APPENDIX K

MDEQ Responses to Public Comments

As described in Section 10.0, the formal public comment period for the Water Quality Restoration Plan and Total Maximum Daily Loads for the Bitterroot Headwaters Planning Area (BHTPA), extended from November 22, 2004 to December 13, 2004. Eight individuals/organizations submitted formal written comments. Their comments have been summarized/paraphrased below and organized by primary topic heading. Responses prepared by MDEQ follow each of the individual comments. The original comment letters are located in the project files at MDEQ and may be reviewed upon request.

In addition to the comments below, several general comments that mainly included grammar errors and missing information were addressed by modifying the final document. These comments were all addressed and since they were minor in extent, are not summarized below.

1. Land Ownership

Comment 1a: Even though approximately 92% of the Bitterroot Headwaters TMDL Planning Area is controlled by the U. S. Forest Service, an additional 5.4% is in private ownership and less than 3% is held in State trust. This land ownership should be broken out into three categories for review and monitoring.

Comment 1b: The Forest would like to see more analysis of the private land influences in the watersheds.

Comment 1c: The Forest would like to see all source assessment and allocations (Section 4, 5, and 6), TMDL impairment assessments (Section 3), restoration (Section 8), and monitoring (Section 9) broken out by Forest Service System land and Private/State/Other Ownership. This would provide the agency and the public with a clear understanding of water condition, sources of impairment, and fully define restoration needs.

Comment 1d: Please provide a % and actual number of road miles that are within 80-100 feet of the channel and are affecting riparian shade, broken out by land ownership and road maintenance responsibilities.

> **Response:** The following response addresses comments 1a – 1d. Due to the timing of these comments, and the fact that this request would require a complete reconstruction of all analyses associated with this document, MDEQ cannot complete this request at this time. However, MDEQ recognizes the importance of these comments and the concerns surrounding the comment and therefore has included statements in the final draft to help the reader understand the effects by land ownership conceptually.
>
> Additionally, the approach used in this Water Quality Restoration Plan (WQRP), was at the watershed-scale, thereby not segregating by land ownership/management. However, MDEQ is currently strategizing on how to more effectively develop monitoring and implementation strategies to cater to specific land managers.

2. Water Quality Impairment Status/Targets and Supplemental Indicators:

Comment 2a: Your evaluation does not include pollution from over-development? A specific problem for study is the Springer Memorial, Bonanza Lands, etc. east of the 13-mile marker on the East Fork road. Lots of these homes are on tiny lots crammed in together with septic fields in close proximity to wells. The Sanitarian is unwilling/unable to address this potentially catastrophic situation.

Response: To fulfill the requirements for this WQRP/TMDL, MDEQ addressed all pollutants on the 1996 and 2002 303(d) list. This included siltation, suspended solids, thermal modifications, noxious aquatic plants, nutrients (West Fork only) and lead. Nutrient pollutants from development on the East Fork were not addressed because it was not listed as a cause on either the 1996 or 2002 303(d) list. Residential development was addressed from the standpoint of potential sources of siltation and thermal pollutants.

However, the main stem of the Bitterroot River is scheduled for TMDL development in 2007 and is currently underway. Nutrients are listed as a potential cause of impairment on the 303(d) list in the Bitterroot River. Therefore all potential nutrient sources will be addressed under this analysis. Since the East Fork is a major tributary to the Bitterroot River, it is likely that it will be revisited and the activities occurring along the East Fork will be investigated as potential sources of nutrient impairment to the main stem.

Comment 2b: When water quality monitoring data reveal changes to natural conditions that exceed those allowed by the State standards, the water is determined impaired or threatened. More specifically, the beneficial uses, which are protected by the exceeded standards, are determined impaired or threatened. Under the requirements of Section 208 and 303(e) of the Clean Water Act, any water found to have one or more threatened or impaired uses must be placed on a list of waters for which "water quality management plans" must be developed. Since DEQ has determined that both Moose and Martin Creek fully support cold-water fishery and aquatic beneficial uses these streams, by virtue of federal statute, must be dropped from the 303(d) protected list.

Response: The final document has been modified to reflect this comment. However, additional monitoring was presented in Section 9.0 of this WQRP to ensure support of the beneficial uses is maintained. MDEQ believes that a typo in the executive summary of the public draft document resulted in this and similar comments surrounding Martin Creek. The final document has been modified to correct this error.

Additionally, the Bitterroot Headwaters WQRP does not formally list or de-list any waterbodies in the Planning Area. The Bitterroot Headwaters WQRP and subsequent TMDLs also do not determine whether beneficial uses are fully supported or not. The WQRP specifically addresses the 303(d) listed causes and the listed beneficial uses affected by those causes and determines whether or not the applicable Montana Water Quality Standards are met or not to conclude whether a TMDL is required.

