Comments and Response Table *DEQ Responses in Red*		
2015_0206 City of Nampa Michael Fuss		
Comment No	***Section***	***Comment***
#1	General	The City appreciates the DEQ's diligence and hard work in completing this important document. The City supports the DEQ's goal of improving water quality in the Lower Boise River watershed.
Thank you for your comment.		
#2	General	The City supports the use of an adaptive management approach throughout the Lower Boise River TMDL development. Given the limited data set for many key inputs, variability of stormwater data and calibration of the AQUATOX model, the results of the AQUATOX model should be used in a multiple lines of evidence approach in the TMDL. The AQUATOX model is an important tool that can help us understand the sensitivity of periphyton to specific inputs but should not necessarily be used for the direct calculation of wasteload allocations. The results of this modeling effort and resulting wasteload and load allocations should continue to be compared to changes in the Lower Boise River, and the allocations should be adjusted when needed to meet water quality goals.
Thank you for your comment. Multiple lines of evidence were used; historical data (USGS, ISDA), AQUATOX Model, and 2012-13 USGS synoptic sampling. The 5-Year review process will be used to evaluate the wasteload allocations and their effectiveness at meeting the water quality goals.		
#3	General	The City strongly supports the concept of water quality trading as a viable method for meeting water quality goals. While the TMDL is not the correct vehicle for detailing the exact implementation of this approach, which should be discussed in a Trading Framework, the City appreciates the DEQ's inclusion of water quality trading as a potential implementation approach for reducing point and non-point source discharges. Furthermore, the City would encourage the DEQ to continue to support and investigate both water quality trading and integrated water management approaches as viable options for meeting water quality goals.
Thank you for your comment.		
#4	Table 16 (38) and Table 18 (40)	The area of the City's MS4 system is inconsistently presented among these tables. The City suggests that all tables be updated to include an area of 30.3 square miles, which is consistent with the City's most recent MS4 Permit.

Thank you for your comment. The area defined in the TMDL document referenced the 2010 Census data, which may differ from the approximate permitted areas defined in the MS4 permits that are based on 2000 Census data. Therefore, no change was made.		
#5	Table 19 (44)	Table 19 should be amended to include the active MSGP facilities located within Canyon County. This information can be found using the EPA's NOI Search Engine.
Table 19 has been updated with Canyon County MSGP facilities.		
#6	5.1.2 (64, and 66)	It is recommended that the DEQ clarify the temporal averaging or hydrologic condition of the ≤ 0.07 mg/L target derived from the Snake River Hells Canyon TMDL and how the Lower Boise River TMDL matches those components. It is unclear from the report whether the ≤ 0.07 mg/L target at Parma has a temporal averaging component or whether it is effectively an "instantaneous maximum" value to be met at all times.
The ≤ 0.07 mg/L target at Parma is an instantaneous maximum that is not to be exceeded. Revised text to clarify.		
#7	5.1.2 (66)	The allowable exceedance frequency (i.e., 1 in 10 years) for nuisance algae seems overly restrictive. This is more stringent than with toxics criteria, for which a 1 in 3 year frequency is used. Considering that the periphyton target is aesthetics-based, it would not be recommended to have an allowable frequency that is more stringent than toxics-based criteria. The City believes that an exceedance frequency of 1 in 3 would support beneficial uses while not overly burdening dischargers.
Removed 1 in 10 years and replaced with continued monitoring and reassessment during the 5 year review will determine the allowable exceedance frequency.		
#8	5.1.2 (66)	It is recommended that the DEQ include a section on critical conditions as they relate to the target for nuisance algae. This section should explain how the modeled period is representative of a critical condition for the Lower Boise River.
Thank you for your comment. The model period does not represent critical conditions, rather, the allocations represent the modeling from Jan 2012-April 2013, along with multiple lines of evidence (e.g. historical data, load duration curves, etc.).		
#9	5.3.2 (86)	The City agrees with the DEQ's approach for separating wet weather and dry weather (i.e., agricultural return and groundwater) allocations. It is the City's view that the dry weather stormwater flows are allowable as non-contaminated flows under its current NPDES permit. However, the City does not have and does not intend to implement any method for controlling these flows outside of routine maintenance and replacement.
Comment noted. Using the information available, DEQ has estimated pollutant loading occurring through regulated MS4 discharges during dry weather. DEQ concurs that certain types of uncontaminated groundwater and irrigation water are “authorized non-stormwater discharges” under the current MS4 permit(s) for Nampa and other regulated MS4 entities. While MS4 operators are not obligated to implement controls for such irrigation and ag return flows, DEQ’s analysis supports the implementation of additional, new actions by MS4 permitees specifically, to identify all existing MS4 outfalls discharging during dry weather, and to sufficiently characterize such flows to identify the type and source of such flows, including to confirm whether such groundwater and/or irrigation water flows are indeed “uncontaminated.” DEQ expects such actions to be required by the applicable MS4 permit(s) to be issued in the future by the EPA.		

#10	5.4.1 (98)	It should be noted that the stormwater load estimates were not developed through the use of the AQUATOX or mass balance models. Rather, these loads were estimated as described in ≤.
Revised text to state that the stormwater load estimates were not derived from the AQUATOX or mass balance models.		
#11	5.4.1 (98)	The City recommends the selection of a tool to separate baseflow in order to identify the dry weather flows. For example, the following two public- domain tools can separate base flow: • Web-Based Hydrograph Analysis Tool (WHAT) - https://wiki.epa.gov/watershed2/index.php/WebBased_Hydrograph_AnalysisTool _(WHAT) • PART - http://water.usgs.gov/ogw/part/ These tools should be used to separate dry weather from stormwater flows in the 15-month Lower Boise River model record. The model would then be paired with the Lower Boise River water balance model in order to distinguish groundwater, wastewater, reservoir release, and runoff inputs. Because the overall dataset is limited and there are specific time constraints, a spreadsheet-based pollutant loading model might be the most efficient approach to calibrate stormwater loads. This type of model is relatively straightforward to develop and can provide land use- based information that will help subdivide the wet-weather loads. Results from a spreadsheet-based pollutant loading model (i.e., Watershed Treatment Model) could then be used to partition loads from these different hydrologic fluxes by location and land use.
Thank you for your comment. This has been discussed, but the complexity of the watershed would require a much more extensive dataset in order to align well with the current modeling approach. However, this can certainly be a tool that is used during the TMDL implementation to help better assess stormwater loads, along with additional mapping and monitoring. As more data is collected this could be revisited.		
#12	5.4.1 (98)	The rationale and feasibility of the assumed 42% and 84% load reductions are unclear based on the description provided in the text. Many stormwater BMPs remove only 10-45% of influent phosphorus loads (Simpson and Weammert, 2007). It is neither technically nor economically feasible to treat all stormwater runoff from a locality, and, thus, the percent required load reductions may not be achievable. Moreover, on a dollar-per-pound basis, the costs of reducing urban stormwater loads can be 2-3 orders of magnitude higher than other sectors (Jones, 2010; Wieland, 2009). For these reasons, the reduction value should not be interpreted as an appropriate goal for any single locality or MS4 permit. Rather, TMDL-related activities by the stormwater sectors should be determined on a locality-by-locality basis, based on a reasonable level of effort in individual permit terms. Trading with other sectors and sources should be allowed and encouraged, to facilitate cost-effective load reductions.
Thank you for your comment. The 42% is within the range of loads that BMPs can remove. If load reductions were decreased below 42%, all other sources/sectors would require a higher reduction (Simpson and Weammert, 2007).		
#13	5.4.1 (99)	The City suggests that the DEQ address the inherent assumptions with the percent reduction approach. While the City supports this method for expressing stormwater wasteload allocations, it should be acknowledged that

		these percent reductions are based on the current understanding of baseline loads. Should baseline load estimates be reduced in the future through further data evaluation, the percent reductions should also be reduced to yield the same wasteload allocations.
Added statement of current understanding.		
#14	5.4.1 (99)	Add the following at the end of the first sentence of the first paragraph ***"…therefore refinements should be made as additional characterization information becomes available."***
Revised text accordingly.		
#15	5.4.1 (99)	Modify the second sentence of the first paragraph to read "Further, these TP ***wasteload and load allocations*** may need to be adjusted to reflect MS4 boundary and land use changes in the lower Boise River subbasin."
Revised text accordingly.		
#16	5.4.1 (100)	Modify the second sentence of the first bullet in the Concentration vs. Load section to read "For this reason…..designed and implemented to reduce loads ***(not concentrations)*** for each MS4."
Revised text accordingly.		
#17	5.4.1 (100)	Modify the third sentence of the first bullet in the Concentration vs. Load section to read "…expressed as percent reduction from the baseline ***load…"***
Revised text accordingly.		
#18	5.4.1 (100)	The first bullet in the Concentration vs. Load section references "…the reduction of loads from the baseline that can be translated into management activities." However, the current method for determining a baseline is unclear either in the text of the TMDL or in Appendix E. The City suggests that DEQ clearly states the baseline assumptions for stormwater loadings as a means to better understand required implementation activities.
Revised text to state: "existing conditions" versus "baseline". Implementation activities over the first 10 years are anticipated to involve actions that identify all existing MS4 outfalls discharging during dry weather, and to sufficiently characterize such flows to identify the type and source of such flows, including to confirm whether such groundwater and/or irrigation water flows are indeed "uncontaminated." DEQ expects such actions to be required by the applicable MS4 permit(s) to be issued in the future.		
#19	5.4.1 (100)	Replace the last sentence of the second bullet in the Concentration vs. Load section with the following: "For these reasons, the reduction value should not be interpreted as an appropriate goal for any single locality or MS4 permit. Rather, TMDL related activities by the stormwater sectors should be determined on a locality-by-locality basis, based on a reasonable level of effort in individual permit terms. Trading with other sectors and sources should be allowed and encouraged to facilitate cost-effective load reductions."
Revised text to state: .."the TMDL related activities should be determined on a watershed basis such that all regulated MS4 entities should be conducting the same or similar types of actions to identify all existing MS4 outfalls discharging during dry weather, and to sufficiently characterize such flows to identify the type and source of such flows, including to confirm whether such groundwater and/or irrigation water flows are indeed "uncontaminated."		
#20	5.4.1 (100)	Suggest changing the second bullet in the Low Frequency Storms section to read:

		"Stormwater (wet weather) flows and loads were not captured as part of USGS August 2012 synoptic sampling. Because of the lack of long-term stormwater data, it is unclear at this time how the loads from these discrete events impact periphytic growth."
Revised text accordingly.		
#21	5.4.1 (100)	For the Low Frequency of Storms section it is recommend that the DEQ reference the following EPA guidance "...because storm water discharges are due to storm events that are highly variable in frequency and duration and are not easily characterized, only in rare cases will it be feasible or appropriate to establish numeric limits for municipal and small construction storm water discharges. The variability in the system and minimal data generally available make it difficult to determine with precision or certainty actual and projected loadings for individual dischargers or groups of dischargers. Therefore, EPA believes that in these situations, permit limits typically can be expressed as BMPs, and that numeric limits will be used only in rare instances." (Revisions to the November 22, 2002, Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs, EPA)
Thank you for your comment. DEQ declines to include the EPA guidance/statement as suggested. The comment cites an outdated EPA memorandum, "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs" (EPA, 2002). EPA has recently released an updated memorandum with a similar title, "Revisions to the November 22, 2002 Memorandum: *Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for stormwater Sources and NPDES Requirements Based on Those WLAs*. See the EPA 2014 memo here: http://water.epa.gov/polwaste/npdes/stormwater/upload/EPA_SW_TMDL_Memo.pdf The 2014 EPA memo, particularly pages 3 through 7, shows that NPDES permitting authorities around the country have successfully included Water Quality Based Effluent Limits consistent with TMDL WLAs into NPDES stormwater permits by incorporating clear, specific, and measurable permit requirements and, where feasible, numeric effluent limitations.		
#22	5.4.1 (101)	On the 4th bullet under Non-Stormwater (Dry Weather) delete "and other BMPs targeting phosphorus reductions, increased attention to on-site stormwater inspection, maintenance, and public education." and replace with "reuse, dry weather inspections, and public education."
Revised to add requested BMPs.		
#23	Table 42 (110)	The City supports the wasteload allocation approach for large WWTFs in the Lower Boise River watershed (i.e., wasteload allocation based on 0.1 mg/L discharge from WWTFs). While this concentration still approaches the current limits of technology, the proposed wasteload allocations provide some operational flexibility.
Thank you for your comment.		

