From: "Arrigoni, Holly" <Arrigoni.Holly@epa.gov>
To: "Curtin, James" <curtin.james@epa.gov>
Date: 8/31/2017 5:40:18 AM
Subject: For our discussion this afternoon: [INTERNAL and DELIBERATIVE] - Deschutes TMDL correspondence
Attachments: Deschutes TMDL FOIA exemption (b)(5) [redacted]
Deschutes River Percival Creek Budd Inlet Tributaries TMDL WQ improvement report 7-18-17.pdf
12172015DeschutesMP.TMDL.SubmittalLtr.pdf

FOIA exemption (b)(5) [redacted]

I've sent you a room invite that will extend beyond the call so we can discuss.

TMDL:
https://fortress.wa.gov/ecy/publications/SummaryPages/1510012.html

FOIA exemption (b)(5)

FOIA exemption (b)(5)

FOIA exemption (b)(5)

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July 17, 2017

Mr. Michael Lidgard, Director
Water Division, Office of Water and Watersheds
U.S. EPA Region 10
Attention: Chris Zell
1200 Sixth Avenue
Seattle, WA 98101

Dear Mr. Lidgard:

In accordance with 40 CFR 130.7 and Section 303(d)(1) of the Clean Water Act (CWA), the Washington State Department of Ecology (Ecology) submits the *Deschutes River, Percival Creek, and Budd Inlet Tributaries Multi-Parameter Total Maximum Daily Load (TMDL) Water Quality Improvement Report* for your review and approval. This TMDL addresses and establishes load allocations for temperature, fecal coliform bacteria, and fine sediment for your approval. The purpose of this letter is to ask EPA to focus on 23 segments impaired by water temperature, fecal coliform bacteria, and fine sediment.

The Deschutes River, Percival Creek, and Budd Inlet Tributaries Multi-parameter TMDL addresses 23 impaired segments on the 2014 Water Quality Assessment (303(d) list). The total number of TMDLs within this submission according to the 1996 counting convention is 18 (see Attachment A). The table in Attachment A clarifies and counts the water body segments addressed within this TMDL by showing their names and identification numbers.

The Water Quality Improvement Report with Implementation Plan includes all the requirements and other information necessary to determine the statutory and regulatory adequacy of this TMDL. In addition, the public participation during the development of the TMDL is captured along with a responsiveness summary in Appendix F. You will find the report at: https://fortress.wa.gov/ecy/publications/SummaryPages/1510012.html.

The TMDL includes allocations and an implementation plan for the 23 impaired segments for which this letter seeks approval. Ecology will fully implement these allocations and proceed with all aspects of the implementation plan within the Deschutes River and Budd Inlet Tributaries watershed. Meeting the allocations and completing the implementation plan are required to return the Deschutes River to a healthy state and protect aquatic life and recreational uses. Among the most critical implementation actions are establishment of forested stream-side vegetation corridors and conservation of existing stream-side vegetation corridors on the Deschutes River and other

streams. Establishing these stream-side vegetation corridors is required to make significant progress on water quality problems. This will take a concerted effort on behalf of land owners, non-profit organizations, and governments in the watershed.

The TMDL implementation plan calls for actions to be completed by 2030. Compliance with numeric water quality standards will take longer since it takes time to achieve full mature riparian vegetation after it is planted. If the actions included in the implementation plan are not met by 2030, Ecology will submit an updated TMDL for the Deschutes River for necessary parameters by 2035.

Ecology augments the TMDL by clarifying the following two wasteload allocations for temperature to all permitted stormwater sources within the TMDL boundary.

1. All discharges shall not cause more than a 0.3°C increase in background stream temperature due to the combined effects of all human activities. That allowable 0.3°C increase is quantified using the following equation, which provides a numeric daily loading value to assess compliance with the allocation.

$$T_{eff} = T + 0.3 * \frac{Q + Q_{eff}}{Q_{eff}}$$

Where:

T = Background daily maximum temperature
Q = Daily average stream flow before discharge
Q_{eff} = Daily average stormwater discharge flow
T_{eff} = Temperature of allowable stormwater discharge

2. All discharges from stormwater systems shall not exceed T_{eff} calculated above and the numeric water quality standard found in WAC 173-201A of 17.5°C for the 7-DADMax.

