

Boise City Comment on March 6, 2015 Draft Lower Boise River TMDL

March 19, 2015

1. Draft TMDL is well crafted and is approvable as written.

The March 6, 2015 Draft TMDL is well written and is approvable as written. IDEQ has done a great job of developing the draft TMDL and associated technical modeling and justification. The draft TMDL and modeling process has been public, open and transparent.

The City has six minor technical comments and two additional comments for consideration by IDEQ that we believe will clarify and further strengthen the draft TMDL.

Thank you for your comment.

2. Minor Technical Clarifications

The City has six minor technical/factual comments that we recommend IDEQ consider including in the final draft TMDL presented for WAG consideration on April 9, 2015. These suggestions include:

- a. Table 7: Point Source Wasteload Allocations

The draft TMDL proposes an October – April allocation of 350 ug/l TP monthly allocation for the City of Parma. Parma discharges to Sand Hollow, a tributary of the Snake River. The 350 ug/l TP allocation for Point Sources was developed to attain the 150 g/m² for discharges to the lower Boise River. The Snake River Hells Canyon TMDL is a seasonal TMD 70 ug/l May-September. IDEQ should describe the rationale for proposing the October-April 350 ug/l TP allocation for Parma.

Thank you for your comment. DEQ appreciates your concerns. Sand Hollow Creek has been removed from this TMDL addendum. Sand Hollow, because it is a tributary to the Snake River and not the LBR, will have an allocation of 0.07 mg/L May-Sept.

It is DEQ's position that the biological impairment we see in Sand Hollow Creek can be attributed, in part, to elevated nutrients. As such a TMDL is needed to reduce nutrients and other contributing pollutants. A separate TMDL addendum to the SR-HC TMDL will address the impairment in Sand Hollow Creek for cause unknown—nutrients suspected.

- b. Figure 20: Daily Mean Flows at Diversion Dam, Middleton, and Parma

The purpose of Figure 20 is to illustrate the amount of water in the Boise River at various locations, upper, middle and mouth of the river. Figure 20 would

more effectively illustrate the change in volume by including Lucky Peak flows, which during the irrigation season are generally two times larger than Diversion Dam flows (i.e. New York Canal during peak irrigation season diverts approximately 2,400 cfs in July).

Thank you for your comment. The red line in Figure 20 (Diversion Flow) represents the flow above the diversion dam; these are the flows coming from Lucky Peak before being diverted to the New York Canal. The following edits were made to Figure 20:

- The Red line labeled “Diversion Dam” was relabeled to “Above Diversion Dam”
- Flow from below diversion dam (recorded by USGS and BOR) was added to the figure.
- Flow from the USGS station at Glenwood Bridge was also added to the Figure.

c. Section 2.2.3 Nondesignated Surface Waters and Presumed Uses

The draft correctly identified that there are three categories of nondesignated waters identified in state water quality standards, manmade, private, and undesignated. The section goes on to discuss how IDEQ addresses undesignated waters but is silent concerning how manmade and private waters are addressed. This section would benefit from additional text concerning how IDEQ addresses manmade and private waters as there are many of them in the valley.

Thank you for your comment. The following text was added to section 2.2.4.

The WQS include a general provision for undesignated waters, but then also specifically address, in section 101.02, undesignated man-made waters. Such waters are protected for the use for which they were developed. The WQS do not protect undesignated man-made waters for aquatic life or recreational uses unless there is information that shows that these are existing uses.

Man-made waterways include “canals, flumes, ditches, wasteways, drains, laterals, and/or associated features, constructed for the purpose of water conveyance.” IDAPA 58.01.02.010.58. Section 101.02 recognizes the complex system of canals and drains and other water conveyances built to support Idaho agriculture. These man-made waterways are distinctly different from natural water bodies. They were constructed and are operated to promote water conveyance and were not intended to support aquatic life and recreational uses. Canal owners and operators maintain the channel to promote water conveyance, through such activities as periodic application of algaecides, removal of benthic and riparian vegetation, and excavation of accumulated sediment to restore channel shape, depth and gradient. The flow of water is highly regulated and abruptly changes on a seasonal basis. DEQ applies the criteria applicable to agricultural uses to protect these waters for the use for which they were constructed—

agricultural water conveyance. If there is information that establishes other existing uses, DEQ will protect for those existing uses. In addition, DEQ will protect downstream waters.

d. Table 10: Numeric Criterion

Table 10 incorrectly identifies numeric criterion for single sample E. coli of 576 and 406 cfu/100. State water quality standards at IDAPA58.01.02.251 include only one numeric criterion for E. coli, 126 cfu geomean over a 30 day period. The 576, 406, and 235 cfu values are thresholds for secondary and primary contact recreation and public beaches respectively that trigger additional sampling to generate the data necessary to compare to the single numeric criterion for E. coli, 126 cfu geomean over 30 days.

