer. It would be good to include data showing that impairments occur year-round, since the TMDL will apply year-round. While the load duration curves for Beaver and Kelly Creeks show impairments during all flow regimes and thereby, implies that impairments occur year-round, more explicit data would be helpful. Additional data should be included for Cedar Creek.

*Response: Figures 4.11 and 4.12 show that bacteria levels in Beaver and Kelly Creeks exceed water quality standards throughout the year. A load duration curve was not developed for Cedar Creek because flow data were not available, but the data show that Cedar Creek is also impacted year-round.*

#### Page 114, Margin of Safety

On page 113, the text states that the 75th percentile was selected to attain the instantaneous maximum criteria of 406 organisms/100mL. Thus, using the 75th percentile is not an implicit margin of safety to meet the 406 organisms/100mL, since the percent reduction adjustment was made to meet both water quality criteria. However, there are other implicit margins of safety that may have been used, such as conservative assumptions on flow that could be discussed in this section.

*Response: Correct. The 75<sup>th</sup> percentile is a margin of safety only in respect to the 126 organisms/100ml criterion.*

6.1.1 Since the MOA between ODEQ and EPA is still in effect, the following changes to the first two sentences in this section are recommended: "ODEQ and USEPA have a Memorandum of Agreement (MOA) which defines what ...document. In December 2002 ..."

*Response: The suggested changes were made to Section 6.1.1.*

### **Sandy River Basin Watershed Council Comments**

The watershed council is concerned about the considerable threat that Japanese knotweed, Himalayan blackberries and other invasive, non-native plants pose to native vegetation and riparian ecosystems. We recommend contacting The Nature Conservancy for more complete data regarding this issue. We suggest that the vegetation analysis in the TMDL be amended to reflect the problem of non-native vegetation. These species have the potential to alter the canopy cover in riparian areas and adversely affect stream temperature as well as increase sediment loading. We suggest that this problem be addressed in the TMDL.

*Response: ODEQ agrees that invasive species have the potential to alter canopy cover in riparian areas and prevent the establishment of system potential riparian vegetation conditions. Additional language was added to Chapter 3, page 21.*

### **Water Environment Services of Clackamas County**

We disagree with the proposed assignment of a temperature Waste Load Allocation (WLA) to the Hoodland Sewage Treatment Facility (STF) in Welches, Oregon. The Sandy River, from River Mile zero to 29.5 is defined by the Department as water quality limited for temperature, and is listed on the Department's 303(d) list. The Hoodland STF discharges into the Sandy River at mile 41, which is 11.5 miles upstream of the water body segment that is on the 303(d) list for temperature. We request that the Department's proposed WLA (29,900,000 kcal/day) for the Hoodland STF be removed from the proposed TMDL for the Sandy River Basin. This proposed WLA is inappropriate for a stream segment that is not designated as water quality limited for temperature.

*Response: The temperature TMDL applies to perennial and fish bearing intermittent streams throughout the Sandy River basin.*

Table 3.10 in the Department's September 2004 draft TMDL for the Sandy River Basin states that the 7Q10 flow at River Mile 41 is 157 CFS. The Department's NPDES permit for the Hoodland STF, issued August 2, 2004, was written with the understanding that the 7Q10 flow at River Mile 41 is actually 179

CFS. The Hoodland STF Outfall Diffuser Predesign Report (March 1998) carefully calculated the 7Q10 flow to be 179 CFS. This figure (179 CFS) can be found on page four of the Hoodland STF NPDES permit fact sheet. We request clarification of the recognized 7Q10 flow for the Sandy River at River Mile 41.

*Response: ODEQ calculated a 7Q10 low flow for the Hoodland STP using a different methodology and a larger data set than was used for the 1998 Diffuser Predesign Report. The consultant who prepared the predesign report simply subtracted the historic Salmon River 7Q10 low flow from the Sandy River 7Q10 low flow. This method, while resulting in the most optimistic 7Q10 low flow of several suitable methodologies, is technically acceptable. Wasteload allocations for the Hoodland facility were recalculated using 179 cfs for the 7Q10 low flow condition.*

On page 66 of the draft Sandy River TMDL under the heading Hoodland Sewage Treatment Plant, the following statement is present: "Since ODEQ simulated stream temperature in the main stem Sandy River using Heatsource, it was possible to determine the "natural thermal potential" at the point where the Hoodland STP discharges to the Sandy River. ODEQ predicted a daily maximum in stream temperature of 17° C (62.6° F) under system potential conditions at this location."