In addition, Ecology clarifies the TMDL by expressing bacteria allocation in daily units (see Attachment B).

Ecology is currently preparing a dissolved oxygen TMDL for Budd Inlet. The Budd Inlet TMDL will set nutrient load and wasteload allocations for all sources of nutrient pollution to the Inlet. Such allocations will include aggregated or distributed nutrient allocations to pollution sources within the Deschutes River watershed and other tributaries to the Inlet as needed to achieve marine dissolved oxygen water quality standards. The Budd Inlet TMDL implementation plan will include nutrient reduction strategies that align with Puget Sound management objectives that target improved ecosystem health and attainment of water quality standards. More information on the Budd Inlet Dissolved Oxygen TMDL is available on our website at http://www.ecy.wa.gov/programs/wq/tmdl/deschutes/BuddInletCapitolLkTMDL.html. We will continue to work directly with EPA staff on the development of this TMDL. According to our current schedule, we plan to send a draft Budd Inlet TMDL to EPA for your full review by 2020 and send a completed TMDL for your approval by 2021.

Ecology will continue to fully support the entire implementation plan that addresses tributaries in the watershed and parameters not included in this submission. Full implementation is needed to restore water quality and meet water quality standards in the Deschutes River and other waters in the basin.

Ecology is confident that the complete work outlined in the report meets the objectives of the CWA and will result in achieving water quality standards for temperature, fecal coliform bacteria, and fine sediment in the Deschutes River, Percival Creek, and Budd Inlet Tributaries. Your review and approval are greatly appreciated.

If you have questions or need clarification, please contact Andrew Kolosseus at andrew.kolossues@ecy.wa.gov or (360) 407-7543.

Sincerely,

Heather R. Bartlett
Water Quality Program Manager

Enclosures

cc: Laurie Mann, Region 10 EPA
Chris Zell, Region 10 EPA
Rich Doenges, Ecology
Helen Bresler, Ecology
Andrew Kolosseus, Ecology
Diane Dent, Ecology

Attachment A

Listing ID	Water Quality Assessment						Waterbody	Parameter	Reach Code	Count	
	2014	2012	2008	2004	1998	1996				2014	1996
45462	5	5	5	3	N	N	ADAMS CREEK	Bacteria	17110019007395	1	1
45695	5	5	5	3	N	N	ADAMS CREEK	Bacteria	17110019007396	1	--
16722	5	1	1	5	Y	Y	DESCHUTES RIVER	Bacteria	17110016000007	1	1
45480	5	5	5	3	N	N	ELLIS CREEK	Bacteria	17110019007661	1	1
45731	5	2	2	3	N	N	ELLIS CREEK, N.F.	Bacteria	17110019007581	1	1
3758	5	5	5	5	Y	Y	INDIAN CREEK	Bacteria	17110019020859	1	1
74218	5	3	3	3	N	Y	INDIAN CREEK	Bacteria	17110019000800	1	--
45212	5	5	5	3	N	Y	MISSION CREEK	Bacteria	17110019020856	1	1
3759	5	5	5	5	Y	Y	MOXLIE CREEK	Bacteria	17110019007890	1	1
3761	5	5	5	5	Y	Y	MOXLIE CREEK	Bacteria	17110019007948	1	--
3763	5	5	5	5	Y	Y	REICHEL CREEK	Bacteria	17110016000057	1	1
45559	5	5	5	3	N	N	SCHNEIDER CREEK	Bacteria	17110019007705	1	1
46061	5	5	5	3	N	N	SPURGEON CREEK	Bacteria	17110016000044	1	1
6232	5	5	5	5	Y	N	DESCHUTES RIVER	Fine Sediment	17110016000014	1	1
6576	5	5	5	5	Y	Y	DESCHUTES RIVER	Temperature	17110016000007	1	1
48711	5	5	5	3	N	N	DESCHUTES RIVER	Temperature	17110016000008	1	--
48713	5	5	5	3	N	N	DESCHUTES RIVER	Temperature	17110016000009	1	--
74253	2	3	3	3	N	N	BUTLER CREEK	Bacteria	17110019013133	1	1
45749	2	2	2	3	N	N	BUTLER CREEK, NW.F.	Bacteria	17110019007449	1	1
45343	2	2	2	3	N	N	BUTLER CREEK, SE.F.	Bacteria	17110019013134	1	1
45342	2	5	5	3	N	N	BUTLER CREEK, SW.F.	Bacteria	17110019007492	1	1
74210	2	3	3	3	N	N	DESCHUTES RIVER	Bacteria	17110016000012	1	1
46415	2	2	2	3	N	N	PERCIVAL CREEK	Bacteria	17110016007733	1	1
										23	18