#24	Tables 40-45 (104-116), Tables 50-55 (133-140), & Tables 56—'57 (141-142)	Request that the DEQ present all wasteload allocations for point sources included in these tables as either "lb/day ***as a monthly average"*** or "lb/day ***as a seasonal average."*** The DEQ has consistently presented the allocations, and therefore the potential permit limits, as a monthly or even seasonal average for point source discharges. The current presentation could potentially lead to interpretation of these numbers as daily limits, which would increase the cost of compliance for dischargers without improving water quality in the Lower Boise River.
Revised Tables accordingly to reflect "monthly average".		
#25	5.4.2 (117) & Figure 47 (123)	The City requests that the DEQ present and discuss the AQUATOX model scenarios for the October thru April timeframe that have point source discharges at higher wasteload allocations (e.g., discharge at 0.5 and 1.0 mg/L). It is unclear, based on the current documentation, the added benefit from reducing point source discharges to 0.35 mg/L as compared to slightly higher levels of discharge. This change impacts the implementation cost for the City and therefore should be examined closely.
Thank you for your comment. AQUATOX scenarios were compared for 0.35, 0.5 and 1.0 mg/L TP. Although periphyton reductions are similar under all three reduction scenarios, the 0.5 and 1.0 mg/L TP will cause additional exceedances of the Snake River-Hells Canyon TMDL TP target of ≤ 0.07 mg/L for May—September due to the persistence of phosphorus in the aquatic environment.		
#26	5.4.2 (119)	The City supports the DEQ's proposed approach (i.e., channel modifications in the Lower Boise River) to further improve water quality in the Lower Boise River. The growth of periphytic algae in the Lower Boise River, like any system, is complex with any number of factors influencing the ultimate concentrations in the river. Because of this, there appears to be a limit to the effectiveness of total phosphorus controls to meet water quality goals, as shown in Figure 47. It is important that the DEQ continues to look for the most cost-effective methods for improving water quality.
Thank you for your comment.		
#27	5.4.2 (119)	The City supports the DEQ's use of AQUATOX for the quantification of the periphytic algae in the Lower Boise River. However, as discussed in Comment No. 2, there is still uncertainty associated with the use of the calibrated AQUATOX model. Because of this, the City requests that the DEQ use a multiple lines of evidence approach in the development of this TMDL and the review of its effectiveness in the future. This approach would be further supported by the collection of additional water quality data that could serve to better calibrate the current AQUATOX model.
Thank you for your comment. The final model scenario did not assume low flow conditions, which under lower flow scenarios, could have resulted in increased periphyton exceedances leading to more conservative targets. DEQ agrees that the collection of additional data could serve to better calibrate		

the current AQUATOX model.		
#28	5.4.8 (147)	Allocation for future municipal growth is critically important to the City. As such, it is suggested that the first sentence of the third paragraph be modified to read "...unless new point sources ***or the expansion of existing point sources*** discharging directly or indirectly to the Lower Boise River, Mason Creek, or Sand Hollow Creek: (1) receive a mean monthly NPDES permit limit for TP of < ≤ 0.07 mg/L, (2) a DEQ 5-year review identifies a growth reserve calculated as the difference between current TP loads and TP allocations, where the difference is divided among new/existing point sources, (3) implement approved water quality offsets or trading, *or* (4) no discharge, ***or (5) a technical study demonstrating the proposal to discharge meets the TMDL targets is provided to and approved by the DEQ."***
Thank you for your comment. This is more appropriately addressed during the NPDES permitting process.		
#29	Appendix E	The City requests that Appendix E be removed from the TMDL documentation. This document was not developed by the Stormwater Group, as referenced in the document, and, as such, does not necessarily represent the views of the entire group. This document should be viewed similarly to other input received from stakeholders throughout the process, which is not included in the formal TMDL documentation. If Appendix E remains as a reference document, the City requests that Cheryl Jenkins, Mike Mieyr, and Ted Douglass's names be removed from the list of Stormwater Group Members. The City (and its consultant) provided general input and data to the group. However, the City did not fully validate the calculations used to derive the stormwater loading values. Refer to Comment No. 11, above, regarding the City's perspective on the appropriate method for quantifying stormwater loads.
Thank you for your comment. Appendix E will remain in the TMDL for reference. This was the information provided to DEQ by LBWC Stormwater workgroup to help develop the stormwater loading estimates and allocations. However, the names referenced above (Cheryl Jenkins, Mike Mieyr, and Ted Douglass), who have requested to be removed from Appendix E, will have a strike through on their name on the Title Page of Appendix E, indicating their request to be removed from the document. The administrative record will illustrate that the referenced names were involved in the stormwater workgroup.		
2015_0206 Tom Dupuis, HDR on behalf of local government, industry and agricultural stakeholders		
#1	Pg.2	The flow management aspects of the lower Boise River are not sufficiently explained to the reader to understand the complexity of flow within the valley and therefore the fate and transport of phosphorus. It is overly simplistic and not accurate to characterize the modified hydrology of the river as impairing or always negatively impacting the river uses. For example, the release of cold water from Lucky Peak Reservoir in summer greatly enhances summer recreation uses and cold water biota uses for tens of river miles.

		Considering inserting additional information, such as excerpts from ERO's reports, and providing greater emphasis on how important the modified hydrology is in the lower Boise River valley. The length of this discussion is not as important as the emphasis, such that bullets, bold text, call out box or other methods can be used so the message clearly stands out.
Revised text, added additional references to discussion on subwatershed characteristics.		
#2	Pg. 17	DEQ should be clear in the text regarding the target supported by the LBWC and DEQ's independent decision to expand the target. DEQ expanded the target both in terms of the season and the applicable beneficial uses. If the literature to be cited regarding aquatic life uses is primarily from research in Montana, and primarily during the peak algae growth period (such as July through September), this should be carefully noted in the document and regarded as a data gap for the lower Boise River, especially as potentially applicable during the October through April season. Revise text as follows. "In consultation with the LBWC, DEQ has identified and refined a numeric target to describe nuisance aquatic growth that may impair AUs of the lower Boise River: mean monthly benthic (periphyton) chlorophyll a ≤ 150 mg/m^2." To date, the LBWC has supported this target only for season May 1 through September 30 and for recreational beneficial uses. DEQ expanded the target to annual. "The target was based…." "Additional scientific findings" as researched by DEQ "support the use of a benthic chlorophyll a target of ≤ 150 mg/m^2 as appropriate for recreation and cold water aquatic life beneficial uses." The original development of the target in Montana was only for recreation and the LBWC supported this target only in terms of recreation. DEQ expanded the target to include cold water aquatic life beneficial uses. "For example, literature suggests…" {and provide additional justification for applicability of the literature for the May through September and the October through April time periods if it exists, and if not, include data gap and adaptive management discussion.}
Revised and included that the year around target was based on exceedances known to occur outside of the May-September time frame, and also recreational activities known to exist outside of the May-September time frame. The AQUATOX model showed that mean ≤ 150 target established by the LBWC was being exceeded outside of the May-September time frame. A February 2015 memo from Darcy Sharp demonstrated that if the .350 mg/L concentration allocation is utilized to meet the 150 mg/m^2 during the October to April time frame, May-September TP exceedances above the ≤ 0.07 mg/l target are more likely to occur, thereby precluding attainment of the Snake River-Hells Canyon target.		

Literature suggests nuisance aquatic algae become apparent between 100 and 200 mg/m^2 and can compromise the use of rivers for contact recreation and productive sport fisheries (Welch et al. 1988).		
#3	Pg. 63	DEQ recognizes that "Watershed hydrologic dynamics are not simple" and this is one of the simplifying assumptions for the analysis. DEQ additionally recognized this as a data gap (Page 32 Table 14) and an assumption "Lower Boise River TP inputs do not translate directly into TP loads at Parma. Instead, TP inputs relative to TP loadings at Parma were calculated over various flow scenarios to develop delivery ratios" (Page 78). However, this has implications as the background load may potentially be labeled inaccurately and/or allocated inappropriately since the flow out of Lucky Peak Reservoir does not simply flow down the Boise River channel but rather follows a circuitous pathway. DEQ should further explain this assumption. The process used to calculate the background load is not clearly presented. The background numbers should be reviewed and revised in the draft TMDL before the public comment period. If DEQ concludes the background load is overestimated and loads are available to be re-allocated, the methodology for this re-allocation should follow EPA and state guidance regarding technical feasibility, cost effectiveness, affordability, relative contributions, equity, trading, and the likelihood of success. An analysis of an alternative analysis and allocation of those loads is being developed and may be presented in Attachment A either with this document or at a later date. Page 64. Add text as follows after bullet #12. For the purposes of this analysis DEQ has not attempted to evaluate the fate and transport of phosphorus from upstream through the complex flow network of the valley. DEQ's simplified approach is thought to be conservative and protective of water quality. It is likely that background phosphorus loads arriving at Parma are highly variable. For example, May through September: Due to the complicated plumbing and more than fully appropriated water rights in the lower Boise River at extreme low flows (e.g. 90% flow background of 37 lb/d TP) the water released from Lucky Peak in the May through September timeframe is diverted, used, reused, and returned to the river. Or more simply at extreme low flow events the upstream river flow likely reaches Parma as tributary, drain, or groundwater flow rather than through the Boise River channel; and the quantity of phosphorus originating from Lucky Peak and delivered back to the Boise River via these other sources is unknown. October through April: Winter release water rights are subject to refill and at maximum are 240 cfs,

		which is unlikely to be achievable during a low flow period (e.g. 1992 Lucky Peak release was 80 cfs or one third of the maximum allowable release). If DEQ concludes the existing allocation is overestimated and loads are available to be re-allocated, the method should employ ratios to provide greater allocations to sources with higher control costs and smaller allocations to sources with lower control costs.
The model assumes only 23% of the TP load reaches Parma under "low flow conditions". This was the same assumed ratio for all sector TP inputs reaching Parma, based on long-term load duration analyses. Background was only entered as a boundary condition in the upper-most reach of the model. Additional background was not subsequently added to the model. Background is only implicit in the load allocations needed to achieve the periphyton target in the AQUATOX model. Therefore, there are no overestimated loads available for reallocation. No text added.		
#4	Pg. 68	"DEQ expects the TP allocations in this TMDL addendum will support beneficial uses, while acknowledging that adaptive management adjustments may be necessary as additional information is obtained through monitoring." While DEQ recognizes the benefits of adaptive management as has been discussed during many meetings, additional information about the actual execution of adaptive management is necessary. Page 68. Add text as follows. "…is obtained through monitoring." DEQ hereby tasks the LBWC with writing an Adaptive Management Plan document to provide guidance for both allocation and implementation approaches of this TMDL. "TP concentrations that support…"
Added text accordingly, with minor changes to original text. "The LBWC has suggested the council submit an Adaptive Management Plan to DEQ".		
#5	Pg. 104-136 Table 40, Table 41, Table 50, Table 52	The fish hatcheries did not request an increase in TP allocations and therefore a net positive percent reduction is not appropriate. The fish hatcheries can maintain current concentrations (as shown in Table 25, Table 29, and Table 30) rather than be increased. Their load allocation should be portrayed as a no net increase over current conditions. If DEQ concludes the fish hatchery load is overestimated and loads are available to be re-allocated, see the comment and request in comment number 3. Update all information relating to fish hatcheries to maintain current TP loads rather than allowing an increase. Page 98. Add text as follows. "….this sector received wasteload allocations of 73 lbs/day (0.1 mg/L) TP for all flow conditions (95% reduction)", except for the fish hatchery facilities which received wasteload allocations based on current conditions for all flow conditions because these facilities already functionally

		operate at or below the point source allocations. Page 107 Table 41. Fish Hatchery TP, 110% to 0% Page 133 Table 50. Fish Hatchery TP, +50% to 0% Page 136 Table 52 IDFG Eagle +714% to 0%, IDFG Nampa +27% to 0%, footnote 3 "Due to their operations it is unlikely that the IDFG Eagle and Nampa fish hatcheries will discharge or need to discharge above current TP concentrations of ~~0.1~~" current concentration of 0.07 "mg/L. As a result, their wasteload allocation is set for ~~0.1~~"mg/L year-round."
Thank you for your comment. Based on conversations with the Eagle and Nampa IDFG fish hatcheries in February 2015, the fish hatchery allocations will be kept at 0.1 for future growth. No changes to the allocations have been made.		
#6	Pages 104-116, Table 40-45 (Tables for May 1—Sept 30) Pages 133-140, Table 50, Table 52-Table 55 (Tables for Oct 1—April 30) Pages 141-142 Table 56, Table 57 (Tables for Sand Hollow)	While the table titles indicate the allocations are presented per day as monthly averages, the labels within the tables are (lbs/day). This connotation indicates the loads are daily limits instead of monthly limits. The presentation of daily allocations (lbs/day) should be revised to correspond with monthly loads as stated in the table title. This is critically important to the point sources as has been described in many meetings that monthly or even better seasonal loads address the variability in treatment performance with equal protection of water quality. Daily loads are overly prescriptive and challenging to meet with existing technologies. Clarity must be provided to direct the permit writer to the intended averaging period and avoid misinterpretation and potential appeals and lawsuits. The stakeholders appreciate the table title text but look for additional emphasis that monthly is the only timeframe necessary. For all tables cited above, add the following to the column headers with *allocation*, "…allocation (lbs/day" as a monthly average")".
Revised tables to reflect monthly average.		
#7	Pg. 116	"DEQ reduced the number TP reduction scenarios through consultation with the Lower Boise Watershed Council, EPA and other interested stakeholders to the following." DEQ should provide documentation of other considered concentrations and DEQ's basis for the final selected value. Page 116. Revise and add to the text as follows. "The final AQUATOX model scenario (Scenario 3) and TMDL allocation resulted from hundreds of model scenario runs and analyses to identify TP allocations that would help achieve the mean monthly periphyton target and support beneficial uses, while also being technically, socially, and economically viable options." These analyses included the evaluation of point sources at 0.5 and 1.0 mg/L both annually and seasonal (May-September) and (October-April) as