This predicted temperature is above the biologically-based numeric water quality standard that applies during all 12 months of the year in that location. The biologically-based numeric water quality standard for the Sandy River at River Mile 41 is 13° C from August 15<sup>th</sup> to June 15<sup>th</sup> and is 16° C for the period from June 16<sup>th</sup> to August 14<sup>th</sup>. According to OAR 340-041-0028(8), the following language appears to apply in this instance: "Where the department determines that the natural thermal potential of all or a portion of a water body exceeds the biologically-based criteria in section (4) of this rule, the natural thermal potential temperatures supersede the biologically-based criteria, and are deemed to be the applicable temperature criteria for that water body." We request clarification of the application of the Sandy River's natural thermal potential, including how it applies throughout the year.

We believe that the Sandy River's natural thermal potential temperature at River Mile 41 supersedes the biologically-based numeric water quality standards. The application of the natural thermal potential theory appears to have been applied at Troutdale Sewage Treatment Plant, and we believe it applies in the case of the Hoodland STF. Specifically, on page 66 of the draft Sandy River TMDL under the heading Troutdale Sewage Treatment Plant, the following statement is present: "ODEQ predicted a daily maximum in stream temperature of 20° C (68° F) under system potential conditions at this location. Therefore, calculation of the WLA for the Troutdale STP is based upon natural thermal potential resulting in a maximum allowable effluent temperature 25.4° C (77.7° F)." We request the Department recalculate the Hoodland STF WLA based on the Sandy River's natural thermal potential at the point of discharge.

*Response: ODEQ determined the natural thermal potential for the Sandy River during the critical summertime period. This value, 17.0° C, was used to calculate the maximum allowable effluent temperatures for the Hoodland STP in the draft TMDL document. In the interest of clarity, the following language was added to the Hoodland STP section on page 66: **"Therefore, the calculation of the summertime waste load allocation for the Hoodland STP is based upon natural thermal potential."** This allocation applies during the June 16<sup>th</sup> through August 14<sup>th</sup> time period. ODEQ did not determine the natural thermal potential of the Sandy River during other time periods and will therefore use the numeric spawning criteria of 13° C to set appropriate permit limits during August 15<sup>th</sup> through June 15<sup>th</sup> time period.*

On page 151 of the draft Sandy River TMDL under the heading titled "Clackamas County", the following statement is present: "Clackamas County holds a Municipal Separate Storm Sewer System (MS4) NPDES permit...". Please note that no portion of Clackamas County's MS4 permit covers the geographic area in the Sandy River watershed. We request that this phrase be removed from the Sandy River TMDL.

*Response: The reference to the County's municipal stormwater permit has been removed.*

## **The Confederated Tribes of the Warm Springs Reservation of Oregon**

The Confederated Tribes of the Warm Springs appreciated the chance to review the upcoming draft for the Sandy River Basin TMDL. It was determined that many of the steps undertaken by this plan will help to improve the water quality in the basin.

We feel the removal of Portland General Electric's Bull Run Hydroelectric Project will make great strides toward improving water quality conditions in the Sandy River Basin. The increased flow will greatly help solve many of the temperature issues associated with the lower Sandy River and will also help to raise the dissolved oxygen in that stretch of river. These improved conditions will also be very beneficial for fish spawning and migration. In regards to reducing temperature through increased stream channel shading, we feel that from studies performed on our behalf, it was difficult to correlate any significant temperature change to increased riparian vegetation. However, the improvement of riparian areas has many beneficial uses in addition to just improved water quality. It is felt that any effort put forth to improve these areas is very worthwhile and benefits the area's entire ecosystem.

In order to reduce the bacterial load in the basin, the tribes recognize the importance of improving failing septic tank systems as well as urban sewer systems. We feel that these problems can have a significant effect on water quality and steps should be implemented as soon as possible in order to begin the restoration process. In addition, the wastewater plant operated by the tribes runs at a rate of 10 parts per million of suspended solids and 10 parts per million of biological oxygen demand and we feel that this should be a noteworthy goal for other wastewater plants operating in the region.

In regards to the Sandy River Basin, we feel that the proposed TMDL does much to address many of the problems associated with the region. The benefits associated with this project will greatly improve both water quality and fish habitat in the basin.

*Response: Thank you for your comments.*