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## APPENDIX E

### PUBLIC COMMENTS AND RESPONSES

Comments have been grouped into categories noted below. Longer comments may be summarized/paraphrased to reduce repetition and space. The original comment letters are located in the project files at MDEQ and may be reviewed upon request.

Comment categories:

1. Executive Summary and Introduction
2. Impairments, Causes and Source Delineation
3. TMDL Targets, Restoration, Implementation, and Economics
4. Monitoring
5. Bank Erosion and the 1964 Flood
6. Fisheries, Wildlife, and Priest Butte Lakes Related Comments
7. Water Rights, including Instream Rights
8. Stream Flows
9. Groundwater Effects on Teton Flows
10. Climate
11. Public Involvement Process
12. Other Comments, Clarifications, Additions, and Corrections
13. Comments that do not elicit a response

#### 1) EXECUTIVE SUMMARY AND INTRODUCTION

**1a COMMENT:** The Executive Summary should be written in laymen's language so it is usable to landowners.

**DEQ RESPONSE:** Substantial effort has been made to rewrite the Executive Summary in as useable and understandable a form as possible that will accurately depict the crucial information in the plan.

**1b COMMENTS:** The following comments are related and can be addressed with one response:

- The acronyms and abbreviation listing on page ix should include more items in the document that the common person cannot understand – such as “mg/L”.
- A glossary of terms and definition of measurements would be most helpful. Not everyone is as scientifically grounded as the author.

**DEQ RESPONSE:** The list of acronyms and abbreviations has been expanded to include scientific units and a glossary of terms has been developed and included.

**1c COMMENT:** The ES should include all targets including flow.

**DEQ RESPONSE:** The Executive Summary has been fully developed and contains all targets discussed in the document.

**1d COMMENT:** Before anything else, the ES should state that the TMDL does not address water quantity. The wording in Sec.3.3 page 31 paragraph 2 should be moved to the beginning of the document.

**DEQ RESPONSE:** The fundamental basis of how water quantity relates to TMDLs is discussed in Sections 1.2 and 3.3. This information and text is also included in the Executive Summary.

**1e COMMENTS:** The following comments focus on laws and rules governing the TMDL program and the **voluntary nature** of the TMDL program.

- We would like to see TMDL laws at the very front of this document to clarify what is required.
- It should emphasize (by stating the law) that nonpoint source control is voluntary and will not affect existing water rights unless “willing parties lease, donate, etc. individual water rights”.
- We propose that the opening statement in the Introduction (Section 1.0) open with a declaration that this is a voluntary program of the Watershed users. In this same paragraph it should clearly be stated that the Water Management Plan and TMDL's for the Teton River Watershed will not affect current water rights in any manner unless "willing parties lease, donate, etc. individual water rights." It must be made very clear in the opening paragraph that the TMDL has been prepared to address water quality and not quantity. These declarations need to be presented immediately so that there can be no doubt of the intent of DEQ.
- On page 1, please reiterate that the TMDL cannot infringe on any water rights in the watershed.
- Section 4.1.5, page 82, final paragraph of the section spells out the beginning of the plan. From the tone of the final 2 sentences in this suggestion, it does not appear as if this is voluntary, but instead feels as if it is going to be imposed upon the landowners of the watershed. We would like to see a statement added that states that this might occur with the voluntary cooperation of the landowners of the watershed.
- Section 4.2.5, page 85 at the top of the page should reflect that this is voluntary and that it is up to the landowner whether or not they choose to alter their management in order to alleviate some of the purported impacts. The author acknowledges that there is insufficient data available to determine what is happening in this area.
- Section 4.4.5, page 101, paragraphs 2 and 3 should emphasize that this plan and implementation of any remedial actions is voluntary, not mandatory.

**DEQ RESPONSE:** Key laws and rules that govern Montana's non-point source and TMDL programs have been cited and referenced in Section 1.1 (The TMDL Context), as have links to Internet sites that have the laws and rules in their entirety. **The fact that the TMDL and non-point source pollution programs are strictly voluntary is emphasized in the text.** In addition, complete text of relevant portions of Montana's Water Quality Act, Water Use Act, and the Surface Water Quality Standards and Procedures has been provided in Appendix D of this document.

## 2) IMPAIRMENTS, CAUSES AND SOURCE DELINEATION

**2a COMMENT:** Page 24, Table 3-1: the probable sources of siltation are petroleum activities on the Clark Fork of the Muddy Creek. Recreation and Blackleaf Wildlife Management activities cause more siltation than the petroleum activities or resource extraction.