		requested by interested stakeholders {if a true statement}. DEQ's determination was these concentrations did not result in meeting the SR-HC TMDL target and/or mean benthic chlorophyll-a target {insert DEQ's basis for not selecting as the final concentrations}.
AQUATOX scenarios were compared for 0.35, 0.5 and 1.0 mg/L TP. Although periphyton reductions are similar under all three reduction scenarios, the 0.5 and 1.0 mg/L TP will cause additional exceedances of the Snake River-Hells Canyon TMDL TP target of ≤ 0.07 mg/L for May—September due to the persistence of phosphorus in the aquatic environment. Added revised text to pg. 116 as requested.		
#8	Pg. 147	"In the case of the lower Boise River TP TMDL addendum, an allowance for future growth is not recommended until such time as reductions indicate that beneficial uses have been restored or state water quality standards have been met." While there may not be quantified allowance for future growth, DEQ has implicitly incorporated growth in various ways and should disclose those concepts to explain that the TMDL is not intended to inhibit growth and multiple pathways are available to accommodate growth. One of several ways to include growth is for NPDES permit limits for future growth to be set at the target concentration, which would be ≤ 0.07 mg/L at Parma for the May through September period. The target concentration for the October to April period is identified as 0.11 mg/L at Parma in Table 5 of the Executive Summary, but this is not reiterated as an explicit TP target in the main report. Page 138. Add text as follows. Future growth is anticipated to impact future flows and phosphorus loadings; however, the use of design flows for wastewater treatment facilities, the margin of safety, water quality trading, the implementation plan, and an adaptive management approach are anticipated to address future growth issues and the objectives of the TMDL. Page 147. Add and revise text as follows. "….unless new or expansion of existing point sources discharging directly or indirectly to the lower Boise River, Mason Creek, or Sand Hollow Creek: (1) receive a mean monthly NPDES permit limit for TP of ~~≤ 0.07 mg/L~~" ≤0.07 mg/L May through September and ≤0.11 mg/L October through April" {if it is DEQ's determination that 0.11 mg/L is the TP target for this season}, (2) a DEQ 5-year review identifies a growth reserve calculated as the difference between current TP loads and TP allocations, where the difference is divided among new/existing point sources, (3) implement approved water quality offsets or trading, ~~or~~ (4) no discharge", or (5) a technical study demonstrating the proposal to discharge meets the TMDL targets is provided to and approved by DEQ. Pending DEQ's response to modify allocations, those loads subtracted from other sectors should be put

		into an explicit reserve for growth allocation.
Revised text with additional language added.		
#9	Pg. 48	"Septic systems, runoff from paved and unpaved road surfaces, and other unquantified sources contribute TP, directly and indirectly, to surface water in the lower Boise River, Mason Creek, and Sand Hollow Creek. Contributions from these nonpoint sources are acknowledged data gaps, and implementation plans could include details regarding future data collection from these sources." Unquantified sources could affect the progress of the TMDL reductions and should be recognized and addressed within the implementation strategies. Page 138. "Activities addressed in a new implementation plan should include." Add the following additional activities within the bulleted list. • Permitting of new septic systems, including examining and considering limiting the use of old technology and promoting the use of new technology for septic systems • Measure and quantify the loading of existing septic systems and estimate the additional loading from future septic systems based on growth patterns and development policies • Offset credit for reducing non point sources loads (i.e., sewering of septic systems) • Growth and development (i.e., paving of new road surfaces) • Other non-point sources
Revised text accordingly.		
#10	Pg. 149	"If trading exists in the area covered by this TMDL, any phased implementation of load allocations may be used to derive trading baseline requirements." Early adopters of phosphorus reductions should not be penalized by the long process of developing this TMDL. A baseline year of 1996 was established in the 2001 TMDL report. Page 149. Add text as follows. "…trading baseline requirements." Offset and water quality credits are based on additional guidance but should not penalize adopters of reductions prior to this TMDL, therefore either the difference of actual conditions or representative typical conditions as existed at the time of this TMDL, less the achieved reduction, less the allocation, are provided a means to calculate these credits.
Thank you for your comment. When DEQ presented to EPA the LBR Implementation Plan in 2008 it may have argued for a baseline based on 2001. However, nearly 20 years have passed since the original TMDL draft of 1996 was done, which was a basis of baseline for the current Lower		

Boise Water Quality Trading Framework. The current TMDL is based on 2012/2013 synoptic sampling and additional water quality data that will necessitate revisiting the baseline question. DEQ does not believe specifying a date in the TMDL is appropriate at this time. The baseline determination by DEQ for the Lower Boise Trading Framework will be updated taking into account the advice of the Lower Boise WAG and interested stakeholders and approval/concurrence from EPA.		
#11	Pg. 151	Provide additional clarity as to where the TMDL targets and allocations apply. Compliance is considered at TP monitoring at Parma and benthic chlorophyll-a monitoring within the lower Boise River AUs. The targets within this TMDL do not apply anywhere else within the watershed for the purposes of compliance, implementation effectiveness or measurement of success of this TMDL. Water quality data collected from other areas of the watershed will be used to inform and improve upon water quality analyses. Allocations for tributaries and groundwater in tributaries apply only at the mouth of the tributary.
TP concentration compliance points for May-September will be applied at the mouths of the lower Boise River and Sand Hollow Creek near Parma; mean monthly cholorphyll-a (periphyton) targets of $\leq$ 150 mg/m^2 will be applied within the impaired AUs (ID17050114SW005_06b, and ID17050114SW001_06) of the lower Boise River.		
#12	Pg. 77	The stormwater load estimates provided in the TMDL, specifically described in Appendix E, are based on a number of inherent assumptions. With these assumptions, it is unclear if the stormwater loads presented over- or under-estimate the actual wet-weather stormwater loads to the Lower Boise River, although they appear to be over-estimated. There are several alternative approaches that could be used to better estimate the wet-weather stormwater loads during the modeled period. These approaches focus on separating baseflow from wet-weather flows so that these flows are better understood. The loadings from stormwater could then be estimated using a simple pollutant loading model based on readily available land-use information. Because of the concerns with the stormwater load development, the stormwater baseline load development approach should be revised to improve the accuracy of the stormwater loads in the TMDL. These loads would be better estimated with a more rigorous technical review utilizing a pollutant loading model. If the DEQ elects to use the currently proposed approach, it is requested that the large degree of uncertainty in these loads be clearly noted in the TMDL. Furthermore, the need for adaptive management and the improved understanding of this load should be highlighted in the TMDL. Should the allocations be lowered, the additional load should be allocated as described in Comment 3.

Added "uncertainty" language as recommended.		
#13	Pg. 36-37 including Table 16 Pg. 81, and Pg. 90 (Table 26 and Table 31) Appendix E	**1. Comment: Stormwater – Other Factual Corrections** (1) Page 36. It is unclear who is being referred to as "Other agencies and stakeholders…" and does not fit within the discussion regarding MS4s. (2) Page 37. Table 16. Values are incorrect. Current allocations based on urbanized areas according to the 2010 census data. Permits are issued for entire geographic areas and the allocations should reflect the permits. Meridian is called out with ITD District #3 (ROW 5) under their NPDES MS4 Phase II Permit (#IDS-028177) which is not correct as they are not part of this permit. (3) Page 36-37 In the last paragraphs, much of the information is unclear and its source should be cited. (4) Page 81 and 90. Table 26 and 31. The source of the flow values are not presented and do not match to the flow values in Table 2 of Appendix E. (5) Appendix E estimates of dry and wet flows, concentrations, and loads are greatly overestimated: a. Walnut data excluded because the watershed contained stormwater controls, low concentration groundwater (30 ug/l) and low concentration irrigation water from Boise City Canal. b. Nampa sites selected that have no or limited BMPs (p. 208) c. Caldwell estimate based on average of high, medium, and low control sites, not on mix of land area with each type of control. Overestimate because most of the area has developed with high level of controls. d. Caldwell Dry estimate for flow and concentration from ~1960 vintage development with no stormwater controls (appendix C) e. High biased estimates of flow, concentration, and load from lands with minimal or no controls applied to entire 2010 Census data geographic area for urbanized lands (e.g. Meridian, Eagle, Kuna, Caldwell, Nampa, Boise), many of which have developed since 1980 with significant retain on site controls of insufficient quality for use in the TMDL. Page 98. The technical basis for the proposed MS4 42% reduction goal needs to be revisited given the extreme unrepresentativeness of the data used to estimate stormwater loads (6) Page 99. Recognition of stormwater programs and polices throughout the lower Boise River watershed should be included and pointed out the main mechanism for management. Also, little more than stock language is provide for MSGP and CGP stormwater. Clarity should be provided that those allocations are not zero and that maximum extent practicable standards for applying BMPs will be allowed.

(7) Page 100. The portrayal of non-permittees within regulated area is inaccurate and a double counting of sources. These sources are addressed by the permittees of those areas as they exist within the greater area of the permittees.

(8) If DEQ concludes the stormwater load is overestimated and loads are available to be re-allocated, see the comment and request in comment number 3.

Request

(1) Page 36. Delete the following paragraph. "Other agencies and stakeholders in the subbasin are in the process of applying for stormwater NPDES permits and have yet to develop or implement the voluntary stormwater activities."

(2) Page 37. Table 16. Replace with the following table. (If this table is not replaced, Meridian should be deleted from the existing table).

Table 16. MS4 Permits in the lower Boise River watershed

Permittee (Source)	NPDES Permit No.	Area (square miles)
Ada County Highway District MS4	IDS028185	1,060
Boise, Idaho Transportation Dept. #3, Garden City, Ada County Highway District, Drainage District #3, Boise State University MS4s	IDS027561	120
Caldwell MS4	IDS028118	12.5
Canyon Highway District #4 MS4	IDS028134	8
Idaho Transportation Department District #3 MS4	IDS028177	112 (linear miles)
Middleton MS4	IDS028100	5
Nampa Highway District #1 MS4	IDS028142	8.5
Nampa MS4	IDS028126	30.3
Notus-Parma Highway District #2 MS4	IDS028151	2

Area as presented under either Permit Area and Applicant or Description of the MS4 and Discharge Locations within the Fact Sheet of the permits.

(3) Page 36. Revise the paragraphs as follows.

"Stormwater management areas for lower Boise River watershed area ~~have been updated~~ based on 2010 census (US Census Bureau) and current GIS mapping information" were estimated by ACHD. This information does not present entities with active stormwater management programs and policies, such as retention on-site, within or outside of permitted areas but are not under the regulations of the MS4 permits. "The MS4s addressed in this TMDL addendum are located within 2010 Census urbanized areas and city boundaries (incorporated areas) of Ada and Canyon County based on available GIS information

		(Figure 31 and Figure 32). Cities in urbanized areas include Boise, Eagle, Meridian, Middleton, Nampa, and Caldwell. Within the urbanized areas are also unincorporated areas of Ada County and Canyon County. Additionally, there are areas in each county that are incorporated, but not included in the permitted urbanized areas. These areas include the Ada County cities of Kuna and Star, and Canyon County cities of Greenleaf, Notus, Parma, and Wilder. Table 17 includes a breakdown of permitted and non-permitted areas based on: • City limits data from 7/29/14 (Ada County Assessor) and 5/28/14 (Canyon County Assessor); • Urbanized Area based on 2010 Census; • Area data from NPDES Permit Factsheets (2000 Census); Impervious areas for each of the cities are located in Table 18. The impervious data includes roads, buildings, and parking lots and was developed as part of the Treasure Valley Urban Tree Canopy project funded by a grant from the U.S Forest Service (2011 NAIP-UTC Canopy Assessment-PlanItGeo)." (4) Page 81 and 90. Correct the names of permits and areas to match with new Table 16 as presented in these comments. Review, revise, and provide complete and transparent documentation for the development of stormwater and non-stormwater flows and loads for both May through September and October through April. Neither the flow or load estimates for stormwater are properly documented and explained. There are factual errors in assumptions and data. (5) Page 98. Provide a basis for the wet weather stormwater reduction of 42% TP load reduction and revise as necessary. Recommendation. Replace numeric allocations and reductions with the maximum extent practicable standard for applying BMPs based on EPA guidance. Delete Appendix E which lack clarity, does not appear to have been QC'd and is not a DEQ document; therefore, cite the document as a reference but not include in the TMDL. (6) Page 99. Add the following text. • Stormwater Management ○ Many entities in the lower Boise River watershed, both with and without permits, have active stormwater management programs and policies, such as retention on-site, which are the primary mechanisms for managing stormwater and reducing pollutant loadings from both commercial and residential developments. Additionally, the maximum extent practicable (MEP) standard for applying BMPs in regards to MSGP and CGP stormwater meets the objects of this TMDL. (7) Current non-permittees within regulated areas (e.g. Meridian, Eagle, unincorporated urbanized Ada County, and Southwest Boise) are already covered by the permittees of those regulated areas and therefore are not assigned additional allocations. Unregulated areas are included as

