APPENDIX E
RESPONSES TO PUBLIC COMMENTS

As described in **Section 8.0**, the formal public comment period for the Yaak Watershed Total Maximum Daily Loads (TMDL) extended from November 19th, 2007 through December 19th, 2007. A public meeting was conducted on Tuesday, December 4th, 2007 at the USFS Ranger Station in Troy, MT. In response to public comment requests, DEQ extended the public comment period to January 14th, 2008 and conducted a second public meeting in Troy, MT on Jan 7th.

Twelve individual comments letters were submitted to DEQ during the public comment period, eleven during the initial public comment period, and one letter during the extended period. Excerpts from comment letters are provided below. Where appropriate, the DEQ has compiled comment with like topics and provided response to the general topic. Responses prepared by DEQ follow each of the comments/topics. Original comment letters are held on file at the DEQ and may be viewed upon request.

Comment #1:
Several (6) individuals expressed concern that they were not adequately informed of the TMDL process and requested an extension of the public comment period and an additional public meeting. Excerpts include:

Comment #1a:
Just this past Sunday I learned about the Yaak river sediment report. I was told by a neighbor who learned of it Friday night after some meeting had occurred regarding this problem. After talking to several people who leave in the Yaak, none of them knew of the problem or the meeting about it. I was told the meeting notice was in one of the local papers, but I do not get the paper, nor do many others up here. With a problem of this magnitude, I would think a responsible government agency would think beyond the box, finding a way to notify the residents of the infected area; a simple mailer to the Troy Post Office Boxes and Rural Mail Boxes would have easily gotten the word out.

Comment #2a:
The public comments on the DEQ's Yaak Watershed Study are due December 19. An article alerting the public to this Study and the date that comments are due appeared in the Western News just today, December 14! I looked at the Study on the internet and there is absolutely no way that anyone in the public, especially this time of year, could possibly review the document and understand what it says in 30 days.

I request that the DEQ delay any further action on this document until the end of summer after the public has an opportunity to participate. The land involved is national forest and the public has a legal right under the National Environmental Policy Act and National Forest Management Act to participate in such studies and to be fully informed, early and often. This right has not been provided by either the Forest Service or the DEQ."

Comment #3a:
The Yaak Rod and Gun Club had its' annual Christmas party last Sunday and thirty two members were present. At the meeting, a report of your activities was given. The group was totally surprised that any work was going on and what recommendations were being made. Apparently, you did have an ad in the paper about a meeting, but we do not think you did nearly enough to let the public know what's happening in our own backyard. Witness the fact that only three or four people knew about the meeting.

We find it difficult to argue your scientific findings in a forum like this. We think you need to have another "public" meeting where local people have the opportunity to ask questions and voice their opinions. The USFS has done an excellent job of this and it has helped their cause rather than hinder it. We look forward to your response on this request.

Comment #1 Response:

In regards to comments on DEQ's public involvement process, the Department follows guidelines and process adopted by the state legislature for consultation associated with TMDL development. Regrettably, in some cases the processes the state employs does not meet expectations of all, as is evidenced in the Yaak.

State Law (MCA 75-5-702(9)(a)) establishes a *statewide TMDL advisory group* that serves in a consultation capacity set forth under law. Additionally, *"the department shall provide public notice of meetings of the statewide TMDL advisory group and shall solicit, document, and consider public comments provided during the deliberations of the*

advisory group. (MCA 75-5-702(10)). Minutes of the *statewide TMDL advisory group* are posted at the website: http://deq.mt.gov/wqinfo/TMDL/advisory_group.asp

The fourteen member *statewide TMDL advisory group* represents a broad base of water related interest groups in Montana. The groups represented are agriculture (livestock and farming), conservation or environmental interest, water-based recreationists, the forestry industry, municipalities, point source dischargers, mining, federal land management agencies, state trust land management agencies, supervisors of soil and water conservation districts for counties both west and east of the continental divide, the hydroelectric industry, and fishing related businesses.

Public announcement and public meetings addressing specific TMDL planning areas (the Yaak TMDL Planning Area, for instance) are not required under state law, and the department conducts such public review and comment processes under internal guidance. This guidance does not typically provide for the solicitation of *individuals* within TMDL planning areas, but solicits watershed advisory groups and Conservation Districts for information on sources that may be contributing to water quality impairment. The department relies on the *statewide TMDL advisory group*, as well as local Conservation Districts and watershed advisory groups to notify and inform constituents regarding local and regional TMDL activity. As the major landholder and land management agency in the Yaak TMDL Planning Area, the department also relied on the USFS to notify prospective watershed advisory groups within the watershed. With the exception of wastewater treatment plant construction grants and NPDES permits, TMDLs and other similar Clean Water Act planning related activities are exempt from requirements of the National Environmental Policy Act (Clean Water Act - Section 511(c)(1)).

During TMDL development, DEQ provided draft documents to the Lincoln Conservation District, the Kootenai National Forest, the US Fish & Wildlife Service, and representatives of the Kootenai River Network and the Yaak Headwaters Partnership Group for review and comment: only the USFS/Kootenai National Forest provided technical and editorial feedback on draft documents that were distributed.

The 30-day public comment process is intended as the venue for general public comments. Generally, members of public are not solicited for review of TMDL technical documents, but are provided an opportunity to comment during the departments 30-day Public Comment Period. In the case of the Yaak TMDL, a public meeting was scheduled for Dec 4th in Troy and public notice was posted in the Western News on Nov 30th. In response to public comments received, DEQ extended the public comment period four weeks (Jan 14th) and scheduled a second public meeting on Jan 7th in Troy. Public notice of this second public meeting ran in the Western News from Dec 26th through Jan 11th, 2008 and was posted at local markets and post offices. A single comment on the Yaak TMDL was received during the public comment period extension.