**DEQ RESPONSE:** Probable causes and sources presented in Table 3-1 are simply those that were listed on the 1996 303(d) list. An analysis of the relative contributions from various sources has not been attempted in this document, but is considered a valuable step in prioritizing which sources are the most critical to address in reducing sediment loading. That recreation and wildlife management activities on the wildlife refuge cause more siltation than those listed on the 303(d) list is an opinion of the commenter.

**2b COMMENT:** Page 31 (section 3.3); We question the reliability of the impairment listings as to factual data used to make these judgements.

**DEQ RESPONSE:** Comments pertaining to impairment listings are sought during the public review and comment period of the 303(d) list development. This process, although not perfect, is vastly improved over 303(d) lists prior to 2000. MDEQ seeks to use the most current and up-to-date 303(d) list for the development of TMDLs in the state (i.e. currently the 2002 list), however the U.S. District Court ruling (CV97-35-M-DWM) on September 21, 2000 requires that Montana use the 1996 303(d) list for development of TMDLs. Therefore, MDEQ must begin TMDL development by looking at the 1996 list, determine the validity of these listings, and move forward with TMDLs as appropriate.

**2c COMMENTS:** The following comments address the issue of natural sources of pollutants and/or natural conditions of the watershed and can be addressed with one response.

- The impacts of natural sources to the beneficial uses of the water should be clearly stated.
- While I agree that farming practices are contributing to the salinity of the Teton, I think the TMDL report is putting too much blame on farming and ranching. The sediment, nutrient, metal and temperatures are all natural and there is little we can do to change it.

**DEQ RESPONSE:** The natural functioning of a watershed and river system is to transport sediment and dissolved chemicals that are delivered to it – regardless of the erosional or weathering process involved. Thus all waters naturally have some amount of sediment,

nutrients, chemicals, and dissolve solids in it at all times, with greater loads, or concentrations, occurring at different times of the year. Ideally, the state of knowledge that is possessed would include the “background” or natural level and variability of these various constituents. Unfortunately, this level of knowledge and understanding does not exist in all places and this is the case in the Teton River watershed. Thus partitioning “background” levels from that which is a result of man’s activities is elusive. What is known is that the flood of 1964 had a profound impact on the river system - both from an immediate impact to the channel geometry but also from the subsequent reaction by the local population. Local reaction is understandable given the cost the flood had on the watershed’s agricultural economy and infrastructure – i.e. buildings, roads, bridges, etc.

However, the true impact of natural sources (including the flood of 1964) cannot be fully understood given that river is over-allocated, chronically dewatered, and is not capable of managing the current sediment supply already in the channel. Additionally, since the river lost substantial stream length from flood events during the past 40 years (~ 22 miles on the upper river and ~ 14 miles on the lower river), local channel slopes have likely increased while sinuosity (meanders) have decreased. At present, the river is “out of balance” and seeks to lower its channel slope by eroding into meander bends and increasing its stream length. Until the river can come closer to its “balance,” the level of sediment in the river will remain elevated.

There is an understanding of what riparian vegetative species existed in the watershed and to some extent what their tolerance levels are to various environmental conditions. Using this information, a “road map” to a future condition of the river channel can be roughed out to where the stream channel and river system may come, once again, into some sort of state of balance. This will only occur with the **voluntary** participation of local landowners and resource managers.

**2d COMMENT:** Section 3.3.2, page 41 in the first paragraph states that Priest Lake is the only water body in the watershed that is listed as impaired and that this impairment is due to Se. As long as the old timers can recall, this has been the case. When birds landed on Priest Lake in the early 1900’ s; they died. Let it be noted that this was before irrigation from the Greenfield Irrigation District (source: personal communication with Leslie and Gladys Chalmers). If the intent of this study is to return things to the conditions which existed at the turn of the century (early 1900’s), then there will be no fishery in Priest Lake and the birds will once more die when they land there.

**DEQ RESPONSE:** Selenium concentrations that existed in Priest Butte Lakes at the turn of the century are not known since no water quality data were collected during that era. The present impairment status is a function of water quality samples collected during the 1990s that exceeded state water quality standards for selenium as they relate to aquatic life and fisheries, not avian species – this is clearly stated in the text. The intent of the document is to identify and pursue conditions for the surface waters in the Teton River watershed that are supportive of **all** beneficial uses associated with the water bodies’ classification.