		load allocations in the TMDL because these jurisdictions have regulatory authority over private and municipal properties that are potential sources of stormwater runoff.
Revised text as requested with some additional edits. Urbanized areas in the MS4 Permits are approximate values based on the 2000 Census data. Table 16 references the more current 2010 census data. MS4/flows and loading Tables have been revised and combined into one table (Table 17) in section 3.1. Stormwater loading was based on the data provided by the stormwater workgroup and included in Appendix E. Implementation activities over the first 10 years are anticipated to involve actions that identify all existing MS4 outfalls discharging during dry weather and to sufficiently characterize such flows.		
#14	General (Pg. 110 Table 42, Pg. 135 Table 52)	The draft TMDL proposes municipal future growth through trading and one municipal WWTF has been authorized to implement an offset. The draft TMDL anticipates trading as a tool for compliance for point sources throughout the TMDL. Water quality trading also could be used to meet some or all of a point source reduction obligation (e.g. small municipalities or MS4s) instead of requiring substantially more expensive treatment. The draft and final TMDL should authorize offsets and trading within the Lower Boise Watershed as a means to comply with phosphorus reduction allocations and for future growth for all point sources. Add a footnote to the point source allocation tables (page 110 Table 42, page 135 Table 52) that states: Point source allocations can be met through trading or offsets as detailed in regulations and guidance documents, such as the revised DEQ Water Quality Trading Guidance Document and the Lower Boise Trading Framework.
Thank you for the comment. The authorization of offsets and trading is more appropriately addressed in Implementation Strategies. Added footnote to tables as suggested.		
#15	Pg. 51, Pg. 65	Page 51. *"Information concerning pollution control efforts for WWTFs, urban and suburban storm drainage, agricultural and other nonpoint sources (including rural roads, septic systems, leaky and sewer lines) can be found in the Implementation Plan for the Lower Boise River TMDL (DEQ 2003)."* Page 65. *"Achieving the target and the mouths of the lower Boise River and Sand Hollow Creek near Parma is expected to be protective of cold water aquatic life and contact recreation in the Snake River."* Page 65. *"Therefore, load and wasteload allocations in this TMDL addendum will support the SR-HC TMDL target of less than or equal to ≤ 0.07 mg/l TP, which in turn should result in < 14 µg/L chlorophyll a as a mean growing season limit with a nuisance threshold of 30 µg/L with exceedance threshold of no greater than 25 percent for the Snake River."* Page 51. The phrase, leaky and, seems incomplete. Delete text in parentheses.

		Page 65. The first "and" may have intended to be at. Page 65. Achieving the LBR TMDL alone will not achieve the SR-HC TMDL; modify "which in turn should result in", to which in turn should support the.
Revised text accordingly.		
2015_0206 The Freshwater Trust2015_0206 The Freshwater Trust		
#1	Executive Summary	Suggest adding a time element to this piece. This is an important clarification b/c it helps to establish that the TMDL is not expected to be successfully implemented now, and so therefore, that LAs are not equal to baseline for WQT. "It also identifies implementation strategies— including reasonable time frames, approach, responsible parties, and monitoring strategies— necessary to achieve load reductions and meet water quality standards in the future".
Revised text accordingly.		
#2	xx	The order of actions here was a little unclear as drafted so I've provided some suggested edits that would clarify. Also, will the framework update the guidance? If so, the sentence is ok. If not, we suggest revising the last clause. DEQ, through the lower Boise River TP TMDL addendum, encourages water quality trading to the extent possible and practicable. Upon completion of the TMDL addendum, water quality trading implementation and details specific to the lower Boise River subbasin will be subsequently developed in an updated water quality trading framework (see Water Quality Trading, section 5.5.5), which will update the existing water quality trading guidance (DEQ 2012).
Revised text accordingly with minor additional edits.		
#3	xxxiv	"Achieves the mean monthly benthic chlorophyll a target of ≤ 150 mg/m^2 in the impaired AUs of the lower Boise River. Multiple lines of evidence indicate that the TMDL phosphorus reductions are sufficient achieve the mean monthly periphyton target on an AU basis, as well as achieve TP concentrations at or near the EPA Gold Book" How does this square with the conclusion that there are some small times of the year during which the monthly target is not met in all reaches? See Figure 14 (Oct – Feb seems close, and March appears to exceed the 0.1 mg/L line).

The 5 modeled segments (9-13) that correspond with the lower Boise River impaired AUs, when averaged across the AUs meet the target.		
#4	xliii	"It is clear that the TMDL analysis illustrates a point of diminishing returns, beyond which further TP reductions do not result in significant reductions in periphyton, likely due to other environmental factors and organic enrichment in the system. That is, TP reductions beyond those modeled the final TMDL model scenario (Scenario 3) do not yield measureable improvements in periphyton reductions. **Error! Reference source not found.** Further represents the annual average periphyton in segments 9-13 (the impaired AUs of the lower Boise River) under the various model scenarios. This illustrates, again, that large reductions in periphyton growth are expected to occur under the final model scenario, but additional TP reductions would result in only slight periphyton reductions" Suggest briefly explaining why DEQ thinks this is the case. Our understanding is that TP loading is just one driver of excess periphyton growth. Unless you improve water depth and block more solar loading, there is only so far that TP reductions can go, and the level in Scenario 3 seems to be the point at which changes to the TP loading variable stop being marginally effective.
Implementation strategies shouldn't rule out anything on this graphic.		
#5	2.2.6	"In consultation with the LBWC, DEQ has identified and refined a numeric target to describe nuisance aquatic growth that may impair A Us of the lower Boise River: mean monthly benthic (periphyton) chlorophyll a ≤ 150 mg/m2. The target was based largely on work conducted in Montana, in which 70% of the public identified periphyton of ≤ 150 mg/m2 as acceptable for recreation during the growing season from July 1 – September 30 (Suplee et al. 2008, 2009). In contrast, less than 30% of the public identified periphyton of > 200 mg/m2 as acceptable for recreation. The target is similar to other locations, including Montana, Minnesota, Colorado, and the Clark Fork River, for which the maximum summer periphyton target is 150 mg/m2 (TSIC 1998, MDEQ 2008, CDPHE 2013, MPAC 2013)". Suggest adding a notation about how and why you opted to use the Montana/Colorado method for periphyton surrogate (i.e. recent nature of study, similar river system and ecology, etc).
The periphyton target of ≤ 150 mg/m2 was just one line of evidence. In addition to the work conducted in Montana, multiple lines of evidence were used; historical data (USGS, ISDA), AQUATOX Model, and 2012-13 USGS synoptic sampling.		
#6	2.2.6	"Additional scientific findings support the use of a benthic chlorophyll a target of ≤ 150 mg/m2 as appropriate for recreation and cold water aquatic life beneficial uses. For example, literature suggests

		nuisance aquatic algae become apparent between 100 and 200 mg/m2 and enriched waters often have benthic chlorophyll a concentrations > 150 mg/m2 (Welch et al. 1988, Dodds and Welch 2000). Biggs (2000) asserted that chlorophyll-a levels > 150-200 mg/m2 are very conspicuous in streams, are probably unnaturally high, and can compromise the use of rivers for contact recreation and productive sports fisheries (Welch et al. 1988, Dodds et al. 1998). Some of the management problems caused by enrichment, and associated benthic algal proliferations, include aesthetic degradation, alteration of fish and invertebrate communities nutrient enrichment and algae proliferation, and degradation of water quality (particularly dissolved oxygen and pH) (e.g.Miltner and Rankin 1998, Welch et al. 1988, Biggs 2000, Miltner 2010)". Did DEQ base the use of 150 mg surrogate primarily to support the recreational use or to support cold water aquatic life, or both?
Historical data from USGS and multiple lines of evidence indicate that the lower Boise River has contact recreational and cold water aquatic life uses that occur year around. The ≤ 150 was based on both cold water aquatic life and recreational uses.		
#7	5.1	Instream water quality targets are selected for the purpose of restoring "full support of designated beneficial uses" (Idaho Code 39-3611, 39-3615). The state's water quality standards for nutrients and nuisance aquatic growth are narrative rather than numerical. In this TM DL addendum, DEQ selected two surrogate targets for attaining this narrative standard in the lower Boise River: 1) a daily concentration target to specifically achieve the SR-HC TMDL allocation target for the lower Boise River (which is set at different levels for two distinct seasonal periods), and 2) a more stringent nuisance aquatic growth target specific to supporting beneficial uses in the lower Boise River. As a general comment, it would be helpful to note that when you select a target, it is a surrogate for a narrative water quality criteria.
Revised text with slight modifications.		
#8	5.1.1	The TMDL targets are designed to achieve full support of designated or existing beneficial uses in the lower Boise River, Mason Creek, and Sand Hollow Creek. Because identifying the impairment or support of beneficial uses is based on multiple lines of evidence, it is difficult to directly measure or compare to the narrative water quality standards. The daily concentration limits were set in accord with the SR-HC TMDL. Additional water quality targets were selected based on scientific literature for river conditions representing a variety of water quality systems, including levels of phosphorus and

		benthic chlorophyll a representative of unimpaired and impaired streams and rivers. This information was then used to help determine load capacity, existing pollutant loads, wasteload allocations, and load allocations.
Thank you for your comment. Revised text accordingly..		
#9	5.1.1	The water quality targets are structured to recognize multiple factors within the watershed: "6. Limited exceedances (depending on magnitude, duration, and frequency) may be acceptable so long as they do not impair beneficial uses". When you speak of limited exceedances, what % of the time is this for (are you referring to 10% departure from the standard that may be acceptable)? Perhaps reference to the fact that these are targets for meeting a narrative standard. "12. The concepts of seasonal conditions and limited exceedances are supported by a number of references including EPA guidance, use in other TMDLs including the SR-HC TMDL, the fact that the phosphorus and periphyton are not toxic, and responses vary with conditions and time". Which documents?
Limited exceedances may be acceptable so long as they do not impair the beneficial uses. See Appendix B, too numerous to list.		
#10	5.1.2	These surrogate targets are intended to protect beneficial uses and are translated into other forms for setting allocations and limits in permits. The TMDL strives to be clear in how allocations were developed and in how NPDES permits should interpret the allocations. However, it is important to be clear that the surrogate target selection informs analyses but is a site-specific interpretation of a narrative standard and is not a standard itself that is necessarily applicable to any other watershed.
Revised text accordingly.		
#11	5.1.2	"Therefore, consistency with the SR-HC TM DL requires achieving the seasonal ≤ 0.07 mg/L TP" "Achieving this concentration target at the mouths of the lower Boise River and Sand Hollow Creek near Parma is expected to be protective of cold water aquatic life and contact recreation"

Revised text accordingly.		
#12	5.1.2	"Therefore, load and wasteload allocations in this TMDL addendum will support the SR-HC TMDL target of less than or equal to ≤ 0.07 mg/l TP, which in turn should result in < 14 µg/L chlorophyll a as a mean growing season limit with a nuisance threshold of 30 µg/L with exceedance threshold of no greater than 25 percent for the Snake River". What is this, where does it come from, and why is it relevant?
This language was taken directly out of the Snake River Hells Canyon TMDL. The lower Boise River TMDL needs to be consistent with the Snake River TMDL.		
#13	5.1.2	***Nuisance Algae Target*** Through the TMDL process, DEQ, in consultation with the LBWC, identified a further set of surrogate metrics that relate nuisance algae growth with the impairment of beneficial uses in the lower Boise River (see Section 2.2.5), and for remaining consistent with the concentration limits in the SR-HC TMDL. The following metrics and rationale were selected as appropriate TP allocation periods for the lower Boise River:
Revised text accordingly.		
#14	5.4.2	"Lower instream TP concentrations can be realized with further TP load reductions, but these reductions would not likely to improve ecological conditions or further support beneficial uses in the river. Additionally, as shown in Table 47, mean and median TP concentrations in the lower Boise River near Parma are less than the May – September ≤ 0.07 mg/L target, and less than the EPA Gold Gook recommended value of 0.1 mg/L for the remainder of the year". The ecological considerations seem sufficient
Thank you for your comment.		
#15	5.4.5	2 "This TMDL addendum, complies with the target TP allocations identified in the SR-HC TMDL and sets load and wasteload allocations that achieve ≤ 0.07 mg/L TP for 90th percentile low flow conditions, and maintains those same concentrations and loads under higher flows in order to comply with the lower Boise River mean monthly periphyton target (Section 5.2.2). Essentially,

		this TMDL TP allocation structure provides an explicit margin of safety for all flows greater than the 90th percentile". Can you please explain this a bit more, and provide an example to help illustrate? We do not fully understand. 4. "This TMDL assumes that orthophosphorus from all sources is completely bioavailable and was modeled as such for a conservative approach. Additional research shows that the" No description as to how the mass balance approach is conservative. We suggest describing briefly here how it is conservative.
• This is a conservative approach because under the load allocations, the target would still be met during the 90th percentile flows, which represents critically low flow conditions when concentrations are highest, which only occurs 10% of the time. • The AQUATOX model assumes that orthophosphorus from all sources is completely bioavailable. This is a conservative simplifying assumption since research shows that not all orthophosphorus is equally bioavailable for algal and plant uptake and growth.		
#16	5.4.7	The point source WLAs and nonpoint source LAs are complementary toward effectively achieving the TP load capacity for the lower Boise River. DEQ has reasonable assurance that point source wasteload allocations will be implemented effectively through the N PDES permit program. However, because point source contributions are regulated by the EPA through N PD ES permits, the reasonable assurances for this TM DL apply almost exclusively toward nonpoint source load reductions.
Revised text accordingly.		
#17	5.4.7	"TP loading from agricultural and other nonpoint sources that are measured through tributaries and ground water are anticipated to decline due to a combination of ripple effects from point source TP reductions, BMPs, nutrient management, and land conversion. Achieving such loading reductions will require time and resources beyond what point source regulation can provide. However, based on the USGS mass balance model and other data and reports (e.g. Etheridge 2013; Fox et al. 2002; Ferguson 1999), DEQ believes that TP concentrations and loads from nonpoint tributary and ground water sources can be effectively reduced to achieve the TMDL targets in the lower Boise River. The necessary reductions will result from the combination of regulated point source reductions (which inherently influence the amount of TP moving through the system and are subsequently used by nonpoint sources), along with concerted voluntary nonpoint source