The Department acknowledges that initial efforts in the Yaak were inadequate to reach some landowners and interested parties, and is pursuing improvements to the process to ensure that interested parties receive adequate notification of opportunities for comment

and/or review, especially in rural areas. Comments received during the Yaak public comment period are seriously considered and the draft TMDL document has undergone substantial revision to address public and stakeholder concerns.

Comment #2:
At the second public meeting (Jan 7th, 2008), the following comments was received in reference to the meeting:

There is a real need for education. There is no understanding relative to the Restoration Plan. A few people have diverted the entire process: we have tried in two hours to reconstruct science.

Comment #2 Response:
DEQ appreciated the comment and agrees with the idea that education and understanding of restoration options is a key component to local implementation of water quality improvements.

Comment #3:
*Page 9, last paragraph, "Major soil types in The Yaak Watershed are shown in **Map 4** of **Appendix E**. Sedimentation is an issue in the Yaak Watershed, and two of the major soil materials on the area that are particularly susceptible to erosion and sedimentation are the decomposed granitics and the glacial lakebed sediments. When disturbed, sediment coming from these landforms can increase significantly over natural levels (Kootenai National Forest EIS, 1987)."*
This is misleading as very little of the watershed is actually granitics or sedimentary. The vast majority of the landtypes in the watershed are stable and only moderately erosive.

Comment #3 Response:
The document has been amended and clarified to better reflect geologic and soil conditions (Section 2.1.5).

Comment #4:
Page 11, first paragraph, "Various studies have estimated that the westslope cutthroat trout now only occupies between 19-27% of its historic range in Montana (Van Eimeren, 1996). Cutthroat trout have declined due to habitat loss caused by poor grazing practices, historic logging practices, mining, agriculture, residential development, the lingering impact of forest roads, dewatering, and dams. Non-native species have also taken a huge toll on westslope cutthroat trout (Novinger and Rahel, 1999). Hybridization with rainbow trout and even other non-native cutthroat trout subspecies is another reason for the decline in population. Consequently, genetically pure westslope cutthroat trout only exist in an estimated 2-4% of their historic stream distribution (McIntyre and Rieman, 1995)."
The citations used in this text are out of date. A 2002 status review of the westslope cutthroat coauthored by Montana Fish Wildlife and Parks and the US Fish and Wildlife Service does not support this text.

Comment #4 Response:

The document has been amended using figures and estimates provided in Shepard et al, 2003 (Section 2.2.1).

Comment #5:
Page 17, "Most of the road closures in the Yaak Watershed are due to concerns for the grizzly bear population, and road decommissioning efforts in the watershed are driven by concerns for water quality and native fish (Newgard, pers comm)."
The Forest Plan would be a better source. There are multiple resource concerns and access management that drive decisions to close roads.

Comment #5 Response:
The text has been removed from the document.

Comment #6:
Page 19, first paragraph, "In 1987, forest plans for the Kootenai National Forest established allowable sale quantities (ASQs) for the maximum amount of timber that could be harvested from the forest. Timber production since 1987 has been well below the ASQs, due to a number of factors, including a shift in management focus increasingly from timber production to wildlife habitat, watershed concerns, litigation, appeals, deferrals, and changes in management area designation (KNF 1997). Timber volume sold from the forest has declined from 200 million board feet (mmbf) per year to about 50 mmbf per year from 1998 to 2001 (USFS, 2003)."
This text does not reflect what has been harvested in the Yaak, but rather across the forest which consists of more than 2 million acres of national forest system lands.

Comment #6 Response:
The document has been amended to provide clarification that the figures provided are for the entire Kootenai National Forest (Section 2.3.1).

Comment #7:
Page 19, second paragraph, "Forest Service timber sales are now geared toward very large operations because larger sales are perceived as more cost effective; as a result, many small mills can not accommodate the sale or compete with the larger timber companies. Stimson and Riley Creek Timber Companies have mills near the Yaak Watershed in Fortine and Moyie Springs, respectively."
This text is not true, as the forest provides numerous sales to smaller business and presently the Small Business Administration set aside for this forest is 58%. Also, Stimson does not own a mill in Fortine. Plum Creek operates a mill in Ksanka, MT.

Comment #7 Response:
The text has been removed from the document.

Comment #8:
Page 31, the use of % Surface Fines as a primary sediment indicator is not appropriate. It is well established in the literature that macroinvertebrate community diversity and species richness is highly correlated to fines in the sediment and the subsequent embeddedness that reduces the interstitial habitats. It is also well documented that fines in the sediments affect fry

survival and emergence. It is also well established in the literature that surface fines has no correlation to subsurface fines and is not even a potential surrogate for % subsurface fines. For these reasons we recommend dropping surface fines as an indicator for all streams.

Page 32, the use of equivalent clearcut acres (ECA), stream crossing density, and road density as sediment indicators, even supplemental indicators, is not appropriate. This forest and other agencies have used these measures as indicators of potential risk to watersheds as they are correlated to development and management. We request they be dropped as indicators.

Comment #8 Response:

The percent surface fines measures utilized in the draft document have been used in a variety of technical documents and TMDLs in Montana and elsewhere as indicators of impact to aquatic communities. As cited in the document and stated in your comment, literature has established the relationship between fine sediment accumulation and impacts to macroinvertebrates, fish and associated aquatic life. DEQ does not suggest that surface fines measures be used as a surrogate for subsurface fines, but should be used in conjunction with subsurface fines to evaluate impacts to aquatic communities. Typically, levels of subsurface fines are associated with use-support evaluation for salmonid-type fish (specifically fry emergence and survival), whereas levels of surface fines are associated with use-support evaluation of macroinvertebrate communities and other biological effects typical of increasing fine sediment accumulations.

To avoid confusion regarding comparison of methods used in beneficial use support evaluation, Figure 4-3 and the associated discussion of surface fines correlation to subsurface fines has been removed from the document. While data collected on the Kootenai National Forest shows a general correlation between surface fines and subsurface fines, additional research would be desirable to establish relationships between the two measures.