**2e COMMENT:** Figures 3-6 and 3-7, page 45 are misleading in their presentation. We agree that agriculture may have contributed to some of the problems at one time or another, but *agriculture is not and was not the cause* of the down-cutting and inaccessible flood plains of the Teton. The banks on the Teton have existed as they are now for more than a hundred years, as can be attested to by the old-timers who have lived here or are descendents of homesteaders of this area.

**DEQ RESPONSE:** Several comments have been submitted that suggest the current bank condition on the Teton River is a result of the 1964 flood. This comment appears to be in conflict with others in that it states that the banks of the river have been unchanged over the past century or greater. The photos in figures 3-6 and 3-7 are meant only to depict sources of sediment. Regardless of the cause of bank instability and erosion, most of these sections will require deep-rooted, stabilizing vegetation such as willows and cottonwoods and, if appropriate, other bank protection structures such as “J-hook veins” and bankfull benches.

**2f COMMENT:** Page 32: Salinity existed prior to irrigation in the Muddy Creek and Blackleaf drainages. The area of the Bynum Reservoir had soap holes and sinkholes.

**DEQ RESPONSE:** It is not the contention of the DEQ that saline conditions were not present in the watershed prior to irrigation, only that land use activities are now adding to salinity conditions in the watershed.

**2g COMMENTS:** The following comments are related and can be addressed with one response:

- Section 3.3.4, page 46 at the bottom of the page states that “the diversion structure for Bynum Reservoir was a specific area identified as contributing instability to the stream.” While this may be true, it is our understanding that this structure was engineered in and is a major flood control structure on the upper Teton River. To do anything to disturb or attempt to remove this structure and its function would be devastating to the Upper Teton as well as have serious, if not catastrophic, consequences to the City of Choteau. While the author might express this view and can perhaps support it scientifically; we would resist any attempts to modify or remove this structure from the Upper Teton unless there is compelling scientific evidence that demonstrates a better way to construct this diversion in an economically feasible manner. Things change over time --whether good or bad. And we learn to live with those changes. There is no way to return to the past.
- There were no large infrastructures in the Teton River in 1928 (e.g. Bynum Reservoir). The current large infrastructure went in 1965, after the flood of 1964. The Army Corp designed it to prevent major flood damage to the Town of Choteau and further deterioration of the river below that diversion point. We would resist any attempt to modify or remove this structure unless it could be shown that there is a better and economical way to construct this diversion.

**DEQ RESPONSE:** This statement should have had a citation following it, which has been added to the final document. Rosgen in his 1992 report “Restoration Concepts for the Teton River – Choteau, Montana” (page 12) states that not only does the [Bynum Diversion]

structure create “*major instability but it also creates a major maintenance obligation to clean out the large accumulations of bedload behind the dam.*” Rosgen goes on to recommend a design that will enable the Bynum Diversion to function in a manner that will allow both the diversion of waters, flood or otherwise, and the passage of bedload. This design, using a natural rock weir and head gate design should afford the same level of protection provided by the current structure and would eliminate a maintenance expense to the Teton Co-operative Canal Company. As for flood protection, the structure certainly provides some level of protection in its ability to divert floodwaters, however it is doubtful whether the current structure would offer any meaningful protection from flood flows the magnitude experienced in 1964. The State Engineers Office Report (MSOE, 1962) stated that Bynum Reservoir was completed in 1928. It is assumed that the diversion canal was part of that project and thus diversion to the reservoir commenced at the completion of the reservoir. The term “large infrastructure” was not used in the draft document.

**2h COMMENT:** Section 4.1.3, page 79, paragraph 4 is a damning statement directed at the poor management practices of DFWP. We would suggest that better enforcement by the DEQ could go a long way in resolving the issues of salt discharged into the Teton waterway. Perhaps there is or will be another way to deal with this problem of salts as technology advances.

**DEQ RESPONSE:** With the exception of point source discharges that are permitted under the federal or state pollution elimination discharge system (NPDES or MPDES) there are limited enforcement mechanisms for meeting water quality standards (e.g. 401 certifications, 318 permits, anti-degradation review (17.30.715 ARM), septic system reviews, and public nuisance regulations). Implementation of restoration measures and compliance with non-point source targets established by this TMDL and Water Quality Management Plan is voluntary as stipulated in the Montana Water Quality Act. Currently, the discharge from Priest Butte Lakes is considered a non-point source discharge and is managed under the 1999 Salinity TMDL for the Teton River below Freezeout/Priest Butte Outlet approved by the Montana DEQ and USEPA. This document does not change that designation.

