

Lower Boise Watershed Tributary TMDL Addendum Draft Strategy Paper

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Tributary TMDLs

A sediment and bacteria Subbasin Assessment and Total Maximum Daily Load (TMDL) addendum for Indian Creek, Mason Creek, Fivemile Creek, Ninemile Creek, Tenmile Creek, Fifteenmile Creek, Willow Creek and Sand Hollow Creek will be developed by May 2013. Other pollutants will be covered in separate addendums at a later date.

Subbasin Assessment Monitoring

Sufficient water quality data exists for the Assessment Units (AU's) below for TMDL need verification and TMDL development with the exception of Indian Creek and Mason Creek. Additional sediment monitoring will be conducted in summer 2012 for Indian Creek and bacteria monitoring will be conducted in summer 2012 for Indian and Mason Creeks.

Sediment Target Development

Building upon work already done by DEQ, the Lower Boise Watershed Council (LBWC) a literature review of sediment targets will be done to determine the acceptable range of suspended sediment target concentrations that will support beneficial uses, specifically cold water aquatic life, and also meet the Lower Boise River sediment TMDL load allocation. Those results will be shared with the LBWC in a work session to solicit their input in choosing a suspended sediment target that is suitable for the tributaries from that range. Based upon a preliminary review of DEQ compiled sediment studies relating to aquatic life toxicity, the suspended sediment annual average is likely to be between 20 mg/L- 30 mg/L. The sediment load allocation will include loads similar to those described in the Lower Boise River sediment TMDL. These loads are expressed in shorter durations with higher targets. The review will also be shared with EPA beforehand to solicit their input.

Suspended sediment TMDLs for each tributary will be developed using a mass balance approach, a load duration curve, or a simple daily load calculated over a range of flows (high/low/average) at the control point at the mouth, whichever is appropriate based on an evaluation of flow/diversions and available flow information. The TMDL load allocation for each tributary will be consistent with existing Lower Boise River and Snake River sediment TMDL allocations.

Bacteria Target Development

TMDLs for *E. coli* will be written for all bacteria listed streams based on water quality standards (WQS) using a geometric mean of 126 *E. coli* organisms per 100 mL and with a control point at the mouth or the most downstream point of the AU. Delisting may occur based on field data.

WAG Facilitation

The LBWC is familiar with the TMDL process, beneficial uses and applicable water quality criteria. Because this effort focuses on a TMDL addendum, WAG/TAC involvement can focus on suspended sediment target input and review of the draft TMDLs.

Sediment and Bacteria TMDL Timeline

The recently revised TMDL process ensures WAG input while also streamlining TMDL development. By bundling the tributaries into one TMDL, determining suspended sediment targets in concert for all the tributaries and developing bacteria TMDLs at the same time, the timeframe for TMDL development is shortened considerably.

July 2012: Sediment/bacteria TMDL development strategy presentation by DEQ.

August 2012: Sediment literature summary sent out to WAG/TAC members.

September 2012: Lower Boise WAG/TAC sediment target working group-sediment target determined.

June-September 2012- Additional Indian Creek sediment and bacteria data collected.

September-October 2012: Bacteria TMDLs developed, if necessary, for Indian, Sand Hollow, Mason and 5/9/10/15 mile Creeks.

November-December 2012: Sediment TMDL development for Indian, Willow, Sand Hollow, Mason and 5/10/15 mile Creeks.

February 2013: Sediment/bacteria TMDL review by WAG/TAC.

March 2013: Public Comment.

May 2013: Finalize sediment/bacteria TMDLs.