Comment #9:

Page 37, bullet items, "Hill et al. (2000) found that percent fines <2mm negatively correlated with periphyton biomass in mid-Atlantic streams. Zweig et al. (2001) in their work on four Missouri streams determined that taxa richness significantly linearly decreased with increasing deposited sediment in 3 of 4 streams." These two citations should not be included as they come from distinctly different ecosystems from dissimilar areas of the country. The remaining citations support the thesis of the text.

Comment #9 Response:

The citations provided support the contention that increasing fine sediment has detrimental effects on aquatic life, and specifically cites various regions to illustrate that the general relationship is common among various ecosystems.

Comment #10:

Page 49, fourth paragraph, "Forest management (timber harvest) was significant in the upper watershed between the 1950's and early 1980's. Since harvest, Grizzly Bear Core Management Area (GCMA) designation." This language is confusing as the term management area is a

designation under the Forest Plan. There is grizzly bear core habitat identified based on access, but there is no designation of core as a management area under the Forest Plan. This change needs to be made in Figures 4-4, 9, & 13. References to GMCA need to be changed to Grizzly Bear Core which is the appropriate designation under grizzly bear management direction per the US Fish and Wildlife Service.

Comment #10 Response:

The document has been amended to include the proper designation terms provided.

Comment #11:

*Page 56, last paragraph, "**Stream Crossing Density:** Stream crossing densities for each site were at or below the indicator value of 3.0 crossings per square mile at all sampling sites located along the mainstem of Seventeenmile Creek.*

***Road Density**: The road density threshold was exceeded at the upper mainstem site (52), but was well under at the other sites and for the portion of the basin above that site." This text is either misleading or indicates a misapplication of these measures. These measures are for relative comparisons and represent the entire area of a watershed, typically at the 6th code hydrologic unit.*

Comment #11 Response:

DEQ utilizes and evaluates data and statistics for stream crossing density and road density in a variety of ways. In order to assist in evaluation of water quality conditions at each sampling site, landscape-scale influences such as stream crossing and road density numbers in the Yaak TMDL were calculated by USFS hydrologists and consider all contributing watershed area *above each sampling site*.

Road crossing densities and road densities by 6th and 7th code HUC are given in Section 5.0 for a general comparison of landscape indicators at the subwatershed scale and are used to assist in allocation sediment loads to subwatersheds.

Comment #12:

Page 58 & 59, "Primary biological indicators (MMI and RIVPACS) do not suggest impairment … Current bankfull width-to-depth and the entrenchment ratios also do not suggest sediment transport problem contributing to or causing impairment. Pfankuch Stream Channel Stability Information collected at 20 sites over a 10 year period (SUM), Stream Channel Stability-Scouring and/or Deposition Item, and the Stream Channel Stability- Distribution and Stability of Channel Bottom Materials Items also do not indicate sediment transport problem contributing to or causing impairment."

The determination of impairment is made in direct contradiction to both biological and physical data indicating otherwise. The impairment determination is based on % Surface Fines which is arguably a meaningless measure, particularly since subsurface fines are within the threshold established for non-impairment based on reference conditions. This document points out that % surface fines is suspect as an indicator of any impairment at page 113, "Unpublished, non-peer reviewed reports (Relyea, 2005) suggest that a threshold of 20% surface fines <2mm may demonstrate impairment to aquatic macroinvertebrate populations, yet <u>this supposition has not been verified</u>." All of the data cited regarding negative effects to fry emergence are for

subsurface fines. The absence of a correlation between surface fines and subsurface fines is further illustrated in Figure 4-3 which displays a regression of surface fines against subsurface fines. The regression results in an r^2 of 0.5689 indicating little if any correlation between the two. Both the macroinvertebrate measures and subsurface fines support non-impairment. We would conclude the data does not support the need for a TMDL on Seventeenmile Creek.

Comment #12 Response:

2006 use-support (i.e. impairment) determinations are made previous to and independent of TMDL development. Use-support determinations are made by the DEQ Monitoring Section through a separate process and reported biennially in the state of Montana's *Integrated 305(b)/303(d) Water Quality Report.* Waterbodies identified in this report have passed a rigorous Sufficient and Credible Data review process to determine whether adequate data and information exists to make a beneficial-use support decision. In establishing and reporting on use-support decisions in the *2006 Integrated Report,* DEQ conducted a formal 60-day public comment period to solicit comments related to beneficial-use support determinations. Comments related to beneficial-use support determinations for specific water bodies should be submitted through this process. For more information on the State's water quality assessment process and reporting of beneficial-sue support decisions, please refer to Montana's 2006 *Integrated 305(b)/303(d) Water Quality Report* at http://www.deq.mt.gov/CWAIC.

Hydrologists and watershed personnel from the Kootenai National Forest and the EPA participated in the establishment of water quality indicators, collection and review of water quality data, and evaluation of data results. What is presented in Section 4.0 is a summary of data and information used to make impairment determinations, but is not the DEQ's official assessment record of beneficial-use support. Please see http://www.deq.mt.gov/CWAIC for detailed assessment record sheets.

DEQ does not view percent surface fines as a meaningless measure as multiple studies have established the relationship between excessive surface fines and the associated detrimental effects on aquatic life. The document points out that the 20% threshold for surface fines as a determiner of impairment has not been independently verified, however the DEQ contends that percent surface fines are appropriate indicators for the evaluation of fine sediment accumulation on aquatic use support. Surface fine values in Seventeenmile Creek were considerably above reference surface fines (Section 4.2.2.3) at multiple sampling sites, suggesting that fine sediment accumulation may be impairing aquatic potential at these sites. Further data collection, evaluation of reference conditions, and continued water quality sampling will help in evaluating future beneficial-use support for Seventeenmile Creek.