		reductions, which will depend on funding, cost-sharing, willing partners, and effective BMP implementation to achieve the target". What is this ripple effect? It doesn't appear to have been explained elsewhere, or perhaps it was but with different terminology. Suggest an internal cross reference to where this has been explained (if it has been). Also suggest adding in a sentence to the last paragraph we added to this section. On what basis does DEQ "believe that TP concentration and loads from nonpoint tributary and ground water sources can be effectively reduced to achieve the TMDL targets..."? Right now, 5.4.7 seems to state: A) the model says these NPS reductions are possible, B) some pilots/studies show that meaningful reductions can occur (especially where prioritized to most impactful areas), but C) NPSs are not required to install anything under ID law (i.e., it will only happen through voluntary measures or measures imposed by TMDL implementation DMAs)... Suggest talking about the voluntary measures that give DEQ reasonable assurances that these targets can be met: WQT (plus the net envtl gains that will accrue), 319 implementation, USDA NRCS program participation, etc.
The ripple effect is explained as follows: As TP loading into the river from point sources is decreased, the residual phosphorus remaining in the river that is used for irrigation purposes will be substantially less than current conditions. Additionally, the TP loading from nonpoint sources is expected to decrease further with the implementation of BMPs, and additional treatment methods. Revised text to read "cumulative" effects versus "ripple" effect.		
#18	5.4.7	Further examination of data from an Idaho surface-irrigated system directly addresses important Reasonable Assurance questions for future nonpoint source ground water and tributary concentrations. The Northside Canal Company (NSCC) case study is a reasonable application to consider in the LBR TP TMDL as the climate and soils and trend for irrigation efficiency/yield using sprinkler and drip are similar. NSCC TP data (Table 58) show an average of 54 ug/l TP over the last 12 years with a decreasing trend (last 8 year average TP = 49 and OP=20 ug/l).
This table has been removed at the request of the Northside Canal Company.		
#19	5.4.7	DEQ is confident that the implementation of voluntary measures is reasonably likely to reduce TP concentrations and loads from nonpoint tributary and ground water sources so as to achieve water quality standards and fully support beneficial uses. Through targeted restoration action on priority lands

		and investment in high impact pollutant reduction actions, DEQ reasonably expects that progress toward these water quality standards will occur, especially as supplemented by the "ripple effect" described above. DEQ expects that significant voluntary investment in water quality trading—which is expected to achieve net environmental gain—may occur. Further, DEQ expects that continued investment will occur through the CWA 319 grant program. Since 1997, DEQ has allocated approximately 1.4 million dollars toward 319 grants in the lower Boise River subbasin for the implementation of BMPs to reduce and prevent pollutant runoff (e.g. sediment and nutrients) from reaching surface waters (see Section 4, Table 22). In addition to 319 grants, numerous projects have been completed within the lower Boise River subbasin through federal programs, such as the Conservation Stewardship Program, Environmental Quality Incentives Program, and Wildlife Habitat Incentives Program (see Section 4, Table 23). DEQ expects to see continued strong investment in these programs over the coming years.
Revised text accordingly.		
#20	5.5.1	"The targets established for point and nonpoint sources in this TMDL may take decades to be achieved. The lower Boise River TP TMDL addendum relies on a staged implementation strategy as referenced in EPA's Phased TMDL Clarification memo (EPA 2006). The staged implementation strategy for the lower Boise River acknowledges that NPDES-permitted point sources will strive to achieve the TMDL target as soon as possible. DEQ anticipates that 2 permit cycles (10 years from the approval of the TM DL) will be provided via 401 certification and justification to achieve their wasteload allocations. However, in consultation with DEQ, appropriate compliance schedules may be considered on a case-by-case basis for point source permits. This TM DL addendum, however, does not define an implementation time frame for nonpoint sources; rather, implementation would begin as soon as possible and continue as quickly as possible until the load allocation targets are met. This acknowledges that successfully achieving the TMDL target and allocations will depend in part on the installation of voluntary Might be helpful to identify the range of timing for achieving NPS reductions."
Revised text accordingly.		
#21	5.5.2	Point source contributions will be determined and regulated by EPA and NPDES permitting, whereas, funding provided under section 319, water quality trading, and other funds, will be used to encourage

		voluntary projects to reduce nonpoint source pollution. Upon the development of the TMDL, it is expected that a lower Boise River trading framework will be updated and that trading may be utilized to achieve the pollutant targets in the subbasin (see Section 5.5.5). DEQ does not expect that load allocations will be met immediately. Load allocations will be met over a reasonable period of time based on current pollution conditions in the watershed, current land management practices, and other relevant factors, as appropriate. DEQ may provide further guidance on the phased implementation of load allocations and will provide oversight to ensure that appropriate water quality milestones and targets are being achieved. If trading has been authorized in the area covered by this TMDL, any phased implementation plan targets for meeting load allocations may be used to derive trading baseline requirements for individual landowners wishing to sell water quality trading credits.
Revised text accordingly.		
#22	5.5.3	The designated management agencies, LBWC, and other appropriate public process participants are expected to: • Develop BMPs to achieve load allocations including incorporation of relevant trading baseline requirements from the Lower Boise Trading Framework. Provide reasonable assurance that management measures will achieve load allocations
Revised text accordingly.		
#23	5.5.5	The appeal of trading to pollutant sources emerges when pollutant sources face substantially different pollutant reduction costs. Typically, a party facing relatively high pollutant reduction
Revised text accordingly.		
#24	5.5.5.1	Both point and nonpoint sources may create marketable credits, which are a reduction of pollutant loading beyond a level required by existing federal, state, local and tribal regulations, and TMDL implementation plan documents: Suggested edit based on JRR definition of baseline requirements. Not just a TMDL (although an important part); also must be beyond existing regulations

Revised text accordingly.		
#25	5.5.5.1	"Point sources create credits by reducing pollutant discharges below NPDES effluent limits set consistent with the assumptions and requirements of the TM DL's wasteload allocations. Nonpoint sources create credits by implementing approved BMPs that reduce the amount of pollutant runoff below current loading levels. Nonpoint sources must follow the specific design, maintenance, and monitoring requirements for that BMP, as established in relevant trading guidance and trading framework documents; apply discounts to credits generated, if required (i.e., attenuation or uncertainty ratios); meet trading baseline requirements (i.e., existing federal, state, tribal and local regulations, and any requirements established via TMDL implementation plans); and provide a water quality contribution to ensure a net environmental benefit. The water quality contribution also ensures the reduction (the marketable credit) is surplus to the reductions the TMDL assumes the nonpoint source is achieving to meet the water quality goals of the TMDL. This last step is important because it helps to demonstrate reasonable assurance toward meeting TMDL goals, and not just pollutant offsetting between point and nonpoint sources". This language is more consistent with language in 40 CFR 122.44(d)(1)(vii)(B)
Revised text accordingly.		
#26	5.5.5.2	," hydrologically-based ratios are developed to ensure trades between sources distributed throughout TM DL water bodies result in environmentally better" Saying "environmentally equivalent" seems inconsistent with "net environmental benefit" (as described in 5.5.5.1). If net benefit is a goal, we suggest editing this sentence here to clarify
Revised text accordingly.		
#27	5.5.5.3	***"Trading Authorization*** Water quality trading is authorized in Idaho regulation. Trading should be implemented consistent with the Clean Water Act and other existing regulations, U.S. EPA's water quality trading policy (EPA 2003), D EQ's water quality trading guidance, and the Lower Boise Trading Framework". Think it is confusing to call this the "framework" section when framework is being used generally

		here, and in other places, has been used as a term of art (i.e., the Lower Boise Trading Framework)
Revised text accordingly.		
#28	5.5.5.3	"After adoption of an EPA-approved TMDL, DEQ, in concert with the WAG, must develop a water quality trading framework document. The Lower Boise has an existing Trading Framework that DEQ is currently evaluating to revise ratios and policies consistent with this Lower Boise TP TMDL assumptions, and the Joint Regional Recommendations (JRR) for water quality trading. The JRR were developed pursuant to a joint effort between Idaho, Oregon and Washington, with technical oversight from EPA Region 10, facilitated through a USDA-NRCS Conservation Innovation Grant awarded to the Willamette Partnership. The framework would mesh with the implementation plan for the watershed that is the subject of the TM DL. The elements of a trading document are described in DEQ's water quality trading guidance (DEQ 2010)". Add the EPA WQT Policy to the reference section. U.S. EPA, Water Quality Trading Policy, 68 Fed. Reg. 1608 (Jan. 13, 2003), *available at* http://www.gpo.gov/fdsys/pkg/FR-2003-01-13/pdf/03- 620.pdf. WQT is authorized by the IDAPA regulation, and must be implemented consistent with existing regs, and should be consistent with the TMDL. The TMDL can describe how it may be part of the implementation strategy, but the authorization comes from the IDAPA rule, as implemented through permits and other documents.
Revised text accordingly.		
2015_0115 City of Boise		
#1	General	**Draft TMDL** Appreciate the good work IDEQ has done over the last three years working on this effort. AQUATOX modeling group; TAC and WAG processes, Draft TMDL a significant effort and generally well constructed. Have a limited number of comments to improve the draft and move the document to the point that it is ready for submission to EPA for review and approval.
Thank you for the comment.		
#2	General	The City support the fifteen comments submitted by the Municipal/Industrial group on February 8, 2015
Thank you for the comment.		

#3	Tables 40-45 (104-116), Tables 50-55 (133-140), & Tables 56—'57 (141-142)	**Weekly Limits** The draft TMDL should provide the technical basis for the need for weekly limits proposed for point sources. The modeling resulted in allocations for monthly total phosphorus discharges. The default NPDES permitting timeframes for permits are monthly and weekly, however can be longer (e.g. Wisconsin 12 month rolling TP average) or shorter (daily Chlorine) as needed. The appropriate permitting timeframe for phosphorus is **monthly** because nutrients do not act as toxics, nutrient are slow acting, and AQUATOX analysis demonstrate the water quality goals will be met with monthly limits. Monthly is the minimum averaging period that needs to appear in NPDES permits. IDEQ needs to provide rationale why weekly limits are necessary or remove the weekly limit from the draft TP TMDL.
Revised to reflect monthly averages.		

#4	Pg. xxx (Table 6), 105	**Stormwater**
		The stormwater loads appear to be overestimated for both summer and winter season. Data used for the stormwater load estimates are:
		• inconsistent with NOAA Boise Airport precipitation data
		  ○ summer estimated at 40% of 11.7" rainfall, actual is 27%, or a 33% overestimate of summer season rainfall and allocation reduction necessary to meet the TMDL target
		  ○ winter estimated at 60% of 11.7" rainfall, actual is 73% or 22% underestimate of winter season rainfall
		• data obtained from drainages with no or minimal stormwater controls, including exclusion of the Walnut data from the analysis because the subbasin includes stormwater controls[1] and use of a 1960's vintage subdivision in Caldwell to estimate dry weather flows and loads[2]. The Caldwell subdivision used data from drainage areas with no or minimal stormwater controls overestimates the current load given development conditions for the City of Caldwell.
		• Stormwater data in the draft TMDL are primarily pre-2012 data, which do not reflect

		the voluntary removal of phosphorus from residential fertilizer by Scotts and other residential fertilizer formulators[3]. For Canyon and Ada Counties, USGS reported a total of 5.276 million kg phosphorus of fertilizer and manures in 2001[4] of which non-farm phosphorus inputs (e.g. residential fertilizer) as 436, 299 kg. The removal of phosphorus from non-organic residential fertilizers, represents a significant reduction that are not included in the dataset used for estimation of current conditions. ○ Minnesota banned phosphorus in residential fertilizer in 2002 and found that: ▪ Phosphorus-free lawn fertilizer is widely available statewide and comprised 82% of lawn fertilizer used (by weight) in 2006, reducing the amount of phosphorus applied as lawn fertilizers decreased 48% from 2003-2006[5]. ○ Phosphorus free fertilizer is widely available in the Treasure Valley, and in many big box stores (e.g. Costco, Lowe's, Home Depot…) the only available fertilizer The draft TMDL needs to be modified to: • include the correct seasonal rainfall split and associated allocations/% reductions to meet the seasonal targets • recognize that the data are overestimates of the stormwater loads due to the data used (few if any BMPs) and green chemistry/pollution prevention measures that have been implemented by the residential fertilizer industry, resulting in overestimates of the reduction necessary to meet water quality targets that need to be addressed in the five year reviews and implementation plans.
Table has been updated.		
#5	Pg. 98	**TMDL Allocation Approach**: Incorporation of Cost, Environmental Benefit, and Trading EPA8910 and Idaho11 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