MDEQ's Sufficient and Credible Data Beneficial Use Determination (SCD/BUD) process is the mechanism that lists and "de-lists" waterbodies on the 303(d) list and ultimately determines whether or not all beneficial uses are fully supported. These decisions are reflected in each biennial Integrated Report (IR). The SCD BUD process will utilize all information provided in this WQRP during the 2006 upgrade of the IR. It is anticipated that any stream found not impaired for specific pollutants under this WQRP, will be de-listed as a cause on the 2006 303(d) list.

Comment 2c: The MLA would like to know why the DEQ strayed from their original 2002 sediment targets developed by the Technical Advisory Committee and supported by Land and Water Conservation? We cannot ascertain the credible data that moved the DEQ to write standards that are more strict than what the EPA requires. If the DEQ used the original sediment standards - Meadow, Rimel and Hughes Creeks would all meet the beneficial uses for sediment loads. Also, we would like to see the DEQ approach this section with an acceptable range due to extreme variability in sediment testing. Since rate of accuracy is not predictable the Montana Surface Water Classifications B and C should reflect a range driven by the amount of fines found in the channel.

Comment 2d: Sediment Targets: Wolman Pebble Counts. Table 3-7 on page 39 includes Wolman Pebble Count fine sediment targets by Rosgen stream type. These targets are significantly lower (more restrictive) than in the December 2003, draft of this document. For example, for B3-type streams, the targets have declined from 19% to 10%, the B4 targets from 36% to 17%, and the C4 targets from 38% to 21%.

The rationale for this change is apparently in the text on p.43, which state that "By this method 25% of the reference stream data represents conditions where the percent surface fines are lower, or in a sense, more restrictive than the target selected..." This rationale, that the target should be at a level where only 25% of the reference streams actually achieve the desired target, does not appear reasonable. Please consider the following four reasons:

a) The USFS reference stream database includes a wide variety of streams in the Bitterroot National Forest, which meet their beneficial uses. The targets should reflect a condition where most streams that meet their uses also meet their relevant targets.

b) Similar TMDL exercises in other parts of western Montana have not used such restrictive targets for fine sediment, yet they are dealing with the same species of cold-water fish (see Big Creek of Upper Flathead--sediments <6mm of <30%; Upper Lolo Creek---sediments <6mm of <21% to <31% by stream type, etc.).

c) The rationale used by EPA for nutrient target selection from regional and reference data bases (www.epa.gov/OST/standards/nutrient.html Document EPA 822-B-00-015) is different: they recommend targets that are more restrictive than 75% of the regional data base, but more restrictive than only 25% of the locally-derived reference data bases. If the statistical approach used for fine sediment here is different than this one for nutrients (EPA apparently does not have nationally-published guidance on this issue for sediment statistics); it should be justified and/or cited.

d) The text on page 43 implies that indeed only "25% of the reference streams in the Bitterroot Headwaters would not meet the fine sediment targets." This however, directly contradicts the statement quoted above from a prior paragraph of page 43.
Please clarify this situation.

Response for 2c & 2d: The final document has been modified to reflect this comment.

Comment 2e: Use of visual observations of substrate composition is a low quality parameter. Visual estimations of substrate are fraught with interobserver bias. Many parameters, which are measured in natural resource science, are subject to variability and subsequent assumptions. Use of this indicator as a target needs a thorough discussion of associated data quality measures. Similarly, pebble count data used to evaluate percent fines are biased against smaller particles. The DEQ/EPA should acknowledge the limitations in these data from the onset.

Response: Our use of the weight of evidence approach as described in Section 3.3 of the document is predicated upon the fact that there is no single parameter that can be applied alone to provide a direct measure of beneficial use impairments associated with sediment. Substrate composition parameters were selected specifically to provide individual measures of potential sediment impairment associated with the cold-water fisheries beneficial use. Although MDEQ recognizes the pebble count's potential for bias against small particles, the pebble count has been shown to provide a cost effective and reliable method of tracking fine sediment levels when performed by trained technicians (Potyondy and Hardy, 1994). As previously stated, the information provided by the pebble counts was used *in combination* with the information provided by all of the other targets and supplemental indicators to reach conclusions about water quality impairment, thus minimizing the potential impact of sampling bias on the impairment status determinations. Additionally, the document specifically addresses and acknowledges variability and uncertainty associated with the analyses conducted as part of this WQRP (see Sections 4.10 and 5.7).