Comment #13:

Page 66, last paragraph, "Sediment Source Surveys were conducted in Lap Creek by the Yaak Headwaters Partnership Group in the summer of 2006. Survey crews identified and assessed nearly all (22) road/stream crossings in the watershed: 14 of 22 of crossings were in the Upper Lap watershed (above site 53). With the exception of where Lap Creek crosses the main Yaak River road, all road/stream crossing sites were within Grizzly Core Management Area (GCMA)

and have been closed to motorized use for more than ten years. Since closure, vegetative growth on many Lap Creek roads has drastically reduced sediment contributed to streams." Why is there no discussion regarding the results of the sediment surveys, particularly since the text points out the roads are revegetated?

It is difficult to determine from the text whether the instream sediment and bedload originated from outside the stream channel which is inferred by the text but never really substantiated. There is also some indication that the condition of subsurface flow is a natural condition. Based on the biological metrics exceeding threshold values the Forest supports the determination that Lap Creek is impaired and should have a sediment TMDL developed; however, that determination should not be based on % surface fines, road density, and stream crossing density.

Comment #13 Response:

Available data on channel form and processes in Lap creek is limited. Impairment determinations in Lap Creek were based on a suite of indicators (including biologic metrics) using a 'weight-of-evidence' approach. These indicators include, but are not limited to % surface fines, road and stream-crossing density. That is, landscape-scale indicators (road density, stream crossing density) were considered in conjunction with instream data in beneficial use support determinations, but are not sole indicators of impairment. The results of sediment surveys are discussed in Section 5.0, but do not include extensive information on road condition other than at stream crossings.

Comment #14:

Page 79, item 2, "South Fork site 50 below Smoot that had the highest fine-sediment value (42% <2mm) is located immediately adjacent to a harvest unit that had riparian harvest. Field notes describe unstable banks where root wads have washed out or blown over as a result of the adjacent trees being harvested. This is the probable source of the excessive fine sediment," based on the map in Figure 4-13 the harvest in question occurred prior to 1980. Additionally, the photo in Figure 4-14 does not support the conclusion that the previous harvest is continuing to contribute to sediment in South Fork Yaak River. It is more likely the sediment is a function of the low gradient in this stream reach and would be there regardless of human activity.

Comment #14 Response:

Field assessment of site 50 was conducted by USFS hydrologists, and the descriptions and causal mechanisms reported in the draft document reflect their assessment of the condition of site 50. Photographs and maps presented herein likely do not capture true site conditions or provide the resolution or detail necessary to overcome site assessment conclusions by qualified personnel.

Comment #15:

Page 79, the summary of effects ignores the activities on private land which include agriculture, developments, and silviculture. Page 83, second paragraph, "Livestock grazing and agricultural activities - impacts typically associated with impacted bank conditions - are relatively insignificant in the Yaak TPA as the watershed is predominantly managed as forest and grazing areas are minimal in extent." This statement is not accurate for the South Fork

Yaak which has two large blocks of private land with agricultural impacts in the downstream portion of the watershed.

Comment #15 Response:

The document has been amended to acknowledge developed and livestock-use lands in the lower South Fork Yaak watershed. Development and other near-stream sources are also acknowledged in the allocation presented in Section 6.0.

Comment #16:

Page 97, second paragraph, "Within the Yaak TPA, the FPWYG establishes an allowable peak flow increase of 14%, based on the Kootenai National Forest Clearcut Equivalent Area Model." This is not accurate as there are ranges of recommended peak flows given in the Forest Plan. Recommended peak flows are based on numerous watershed characteristics. The text appears to take our Forest Plan direction out of context. We recommend dropping this statement.

Page 97, fourth paragraph, "Maintaining PFI below the FPWYG of 14% constitutes a 'reasonable land, soil and water conservation practice" and will ensure that water yield increases from timber harvest activities do not impact beneficial uses." This statement in essence sets a standard which goes beyond the Kootenai NF Forest Plan and would limit any future management in the watersheds named in this document. We recommend deleting this statement.

Comment #16 Response:

The goal of establishing acceptable peak flow increases on forested lands is to avoid channel impacts as a result of high flows associated with denudation and vegetative removal. DEQ believes the *Forest Plan Water Yield Guidance* establishes processes for determining PFI that are protective of streambank and stream channel health, and recommends that rather than establishing a blanket 14% PFI, acceptable PFIs shall be in accordance with the guidance for evaluating PFI as provided in the FPWYG. The document has been amended to remove the 14% PFI threshold, instead relying on more detailed analysis provided by FPWYG to ascertain allowable PFIs (Section 5.2.1.5).

Comment #17:

Page 98, last paragraph, "Road density thresholds are not developed for the purposes of this TMDL; however, efforts should be emplaced to reduce road densities in order to mitigate unnatural flow routing conditions, and new road construction should be done in a manner that minimizes road density and consequent deleterious effects." This text appears extraneous to the subject, provides a personal opinion and should be deleted, especially if 'Road density thresholds are not developed for the purposes of this TMDL.'

Comment #17 Response:

It is well established in the literature that increases in road densities in forested landscapes can result in deleterious effects to aquatic resources, through increases in sediment delivered to streams via runoff from road surfaces and interception and subsequent surface routing of shallow subsurface flows. Reducing or mitigating the effects of high road densities and the disruption of natural flow paths is promoted in both

the State of Montana's Non-Point Source Management Plan (DEQ, 2007) and in USFS guidance (USDA, 1995). Section 6.0 has been edited to clarify the DEQ's position regarding road densities, their influence on water quality conditions and forest management implications.

Comment #18:

The statement on Page 110, first paragraph, "For instance, to ensure that water quality standards are achieved and maintained, it is reasonable that all applicable BMPs are applied in order to meet sediment allocations. However, it is not reasonable to increase road densities or stream crossing densities where the sum of sediment loads from a fully 'BMPed' condition exceeds the ability of streams to maintain aquatic beneficial life uses," is problematic as it describes the current state of the three Yaak watersheds discussed in this document where two measures typically used to identify potential risk have been misapplied as measures of sediment load. This statement appears to be a moratorium on future road construction and management in the three watersheds in question.