**2i COMMENT:** In scanning the supporting figures located in the appendixes, we note numerous cases where the information is so scant within the basin as to be suspect. We question whether it is indeed indicative of what is actually occurring basin-wide. Additionally, we note that there has been no weight given to the severity or the length of the drought that this region of Montana has endured over the past 6- 7 years and how it might have skewed the data or the interpretation of the data gathered.

**DEQ RESPONSE:** It is unclear from this comment which figures are being referenced. The draft document contained 18 thematic maps in Appendix A and ten maps of water quality data in Appendix B. Certainly, there are data gaps and this document makes no attempt to hide them. In fact, an attempt was made to fill data gaps as best possible and where this failed, a monitoring plan was laid out to address them.

Concerning the question of drought, data collected during dry periods would reflect a “worse case” scenario. If beneficial uses are evaluated as not impaired there is an extra degree of certainty that the use is in good shape. If, on the other hand, particular uses are evaluated as

impaired, it may be strictly due to the drought conditions or a combination of poor water quality and other factors related to the drought. The states water quality standards do not distinguish between wet and dry periods.

Aquatic life samples collected during the past two to four years were compared against regional reference indices of biologic integrity, or IBIs. IBIs values will reflect conditions of low flow and high stream temperatures, as a result of dewatering – whether a result of drought (i.e. natural) or irrigation withdrawals (i.e. human-caused). Potential water quality impairments based on data collected during drought years does not necessarily suggest that the impairment does not exist, but does strongly suggest the need for additional sampling during a climatically wet period. This need has been acknowledged and the intent of the adaptive management and monitoring plans is to collect additional data and make adjustments as appropriate as more data and information is garnered.

### 3) TMDL TARGETS, RESTORATION, IMPLEMENTATION, AND ECONOMICS

**3a COMMENT:** DEQ should hold MFWP to a strict adherence to SC targets in the Teton. Meeting the targets 56% of the time is not acceptable. Perhaps more reasonable targets could be met.

**DEQ RESPONSE:** All non-point source / TMDL targets and implementation measures are voluntary. Stakeholders in the watershed have made this point repeatedly via public comment to this draft document. The existing salinity target for the middle and lower Teton River was established in a 1999 TMDL approved by the USEPA. The exceedence of this target is a result of the variability in the river and lake system in terms of the flow level and background TDS concentration in the Teton River as well as the TDS concentration in Priest Butte Lakes' discharge. MFWP monitors water quality in both the Priest Butte Lakes discharge and Teton River roughly three times per week during discharge and adjusts its discharge based on measured TDS concentration (i.e. SC levels). This document seeks to improve attainment of the salinity target by re-defining it as a seasonal average (without changing the actual 1,000 µg/L target value) and also by setting an upper limit as a not to exceed 1,400 µg/L during the critical irrigation season.

**3b COMMENT:** Section 4.2.2 does not appear to be attainable with the current science and water available in the watershed.

**DEQ RESPONSE:** Section 4.2.2 addresses selenium targets for Priest Butte Lakes. The state has established numeric water quality standards for selenium, which can be found in the MDEQ's circular WQB-7 (Montana's Water Quality Standards). The selenium target for Priest Butte Lakes was set at < 5 µg/L, the chronic water quality standard for aquatic life (MDEQ, 2002b). This target goal will be sought using the science, technology, and understanding that are currently available. If the targets have not been met during future five-year reviews, then the reason(s) need(s) to be determined and a revised strategy developed that takes into account all new data, information, and understanding has been gained during the interim period.

**3c COMMENT:** Please explain the costs to replace culverts and deal with bridge problems on page 92: Highway related issues, 4.3.1.2.

**DEQ RESPONSE:** The cost to replace or upgrade a culvert or bridge structure varies considerably depending on many contributing factors that include channel size, stream flow, magnitude of earth work required, size and type of new structure, pre-work site design requirements, equipment required for installation, etc. As stated in the document, each site should be evaluated as to its level of impact to water quality or channel stability as well as the feasibility of upgrading the structure.