Comment 2f: We are concerned whether "an appropriate level of technical analysis," a requirement for TMDL approval, is utilized throughout this document. The DEQ presents averages for highly variable parameters, without reporting sufficient measures of variability. It is not clear from the available information that sufficient data were collected to apply a statistical approach. If not, then this document must acknowledge the limited utility of the data when variability is unknown. This applies also to data quality objectives discussed above.

Response: Given the stringent schedule and large number of TMDL required for completion, MDEQ is often tasked with answering complex scientific questions with limited data and resources. MDEQ will continue to utilize the best data and information attainable within the constraints of the schedule and continue to propose monitoring that will help strengthen the validity of our findings today.

The weight of evidence approach applied to impairment status determinations and the monitoring and adaptive management plan included in the TMDLs are designed to address the inevitable data limitations with which MDEQ must content in meeting its obligations for

TMDL completion. Additionally, the document specifically addresses and acknowledges variability and uncertainty associated with the analyses conducted as part of this WQRP (See Sections 4.10 and 5.7).

Comment 2g: We commend the DEQ for factoring temperature as a potential limiting factor for bull trout. Thermal loading cannot be ignored, particularly in light of the fact that the bull trout has special federal status. Thus, we are pleased to see temperature listed as a potential pollutant before this TMDL is approved, in addition to the other listed targets for bull trout in Section 7.3.4.4.

Response: Comment noted.

Comment 2h: Moose Creek, being a mostly undeveloped watershed, is a baseline reference stream for water quality on the Bitterroot National Forest, and, therefore, makes me wonder why it's listed for water quality impairment. On the other hand, two additional streams could be listed as water quality impaired, Camp Creek and Cameron Creek. Camp Creek is channelized along Highway 93, and has sediment inputs from that mountain pass highway which could be prevented. Cameron Creek flows from Sula State Forest, which has low standard logging roads, and was severely burned in 2000 wildfires, as well as grazing and irrigated lands. Mike Jakober, Bitterroot National Forest fish biologist, can support removal of Moose and addition of Camp and Cameron Creeks.

Response: The final document has been modified to reflect this comment. Additionally, while other streams within the Bitterroot drainage may in fact be impaired, only streams listed on the 1996 and 2002 303(d) list were evaluated for purposes of this WQRP in accordance with the current court order. However, 305(b) reporting requirements and future 303(d) listing processes enable the State to address all waters in Montana. Time and resources will obviously dictate the rate at which this can occur, but MDEQ is currently developing strategies by which to achieve these goals once the requirements of the consent decree and court order are met.

Comment 2i: Temperature Targets: The two temperature targets of 12 degrees C (upper watersheds) and 15 degrees C mid-summer 7-day maximums (lower watersheds) are quite close to the EPA Region 10 (Pacific Northwest) Temperature Criteria for cold-water salmonids **http://yosemite.epa.gov/R10/water.nsf/water+quality+standards/WQS+temperature+guidance** of 12 degrees C for bull trout juvenile rearing and 16 degrees C for "core" juvenile rearing of other species, and 18 degrees C for non-core rearing and migration areas.

Although there is a reference cited in the document for using 15 degrees C for other bull trout, it appears that some of the reference streams in the Upper Bitterroot do not meet that 15 C criteria (Moose Creek, upper Nez Perce Fork). Why use a target which is already more restrictive than the reference stream conditions if alternative targets are well documented and accepted by EPA?

Response: The in-stream temperature targets in the BHTPA were set according to USFWS guidance (USFWS, 1998) in response to the current bull trout threatened status of the Endangered Species Act. While the Montana Water Quality Standards for temperature are

subject to "reference conditions," it was determined that insufficient temperature reference data exists in the BHTPA. Therefore, a conservative, protective approach was utilized in setting the targets in the BHTPA. Additional reference monitoring in the BHTPA is proposed in this document so that the thermal potential of the BHTPA streams might be realized in the future.

Comment 2j: Nutrient Targets. The Table 3-9 on page 41 includes the algae and nutrient targets for the TMDL Planning area. The algae and nutrient targets are well documented. However, it is unclear how to apply the Total Phosphorus targets since both the 10 micrograms/Liter and 39 micrograms/Liter are given in the same table. The reference given for the second, higher Total P target (39 micrograms/L) is the Clark Fork river water quality standard below the Blackfoot River. This is a standard applied to a large river with multiple major point sources of phosphorus, and an important element of geologic phosphorus input. It is also a standard designed to achieve a benthic Chlorophyll A of 100 milligrams/M2. With the stated benthic chlorophyll A target of 33 mg/M2, using this target for headwater streams in the Upper Bitterroot does not appear to be appropriate. The EPA (EPA 822-B-00-015) notes that reference stream conditions for total P in Ecoregion II (western mountains) ranges from 3 to 32 micrograms/L. It appears from local reference stream data (Moose Creek) and other unimpaired streams (e.g. West Fork Bitterroot) that total P targets for the Bitterroot should be somewhat higher than 10 micrograms/Liter (no Moose Creek data ever achieved that low level). Can there be a locally based determination of Total P and total N targets based on statistics from existing nutrient data in the Bitterroot?