Again, the sediment load identified for the three streams in question relies on events that have yet to occur as identified throughout Chapter 5 and the following from page 108, second paragraph, "Sediment production and delivery to streams from forest roads and potential culvert failure are currently the primary human caused sources of sediment impairment to water quality in the Yaak TMDL Planning Area." The text following that on page 110, "In addition to BMP application, maintaining and/or reducing road densities and stream crossing densities at levels that do not cause water yield increases that would exceed Forest Plan Water Yield Guidance, or cause deleterious impacts to stream channels or aquatic life are considered 'reasonable land, soil and water conservation practices.' That is, in some cases a larger effort than solely implementing new BMPs may be required to address sources of impairment," would indicate the State has made the interpretation that road densities beyond 3.0 mi/mi^2 and stream crossings in excess of 1.5 crossings/mi^2 are in violation of the Kootenai Forest Plan and the Clean Water Act.

Page 11, first paragraph, "It is not the intent of this TMDL to dictate forest management practices by requiring specific implementation activities, but to establish reasonable conditions that would result in the attainment and maintenance of water quality standards for sediment. As such, the land, soil and water conservation practices above represent surrogate conditions that assist in establishing the potential for sediment reductions from unpaved forest roads through the application of appropriate BMPs and an understanding of processes that may influence water routing and water yield increases. In addition to these conditions, 'all reasonable land soil and water conservation practices' may also those activities that act to maintain beneficial uses and can include:

Limiting or reducing road densities and road crossing densities
Decommissioning roads (especially those that threaten water quality)
Pulling culverts on decommissioned roads."

In closing, unless the DEQ reconsiders, and this forest strongly believes it should, including road densities and stream crossing densities as measures of impairment and potential culvert failures as allocated 'sediment loads' this TMDL does in fact dictate forest management

activities within the three watersheds addressed by this TMDL and potentially across a much broader landscape, regardless of intent.

Comment #18 Response:

In making impairment determinations or when evaluating or defining a potential problem, interpretation of sediment standards must include consideration of both human caused sources of sediment loading along with in-stream impacts such as percent fines increases. The use of landscape scale variables as a supplemental indicator, in conjunction with in-stream measures is a critical approach in defining the potential cause of in-stream impacts. EPA sediment TMDL guidance (EPA, 1999) suggests a variety or suite of targets be used to evaluate stream condition and specifically recommends hillslope indicators such as Equivalent Roaded Acreage (USDA, 1988), percent impervious or disturbed land, or other appropriate hillslope or landscape indicators.

EPA's Protocol for Developing Sediment TMDLs (1999) states, "*Not all TMDL indictors must focus on the waterbody…Riparian and hillslope indicators provide additional indicators of environmental conditions associated with designated or existing use protection; however, they should be used to compliment instream indicators and not as substitutes for instream indictors."*

DEQ has amended Section 6.0 and Section 7.0 to clarify DEQ's position regarding forest management activities and how allocations may affect these management activities. Allocations given do not preclude management activity on forest lands, but state that management activity should be conducted in accordance with "all reasonable land, soil and water conservation practices."

The numeric allocation (allowable load) to forest roads is based on surrogate criteria and does not mandate specific management practices that must be employed for sediment reduction and management. For instance, it is not required that management actions adhere to specific contributing lengths or road densities, if it can be shown through site-specific analysis that numeric load allocations given will not be exceeded. For instance, there are several 7th-code watersheds in the Yaak TPA with road crossing densities that exceed 1.5 crossings/mile^2 that are meeting numeric allocations (Tables C-17-C-19, Appendix B), due to improved or revegetated roads. Likewise, there are also several 7th-code watersheds with low road crossing densities that exceed numeric allocations due to improperly maintained roads. As site-specific information in these watersheds is collected, existing loading determinations may be modified based on empirical site-specific data. In most instances in the Yaak TPA, it is likely that road allocations can be met through upgrade or improvement of 'problem sites' on existing road networks and stream crossings. Please see Sections 5.0 and 6.0 for more detail explanations of the implications of sediment allocations on management activity.

Comment #19:

It seems to me that a small, very, very, small minority of concerned citizens had input of questionable 'facts' that adversely affects the majority. Sediment runoff is not a problem in this area. Rather this 'fact' is another "spotted owl" gambit to serve the agenda of this small vocal minority of gadflies who earn their living through dissension. Please find a way to learn from a broad base of knowledgeable local citizens.

Comment #19 Response:

Recent field work and analysis (Section 5 and Appendix C) documents *specific* sediment contributions to waterways from the unpaved forest road network that are chronic and controllable. These sediment contributions can be easily remedied by maintenance and Best management Practices to reduce sediment contributions to acceptable and sustainable levels. Please see response to comment #1 regarding the public involvement process.

Comment #20:

I am writing to comment on the watershed quality on the Yaak River drainage. I am specifically very familiar with and very interested in the 17 Mile Creek drainage. I have been a resident land owner in the 17 Mile valley for 34 years and have observed decreasing water quality in that watershed over that period of time. I think this is clearly due to road building and logging activities specifically.

The 17 Mile Creek Forest Service road traverses an area on the north side of the creek at various distances from the stream bed itself. There are several areas of chronic slumping involving the upper cut bank and the road bed itself. It appears particularly prominent in areas with a clay soil type. Repeated damage to the road in these areas has required the Kootenai National Forest to spend a considerable amount of money over the past decade just to keep the road passable. This road ended up being closed for an entire season pending repair of a large area where to road itself sloughed off the hill.

To summarize the situation as I see it; this Forest Service road is used only for pleasure driving, and is used as a loop by mostly local residents. I believe a significant amount of sediment into the creek is occurring due to the activities on this road. It is clear to me that sediment into the watershed would be reduced and a considerable amount of tax dollars saved if a portion of this road comprising approximately five miles of this road would be closed and rehabilitated.