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		likelihood of success, to develop the most effective allocation strategy Issues/rationale i. Cost Considerations 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 ii. Trading: Trading also could be used to meet some or all of a point source reduction obligation (e.g. small municipalities or MS4s) instead of requiring substantially more expensive treatment for each source. The draft TMDL should include a general authorization for trading to meet permit obligations for all sources. iii. Additional Environmental Benefits The TMDL should include consideration of additional environmental benefits to optimize the investment in water quality improvement and also meet other important environmental goals (e.g. habitat, CO2 reductions, Carbon sequestration…). The TMDL should include a discussion of cost effectiveness of various allocation methods to achieve the water quality target, including: o Various technology based thresholds for WWTFs o Evaluation of affordability, particularly for small municipalities and stormwater dischargers o Authorization for the use of trading for all point sources to achieve WLAs Limited use by large WWTFs based on hot spot…. Unlimited use for small (<2mgd WWTFs) Use by stormwater dischargers ii. Additional Environmental Benefits The TMDL should include a discussion of additional environmental and sustainability benefits for each allocation approach. This could be qualitative or quantitative based on the exiting literature so that finalization of the TMDL can proceed in a timely manner. The TMDL should include a discussion of additional environmental and sustainability benefits for each allocation approach. This could be qualitative or quantitative based on the exiting literature so that finalization of the TMDL can proceed in a timely manner.
Thank you for your comment. During the TMDL Implementation phase DEQ will conduct an analysis of the allocations that address these factors.		
#6		**Reasonable Assurance** When a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, EPA's 1991 TMDL Guidance

		states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to implement water quality standards. The draft TMDL includes phosphorus water quality data from the Northside Canal Company (NSCC) that is helpful in demonstration of reasonable assurance. NSCC diverts 1.3 million acre feet of water from the Snake River and operated like the Lower Boise River irrigation systems with 100% furrow irrigation and an intricate water reuse system for 75 years before beginning conversion of the irrigation system to sprinklers and implementing a system of sediments and wetland ponds to improve water quality. Total phosphorus discharges from NSCC to surface waters over the last 12 years averaged 54 ug/l TP and averaged 49 ug/l TP over the last 8 years. The performance with the NSCC demonstrates that the 70 ug/l LA for agricultural and groundwater non-point sources is attainable and achievable, and should be used to support the reasonable assurance for the Lower Boise River TMDL.
Thank you for your comment.		
2015_0211 Jack Harrison		
#1	General (Allocations)	**Not supportive of wastewater wasteload allocation of 100 ug/L.** As I stated many times in the past, I believe there is too much uncertainty in load estimates, modeled reduction and implementation to support a wastewater allocation over 70 ug/L for municipal treatment facilities. The uncertainty of load estimates and modeled reductions is understandably difficult to reduce. However, assigning tributaries, drains and groundwater a target of 70 ug/L (except where adjusted for the extra wastewater wasteload allocations) and then adding an additional wastewater load into the watershed seems counter-productive. This extra allocation would reduce the load for phosphorus trading, which is considered to be a major funding source for the voluntary non-point source reductions that are proposed. Furthermore, wastewater is already given a “reserve for growth” by allowing facilities to discharge at design rather than current discharge rates, further increasing the phosphorus loads that will be discharged into the watershed. If in fact there is some estimated extra capacity, it would be more prudent to hold this load in reserve to either address future growth in areas where capacity is most limited (likely the lower end of the watershed), or “retire” the load if future conditions indicate targets are not being met.
Thank you for your comment. DEQ ran additional AQUATOX reduction scenarios with point source allocations reduced to ≤ 0.07 mg/L year-		

round, and 0.05 mg/L year-round—which is the approximate limit of technology—the additional scenarios showed a small net gain in environmental benefit for a large technological investment. The difference of the annual average periphyton growth between scenario 3 (point sources at 0.1summer/0.35 Winter; NPS 0.07) and Scenario 7 (point sources at 0.05 year-round) is only 8 mg/m^2. The 82% WLA reduction will have a corresponding load reduction in tributaries, drains and groundwater. This corresponding load will provide a future reserve.		
#2	General (Target)	**Not supportive of the Nuisance Algae Target as applied.** The periphyton target is represented in the modeling as a "Mean monthly benthic chlorophyll *a* of ≤ 150 mg/m2" (e.g., page 17). This was selected based on work done on the Clark Fork River. However, it appears based on the same information, a mean of 100 along with a maximum of 150 was used for the Clark Fork River, and much of western Montana. This indicates that the Boise River target could be underprotective, and could lead to 50% more periphyton than anticipated. It should also be noted that the newer nutrient criteria recommended for control nuisance periphyton indicate that both phosphorus and nitrogen controls are needed (Suplee et al., 2013).
Thank you for your comment. Multiple lines of evidence were used; historical data (USGS, ISDA), AQUATOX Model, and 2012-13 USGS synoptic sampling. "Scientific findings support the use of a benthic chlorophyll a target of ≤150mg/m^2 as appropriate for recreation and cold water aquatic life beneficial uses. For example, literature suggest nuisance aquatic algae becomes apparent between 100 and 200 mg/m^2 and enriched waters often have benthic chlorophyll a concentrations ≥ 150 mg/m2 (welch et al. 1988, Dodds and Welch). The 5-Year review process will be used to evaluate the wasteload allocations and their effectiveness at meeting the water quality goals.		
#3	Pg. 98	**Quantification of septic systems loads is needed.** Septic systems are identified as part of nonpoint source load (page 98), but there is no quantitation to estimate the fraction of the total nonpoint load. Rough estimates of septic TP loads indicated that the phosphorus loads from septic systems could easily exceed some of the other sources identified (i.e., smaller tributary point sources (excluding Nampa and Meridian), background, fish hatcheries, or wet weather stormwater). The lack of a more informed assessment of this potentially substantial current and "growing" contribution to the watershed appears to be a major flaw in the TMDL.
As discussed in the February WAG meeting, septic system evaluation will be included in the implementation plan.		
#4	Pg. 119	**Nitrogen and organic matter targets and allocations should be considered.** The Final Model Scenario (#3) included reductions in nitrogen and organic matter (Pg 116), and an adjustment of the initial conditions to levels similar to upstream of Boise (i.e., Segment 1). These reductions and adjustments need to be more fully explained in section on "Final AQUATOX Model Scenario and TMDL Allocation Structure". Furthermore, it was noted that without these reductions the targets cannot be met. This suggests that nitrogen and organic matter targets and allocations should be considered.

Thank you for your comment. With targeted implementation these will also be reduced. Reductions and adjustments will be evaluated further during the five year review process.		
#5	Pg. 124	**Modeled yearly average periphyton "over-averaged".** The modeled yearly average periphyton (Pg 123; Figure 47) represents an annual averaged level that covers too long a period to be informative. And, more importantly, this figure is used to support the conclusion that reducing TP to lower levels will not reduce periphyton. This conclusion seems counter to a body of technical literature (e.g., Suplee et al., 2013), and is not consistent with the lower periphyton levels reported for the upper reach of the river.
The comparison of annual averages was intended as a way to show that there is not much environmental benefit in further phosphorus reductions beyond scenario 3, without further reductions of carbon and nitrogen. Revised text to clarify. Furthermore, using annual averages is not how periphyton targets will be interpreted in the TMDL. Please see pg. 7 of the attached Memo; *Additional scenarios for the Lower Boise River AQUATOX model of the total phosphorus (TP)/periphyton relationship* (2/13/2015, Darcy Sharp).		
#6	Pg. 126	**Maximums needed to be presented.** Maximums (or 95 percentile) periphyton concentrations should be assessed when considering acceptable peripyton reductions. To do this, Figures 48 and 49 (~Pg 124) should be revised to show modeled range of periphyton. This will allow the reader the ability of see the range of modeled predictions and reductions at each of the segments, and better understand how well targets are met.
Revised the Reduction Scenario Prediction Figures to include the minimum and maximums for Boise River AUs. We can and have presented TP and periphyton results in many ways and formats, but the final analysis was the result of lengthy negotiations with EPA and the WAG.		
2015_0213 ACHD		
#1	Pg 81, Table 86, and Pg 90, Table 31	Supportive of current load estimates for stormwater and "non-stormwater"
Thank you for your comment.		
#2	Pg 112, Table 43,	Supportive of wasteload allocations for stormwater and "non-stormwater"
Thank you for your comment.		
#3	Pg 98 and 99, Table 38,	Supportive of "non-stormwater" percentage of discharge as 50/50%. To the extent that non-stormwater (dry weather) discharges are the result of exempt, non-point source activities originating from agricultural lands (i.e., ~~groundwater infiltration,~~ irrigation flows and pass-through), ~~and other non-storm water flows that are not part of the allowed discharge under the MS4 NPDES permit),~~ they are assigned a load allocation…. Need to list all non-storm discharges in NPDES permits to better explain what is excluded under agricultural exemption. See attached table as an example. "other non-storm water flows that are not part of the allowed discharge under the MS4 "NPDES

		permit)," The "other" non-stormwater flows that are not authorized under the MS4 permits are termed "illicit discharges". No allocation - load or wasteload should be given.
Revised text accordingly. Added non-storm discharges table to section 3.1.		
#4	Pg 137, Table 53	Not supportive of wasteload allocations for authorized "non-stormwater" as these should be set consistent with other NPS reductions as given in Table 54, (pg 139) Oct-Apr authorized non-stormwater load reduction set at 84%. This is not consistent with Tributaries that are given allocations of 72% reduction
The 84% is based on Appendix E (Table 2), which was provided by the stormwater workgroup. The 84% reduction for non-stormwater was based on the estimated current concentration of non-stormwater (0.44 mg/L) that was provided by the stormwater group. An 84% reduction in non-stormwater will be required to attain the 0.07 mg/L. The 72% reduction allocation given to tributaries is an average of the tributary load reductions with a range of 34-80%.		
#5	Pg 35, Section 3.1	Introduction of stormwater should include reference to "non-stormwater". Certain types of stormwater runoff are considered point source discharges for Clean Water Act purposes, including stormwater and authorized non-stormwater that is associated with municipal separate storm sewer systems (MS4s), industrial stormwater covered under the Multi-Sector General Permit (MSGP), and construction stormwater covered under the Construction General Permit (CGP).
Authorized non-stormwater is considered a subset of the discharges allowed under a NPDES Permit-they are not true "point sources". No change made to the text.		
#6	Pg36, Section 3.1	~~'True'~~ S~~s~~tormwater is produced by runoff from precipitation-driven storm events. As a result, stormwater ("wet weather") discharges from MS4 systems that result from specific precipitation events will be referred to as stormwater and identified as a point source with a wasteload allocation in this TMDL. Stormwater within the lower Boise River watershed is regulated under either a Phase I or a Phase II NPDES MS4 Permit issued by EPA Region 10. Permitted stormwater is considered point sources and will be assigned "wasteload allocations". "True" stormwater is not standard terminology. Delete all references to "true" stormwater. Use "stormwater" as defined by EPA in 40 CFR §122.26(b) (13) and ACHD's MS4 NPDES permits (see text below). See comment #7 for terminology clarifications. "Storm water" and "storm water runoff" as used in this Permit means storm water runoff, snow melt runoff, and surface runoff and drainage, and is defined at 40 CFR §122.26(b)(13). "Storm water runoff"

		means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, channels, or pipes into a defined surface water channel or a constructed infiltration facility. 40 CFR §122.26(b)(13) **(13)***Storm water* means storm water runoff, snow melt runoff, and surface runoff and drainage.
Revised text accordingly with minor edits.		
#7	Pg 36, Section 3.1	Clarification needed. For consistency all text related to defining and explaining stormwater, non-stormwater, dry weather discharges, exempt non-stormwater, allowed, non-stormwater, non-point source, etc. should be the same in TP and sed/bacteria TMDLs. The following terminology is recommended: "Stormwater" = authorized, permitted, wet-weather, point source "Authorized Non-stormwater" = authorized, dry weather, point source (see table for list) "Agricultural Exempt Non-stormwater" = irrigation water, pass through, non-point source "Illicit Discharge" = unauthorized non-stormwater MS4 systems in the Treasure Valley also ~~accept~~ convey other inputs of water such as landscape irrigation, building cooling waters, wash waters, agricultural return, ~~and~~ ground water infiltration, and construction discharges. These types of discharges are characterized as non-stormwater discharges. In effect, in some situations, MS4 systems in the valley ~~often~~ share~~s~~ "pipes" with agricultural non-point source discharges. This situation is more common in the western end of the valley. These non-stormwater ("dry weather") discharges ~~can be~~ are authorized in MS4 permits if they satisfy specific conditions (please see individual MS4 permits for more information). A complete list of authorized non-stormwater discharges as defined by local MS4 permits is located in Table XX. Authorized non-stormwater discharges need to be explained and expanded. See attached table.
Revised text accordingly with minor edits, added recommended non-stormwater table.		
#8	Pg 36, Section 3.1	As a result, all non-precipitation driven discharges from MS4s will be referred to as non-stormwater and identified as a ~~non-point~~ sources with a wasteload allocation in this TMDL. Non-stormwater discharges originating from agricultural lands e.g. irrigation return flows will be identified as agricultural exempt non-stormwater with a load allocation in this TMDL.