Response: At the time of this report, Montana DEQ was still in the process of evaluating the suitability of the U.S. EPA guidelines as TMDL targets for mountain streams in western Montana and of developing revised nutrient criteria for streams in the state. Although the U.S. EPA data does range from 3 to 32 micrograms/L as the comment indicates, the U.S. EPA has specifically selected 10 micrograms/L as the TP criteria for Region II, and thus this value was used by MDEQ as a target. MDEQ also recognizes that the Clark Fork River standard may not be entirely appropriate for headwaters streams in the BHTPA. However, the combination of the U.S. EPA and Clark Fork guidelines provides a preliminary range of possible reference conditions for TP in the BHTPA. Phosphorous concentrations in the BHTPA will be evaluated using a weight of evidence approach that relies simultaneously on the U.S. EPA and VNRP target guidelines. Comparisons of current total phosphorous concentrations to target thresholds will be conducted in the context of other target and indicator-based evidence of potential eutrophication, including benthic and water column chlorophyll a levels, macroinvertebrate communities, and the presence or absence of anthropogenic phosphorous sources. MDEQ appreciates the comment regarding a locally based reference determination and agrees that such a determination is desirable; however the study required for such a determination was beyond the resources available for this project. The weight of evidence and adaptive management approaches described in the TMDL document were included to address the types of data limitation this comment highlights. As monitoring continues and as MDEQ develops nutrient standards for western Montana, the nutrient targets can be revised as needed. Nevertheless, based on the weight of evidence approach described in the TMDL document, MDEQ stands by the determination that the West Fork and Moose Creek are not impaired by nutrients

Comment 2k: Prior Comments: Several comments, which I made in writing on January 3rd, 2004, for a prior version of this document, still apply. For instance, errors with Table 4-6 Bank Instability, and incongruency between Temperature in Celsius in Table Headings and in Fahrenheit in the numeric data (see Table3-64, p. 137 for instance), still apply. For this reason, I have attached my comments from January 3, 2004. Please consider those comments part of this communication.

Response: The final document has been modified to reflect these comments.

Comment 2l: The Forest would like to have the length of stream listed clearly identified in the TMDL and where supported by sufficient and credible data, changed to reflect that segment of stream truly impaired.

Response: All of the streams in the BHTPA were listed in their entirety on the 2004 and all prior 303(d) lists. Based on the results of the TMDLs that have been developed for these, MDEQ will consider dividing the streams into impaired and non-impaired reaches for future versions of the 303(d) list. In the meantime, the text of the TMDLs discusses this issue were it is relevant.

Comment 2m: The forest requests that the Targets presented in Table 3-7 and 3-8 be reviewed and changed. The Forest would like all reference streams on Forest Service System land to be considered when determining the sediment target. Presently, only 25% of our reference streams would meet the sediment targets provided in this draft document.

Response: The final document has been modified to reflect this comment.

Comment 2n: The Forest does not agree with the establishment of proactive and protective TMDL's for the following stream/parameter combinations;

- Sediment for Moose Creek;
- Temperature for Martin Creek;
- Sediment impairment listing for Meadow Creek (given all the BMP implementation that has occurred on both the roads and within the cattle allotment);
- Sediment impairment listing for Reimel Creek;
- Sediment impairment listing for Upper East Fork Bitterroot River above Martin Creek;
- Sediment impairment listing for Hughes Creek; and,
- Sediment impairment listing for Upper West Fork Bitterroot River.

If there is not sufficient and credible data (SCD) this needs to be stated. The Forest's rational for de-listing [these water pollutants] are found within the comments provided in the document and Table 3-68 is clearly defined as not being impaired. Moose Creek is considered a Reference stream. Data from the stream is used to determine the sediment target. Moose Creek meets all sediment targets if the requested changes in these targets are accepted by the state.

Comment 2o: We feel Section 3 needs to be very specific as to the sources, existing data analysis, restoration that has occurred, and the need for additional restoration. Data from this section, as well as Sections 4, 5, 6, 8, and the maps need to brought into the discussion. The

Forest is not comfortable relying solely on information from Gary Decker's 1991 watershed sensitivity work and the BAR EIS when there is new data provided from BMP monitoring and stream or watershed surveys.