Comment #20 Response:

DEQ agrees that chronic delivery of sediment from the unpaved forest road network in the Yaak poses a threat to water quality, and supports activities that would reduce sediment loading and hazard risk. Typically, the majority of sediment loading from forest road systems occurs at a minority of sites (Table C-2, Appendix C) and can be reduced using a variety of methods. It appears the condition described may be a priority candidate for sediment control and hazard risk reduction actions.

Prioritizing and implementing sediment control actions will require a coordinated effort between land management agencies and other important stakeholders, including county

governments, conservations districts, private landowners, state and federal agency representatives, and individuals from conservation, recreation, and community groups with water quality interests in the Yaak River Watershed (Section 7.0).

Comment #21:

The TMDL suggests that there is a need to better define reference conditions for streams in the Yaak watershed to know the range of natural conditions. This is a recommendation that the YVFC strongly supports and would like to see the existing data complemented by additional data collection and analysis on these reference streams. Better understanding the reference conditions in the Yaak will allow agencies working in the Yaak to recognize how far the current conditions have moved from the natural sediment load.

Furthermore, we would like to see that the current data is used to determine that there are not additional impaired streams throughout the watershed. A larger data base, created for the entire watershed, would assist in determining the health of streams not previously listed. We would like to see the TMDL recommend that monitoring occur throughout the watershed to determine that other watersheds are maintaining fisheries and appropriate sediment loads.

We support the monitoring recommendations on Lap Creek, South Fork and Seventeenmile to establish a baseline condition. This will allow agencies to evaluate the effectiveness of restoration activities and identify areas where additional work is needed to meet the water quality targets.

Comment #21 Response:

It is the intent of the Clean Water Act and the Montana Water Quality Act to assess and evaluate water quality condition of state waters, and to maintain beneficial uses and water quality standards. As such, it is the department's goal to continue monitoring and assessment activities in the Yaak watershed and the region as resources and priorities permit.

Evaluation of data and information for use in beneficial-use support decisions is conducted by the DEQ's Monitoring Section, and reported biennially in the state of Montana's *Integrated 305(b)/303(d) Water Quality Report.* Please refer to this report at http://www.deq.mt.gov/CWAIC for information on submittal of data for evaluation pursuant to beneficial use support determinations for water bodies within the Yaak TMDL Planning Area. DEQ thanks you for your support.

Comment #22:

In section 2.3.1 Population and Land Use History, it states, "Many residents of the Yaak consider the area to be one of the last wild places in the lower 48, and actively work to protect the area from the effects of roads and timber harvest. Many in the community work in the timber industry yet have very strong feelings about forest management and preservation. This includes protection of the endangered wildlife species that live in the forest (Eureka Chamber of Commerce)." This statement is not representative of the majority, is straight from the Yaak Valley Forest Council Website, and should either be reworded or removed.

Comment #22 Response:
The document has been edited, and the aforementioned language removed from the document.

Comment #23:
This section does not address, nor does any section of this report, address the RS 2477 roads contained in this watershed. If RS 2477 roads exist, they can only be closed by eminent domain. Since this report does not address RS 2477 roads, it is unknown whether any of the roads that have been cited as a source of pollution are RS 2477.

Comment #23 Response:
The TMDL document does not make any road closure recommendations. Other than the specific road-sediment field sampling sites identified in Appendix C (Table C-20, Table C-21), sediment load estimates and applicable load reductions are not provided per road segment, but are extrapolated from field-sampled sites and applied at the 7th code HUC watershed level (see Section 5.2.1.4 and Appendix C). Evaluation and calculation of sediment loading from any particular road segment would require additional site-specific data and information.

Comment #24:
Sediment levels – There is little, if any, historical data that lends a baseline standard from which to determine if sediment levels have increased. Due to this, the WATSED model was used to determine sediment levels.

In Lands Council, et. al., v. United States Forest Service, the Ninth Circuit Court of Appeals determined the WATSED model to be flawed: "We agree that the WATSED model did contain faulty analysis". "The government concedes that the WATSE model does not include relevant variables in determining total sedimentation of the watershed and that WATSED does not have variable to predict the effects of large-scale, high intensity, short-term peak flows."

In light of this information, the data used in this study that originated from the use of the WATSED model is held to be flawed and removed form consideration.

This study has little or no historic data and the aquatic life diversity, nor any historical quantitative data. Again, modeling was used to determine "what should" be in these streams as opposed to actual condition.

Again, in Lands Council, et. al. v. United states Forest Service, the Ninth Circuit Court found;

*'The Lands Council next challenges the Forest Service's analysis of disturbed soil conditions. Under the Forest Plan and the applicable Regional Soil Quality Standard, the Forest Service cannot allow an activity that would create detrimental soil conditions in fifteen percent of the project area.**20** The Lands Council's claims that the methodology that the Forest Service used to calculate the amount of soil that was in a detrimental state was insufficiently reliable because the Forest Service never sampled the soil in the activity area. Instead, based on samples from throughout the Forest, and aerial photographs, **t**he Forest Service estimated the quality of the soils in the Project area using a spreadsheet model.*

[9] *This methodology has previously been called into question. In a similar case, the United States District Court for the Eastern District of Washington considered the exact same methodology and concluded that its use was impermissible: The shortcomings in the USFS analysis are all directly tied to the fact that they did not take the time to walk the areas that they planned to harvest. Instead, based on assumptions [from general data from the IPNF soils], geological maps, and aerial photographs, they estimated the condition of each unit, tried to determine which units might exceed established standards, and projected potassium levels.*

same problem exists: The Forest Service did not walk, much less test, the land in the activity area. The Forest Service concedes that it did not test much of the activity area, but argues that because it tested similar soils within the Forest, and similar soils act the same way, then the methodology is sound. Moreover, the Forest Service argues that we owe its technical expertise deference. See Marsh, 490 U.S. at 378.