Sediment and Bacteria AU's

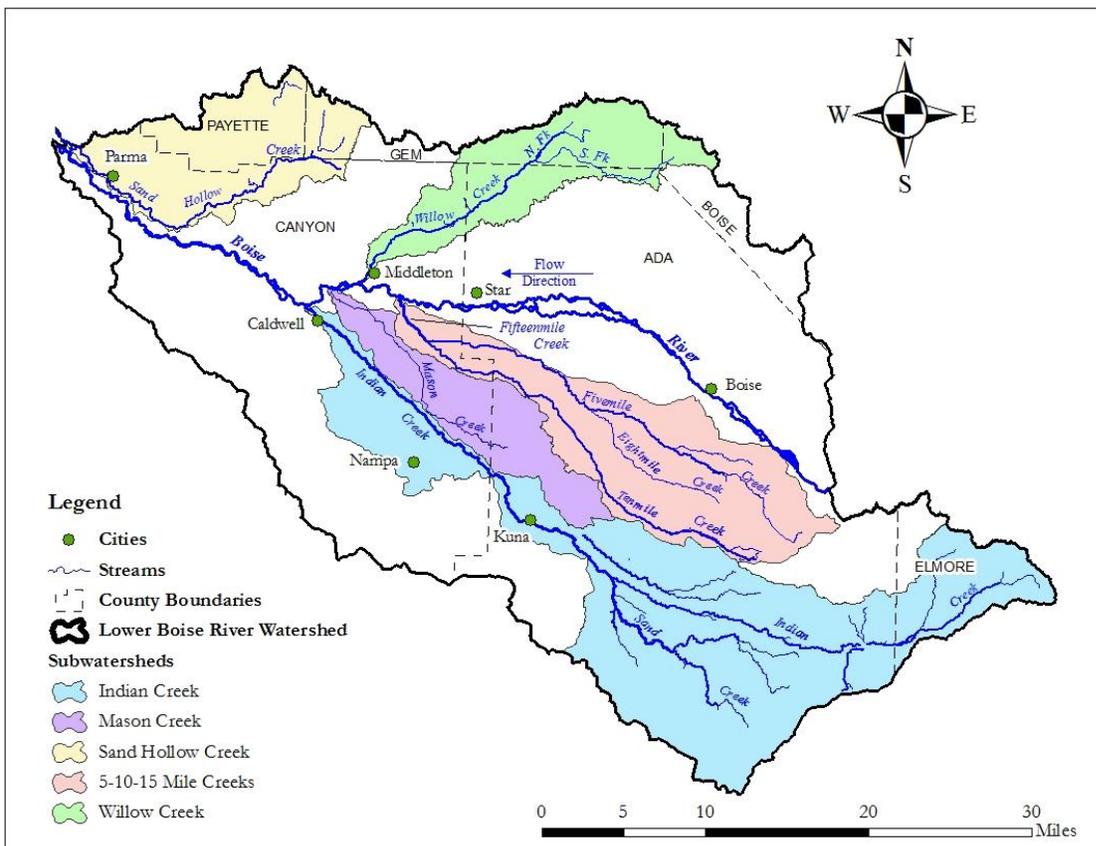


Figure 1. Watershed Location

Indian Creek

Assessment Unit	Beneficial Use	Pollutant(s)
ID17050114SW003_02 Indian Creek and 1 st and 2 nd order tributaries upstream of Indian Creek Reservoir	COLD PCR SS	Fecal Coliform (Soon to be <i>E. coli</i>) Sediment
ID17050114SW002_04 downstream of Sugar Avenue	COLD SCR	Sediment <i>E. coli</i>

Watershed Description

Indian Creek's lower assessment unit flows for 11.9 miles between Sugar Avenue in Nampa and the Boise River in Caldwell. Half a mile from its mouth, the entire creek is diverted into the Riverside Canal, which then spills a portion of the flow back into the Boise River.

Indian Creek was sampled for bacteria in 2011, and revealed a geometric mean of 490 *E. coli* colony forming units (cfu) per 100 mL. The most recent sediment data were collected by the USGS in 2005.

The only point source on this assessment unit is for the City of Nampa's wastewater treatment plant, and the National Pollutant Discharge Elimination System (NPDES) permit was issued in February 1999.

- Sediment
 - 3000 lbs/day monthly average effluent limit and 4500 lbs/day average weekly limit.
 - 30 mg/L average monthly limit and 45 mg/L average weekly limit.
 - 85% removal requirement.
- Fecal Coliform bacteria
 - 200 CFU/100 mL average weekly and monthly limits.
 - 800 CFU/100 mL daily maximum limit.

Five/Ten/Fifteen Mile

Assessment Unit	Beneficial Use	2010 IR 303 (d) listed Pollutant(s)
ID17050114SW010_02 Fivemile, Eightmile, and Ninemile Creeks – 1 st and 2 nd order	COLD SCR	Low flow alterations <i>E. coli</i>
ID17050114SW010_03 Fivemile Creek – 3 rd order	COLD SCR	Sediment <i>E. coli</i>
ID17050114SW008_03 Tenmile Creek – 3 rd order below Blacks Creek Reservoir	COLD SCR	Sediment <i>E. coli</i>
ID17050114SW007_04 Fifteenmile Creek	COLD* SCR	Sediment <i>E. coli</i>

* This water body is undesignated; therefore DEQ presumes that the water body can support cold water biota.