Response to Comments 2n & 2o: The use of historic data like Gary Decker's 1991 watershed study was used in the TMDL document to describe why some of the streams in the planning area were placed on the 303(d) list in 1996 and to evaluate if this decision was reasonable. In no case was such data used as the sole basis for a TMDL. However, once a stream is placed on the 303(d) list and the decision to do so is determined to have been valid, it is MDEQ's responsibility to keep the stream listed and develop a TMDL unless convincing new data suggest that past impairments have been incorrect and no legacy effect continue to limit beneficial use support.

However, in light of the Forest's comments, the impairment status of the streams listed above was reevaluated:

- Sediment for Moose Creek: MDEQ agrees and no sediment TMDL has been developed for Moose Creek. MDEQ proposed de-listing Moose Creek for sediment in 2006.
- Temperature for Martin Creek: MDEQ agrees and no temperature TMDL has been developed for Meadow Creek. MDEQ proposed de-listing Meadow Creek for temperature in 2006.
- Sediment impairment listing for Meadow Creek (given all the BMP implementation that has occurred on both the roads and within the cattle allotment): MDEQ agrees and no sediment TMDL has been developed for Meadow Creek. MDEQ proposed de-listing Meadow Creek for sediment in 2006.
- Sediment impairment listing for Reimel Creek: MDEQ disagrees. While most of the major impacts in the watershed have been addressed, several of the supplemental indicators suggest possible legacy issues in the watershed and the fires of 2000 burned a large portion of the stream. In light of this, MDEQ has developed a sediment TMDL and outlined a restoration plan. MDEQ acknowledges, however, that sediment loading does not appear to be excessive and the stream may just need more time to heal from past impacts. MDEQ will continue to monitor the stream and reevaluate the 303(d) status at the 5-year review.
- Sediment impairment listing for Upper East Fork Bitterroot River above Martin Creek: MDEQ agrees that most of the impacts to the East Fork occur below Martin Creek. However, at this time, the stream is listed in its entirety and thus the TMDL is expressed for the whole stream.
- Sediment impairment listing for Hughes Creek: MDEQ disagrees. In light of the placer mining in the watershed and potential road sediment impacts, a sediment TMDL is warranted for Hughes Creek. MDEQ acknowledges that placer mining impacts on USFS managed lands have been restored, but other problems with the stream remain. Therefore, it may take more time to realize the effects of recent mitigation.
- Sediment impairment listing for Upper West Fork Bitterroot River: MDEQ agrees that most of the impacts to the West Fork occur below Deer Creek. However, at this time, the stream is listed in its entirety and thus the TMDL is expressed for the whole stream.

Comment 2p: The Forest questions the development of a flow TMDL since flow has not been identified by the State of Montana as a pollutant. The document should be consistent in the application of a flow TMDL.

Response: No flow related TMDLs were developed as part of this document. The adaptive management strategy outlined in Section 9.10 suggests flow alterations in the East Fork Bitterroot River **may be** contributing to the temperature impairment and thus recommends a study to verify this assumption.

Comment 2q: A clear process needs to be identified to address those watersheds where all reasonable management practices (provision 17.30.602(17) of the State's Water Quality Sediment Standards) are in place to mitigate the identified pollutant or where all identified restoration has been completed.

Response: The comment is unclear as written. However, MDEQ has several processes, which uses all available data to evaluate water quality standard's attainment (MDEQ, 2005). Impairment decisions made under our sufficient and credible data/beneficial use determination process (SCD/BUD) and this WQRP are specific in time and do not account for potential future recovery. They reflect the conditions observed at the time the data was collected and evaluated. This document allows for flexibility for potentially changing those decisions as more data becomes available. Additionally, MCA (75-5-703(9)(c)) requires the State to reevaluate TMDL/WQRP's five years after they have been completed and approved. This evaluation could allow for updating impairment status of specific waterbodies and/or revising components of the TMDLs.

Comment 2r: The Forest would like to have all the restoration that has occurred to date in the watersheds be considered as part of the impairment call.

Response: Restoration activities have been described in Sections 3.0 and 8.0. However restoration alone cannot affect the impairment status determination until the impact of that restoration is seen in a response of the target and indicator variables. The Monitoring and Adaptive Management strategies described in the text allow MDEQ to reevaluate the target and indicator variables if they do not respond as expected. In light of the changes made to the document in response to comments 2n and 2o, potentially significant pollutant sources remain in all of the watershed for which TMDLs have been developed.