Thank you for your comment. The Single sample thresholds of ≤ 406 *E. coli*/100 mL for primary contact recreation and ≤ 576 *E. coli*/100 mL for secondary contact recreation were removed from the main table and included within footnote c.

e. Section 2.3 (p. 22) Summary of and Analysis of Existing Biological Data: Lower Boise River

The first sentence of the Lower Boise River section contains text that suggests that BURP (Beneficial Use Reconnaissance Program or BURP) data could not be collected on the river because of high flows. IDEQ BURP guidance was developed for perennial streams (e.g. < 5th order, <15 meter width, and < 0.4 m depth). IDEQ developed a River Ecological Assessment Framework in 2002 and USGS has collected multiple years of data from locations on the Lower Boise River. The first sentence should be revised to acknowledge that BURP is appropriate only for perennial streams (e.g. 5th order or lower, < 15 meter width, <0.4 meter depth) and not for the Boise River, which is significantly larger and requires different assessment protocols.

Thank you for your comment. Text was revised accordingly.

f. Stormwater Section (p.3): Industrial and Construction Facilities Discharging to Impaired Waters

This section discusses only MSGP facility discharges to impaired waters and would benefit from additional text concerning Construction General Permit discharges to impaired waters.

Thank you for your comment. Added CGP language as requested.

3. Two Additional Comments

a. Table 17

1. Summer and winter flow wet weather flow volumes

Summer and winter flow wet weather flow volumes in the table (40% summer, 60% winter) are inconsistent with precipitation data from NOAA that show lower summer and higher winter precipitation (27% summer, 73% winter). This results in a 33% overestimate of summer loads and 22% underestimate of winter loads.

Thank you for your comment. No change was made to the stormwater flows. DEQ received the seasonal total flows and loads from the stormwater workgroup. DEQ acknowledges that the stormwater system is complicated and that further characterization is needed. The uncertainty related to the stormwater data needs to be addressed through the TMDL implementation monitoring and mapping, etc.

2. Permitted and Non-permitted Area

The distinction between permitted and non-permitted areas appears to be unnecessary because each Phase II permit currently contains requirements (see II.E.¹ in all Phase II MS4 permits issued in the valley) that require permittees to:

“The permittee must implement the actions and activities of the SWMP in all new areas added or transferred to the permittee’s MS4 (or for which the permittee becomes responsible for implementation of storm water quality controls) as expeditiously as practicable, but not later than one year from the date upon which the new areas were added. Such additions and schedules for implementation must be documented in the next Annual Report following the transfer.”

Additionally, the distinction between permitted and non-permitted does not effect the estimates of the source loads or allocations contained in the draft TMDL.

Thank you for your comment. DEQ agrees that the distinction between permitted and non-permitted areas does not impact the estimates of the source loads or allocations in the draft TMDL. However, the distinction between permitted and non-permitted areas was provided at the request of the LBWC stormwater workgroup, therefore no changes were made.

b. TMDL Allocation Approach: Incorporation of Cost in Allocation Approach

The City provides the following comments for IDEQ’s consideration not only in this TMDL but for future TMDLs. As demonstrated by this TMDL, multiple WLA and LA “scenarios” can address the TP impairment issues in the LBR. The IDEQ should consider a more formalized approach to selecting the preferred “scenario” that gives consideration to the triple bottom line of financial, social, and environmental impacts.

¹ ACHD, Caldwell, Middleton, and Nampa Phase II permits at <http://yosemite.epa.gov/r10/water.nsf/NPDES+Permits/Current+ID1319>

EPA^{2 3 4} and Idaho⁵ have provided guidance concerning TMDL development requirements, including allocation methods and considerations. EPA and state guidance identify a number of factors, including technical feasibility, cost effectiveness, affordability, relative contributions, equity, trading, and the likelihood of success, to develop the most effective allocation strategy. This comment is more directed to considering the financial and social impacts associated with selecting a preferred scenario.

The Watershed Council and the State have the opportunity to incorporate financial, social and environmental impacts into the allocations by selecting an allocation method that satisfy Clean Water Act obligations while optimizing financial, social, and associated environmental impacts.

i. Cost Considerations

Cost can and should be an important consideration in the development of a TMDL⁶. EPA's TMDL Report to Congress on the National Costs of the TMDL program estimates implementation costs at \$1 to \$3.2 Billion annually. These costs are based on the assumption that states will use "... cost-effective reductions among all sources of the impairments, including trading between point and nonpoint sources." EPA notes that "costs may be higher or lower depending on the extent to which States choose to allocate more of the reductions to sources with lower control costs versus allocating equal percentage reductions to sources regardless of costs". EPA estimates that costs could double if cost effective approaches in allocating TMDL responsibility are not used.⁷

Affordability is also a factor related to cost and has long been a consideration in TMDL development and implementation of the Clean Water Act. Affordability was initially defined by EPA in 1995 with interim guidance at 2% of Median Household Income⁸.