Attachment B. Bacteria Daily Load Expressions for Water Quality Limited Segments in the Deschutes River, Percival Creek, and Budd Inlet Tributaries.

Listing ID[1] (#)	**Waterbody** (name)	**Water Quality Target**[3] (fecal coliform in colonies 100 mL^{-1})	**Load Capacity**[4] (cfu day^{-1})	**Wasteload Allocation**[5] (cfu day^{-1})	**Load Allocation**[5] (cfu day^{-1})	**Margin of Safety** (cfu day^{-1})
45462 & 45695	Adams Creek	19	3.96E+08	1.98E+08	1.98E+08	implicit
74253	Butler Creek	31	3.18E+08	1.59E+08	1.59E+08	implicit
16722 & 74210	Lower Deschutes River[2]	37	9.04E+10	4.52E+10	4.52E+10	implicit
45480 & 45731	Ellis Creek	27	5.90E+08	2.95E+08	2.95E+08	implicit
3758 & 74218	Indian Creek	31	1.02E+09	5.10E+08	5.10E+08	implicit
45212	Mission Creek	29	3.26E+08	1.63E+08	1.63E+08	implicit
3759 & 3761	Moxlie Creek	31	2.50E+09	1.25E+09	1.25E+09	implicit
46415	Percival Creek	19	4.74E+09	2.37E+09	2.37E+09	implicit
3763	Reichel Creek	26	1.25E+09	6.26E+08	6.26E+08	implicit
45559	Schneider Creek	26	4.60E+08	2.30E+08	2.30E+08	implicit
46061	Spurgeon Creek	42	5.45E+09	2.72E+09	2.72E+09	implicit

[1] Water Quality Limited Segment number as specified in 2014/2016 303(d) list

[2] Applies to reaches downstream of National Forest

[3] Geometric mean bacteria density needed to achieve Part 2 of the water quality standard according to statistical rollback method

[4] Percent reductions reported in TMDL for each monitoring station remain effective as implementation targets

[5] Aggregate allocation to be achieved by all current and future sources of bacteria pollution

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December 17, 2015

Mr. Dan Opalski, Director
Water Division, Office of Water and Watersheds
U.S. EPA Region 10
Attention: Jo Henszey
1200 Sixth Avenue
Seattle, WA 98101

Dear Mr. Opalski:

In accordance with 40 CFR 130.7 and Section 303(d) (1) of the Clean Water Act (CWA), the Washington State Department of Ecology submits the ***Deschutes River, Percival Creek, and Budd Inlet Tributaries Multi-parameter*** *Total Maximum Daily Load* (TMDL) Water Quality Improvement Report for your review and approval. This TMDL addresses and establishes load allocations for temperature, fecal coliform bacteria, dissolved oxygen, pH, and fine sediment within the watershed.

The Deschutes River, Percival Creek, and Budd Inlet Tributaries Multi-parameter TMDL addresses 71 impaired segments on the 2012 Water Quality Assessment (303(d) list). The total number of TMDLs within this submission according to the 1996 counting convention is 31. In addition to these listed segments, there were two water body segments found not meeting water quality standards. We ask that the load allocations applied to these water bodies also be approved. The table in the enclosure clarifies and counts the water body segments addressed within this TMDL by showing their names and identification numbers.

The Water Quality Improvement Report with Implementation Strategy includes all the requirements and other information necessary to determine the statutory and regulatory adequacy of this TMDL. In addition, the public participation during the development of the TMDL is captured along with a responsiveness summary in Appendix F. You will find the report at: https://fortress.wa.gov/ecy/publications/SummaryPages/1510012.html.