Comment 2s: The Forest is dealing with many legacy concerns. Many of the listing sources are from legacy activities and not from those projects planned and implemented today, due to the Montana SMZ law, INFISH guidelines, and a better understanding of the effects of our activities on the landscape.

Response: The final document has been modified to reflect this comment. However, it is important to note that while current land management practices may not be contributing at the same level as legacy practices, the affects of these legacy practices may still be impacting beneficial uses today. Until such time recovery occurs, either naturally, or through mitigation, impairments from past practices may continue to exist.

Comment 2t: A review of the target parameters by the TAC and IT is recommended. The Forest questions whether this document want to have supplemental target for suspended sediment and turbidity when these measurements are time consuming and expensive to gather and interpret.

Response: Our use of the weight of evidence approach as described in Section 3.3 of the document is predicated upon the fact that there is no single parameter that can be applied alone to provide a direct measure of beneficial use impairments associated with sediment. The suspended sediment and turbidity supplemental indicators were selected specifically to provide individual measures of potential sediment impairment associated with the cold-water fisheries beneficial use. The information provided by these parameters was then used in combination with the information provided by all of the other targets and supplemental indicators to reach conclusions about water quality impairment.

Additionally, supplemental indicators will not be used directly as water quality targets to measure the success of this Water Quality Restoration Plan, but will be used if targets are not met, in examining the circumstances surrounding non-attainment of the targets. Therefore, these supplemental indicators are not necessary to make decisions in the future, but are merely suggested as possible parameters to be measured if feasible.

3. Source Assessment

Comment 3a: Our engineering department has a concern that the gravel lift/depth factor for reducing sediment is not valid. Is there supporting data to show that a 2-6 inch gravel lift in our area only reduces surface erosion by a factor of 0.5?

The 50% reduction in sediment resulting from a 2-6 inch gravel lift was taken from the Washington Forest Practices Board's Standard Methodology For Conduction Watershed Analysis (1997), from which the FroSAM method used in the BHTPA was developed. The "Washington Method" has been widely used to evaluate sediment loading from roads in western Montana and represents the best available science for evaluating this important sediment source.

Comment 3b: We have concerns that all road crossing were considered equal in the model. This limitation of the model needs to be clearly stated and an error band applied to the modeled numbers so land managers and the public have a true vision of the road and sediment issues on the landscape.

Response: All roads were not considered equal, but were instead evaluated on a case-by-case basis using FroSAM, a modified version of the "Washington Method" described above. This method represents the best tool available for evaluating road sediment delivery in forested watershed and has been widely applied as part of TMDL development in Montana.

Comment 3c: The bank stability assessment does not seem fully developed. More work should focus on the sensitive stream types, the meandering C and E channels found in the valley bottoms and on private lands. The source of bank instability needs to be fully disclosed.

Response: No loads from specific sources were developed for bank stability. The stream bank assessment conducted in the BHTPA only identified linear distances, level of disturbance, and possible sources of stream bank erosion. The adaptive management strategy outlined in section 9.10, suggests a process by which to better define the loads and sources of the loads from stream bank erosion.

4. Monitoring

Comment 4a: The DEQ indicates that suspended sediment monitoring provides a direct measure of sediment transport while turbidity provides an indirect, but more easily conducted measure of sediment. However, it is difficult to monitor suspended solids and turbidity leading to a lack of current credible data. Therefore more flow data should be required.

Response: Comment noted.

Comment 4b: One of the more complex problems the state faces is the ongoing monitoring of each watershed as required for the mandated 5-year review. With a very limited staff it will be very important to base monitoring on performance based targets. The ultimate goal should be the de-listing of 303(d) water bodies.

Response: MDEQ agrees that meeting the current 2012 schedule while conducting 5-year reviews is a difficult and complex task that lies before us. We are currently developing measures by which to achieve these goals. One measure is the recent development of the *Watershed Protection Section* within the Water Quality Planning Bureau at MDEQ. When this Section becomes fully staffed and funded, it is envisioned that they will become part of an expanded team to assist with on-the-ground implementation projects following approved TMDLs, as well as measuring the success of these projects in meeting water quality standards.

"Performance-based" is a term typically used in the allocation component of the TMDL process, not water quality targets. An allocation is that portion of receiving water's loading capacity that is attributed to one of its existing or future pollution sources. A "performance-based" allocation is used when the actual loading capacity cannot be determined, but the sources and reasonable mitigation is known. Performance-based refers to future actions that can be linked to pollutant load reductions that, in turn, are likely to result in achievement of water quality standards. Since targets are quantitative values used to measure whether or not the applicable water quality standards are attained in a given waterbody, the "performance-based" term and/or concept is not typically applied to the "target" component of the TMDL process. Targets must represent attainment of water quality standards and are the end-point goal of the TMDL process. Performance-based actions therefore, can be the means by which the goals will be achieved (i.e., an allocation), but cannot be the end-point goal (i.e., the target).