		As drafted, this statement is incorrect. Non-stormwater discharges derived from agricultural lands are exempt from the Clean Water Act and are considered non-point sources. All MS4 NPDES permit-authorized, non-stormwater discharges are point sources. All other non-stormwater discharges, not defined by NPDES permits as authorized are illicit discharges. Groundwater infiltration is listed as an authorized non-stormwater discharge in MS4 NPDES permits. Groundwater infiltration is not covered under the agricultural exemption to the Clean Water Act or any other exemption. Groundwater infiltration is included as part of WWTP wasteload allocation. Groundwater infiltration is authorized non-stormwater and should also receive a wasteload allocation.
Thank you for your comment. Added text with some revisions to "Agricultural Exemption Non-stormwater", renamed to "NPDES-Exempt Agricultural flows. For clarification, only uncontaminated groundwater infiltration is allowed under MS4 NPDES permits.		
		Text is confusing and inaccurate as written. See edits below. Same/similar text should be in sed/bacteria TMDL too. Recommend adding information for Nampa, Caldwell, etc. or placing all similar info in a table. There are eight ~~several~~ EPA-issued MS4 stormwater permits and 12 different permittees in the lower Boise watershed. These entities ~~that~~ discharge phosphorus into the lower Boise River, directly or indirectly, through drains, tributaries, and other hydrological connections (Table 16). ~~Several agencies and organizations share responsibilities for the NPDES MS4 permits. Information and reporting include a five-year report which is available from the partnership internet site: *http://www.partnersforcleanwater.org/default.asp*.~~ ~~An annual report is published and made available through ACHD's web site: *http://www.achd.ada.id.us/Departments/TechServices/Drainage.aspx*.~~ In the Boise and Garden City area, Ada County Highway District (ACHD), Boise, Garden City, Idaho Transportation Department, Ada County Drainage District 3, and Boise State University share Permittee responsibilities for implementing their NPDES MS4 permit. Information on meetings, responsibilities, budgets, stormwater management plans, and annual reports are available from the ~~partnership~~ Permittee internet site http://www.partnersforcleanwater.org/default.asp. ACHD's annual report for the area that includes the cities of Eagle, Meridian, and urbanized unincorporated Ada County (urbanized Ada County) is published and made available through ACHD's web site at: http://www.achd.ada.id.us/Departments/TechServices/Drainage.aspx.

Revised text as accordingly.		
#10	Pg 36, Section 3.1	~~Other agencies and stakeholders in the subbasin are in the process of applying for stormwater NPDES permits and have yet to develop or implement the voluntary stormwater activities.~~ Text is dated and is no longer relevant. Delete.
Deleted text accordingly.		
#11	Pg 36, Section 3.1	~~Stormwater within the lower Boise River watershed is regulated under either a Phase I or a Phase II NPDES Permit issued by EPA. Permitted stormwater entities are considered point sources and will be assigned "wasteload allocations".~~ Moved text up in section. See comment #6.
Deleted text accordingly.		
#12	Pg 38, Table 16	**Source** **NPDES Permit No.** Boise/Ada County MS4 IDS-028185 & IDS 027561 There is no Boise/Ada County MS4 and is inaccurate as written. Please list out permittees as in Table 17, pg 39.
Revised table accordingly.		
#13	Pg 38, Table 16	Footnotes 3 and 4 need to be rewritten to ensure consistent terminology for stormwater and non-stormwater. See comment # 7 for recommended terminology. Footnote 2 – Not sure what this means. What is the total service area for the MS4? Where did the contribution area come from?
Revised Table and footnotes.		
#14	Pg 39, Table 17	Table 17. MS4 NPDES permit holders and permit areas and non-permitted jurisdictions and areas ~~2010 Census Boise Urbanized Area and other areas~~ (prepared by ACHD).
Revised title.		
#15	Pg 45, Table 19	Delete ACHD MSGP permit IDR05CM22 from the table. Notice of Termination submitted 05/07/2014.
Removed from table.		
#16	Pg 48, Section 3.2.1	Section 3.2.1 Agricultural Discharges is inappropriately titled. Should be "Tributary and Drain Discharges." While a substantial fraction is from agricultural sources also includes groundwater, wastewater, stormwater and non-stormwater.
Revised text accordingly.		

#17	Pg 49, Section 3.2.2	Section 3.2.2 Background includes important and appropriate estimates. Water flows into the watershed with a concentration. To be technically sound, any load analysis or model needs to account for this load.
Thank you for your comment. A TP concentration of 0.018 was established as the "*background condition"* for the inflows at the upstream boundary of the lower Boise River (Diversion Dam) originating from the Lucky Peak Dam releases to meet the ≤ 0.07 target at Parma. The stablished background loading estimated to reach Parma was only 23% of the maximum background loading that could potentially reach Parma, which is consistent with all other sectors (please see Table 2 in TMDL). For the AQUATOX model DEQ utilized the actual USGS 2012-2013 synoptic samples and values.		
#18	Pg 50, Section 3.2.3	Section 3.2.3 Ground Water and Unmeasured Sources needs to explain that this does not include shallow ground that drains into and discharges with the tributaries and drains. It should also be explained that during Oct-Apr period most of the flow in the tributaries and drains is the shallow ground water draining agricultural lands.
Added text accordingly.		
#19	Pg 51, Section 4	Past and Present Pollution Control Efforts. The document references 2008 Implementation plan which is based on 2003 sed/bacteria implementation plan. We recommend referencing the 2013 Phase I permit along with the 2009 Phase II permits as an appendix. These permits document the requirements of the permittees. Additionally, status of implementing permits is included in stormwater management plans and annual reports which are included on permittee websites as required by the permits.
Revised text to include reference to Phase I /Phase II permits, and link to EPAs NOI search engine.		
#20	Pg 68, Section 5.2.1	Section 5.2.1 Load Capacity for May-Oct relies on a "load capacity model, which is a simplified mass balance applied at a range of flows. In addition to coarse estimates of loads, it includes a number simplifying assumptions, such as (1) a flow balance that relies on groundwater/unmeasured for flow adjustment and (2) and mass balance that is adjusted with ratios (e.g., TP inputs reaching Parma). This model needs to be more fully explained and qualified.
Added language to Section 5.2.1 describing the load duration approach and mass balance assumptions. Added language to 5.4.1 describing additional assumptions.		
#21	Pg78 and Pg83	In the discussion on nonpoint source loads, DEQ states "Flow, TP concentrations, and loads are also presented by removing the flows and TP loads attributed to NPDES-permitted facilities." In Table 27, the loads are footnoted "Tributary flows and loads calculated by subtracting WWTF flows and loads." This needs to be further explained and information provided to support subtracted the "flows and loads"
Revised footnote to clarify.		
#22	Pg 86, Section 5.3.2	Agricultural returns and lawn watering are not an issue this time of the year. Delete as shown below: <u>During the October 1 through April 30 time period</u>…including but not limited to ~~agricultural returns,~~ shallow ground water, urban/suburban sources (e.g. ~~lawn watering~~ construction discharges), and other unmeasured sources.

Revised text accordingly.		
#23	Pg 86 and Pg91	In the discussion on nonpoint source loads, DEQ states "Flow, TP concentrations, and loads are also presented by removing the flows and TP loads attributed to NPDES-permitted facilities." In Table 32, the loads are footnoted "Tributary flows and loads calculated by subtracting WWTF flows and loads." This needs to be further explained and information provided to support subtracted the "flows and loads"
Revised footnote to clarify.		
#24	Pg 86	In the subsection on Nonpoint Tributary, Ground Water and Unmeasured, DEQ needs to explain that this is mostly shallow ground that drains from agricultural areas into and discharges with the tributaries and drains.
This has been further clarified in the TMDL.		
#25	Pg 90, Table 31	See Comment 12.
Revised into 1 table.		
#26	Pg 99, Table 38	See Comment 12. Table 38. Estimates for the percentage of agricultural exempt non-stormwater (dry weather) MS4 discharge attributable to nonpoint sources originating from agricultural lands. These estimates are very approximate, and are based on professional judgment, rather than hard data.
Revised text with minor edits.		
	Pg 99, Table 38	ACHD Phase 1 IDS-027561 Boise City Garden City Ada County Drainage District 3 Idaho Transportation Department, District 3 Boise State University There should be a percentage for each Permittee.
Thank you for your comment. This will be identified during permitting and discussed with EPA.		
#28	Pg 99, Table 38	At this time ACHD does not have enough understanding and data on the volume of dry weather flows that originate from exempt, agricultural non-point sources. Until such time that ACHD can make this determination, ACHD will assume 50% (the default) of the non-stormwater discharged from ACHD's storm drain system is attributable to agricultural exempt non-stormwater for Permit #'s IDS-027561 and IDS-028185.
Thank you for your comment, included accordingly.		
#29	Pg 112, Table 43	See Comment 12. **"Source NPDES Permit No.**

		Boise/Ada County MS4 IDS-028185 & IDS 027561 There is no Boise/Ada County MS4 and is inaccurate as written. Please list out permittees as in Table 17, pg 39".
This table was combined with Table 17 to reduce redundancy.		
#30	Pg 114, Figure 46	This graph shows measured stormwater concentrations and reduced concentrations based on target. Stormwater allocations are load reductions and not intended to reduce concentrations. Therefore this is misleading and should be removed.
Thank you for your comment. The allocations are in lbs, so when you reduce the lbs you inherently reduce concentrations. No revision made to graph.		
#31	Pg 137, Table 53	See Comment 12.
Revised table accordingly.		
#32	Pg 17	Nuisance Algae Target is given as a "Mean monthly benthic chlorophyll a of ≤ 150 mg/m2". This was selected based on work done on the Clark Fork River. They set a mean of 100, with a max of 150. This indicates that the Boise River target would be under protective, and could lead to 50% more periphyton. Please explain the technical basis for the lower target.
Thank you for your comment. DEQ used multiple lines of evidence, not only just the Clark Fork River.		
#33	Pg 48	Septic systems are identified as part of Nonpoint source load, but there is no attempt to quantify it a fraction of the total load. Rough estimates of septic TP loads indicated that the phosphorus loads from septic systems could easily exceed the loads contributed by the smaller tributary point sources (excluding Nampa and Meridian), background, fish hatcheries, and wet weather stormwater. The lack of a more informed assessment of this substantial current and "growing" contribution to the watershed is a major flaw in the TMDL.
Thank you for your comment. As discussed in the February WAG meeting, septic system evaluation will be included in the implementation plan.		
#34	Pg 98	We have concern about wasteload allocation of 0.1 mg/L for WWTFs at this time. There is too much uncertainty regarding capacity to meet ≤ 0.07 mg/L targets for the tributaries, drains and groundwater. Also lessens ability for trading to take place in the watershed.
Thank you for your comment. DEQ ran additional AQUATOX reduction scenarios with point source allocations reduced to 0.07 mg/L year-round, and 0.05 mg/L year-round—which is the approximate limit of technology—the additional scenarios showed a small net gain in environmental benefit for a large technological investment. The difference of the annual average periphyton growth between scenario 3 (point sources at 0.1summer/0.35 Winter; NPS 0.07) and Scenario 7 (point sources at 0.05 year-round) is only 8 mg/m^2.		
#35	Pg116	The Final Model Scenario (#3) included reductions in nitrogen and organic matter. These reductions need to be more fully explained in section on "Final Aquatox Model Scenario and TMDL Allocation Structure". Furthermore, it noted that without these reductions the targets cannot be met. This suggests that

		nitrogen and organic matter targets and allocations should be considered.
Thank you for your comment. With targeted implementation these will also be reduced. Reductions and adjustments will be evaluated further during the five year review process.		
#36	Pg 123	The yearly average periphyton figure shows an averaged level that covers too long a period to be informative. And, more importantly, this figure is used to support the conclusion that reducing TP to lower levels will not reduce periphyton. This conclusion is counter to a body of technical literature (e.g., Suplee et al., 2013), and is not consistent with the lower periphyton levels reported for the upper reach of the river.
The comparison of annual averages was intended as a way to show that there is not much environmental benefit in further phosphorus reductions beyond scenario 3, without further reductions of carbon and nitrogen. Revised text to clarify. Furthermore, using annual averages is not how periphyton targets will be interpreted in the TMDL. Please see pg. 7 of the attached Memo; *Additional scenarios for the Lower Boise River AQUATOX model of the total phosphorus (TP)/periphyton relationship* (2/13/2015, Darcy Sharp).		
#37	Pg 124	Maximums (or 95 percentile) periphyton concentrations should be assessed when considering acceptable reductions. To do this, Figures 48 and 49 should be revised to show modeled range of periphyton. This will allow the reader the ability of see the full range of modeled predictions and reductions at each of the segments, and better understand how well targets are met.
Thank you for your comment. Revised Reduction Scenario Prediction Figures to include minimum and maximums for Boise River AUs. We can and have presented TP and periphyton results in many ways and formats, but the final analysis was the result of lengthy negotiations with EPA and the WAG.		
2015_0218 Daniel Steenson and Andrew Waldera, LBWC Directors		
#1	Title and Pg.2	The explanation of the purpose of the TP TMDL as an "addendum" and its relationship to prior LBR water quality-related documents is vague and confusing. At page 2, the Draft states that it is an addendum to six documents, including the original 1999 LBR TMDL, two implementation plans, two addendums, and the LBR TMDL Five-Year Review. The Draft further explains that an addendum either (1) establishes a new TMDL for a pollutant or (2) updates an existing, EPA-approved TMDL for a pollutant. Though the TP TMDL Draft does not say so, the Draft is within the first category, establishing a new TMDL for TP for certain AU's within the LBR HUC. The Draft "2014 Addendum of the Sediment and E. Coli TMDLs," is also within the first category of addendums, establishing new sediment and bacteria TMDL's for AU's within the LBR HUC. In contrast to the Draft TP TMDL, the sediment and E. Coli addendum clearly and concisely states: "This document is an addendum to the 1999 Lower Boise TMDL." (2014 Addendum at 20.) The same statement applies to the TP TMDL Draft: it is an addendum to the 1999 Lower Boise TMDL, establishing a new TMDL for TP for AU's within the LBR HUC.