**3d COMMENT:** Explain the data used in 4.4.1, page 99, through 4.5.1, page 102.

**DEQ RESPONSE:** This comment relates to temperature and nutrient related impairments. Temperature data discussed in Section 4.4.1 includes instantaneous measurements of stream temperature by the USGS at the Dutton gage station on the Teton, the general riparian conditions assessment conducted by the NRCS and TRWG in 1998, and data collected by MDEQ field staff using Standard Operating Procedures for water quality investigations (MDEQ, 2002c) during the 1998, 2000, 2001, and 2002. The USGS includes temperature as a standard field parameter collected during site visits to collect water quality samples and is a single point-in-time sample. The NRCS data from the “rapid aerial assessment” is described in Section 4.3.1. MDEQ temperature data for these locations is similar to USGS data, in that they are single point-in-time samples collected as part of a greater suite of water quality parameters.

Nutrient data discussed in Section 4.5.1 includes data collected by MDEQ field staff using Standard Operating Procedures for water quality investigations (MDEQ, 2002c) during the 1998, 2000, and 2001, GIS data from various source made available through the Natural Resources Information System (NRIS) of the Montana State Library, and the general riparian conditions assessment conducted by the NRCS and TRWG in 1998. GIS data includes the USGS National Land Cover Dataset, irrigated lands and infrastructure mapped by the State Engineer’s Office (circa 1960) and digitized by the DNRC, NRCS SSURGO soils database, permitted point sources from DEQ data, and septic densities developed by NRIS.

**3e COMMENT:** What economically feasible alternatives are there to existing diversions?

**DEQ RESPONSE:** The document make specific reference to altering the design of the Bynum diversion such that it may allow for the passage of bedload during high water and runoff while still maintaining its diversion capabilities. The economic incentive to replacing the structure with the natural rock weir, as conceptually designed by Dave Rosgen, is that it will **eliminate** the need for annual/biannual maintenance of the structure. Currently, accumulated bedload materials need to be removed from behind the structure with heavy equipment that requires a 310 permit and if required a 318 authorization from MDEQ allowing a temporary exceedences of the state’s turbidity standard. 318 authorizations cost \$150. Granted, the annual cost for an equipment operator and associated permits may be “minimal” but the long-term benefit of reduced maintenance and associated benefits to water quality and watershed health become significant.

**3f COMMENT:** This TMDL does not take economics into consideration and it considers fish to be a priority over water rights (p. 80).

**DEQ RESPONSE:** The commenter is correct in the assertion that an economic analysis has not been conducted in terms of cost-benefits for implementation measures or attainability of certain targets given current technology. An evaluation of economic trade-offs or a full economic analysis should be conducted before implementing any measures that entail significant investment or shift in land use management. Comments to this effect have been added to Section 5 of the document. Regarding the priority of fish vs. water rights, the Department does not seek to prioritize one over the other. Simply, the responsibility of the MDEQ is to work towards water quality that supports **all** beneficial uses that are associated with the waterbody's classification within the confines of current governing laws and administrative rules.

**3g COMMENT:** Section 4.4.2, page 100 [thermal modification – existing conditions & source assessment] in the first sentence is one of those statements that makes one wonder what the author is thinking. It appears to be a section where he is arguing that there is little or no data and that he has no idea what is really going on within the Watershed.

**DEQ RESPONSE:** This section has been re-written to clarify what is being presented.

**3h COMMENT:** Section 4.5.1, page 102 paragraph 2 [nutrient existing conditions/source assessment] basically states that the author does not have the data and that it is not understood what is occurring. To create targets or formulate a plan of action without understanding the problem would appear to be foolhardy.

**DEQ RESPONSE:** MDEQ acknowledges that monitoring data in the Teton River watershed is not extensive on all streams or for all parameters. However, the data collected in 2000 and 2001 by MDEQ field staff meets the state's sufficient credible data criteria. Therefore a determination of partial-support was made for the 2002 303(d) list for Teton Spring Creek, Willow Creek, and Deep Creek. That listing triggers the requirement for a TMDL for each of the listed pollutants - nutrients in this case. Given the legal requirements under the federal Clean Water Act and Montana's Water Quality Act, as well as, the court-imposed schedule for completing TMDLs (referenced in Section 1-1) the DEQ developed an **adaptive management plan** which includes a TMDL and implementation strategy that is based on the available data, where available, and scientific literature where it is not. By employing an adaptive management approach, MDEQ acknowledges that data gaps exist and will work with stakeholders in the watershed to update and improve upon this document as new data and knowledge is acquired.