[10] *The Forest Service, granted appropriate deference, still does not demonstrate the required reliability of the spreadsheet model. We are asked to trust the Forest Service's internal conclusions of the reliability of the spreadsheet model when the Forest Service did not verify the predictions of the spreadsheet model. Under the circumstances of this case, the Forest Service's basic scientific methodology, to be reliable, required that the hypothesis and prediction of the model be verified with observation. The predictions of the model, which may be reliable across the entire Forest, were not verified with on the ground analysis. The Forest Service, and consequently the public at large, has no way to know whether the projection of the Project area's soils was reliable. Was the Forest Service "dead on" or "dead wrong?" The Final Environmental Impact Statement is inadequate to tell. Our conclusion that such unverified modeling is insufficient is similar to the holding in Kettle Range, because in that case the court noted that some of model's input was based on data about the soils throughout the Forest. 148 F. Supp. 2d at 1126-27. The failure of the Forest Service in that case, as well as here, was that the soils analysis was based entirely on the model with no on-site inspection or verification. Therefore, we hold that Forest Service's reliance on the spreadsheet models, unaccompanied by on-site spot verification of the model's predictions, violated NFMA.'*

I assert that the above situation is in play. That not all of the area in question was walked by agency personnel, that assumption through modeling were applied, spreadsheet information form other areas used and that the end result was an inaccurate picture of the condition that actually exists."

Comment #24 Response:

DEQ understands the limitations of WATSED and other models when attempting to estimate sediment loads on a watershed scale. WATSED has been used and approved by EPA in a variety of TMDLs in order to estimate general or relative loading estimates.

In the Yaak TMDL analysis, WATSED results were not used to make impairment determinations or provide basis for allocations or load reductions. WATSED results were used to estimate relative natural background sediment loading, but were not a final determiner of watershed condition. Analysis and evaluation of watershed condition relied heavily on field observations, field assessments, and contracted data collection & road loading analyses. The sizes of the affected watersheds, as well as time and budget constraints preclude detailed field assessment of all lands and waters within the Yaak TMDL Planning Area. Agency personnel did conduct field assessments in each affected watershed and assessed sediment loading from road systems, assessed degree of natural bank erosion and hillslope process, and evaluated field data and landscape-scale data to determine watershed condition, loading estimates and sediment load reduction potentials.

Comment #25:
The TMDL process does not allow for a finding of "indeterminate". This needs to be addressed and changed.

Comment #25 Response:
It is assumed that a 'finding of "indeterminate"' refers to the beneficial-use support (impairment) determination made by the DEQ. Beneficial-use Support determinations are made by the DEQ Monitoring Section through a separate process and reported biennially in the state of Montana's *Integrated 305(b)/303(d) Water Quality Report.* Waterbodies identified in this report have passed a rigorous Sufficient and Credible Data review process to determine whether adequate data and information exists to make a beneficial-use support decision. The streams identified in Yaak Watershed TMDL contained data and information determined to be sufficient for making beneficial use support determinations.

During TMDL development, however, additional data may be collected consequent to the beneficial-use support determination reported in the *Integrated 305(b)/303(d) Water Quality Report*. Where new or additional data suggests modifications to the reported beneficial-sue support determination, DEQ may defer TMDL development pending further evaluation of data and information. This was not the case in the Yaak as discussed above. For more information on the State's water quality assessment process and reporting of beneficial-use support decisions, please refer to Montana's 2006 *Integrated 305(b)/303(d) Water Quality Report* at http://www.deq.mt.gov/CWAIC.

Comment #26:
The TMDL process, as explained, does not allow for public comment on the final product prior to its being submitted to EPA. This is totally unacceptable. After the public comment review of this draft document, everything in the document COULD be changed, and the public would have no recourse. This situation is totally unacceptable and needs to be revised.

Comment #26 Response:
DEQ does not conduct an additional public comment review period after written comments have been received and addressed unless there have been substantial modifications to the TMDL that would significantly impact stakeholders in a way that was not addressed within the original draft document or during the public comment period.

DEQ does make available the final edited EPA-submittal document to individual stakeholders or members of the public if they request a copy.

Comment #27a:
The Yaak Valley Forest Council has played a large role in the gathering of data for this study. The end result of this study could well recommend closure of Forest Roads. One of "stated" mission is to "protect roadless areas". The use of any data that was collected by the YVFC, and referred to in this study, either directly or indirectly, opens this watershed study to bias.

Comment #27b:
Natural progression in any water shed is for the water to erode a stream bed out of the earth if the water flow is large enough. Why are you wasting my tax dollars making computer models and utilizing data gathered by groups with an agenda such as the Yaak Headwaters Restoration Partnership? This group consists of individuals from the Yaak Forest Council which is an environmental group opposed to commercial logging and wants much more wilderness. Having people with a preconceived agenda like this gather data doesn't make sense, period.

Comment #27 Response:
The DEQ reviewed and evaluated a variety of data to assist in the development of TMDLs in the Yaak watershed. The Yaak Headwaters Restoration Partnership (YHRP), of which the Yaak Valley Forest Council is a participating organization, coordinated sediment source surveys which were conducted by YVFC personnel under direction and training from the Kootenai National Forest and the Montana Dept of Fish Wildlife & Parks. The assessments were all done within existing roaded areas, and were conducted independent of TMDL development.

DEQ understands the need to carefully review and evaluate all data sources. The DEQ and Kootenai National Forest evaluated the data collected under direction of the YHRP, verified its validity with on-site visits and found the information to be relevant and accurate.

Comment #28a:
Using a computer model to analyze the sedimentation and environmental quality of a stream can have many mistakes, as nature doesn't follow any particular pattern that can be repeated for data generation as was done in this document. I suggest that you get out of your office and walk up a Lap creek road and use some common sense to determine if, for example, the culverts are adding sediment to the creek. It doesn't take a genius to see if the roads are washing out and ruining a stream bed.