I believe that the complete work outlined in the report meets the objectives of the CWA and will result in achieving water quality standards for temperature, fecal coliform bacteria, dissolved oxygen, pH, and fine sediment in the Deschutes River, Percival Creek, and Budd Inlet Tributaries. Your review and approval are greatly appreciated.

If you have questions or need clarification, please contact Lydia Wagner at lydia.wagner@ecy.wa.gov or (360) 407-6329.

Sincerely,

Heather R. Bartlett
Water Quality Program Manager

Enclosures

cc: Laurie Mann, RG10 EPA

Enclosure

Deschutes River, Percival Creek, and Budd Inlet Tributaries listed on the 1995 and 2012 303(d) lists for temperature, fecal coliform bacteria, dissolved oxygen, pH, and fine sediment

Water Body	Parameter	Township, Range, Section	1996 List	1996 Listing ID	1996 Count	NHD reach code	2012 List	2012 Count	2012 Listing ID	Lower Route Address
Budd Inlet Watershed										
Adams Creek	Bacteria	19N-2W-25	N	---	1	17110019007395	Y	1	45462	0.000
		19N-2W-26	N	---	---	17110019007396	Y	1	45695	1.019
	pH	19N-2W-25	N	---	1	17110019007395	Y	1	50965	0.000
Butler Creek	Bacteria	18N-2W-66	N	---	1	17110019007492	Y	1	45471	0.019
Butler Creek, SW F	Bacteria	18N-2W-66	N	---	---	17110019007492	Y	1	45342	0.000
Ellis Creek	Bacteria	18N-2W-53	N	---	1	17110019007661	Y	1	45480	0.000
Indian Creek	Bacteria	18N-1W-18	Y	WA-13-1300	1	17110019020859	Y	1	3758	4.061
		18N-2W-24	N	---	---		Y	1	45213	1.739
		18N-2W-52	N	---	---		Y	1	46410	2.838
Mission Creek	Bacteria	18N-2W-64	Y	WA-13-1380	1	17110019020856	Y	1	45212	0.800
		18N-2W-53	N	---	---		Y	1	46102	0.000
Moxlie Creek	Bacteria	18N-2W-41	Y	WA-13-1350	1	17110019007948	Y	1	3759	0.000
		18N-2W-41	N	---	---		Y	1	3761	0.000
		18N-2W-41	N	---	---		Y	1	45252	0.000
		18N-2W-56	N	---	---		Y	1	46432	0.597
Schneider Creek	Bacteria	18N-2W-59	N	---	1	17110019007705	Y	1	45559	0.000
Deschutes River Watershed										
Ayer (Elwanger) Creek	Bacteria	17N-1W-7	Y	WA-13-1015	1	17110016000187	Y	1	5849	0.000
	pH		Y		1		Y	1	5850	0.000
	Dissolved Oxygen		Y		1		Y	1	5851	0.000
Chambers Creek	Bacteria	18N-2W-36	N	---	---	17110016000048	Y	1	45560	0.060
Deschutes River	Bacteria	17N-1W-7	N	---	1	17110016000008	Y	1	46499	8.606
		17N-1W-19	N	---	---	17110016000009	Y	1	46500	13.601
		16N-1E-18	N		---	17110016000013	Y	1	9881	31.575
		16N-2E-30	N		---	17110016000014	Y	1	46210	43.988
	Dissolved Oxygen	18N-2W-60	N	---	1	17110016000007	Y	1	10894	1.112
		17N-1W-7	N		---	17110016000008	Y	1	47753	8.606
		17N-1W-19	N		---	17110016000009	Y	1	47754	13.601
		16N-2E-30	N	---	---	17110016000014	Y	1	47756	43.988
	Temperature	18N-2W-60	Y	WA-13-1010	1	17110016000007	Y	1	6576	1.112
		17N-1W-33	Y		1	17110016000010	Y	1	7590	22.449
		17N-2W-1	N	---	---	17110016000007	Y	1	48710	4.462