On November 26, 2014, EPA significantly revised the Clean Water Act affordability guidance to include additional factors for consideration, including up to ten

² EPA, 1999, Draft guidance for water quality-based decisions: the TMDL process, second edition, August 1999

³ EPA, 2000, Revisions to the Water Quality Planning and Management Regulation and Revisions to the National Pollutant Discharge Elimination System Program in support of revisions to the Water Quality Planning and Management Regulation, Federal Register V. 65, No. 135, July 13, 2000, p 43586-43670.

⁴ EPA, 2001, Notice of Availability of a Draft Report on Costs Associated With the Total Maximum Daily Load Program and Request for Comments Federal Register: August 9, 2001, V. 66, No. 154. p. 41875-41876.

⁵ IDEQ, 1999, State of Idaho guidance for development of Total Maximum Daily Loads, June 8, 1999, 46 p.

⁶ EPA, 2001, Notice of Availability of a Draft Report on Costs Associated With the Total Maximum Daily Load Program and Request for Comments Federal Register: August 9, 2001, V. 66, No. 154. p. 41875-41876.

⁷ EPA, 2001, Administrator Mehan testimony to House Water Resources and Environment Subcommittee November 15 concerning TMDL Final Rule, November 15, 2001

⁸ EPA, 1995, Interim economic guidance for water quality standards workbook, EPA-823-B-95-02

additional measures of the financial ability of communities to pay for Clean Water and Safe Drinking Water Act implementation⁹.

Multiple statewide studies of nutrient removal costs have identified affordability as a significant issue, particularly for small facilities and stormwater contributors for implementation of phosphorus and/or nitrogen nutrient controls associated with TMDLs or statewide nutrient standards¹⁰. Nutrient removal costs are more affordable for large facilities (e.g. 10-20 million gallon per day capacities and processes) that can be modified to achieve biological nutrient removal.

Impacts on small rural wastewater facilities are two to five times more expensive as identified in multiple recent statewide nutrient treatment cost analyses. Utah evaluated upgrade cost for all municipal wastewater treatment facilities statewide, including small facilities (< 2 mgd) and design lagoon (0.55 mgd), to attain four potential levels of phosphorus and/or nitrogen control (1 mg/l and 100 ug/l of TP; 1 mg/TP and 10 mg/l TN; 100 ug/l TP and 10 mg/l TP). Affordability was evaluated under the 1995 2% of MHI. The Utah Study findings were that for mechanical plants, nutrient removal was affordable for all nutrient removal scenarios but that small system affordability using the MHI threshold was fully used or exceeded for three of the four nutrient removal scenarios (i.e. 108% for 1 mg/l TP and 10 mg/l TN; 93% for 100 ug/l TP; and 149% for 100 ug/l TP and 10 mg/l TN)¹¹.

Affordability for Municipal Separate Storm Sewer System (MS4) is also a major concern as treatability options for nitrogen or phosphorus are minimal and extremely expensive if applied on individual MS4 basis.

Three very small municipal wastewater treatment facilities (Greenleaf, Notus, Wilder) have design discharge of 0.6 mgd to the Lower Boise watershed one small municipality (Parma) that discharges to the Snake River Hells Canyon reach. Greenleaf recently constructed wastewater treatment facilities and currently has monthly rates of \$80, or 2.6% of median household income. Greenleaf would be

⁹ EPA, 2014, Financial capability assessment framework for municipal clean water act requirements, November 24, 2014 memo from Ken Kopocis and Cynthia Giles, 8 p.

¹⁰ MDEQ, 2007, Wastewater Treatment Performance and Cost Data to support an Affordability Analysis for Water Quality Standards, 27 p., WDOE, 2011, Technical and Economic Evaluation of Nitrogen and Phosphorus Removal at Municipal Wastewater treatment Plants, Tetra Tech for WDOE, 556 p. accessed August 15, 2014, <https://fortress.wa.gov/ecv/publications/publications/1110060.pdf>

Ohio EPA , 2013, http://epa.ohio.gov/Portals/35/wqs/nutrient_tag/OhioTSDNutrientRemovalCostEstimate_05_06_13.pdf

Utah, CH2MHill, 2010 , statewide nutrient removal cost impact study, 114 p.