On page 82, Table 5-1 of the document you state that your model shows an average of 70 tons of sediment added to Lap Creek each year due to culverts. I want you to come up to the Yaak and show me where 46.7 yards of sediment, calculated using 3000 Lbs/Yard, is being washed away from the Lap Creek road system each year due to culvert failure. This represents approximately 5 dump truck loads of dirt being dumped into Lap Creek because of culverts each year. The Lap Creek road system has been in place for at least 20 years and this would represent a total of 100 dump truck loads of dirt washed away from this road system in this time, this is not happening.

Comment #28b*:
The computer model just won't work here. …. I would suggest you have some minor and inexpensive repairs in mind as I suggested. Give it a very high score and take it off the 303(d) list.

*note that this comment was the conclusion of a detailed multi-page data review provided by the commenter.

Comment #28c:
Page 82, Table 5-1 would indicate that the sediment contributed by culvert failures is almost equivalent to predicted natural sedimentation rates for each watershed. This number is treated as real but in fact is a hypothetical number that does not reflect conditions on the ground. We recommend either describing it accurately and putting this number in context or dropping it from the table.

Comment #28d:
Sections 6.2.1 and 6.2.2, as written preclude future Forest Service management in the three listed drainages as the projected load allocations are not only theoretical but unattainable. If DEQ is going to establish 1.5 stream crossings/mi^2 culverts designed to accommodate Q_{100} flows, and no peak flow increase above 14% as 'reasonable land, soil, and water conservation practices,' then natural resource management across a much larger landscape is at risk. The crux of this TMDL and load allocation is flawed as it is based on the theoretical 'load generated by potential 'culvert failures', which have not occurred and likely will not occur given the stable nature of both the watersheds and roads in question.

Comment #28e:
Page 110, second paragraph, "Sediment production and delivery to streams from forest roads and potential culvert failure are currently the primary human caused sources of sediment impairment to water quality in the Yaak TMDL Planning Area." Again, the forest disagrees with the use of a potential sediment source generating theoretical sediment loads as a measure of pollutant contributed to any watershed.

Comment #28 Response:
DEQ has reevaluated the methodologies used in deriving the loading numbers generated in the draft report and modified its analysis and discussion regarding culvert failure in the Yaak watershed. Culvert blowouts and chronic sediment delivery from culvert failure have been documented recently (YHRP, 2004-2006) in the Yaak watershed, however factors influencing chronic and acute sediment delivery from culverts are complex and variable, making numeric loading estimations uncertain. Impacts from culverts, however, do exist and pose a chronic threat of sediment loading where culverts are undersized, misaligned or not maintained.

Culvert calculations and allocations have been adjusted to reflect actual acute and chronic sediment delivery conditions observed in the Yaak. While loading estimates provided in the original draft were based on load-at-risk estimates and not actual observed delivery to streams, culvert failures have indeed occurred and have been documented in Yaak Headwaters Restoration Partnership sediment assessments. Additionally, where roads have been placed into storage or CORE, lack of culvert and road maintenance on these road segments has contributed to deteriorating conditions and creates further potential for catastrophic failure of culverts. Blockages were observed at many culverts, and in many instances, evidence of culvert overtopping and/or scour was observed, providing direct evidence of sediment delivery that can easily be remediated through simple manual methods.

As maintenance and upgrades on the road and culvert system are conducted, Lap Creek will be reevaluated to determine whether implementation or site-specific assessments have resulted in changes to water quality determination in Lap Creek. DEQ welcomes the thoroughness of your review, and has modified the document to better reflect on-the-ground conditions.

Please see Section 5.0 and 6.0 for changes to the culvert assessment discussion.

Comment #29:
Lap Creek has never been a watershed that supports fish so this should not be an issue when determining the sediment load in this creek. Nitrates are natural and are generated by the decomposition of wood etc. Don't try and put fish where they have never been historically.

Comment #29 Response:
Montana water quality standards state that waters are to be "maintained suitable for…growth and propagation of salmonid fishes and associated aquatic life"(ARM 17.30.623). This protection applies not only to salmonid fishes, but also to macroinvertebrate and periphyton communities. Sediment accumulations can detrimentally affect all faunal aquatic communities, and water quality indicators and allocations have been chosen that represent conditions that protect and maintain the beneficial uses of that water body. Salmonid fish have been observed in Lap Creek by the author & contributors, and are documented in Montana Fish Wildlife & Parks surveys (see Table 2-3).

Comment #30a:
Why is the Yaak water shed not meeting your standards and documents like the Yaak River Watershed being generated? It is my belief that you want to decommission more roads and further restrict us from using our public lands. The closed roads in the Yaak generate vegetation quite quickly and you can not make a case that the decommissioning of roads in this area helps the watershed in any fashion.

Comment #30b:
Please, please do not take away more access than has been removed already! Monitoring responsible use makes sense - closing off remaining recreational use of the public lands that we co-own would be like robbery. It might be an asset to monitoring responsible use by training local volunteers and equipping them with radio contact devices for enlisted volunteers. Or could a cell phone tower be constructed on top of Mt. Baldy to cover a large amount of the area by private cell phone use to report violators? Please extend the comment period and consider seriously the responses gathered.

Comment #30 Response:
Regarding DEQ's authority and statutory requirements to evaluate water quality standards and develop appropriate TMDLs, Montana state law (MCA 75-7-702-703) directs the DEQ to assess the state's water bodies and develop TMDLs for all impaired or threatened water bodies. Section 3.0 presents information and background on all

applicable federal and state regulatory requirements and statutes relating to TMDL development.

DEQ understands the concern regarding removal of access. It is not the intent of the TMDL to close roads or restrict access. It is the intent of the TMDL to assess sources contributing to water quality impairment and provide reductions necessary to meet water quality standards. It is the belief of the DEQ that the required reductions may be met through improvements and BMPs on existing 'problem' sites. Monitoring road usage and violation however, is beyond the scope of the TMDL document. DEQ suggests contacting the USFS with these suggestions.