Water Body	Parameter	Township, Range, Section	1996 List	1996 Listing ID	1996 Count	NHD reach code	2012 List	2012 Count	2012 Listing ID	Lower Route Address
		17N-1W-7	N	---	---	17110016000008	Y	1	48711	8.606
		17N-2W-13	N	---	---		Y	1	48712	10.353
		17N-1W-19	N	---	---	17110016000009	Y	1	48713	13.601
		17N-1W-29	N	---	---		Y	1	48714	17.626
		17N-1W-28	N	---	---		Y	1	48715	21.012
		16N-1W-2	N	---	---	17110016000011	Y	1	48717	26.693
		16N-1W-40	N	---	---	17110016000012	Y	1	48718	29.558
		16N-1E-18	N	---	---	17110016000013	Y	1	9439	31.575
		15N-3E-7	Y	WA-13-1020	1	17110016000019	Y	1	7588	58.759
		16N-2E-30	Y		1	17110016000014	Y	1	7592	43.988
		16N-2E-34	Y		1	17110016000016	Y	1	7593	50.183
		16N-1E-26	Y		1	17110016000014	Y	1	7595	40.377
		16N-1E-20	N	---	---	17110016000013	Y	1	48720	34.051
		16N-1E-22	N	---	---		Y	1	48721	38.794
		16N-2E-29	N	---	---	17110016000015	Y	1	48724	45.916
		15N-3E-10	N	---	---	17110016000026	Y	1	48726	65.807
	Fine Sediment	16N-2E-30	N	---	1	17110016000014	Y	1	6232	43.988
Huckleberry Creek	Temperature	15N-3E-17	Y	WA-13-1024	1	17110016000085	Y	1	3757	0.212
Lake Lawrence Creek	Dissolved Oxygen	16N-2E-30	N	---	1	17110016000056	Y	1	47696	0.000
Reichel Creek	Bacteria	16N-1E-27	Y	WA-13-1022	1	17110016000057	Y	1	3763	0.000
		16N-1E-26	N	---	---		Y	1	45566	1.170
	Dissolved Oxygen	16N-1E-26	N	WA-13-1022	1		Y	1	47714	1.170
	Temperature	16N-1E-26	N	WA-13-1022	1		Y	1	48666	1.170
Spurgeon Creek	Bacteria	17N-1W-19	N	WA-13-1016	1	17110016000044	Y	1	46061	0.000
Tempo Lake Outlet	Temperature	17N-1W-28	N	----	1	17110016000233	Y	1	48696	0.000
Unnamed Spring (Trib To Deschutes River)	Temperature	17N-1W-28	N	----	1	1711001600009	Y	1	48923	0.000
Percival Creek Watershed										
Black Lake Ditch	Dissolved Oxygen	18N-2W-21	N	---	1	17110016007722	Y	1	47761	0.000
		18N-2W-32	N	---	---		Y	1	47762	3.476
	pH	18N-2W-32	N	---	1	17110016007722	Y	1	50990	3.476
	Temperature	18N-2W-21	N	---	1	17110016007722	Y	1	48733	0.000
		18N-2W-29	N	---	---		Y	1	48734	1.552
		18N-2W-32	N	---	---		Y	1	48735	3.476

Water Body	Parameter	Township, Range, Section	1996 List	1996 Listing ID	1996 Count	NHD reach code	2012 List	2012 Count	2012 Listing ID	Lower Route Address
Percival Creek	Bacteria	18N-2W-55				17110016007720	Y	1	46103	0.070
		18N-2W-21					Y	1	46108	1.841
	Dissolved Oxygen	18N-2W-55				17110016007720	Y	1	48085	0.070
		18N-2W-21					Y	1	48086	1.841
	Temperature	18N-2W-21				17110016007720	Y	1	42321	1.841
		18N-2W-28					Y	1	48249	2.422
		18N-2W-55					Y	1	48727	0.070
		18N-2W-34				17110016007733	Y	1	48729	5.159
Totals					**31**			**71**		

Deschutes MP TMDL impaired listings that are on the Proposed 2014 303(d) list but not on the 2012 303(d) list.

Water Body	Parameter	Township, Range, Section	1996 List	1996 Listing ID	1996 Count	NHD reach code	2012 List	2012 Count	Proposed 2014 Listing ID	Lower Route Address
Indian Creek	Bacteria	18N-2W-41	N	---		17110019000800	N		74218	---
Ayer (Elwanger) Creek	Temperature	17N-1W-7	N	---		17110016000187	N		73229	---
Totals										