Finally, MDEQ's goal is not to de-list waters. MDEQ's goal is to attain and maintain water quality standards to ensure all beneficial uses are fully supported.

Comment 4c: We were also pleased to see more use of "Phase I" Assessments, with aerial surveys, in this TMDL preparation, compared to other documents we have reviewed.

Response: As described above, many times assumptions are made from limited data. It is MDEQ's position, to ensure that the beneficial uses are protected. This sometimes requires additional analyses.

Comment 4d: The monitoring section needs more detail, for example how is the state planning on getting this done and where will the funding come from?

Response: It is important to note that most of the monitoring suggested in this WQRP is strictly voluntary in nature. Under State law (MCA 75-5-703(7)), after control measures have been implemented (incorporation of waste load allocations into discharge permits and application of reasonable land, soil, and water conservation practices), the Department of Environmental Quality is responsible for determining if State water quality standards are being met. This determination is a part of the State's 305(b) Report/303(d) list, which MDEQ produces on a biennial basis. MDEQ is interested in a voluntary collaborative and cooperative approach and encourages land management agencies and private property owners to work with MDEQ in future implementation and monitoring activities.

Again, MDEQ encourages a collaborative effort in implementing recommendations in the Water Quality Restoration Plans. This collaboration can take many forms. This plan does not articulate who is responsible for writing the monitoring report because this has not been determined. What has been determined is that a number of groups have monitoring resources and that coordination of these resources is appropriate. However, in order to realize the potential gains in implementation, monitoring of these activities would only serve positively to land managers. Therefore, MDEQ feels that a collaborative approach between all land managers in the BHTPA and MDEQ should occur as feasible. MDEQ will assist with these efforts as practicable.

Comment 4e: The Forest is not prepared to assume responsibility for monitoring within the project area. We will participate with the Technical Advisory Committee (TAC) and the Implementation Team (IT).

Response: The final document has been modified to reflect this comment.

Comment 4f: The Forest suggests that road crossing monitoring be added. It may be easier and more telling to monitor sediment at the source than in the stream, which is a cumulative, look at the whole watershed. Stream channels are a very slow response to restoration.

Response: The final document has been modified to reflect this comment.

5. Restoration/Implementation

Comment 5a: Implementation Plan. The proposed agencies involved in the TMDL Implementation Team should also include the Bitter Root Water Forum, a local watershed group

with 10 years of experience in the area. The text on p. 247-48 includes ".....lacking a formal watershed group.....an Implementation Team will be formed." Although the Water Forum is mentioned in the text, it is not mentioned in the executive summary of this document as part of the Implementation Team. Also, there are several references to the "Ravalli" Conservation District in the text in this section, as well as in the Executive Summary. This should be corrected--the local conservation district is the "Bitterroot Conservation District."

Response: The final document has been modified to reflect this comment.

Comment 5b: Please include all the recent restoration that has occurred within these watersheds in the restoration analysis. Also, bring this information forward to Section 3 to document listing or de-listing.

Response: This information has been added to Sections 3.0 and 8.0 where appropriate.

6. Modeling

Comment 6a: The Burned Area Recovery (BAR) model was originally created to assist in the evaluation of sediment related impacts on water resources caused by non-channelized erosion following the 2000 fire season. The model was developed to calculate post-fire sediment yield as of June of 2001 and estimate future increase in sediment yields related to post-fire salvage logging activities proposed by the Bitterroot National Forest. This model was a principal component used in the BNF Burned Area Recovery EIS. However, five years post-fire, we now know that very little salvage activity actually occurred due to litigation and the subsequent negotiated settlement agreement. It would not be wise to use this model in determining or predicting future sediment due to timber harvest or salvage operations. All vegetative treatments are performed to Best Management Practices (BMPs) and within the Streamside Management Zone regulations. As a performance measure, these BMPs and SMZ mitigation measures are audited bi-annually by a cross-section of highly trained professionals. Each audit cycle reports to the state legislature their findings and for the past decade the audit report demonstrates a 97% to 99% effective rate in applying BMPs. It has been successfully modeled and field assessed that the long-term effect of a vegetative treatment in reducing sediment loading is greater than a potential short-term and temporary spike.