<http://www.nj.gov/dep/wms/bwqsa/UtahStatewideNutrientRemovalCostImpactStudyRptFINAL.pdf>

Illinois, 2011, Evaluation of practical technology-based effluent standards for phosphorus and nitrogen in Illinois; 53 p.

http://c.ymcdn.com/sites/www.isawwa.org/resource/dynamic/forums/20111226_095749_18134.pdf

Minnesota Department of Transportation, 2005, Cost and effectiveness of stormwater management practices, Minnesota Department of Transportation, Research Report 2005-23, 103 p. <http://www.lrrb.org/media/reports/200523.pdf>

Chesapeake Bay Commission, 2012; Nutrient Credit Trading for the Chesapeake Bay: an economic study; 60 p.

<http://www.chesbay.us/Publications/nutrient-trading-2012.pdf>

¹¹ Utah, CH2MHill, 2010 , statewide nutrient removal cost impact study, 114 p.

<http://www.nj.gov/dep/wms/bwqsa/UtahStatewideNutrientRemovalCostImpactStudyRptFINAL.pdf>

able to meet the summer allocation but not the winter allocation. The additional winter treatment cost to Greenleaf would increase the % of Median Household Income for wastewater, which is significantly over the 1995 EPA guidance and even higher compared to the November 2014 revisions of EPAs affordability guidance.

The TMDL should include affordability analysis associated with the allocations, and where exceedance of the affordability thresholds are anticipated, develop alternative allocations, as it has done for stormwater.

An alternative allocation approach could be to:

1. Use summer and winter MS4 Wet source values that correspond to measured precipitation (27% summer and 73% winter) instead of the 40/60% split in the current draft.

This change would reduce summer loads 23.5 lb/d, freeing up that capacity for less stringent summer allocations for at design capacity for Greenleaf, Wilder and Notus, which could be met through trading or offsets entirely instead of costly improvements.

Use of actual precipitation data would add 23.5 lb/d load in the winter (it's actually already there, just unaccounted for in the load estimates) and some portion of the 17.6 lb/d at design from the three small municipalities. The additional winter loads would need to be evaluated to see what reductions are possible or necessary.

Examples of Idaho's use and EPA approval of TMDLs containing allocation economic considerations in setting municipal nutrient allocations include:

- [Middle Snake River/ Succor Basin TMDL¹²](http://www.deq.idaho.gov/water-quality/surface-water/tmdls/table-of-sbas-tmdls/snake-river-middle-succor-creek-subbasin.aspx)

The TMDL proposed an equal concentration allocation for non-point sources (70 ug/l) and current treatment levels up to design capacity for point sources (200% greater than current discharge for Marsing; 167% allocation for Homedale). Point sources were discharging directly or indirectly to water quality limited segments of the Snake River [see Table 50 in Snake River/Succor Creek TMDL]. EPA approved the TMDL on January 5, 2004.

¹² 2003 Middle Snake Succor Creek TMDL,
<http://yosemite.epa.gov/opa/admpress.nsf/8b770fac5edf6f185257359003fb69e/618c1f314c6b621c85257dcd00685aae!OpenDocument>

- Snake River Hells Canyon TMDL¹³

The allocations proposed by the states of Oregon and Idaho and approved by EPA were based on economic analysis and selection of the least cost approach to comply with the total phosphorus target. The five municipal and one industrial source allocations were based on cost effective biological nutrient control (80% reduction from current discharges) and implementation of agricultural BMPs for the majority of the reduction, because in part, point sources were a very minor portion of the cumulative load.

The TMDL should include a discussion of cost effectiveness of various allocation methods to achieve the water quality target, including:

- Various technology based thresholds for WWTFs
- Evaluation of affordability, particularly for small municipalities and stormwater dischargers
- Authorization for the use of trading for all point sources to achieve WLAs
 - Unlimited use for small (<2mgd WWTFs)
 - Use by stormwater dischargers

Thank you for your comment. The stormwater workgroup provided DEQ with the wet weather and dry weather loads, which is what DEQ used to calculate flows. If DEQ was to adjust the flows to 27%/73%, as suggested, the loading would remain the same. This adjustment in flows would not result in a change in allocations as suggested. DEQ recognizes that additional mapping and monitoring is needed to further characterize stormwater. The loads provided by the stormwater workgroup were used as a best estimate, based on the data available at the time this TMDL was being developed.

The load allocations in the TMDL are simply the amounts of pollutants that can be discharged from each source category, but the TMDL does not specify how the discharges must attain their particular load allocation. The point source waste load allocations will be best implemented through an existing regulatory program such as an NPDES program.

During the initial implementation planning each source will investigate alternatives and feasibility for meeting individual allocations. During this time, economic impacts will be considered on a case by case basis.

¹³ 2004 Snake River Hells Canyon TMDL, <https://www.deq.idaho.gov/water-quality/surface-water/tmdls/table-of-sbas-tmdls/snake-river-hells-canyon-subbasin.aspx>