		Accordingly, clarifying revisions to the title and description the Draft TP TMDL are proposed in the attached revision draft.
Thank you for your comment. No change made to the title.		
#2	Mason and Sand Hollow Creek	The TP TMDL contains no data or analysis demonstrating that TP is causing or contributing to use impairment in Mason Creek or Sand Hollow Creek. Idaho Code section 36-3911(6) provides: "No instream target for a pollutant shall be set as part of a TMDL process unless the data and analysis in the subbasin assessment demonstrate that the pollutant is causing or contributing to a violation of a water quality standard in the stream for which the TMDL is being developed." The Draft TP TMDL incorrectly asserts that cold water aquatic life and contact recreation uses are impaired by TP in Mason Creek and Sand Hollow Creek. *Draft* at xix, 33. No data reported in the Draft, and no assessment referenced in the draft, documents nuisance aquatic growth in either Mason Creek or Sand Hollow Creek. Section 2.3 of the Draft contains a summary and analysis of existing water quality data. While section 2.3 contains a robust summary and analysis of periphytic algae in the Lower Boise River (*see* pp. 25-27), there is no reference to any aquatic growth in either Mason Creek or Sand Hollow Creek. There has been no discussion between the LBWC and DEQ to determine an appropriate nuisance threshold for benthic chlorophyll-a in Mason Creek or Sand Hollow Creek. In fact, the WAG's choice of the benthic chlorophyll-a target of 150 mg/m2 for the Boise River was made with the express understanding that this target would not apply to the tributaries. (*See* DEQ February 12, 2013 letter to the WAG.)
Thank you for your comment. DEQ's review of relevant information establishes cold water aquatic life and recreational uses exist or are or attained uses in both Mason Creek and Sand Hollow Creek AUs. Relevant information also documents that both Sand Hollow and Mason Creek are impaired for aquatic life uses. The DEQ Beneficial Use Reconnaissance Program (BURP) has collected fish and macroinvertebrate data in Mason Creek and Sand Hollow Creek. The data for both streams identified the presence of aquatic macroinvertebrates, and the Mason Creek BURP report identifies the presence of cold water fishes such as redside shiner, smallmouth bass, and northern pikeminnow. The Sand Hollow BURP report did not include fisheries data, but the 2001 Sand Hollow Creek Subbasin Assessment identifies game, nongame, and trout fishes that have been collected in the creek (DEQ 2001d). The 2001 Mason Creek and Sand Hollow Creek Subbasin Assessments (DEQ 2001c, 200d) also document that during the summer,		

contact recreation occurs at several locations in both streams, although the managing irrigation districts discourage such activities (alternatively, canals can be posted as no trespassing). In 2004 EPA denied a designated use change for Sand Hollow and Mason Creeks from Cold Water Aquatic Life to Modified Aquatic Life.

Sand Hollow Creek and Mason Creek have been listed for nutrients in the Integrated Report for the past 5 cycles. Data from the Idaho Department of Agriculture from 2008 show levels of TP in both Sand Hollow and Mason Creek at more than 4 times the EPA's Goldbook standard (0.1 mg/L). ISDA's 2008 TP results had an average of 0.40 mg/L for Sand Hollow Creek and an average of 0.36 mg/L for Mason Creek. EPA's Goldbook standard for TP (O.1 mg/L) is supported by evidence that TP concentrations > 0.10 mg/L within a flowing stream can lead to biological nuisances (Mackenthun, 1973), and in accordance with the SR-HC a TP concentration of ≤.07 was found to be the concentration level at which TP could occur in order to reduce algae blooms in Brownlee Reservoir. Both Creek's TP concentrations reported by ISDA were roughly four times what Mackenthun found could lead to biological nuisances.

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The stream beds in Sand Hollow Creek and Mason Creek are largely composed of silty-clay sediments that lack surface areas to provide optimal conditions for nuisance algae conditions to exist; nevertheless, USGS data has shown that nuisance aquatic growth is present in both creeks. While the periphyton levels in Mason and Sand Hollow were found to be below 150 mg/m^2, both creeks are very turbid, and given the completion of the sediment TMDL, they could get much clearer and facilitate algae growth under current TP loads. When modeled, both creeks show that a nuisance algae condition would exist.

The LBR TMDL does not include a periphyton target of < 150 mg/m^2 for the tributaries, but rather the TP in tributaries need to be at the 0.07 mg/L to meet the LBR nuisance condition. The mean monthly benthic chlorophyll a (periphyton) target of ≤ 150 mg/m^2 applies to the two impaired AUs on the main stem of the lower Boise River (ID17050114SW005_06b-Middleton to Indian Creek and ID17050114SW005_06-Indian Creek to the mouth).

The Mason Creek TP allocation (0.07 mg/L) was developed to help achieve the lower Boise River target (periphyton ≤ 150 mg/m^2), which DEQ believes are sufficiently stringent to result in full beneficial use support in the creek.

The Sand Hollow Creek TP allocation (0.07 mg/L) was developed to help achieve the SR-HC target (≤ 0.07) and to be commensurate with other lower Boise River tributaries, which DEQ believes are sufficiently stringent to result in full beneficial support in the creek.

DEQ proposed to delisted Mason Creek and Sand Hollow Creek for 'cause unknown (nutrients)'. However, EPA's 2010 public comments said that the rationale was insufficient. Hence, this AU has been 're-listed' for 'cause unknown' (nutrients).

DEQ proposed to delist Sand Hollow Creek for 'cause unknown (nutrients)'. However, EPA's 2010 public comments said that the rationale was

insufficient. Hence, this AU has been 're-listed' for 'cause unknown'.		
#3	2.3 Pg. 18-33	The Draft TP TMDL does not contain data and analysis to support the assertion that cold water aquatic life in the lower Boise River are impaired by TP. (*See* Draft, section 2.3, pp. 18-33.) Without explanation, the Draft cites EPA's 2009 disapproval of Idaho's 2008 303(d) list as a basis for the conclusion that cold water aquatic life are impaired by TP concentrations. However, while EPA's letter states that DEQ did not present sufficient evidence to delist the lower Boise River for nutrient impairment, that letter did not provide data or analysis demonstrating that cold water aquatic life are impaired by nuisance aquatic growth caused by TP concentrations.
Please see the above comment.		
#4	General/Periphyton	The benthic chlorophyll-a target was chosen to address perceived impairment of recreational use and aesthetics, not impairment of cold water aquatic life. The abstract from Welch et al., 1988, for example, states: "A biomass range of 100-150 mg chl a mW2 may represent a critical level for an aesthetic nuisance; below those levels, filamentous coverage was less than 20%." Other indices of water quality (dissolved oxygen content and measures of benthic macroinvertebrate diversity) were apparently unaffected by periphytic biomass or filamentous coverage in these streams. Dodds and Welch (2000) discussed impacts to aquatic life from algal levels in terms of deficits in dissolved oxygen and pH concentrations, not in terms of any particular concentration of benthic chlorophyll-a.
The benthic chlorophyll-a target was chosen to address both recreation and aquatic life uses. "Additional scientific findings support the use of a benthic chlorophyll a target of ≤150mg/m^2 as appropriate for recreation and cold water aquatic life beneficial uses. For example, literature suggest nuisance aquatic algae becomes apparent between 100 and 200 mg/m^2 and enriched waters often have benthic chlorophyll a concentrations ≥ 150 mg/m2 (welch et al. 1988, Dodds and Welch). Multiple studies have demonstrated that nuisance aquatic growth negatively impacts aquatic life. Dodds and Welch (2000) identified management problems caused by enrichment and associated benthic algal proliferations, including loss of pollution-sensitive invertebrate taxa through smothering of substrata by algae (e.g. Quinn and Hickey 1990), and degradation of water quality (particularly dissolved oxygen and pH) resulting in fish kills (e.g. Quinn and Gilliland 1989). Biomass levels of > 150-200 mg/m^2 chlorophyll-a are very conspicuous in streams, are probably unnaturally high, and can compromise the use of rivers for contact recreation and productive sports fisheries (e.g. Horner et al. 1983, Welch et al. 1988, 1989, Biggs 1996, Dodds et al. 1998). Dodds et al. (1998) found that a general suggested mean of 150 mg/m^2 of benthic chlorophyll-a represents nuisance algae levels that agrees with other authors (Horner et al. 1983, Nordin 1985, Tristate Implementation Council 1996, Welch et al. 1988, 1989).		

This was discussed during TAC/Wag meetings on 1/10/2013, 1/24/2013, 2/14/2013, 2/28/2013, and 9/26/2013. http://www.deq.idaho.gov/regional-offices-issues/boise/basin-watershed-advisory-groups/lower-boise-river-wag.aspx		
#5	5.4.7	NSCC and Boise Valley irrigation system operations are not comparable. Accordingly, the discussion of the NSCC system should be removed from the discussion of reasonable assurance in section 5.4.7, as proposed in the attached revision draft.
Discussion of the NSCC system has been removed as requested.		
#6	5.5	Existing agricultural implementation plans are adequate. In section 5.5, the Draft TP TMDL fails to mention the comprehensive November, 2003 Agricultural Implementation Plan under which agricultural BMPS have been effectively implemented for over a decade, and asserts that "a new implementation plan should be developed." We do not agree that the TP TMDL requires development of an entirely new implementation plan for agriculture, though the LBWC may decide it is beneficial to update the existing implementation plan. Changes to section 5.5 that consistent with this comment are proposed in the attached revision draft.
Thank you for your comment. We agree that a new plan does not need to be developed, but the existing plan needs to be updated to reflect the reductions necessary.		
#7	xvi	This document addresses (2 assessment units) of the lower Boise River subbasin that have been placed in Category 5 of Idaho's most recent federally approved 2012 Integrated Report (DEQ 2014c) due to nuisance aquatic growth caused, in part, by total phosphorus (TP) . This addendum describes the key physical and biological characteristics of the subbasin; water quality concerns and status; TP sources; and recent TP control actions in the lower Boise River subbasin, located in southwest Idaho. For more detailed information about the subbasin and previous TMDLs, see the lower Boise River Subbasin Assessment, TMDLs, Addendums, and Five-Year Review (DEQ 1999, 2008, 2009, 2010b). The TMDL analysis establishes TP targets and load capacities, estimates existing RP loads, and allocates responsibility for TP load reductions needed to reduce nuisance aquatic growth to levels that do not impair recreational uses of the listed AUs of the lower Boise River Implementation strategies are also discussed—
Revised text to reflect TP. Did not remove Sand Hollow Creek and Mason Creek from TMDL. Please see comment #2 above.		
#8	xvi	

		Previous subbasin assessments, TMDLs and Implementation Plans, are contained in the following documents:
Thank you for your comment. These are listed on pg. Xlvi of the Executive Summary.		
#9	xvii	This addendum addresses the phosphorus impairment of recreational uses in the following AUs: • Boise River–Middleton to Indian Creek (ID17050114SW005_06b) • Boise River–Indian Creek to Mouth (ID17050114SW001_06) • TP pollutant sources to the lower Boise River include upstream contributions (background), tributaries, WWTFs, stormwater, industrial discharges, agricultural and irrigation returns, ground water and unmeasured sources (e.g. drains and septic systems).
Revised text accordingly.		
#10	xviii	**The lower Boise River subbasin. The impaired lower Boise River AUs that are specifically addressed in this TMDL addendum are identified by their AU number on the map (impaired AUs in this TMDL addendum begin with 17050114).** **"Delete Sand Hollow and Mason AUs"**
Thank you for your comment. Sand Hollow and Mason Creek will remain in the TMDL.		
#11	xix	The lower Boise River from Middleton to the confluence with the Snake River, is listed as impaired (Category 5) from TP in the 2012 Integrated Report (Table 1). Recreational uses can be impaired by nuisance aquatic growth caused, in part, by TP from point and nonpoint sources. "Delete Mason and Sand Hollow Creek from Table 1"
Thank you for your comment. Please see comment #2 above.		
#12	xx	This TP TMDL addendum relies on a staged implementation strategy as referenced in EPA's Phased TMDL Clarification memo (EPA 2006). NPDES…. Reduction of TP form agricultural nonpoint sources will continue under the nonpoint source and agricultural components of the Implementation Plan for the Lower Boise River TMDL (DEQ 2003). Recognizing the many difficulties in achieving the agricultural and other nonpoint source load allocations

		over the long-term, an adaptive management-type approach for implementation should address:
Thank you for your comment. This is more appropriately addressed during implementation planning.		