Response: Text has been added to the document to acknowledge that the sediment load predicted by the BAR no longer reflect the actual load. Several years have elapsed between the completion of the modeling and the release of this TMDL document, and fire-related sediment loads have undoubtedly declined dramatically. The text now reflects this. The model generated estimates of sediment from fire and timber harvest that are presented in the TMDL were as of the time of modeling and do not include estimates from future harvest or salvage operations.

Comment 6b: Riparian harvest on Forest Service lands is a practice of the past. Both the Montana SMZ law and INFISH guidelines provide for riparian buffers along perennial and intermittent stream and have strict standards for any activities occurring within these buffers. The

Forest would like the work "past" put in front of any reference to riparian harvest throughout the document.

Response: The final document has been modified to reflect this comment.

7. Public Comment/Document Presentation

Comment 7a: We would suggest moving the section regarding "public participation" (Section 10) to the beginning of the TMDL document.

Response: Comment noted.

Comment 7b: We would also suggest the creation of executive summaries for future TMDLs that adequately summarize the documents for interested members of the public.

Response: Comment noted. MDEQ and U.S. EPA are working collectively to develop better, more comprehensive executive summaries to address this concern in the future.

Comment 7c: Reviewing the TMDL draft via the Internet on slow phone connections is a chore due to draft size being almost 300 pages, and a hard copy would help in the next revision.

Response: The courts and our constituents have been asking for MDEQ and U.S. EPA to increase the pace of TMDL development since the program officially began in Montana in the late 1990's. The pace of TMDL development in Montana has increased annually since the year 2000 and is expected to continue to increase. This, inevitably, will result in an increased burden on the public to review more and more TMDL documents on an annual basis. This is a fact that we will have to accept.

To date, the timing of the release of public review drafts has largely been driven by a rigorous, court-imposed schedule with annual milestones. Given a court-imposed schedule, Montana's TMDL Program has operated on a calendar year basis since the year 2000, with TMDL documents scheduled for completion by the end of December every year. This has resulted in the release of most of the public review drafts in October, November, or December on an annual basis.

Nonetheless, MDEQ appreciates the challenges the public may face when multiple draft documents are published at the same time. MDEQ is working to address numerous issues including:

- Developing standard procedures for notification of document availability;
- Pre-specifying convenient locations for the public to review the drafts (such as local libraries and copy shops such as Kinko's);
- Producing draft & final versions on compact disks;
- Standardizing text viewing software for review of the documents electronically; and
- Creating a streamlined process for receiving and recording public comment.

It is also important to note that MDEQ is strategizing on ways to better inform the public on upcoming public draft releases so that the public can prepare and schedule appropriately with the timing of the release of each draft document.

Finally, MDEQ is strategizing on ways to make the documents available to the public following U.S. EPA approval of the final document.

8. General Comments

Comment 8a: An additional concern in Section 3 is the reference to the Beschta 1987; Li et al, 1994 report. We would caution the DEQ to rely only on peer reviewed and tested sound science. The Beschta Report has not been peer reviewed and should be stricken as reference material.

Response: Comment noted.

Comment 8b: The Bitterroot National Forest already mitigates for endangered species by adhering to INFISH and PACFISH standards as adopted into the Forest Plan in 1995. Furthermore, since the Canadian Lynx has not yet been listed in the lower 48 states, this provision should be stricken from the BWQRP.

Response: Comment noted. Canadian Lynx are currently listed as *threatened* in the lower 48 States.

Comment 8c: I don't have any specific statements about this or any TMDL draft in Western Montana other than to say the high water quality, high air quality and associated mountain vistas are the reason we have such explosive growth in the state. Pristine watersheds sell! Fisheries, tourism and the quality of life all benefit hugely with pristine waters and our TMDLs should be extremely LOW! Keep septic regulations strict, keep banks stable and tell the yeeha ranchers the days have come to keep the hooves and cow pies out of our streams.

Response: Comment noted.

Comment 8d: Process for de-listing needs to be clearly stated. If the Forest performs all identified source work, can the stream be delisted even if the targets are not yet met?

Response: The Bitterroot Headwaters WQRP does not formally list or de-list any waterbodies in the Planning Area. The Sufficient and Credible Data Beneficial Use Determination (SCD/BUD) process is the mechanism that lists and "de-lists" waterbodies on the 303(d) list and are reflected in each biennial Integrated Report (IR). The SCD/BUD process will utilize all data and information provided in this WQRP and any other additional information/data during the 2006 upgrade of the IR.

Comment 8e: The Forest feels that on Forest Service lands, all possible control measures related to the loss of riparian vegetation by the location of the road is being implemented.

Response: Comment noted.