Watershed Description

Flow in Fivemile and Tenmile Creeks is hydraulically disconnected at the New York Canal and Ridenbaugh Canal. Fivemile Creek and Tenmile Creek join to form Fifteenmile Creek which

discharges to the Boise River southeast of Middleton. The stream channels have been modified to support a water conveyance system, and parts of the channel are completely obscured by agricultural/urban development. Portions of the creeks align with historic drainage channels.

Point Sources

- City of Meridian – Issued November 1999
 - Sediment
 - 30 mg/l average monthly limit and 45 mg/L average weekly limit.
 - 85% removal requirement.
 - Lower Boise River TMDL WLA 710 lbs/day monthly, 1065 lbs/day weekly; consistent with the NPDES permit issued in 1999.
 - Fecal Coliform Bacteria
 - 100/100 mL average monthly limit.
 - 200/100 mL average weekly limit.
 - 800/100 mL daily maximum limit.
 - *E. coli* Bacteria – monitoring requirements only

Sand Hollow

Assessment Unit	Beneficial Use	2010 IR 303d listed pollutant(s)
ID17050114SW016_03 C-Line Canal to I-84	COLD*	Sediment
ID17050114SW017_03 I-84 to Sharp Road	COLD* SCR	Sediment <i>E. coli</i>
ID17050114SW017_06 Sharp Road to Snake River	COLD* SCR	Sediment <i>E. coli</i>

* This water body is undesignated; therefore DEQ presumes that the water body can support cold water biota.

Watershed Description

Flow in Sand Hollow Creek starts east of the town of Sand Hollow. The channel is constructed, or modified, for agricultural purposes. Portions of the creek align with historic drainage channels. There is a transfer of irrigation water from the Payette River at Black Canyon Dam into the Black Canyon Irrigation District C-Line Canal that irrigates over 25,000 acres of farmland that drains into the LBR below Middleton. This transfer of water provides for a significant portion of the base flow in Sand Hollow Creek. While part of the Lower Boise 4th field HUC, the majority of Sand Hollow Creek flow discharges to the Snake River north of the mouth of the Boise River.

Point Sources

- City of Parma – Issued May 2004
 - Sediment
 - 255 lbs/day monthly average effluent limit and 369 lbs/day average weekly limit.
 - 45 mg/L average monthly limit and 65 mg/L average weekly limit.
 - 65% removal requirement.
 - *E. coli* Bacteria – not to exceed a monthly geometric mean of 126/100 mL

Mason Creek

Assessment Unit	Beneficial Use	2010 IR 303 (d) listed pollutant (s)
ID17050114SW006_02 Entire watershed	COLD*	Sediment
	SCR	<i>E. coli</i>

* This water body is undesignated; therefore DEQ presumes that the water body can support cold water biota.

Watershed Description

The Mason Creek Subwatershed drains 62 square miles of rangeland, agricultural land and urban areas. The hydrology of Mason Creek is related to the irrigation season with low flows occurring in non-irrigation season months. USGS is finalizing turbidity/pollutant relationships in this watershed after collecting continuous flow/turbidity data in addition to Total Suspended Sediment (TSS) samples in 2011. Low Beneficial Use Reconnaissance Program (BURP) scores and high TSS data collected by the Idaho State Department of Agriculture (ISDA) indicate the need for a TSS TMDL. Additional bacteria data will be collected in June 2012 to verify whether a bacteria TMDL is necessary.

Point Sources

- Sorrento Lactalis NPDES permit issued 2005
 - *E. coli* bacteria not to exceed a monthly geometric mean of 126 cfu/100 mL.
 - 13 mg/L average monthly limit and 25 mg/L maximum daily TSS limit.

Willow Creek

Assessment Unit	Beneficial Use	2010 IR 303 (d) listed pollutant
ID17050114SW015_03 3 rd order	COLD*	Sediment

* This water body is undesignated; therefore DEQ presumes that the water body can support cold water biota.

Watershed Description

Willow Creek drains approximately 55,545 acres of mainly agricultural land and rangeland. One major canal (C-Line East) supplies water to cropland in the Willow Creek Subwatershed and one major drain (Willow Creek) receives tailwater from the croplands and pastures and drains ground water. There are no NPDES permitted facilities in the watershed.