**3i COMMENT:** Section 4.5.1, page 103, subsection on Deep Creek Watershed, paragraph 2 states an opinion, not a fact on the primary source of elevated nutrient concentrations. We all have suspicions, but to point fingers without having the evidence is not appropriate, especially in a scientific document.

**DEQ RESPONSE:** The statement is based on professional judgment derived from a GIS analysis (Geographic Information System) using data from the USGS land use/cover dataset, NRCS soils database, and the NRCS aerial assessment of the watershed conducted recently. Further, the scientific literature supports the professional judgment of causes and sources of nutrient loading in agricultural watersheds. By far the greatest land use in Deep Creek is agriculture. Finally, since an adaptive management strategy is proposed to managing this water quality plan, if the primary source of nutrients to Deep Creek is subsequently identified as some other currently unknown source, the plan could be adjusted to reflect that state of knowledge.

**3j COMMENT:** Section 4.5.1, page 104, subsection on Teton Spring Creek Watershed, second paragraph from the bottom of the page that begins, "Teton Spring Creek also traverses through Choteau..." It appears that no attempt has been made to measure or quantify the impact of the town upon the Watershed. We feel that for this plan to be truly all-encompassing, resources be devoted to study this impact and quantify it. To gloss over one major point source of possible contamination or quality influence makes a mockery of the remainder of the study.

**DEQ RESPONSE:** MDEQ agrees that a detailed analysis of Choteau's **non-point** contribution to the nutrient load is justified and warranted. However, time and resource constraints imposed by the judicially mandated TMDL schedule precluded such an endeavor. The adaptive management approach to this plan is intended to account for these data gaps (reference Section 6.2.2 and Table 6-4) and the plan should be updated as these gaps are filled. Future planning should include an evaluation of residential/commercial water use, fertilizer application, storm water runoff, etc. The analysis should look to identify where conservation measures may assist in reducing water usage as well as non-point source loading from nutrient, sediment, and other pollutant runoff associated with urban/residential environments. In addition, Choteau's MPDES permit is currently being reviewed and re-written and its impact on the Teton River, the receiving water for the WWTP discharge, will be evaluated.

**3k COMMENT:** Section 4.5.2, page 105. In the first paragraph is a statement referring to aquatic plant growth becoming a nuisance when it affects fisheries or aesthetic uses of a stream. Is this within the scope of *this* study? Are we worried about the aesthetics and fisheries of the stream? Is this even a problem?

**DEQ RESPONSE:** The following statement is in Section 1.2 of the final version of the document and provides a response to the comment. "Within the context of the laws and rules governing water quality in the State of Montana, the MDEQ is required to work towards the support of **all** beneficial uses associated with a waterbody as defined in the Surface Water Quality Standards and Procedures rules (17.30.600 et seq., ARM). It is important to note that the laws **do not** identify one beneficial use as more important than another.

**3l COMMENT:** Sec. 4.5.2 Page 107 first paragraph, is it the intent of this document to reshape Teton Spring Creek so it will run cool water? Please emphasize that this is voluntary.

**DEQ RESPONSE:** There is no enforcement provision for non-point sources that MDEQ would use to effect a change in the channel geometry of Teton Spring Creek. However, given the nature of stream flow and valley type, the channel geometry Teton Spring Creek is not what it would naturally be. Restoring the creek to a narrow and deep configuration would improve its water quality from a fisheries and aquatic life perspective, but implementing measures to do so is strictly voluntary.

**3m COMMENT:** Section 5.0, page 111 states who will responsible for implementation of the Water Quality Management Plan and TMDL's for the Teton River Watershed. A statement needs to be included in this section reiterating the declaration that this is a voluntary program of the Watershed users. In this statement, it should clearly be stated that the Water Management Plan and TMDL' s for the Teton River Watershed will not affect current water rights in any manner unless "willing parties lease, donate, etc. individual water rights." It must be made very clear in this statement that the TMDL has been prepared to address water quality and not quantity. These declarations need to be presented so there can be no doubt of the intent of DEQ, the TWRG, and the Teton and Chouteau County Conservation Districts.

**DEQ RESPONSE:** A statement pertaining to the voluntary nature of the TMDL and non-point source programs already existed in this section. A caveat referring to the water right issue has been added. A statement addressing the quality vs. quantity issue has not been added here since this is neither codified in state law nor does MDEQ feel it appropriate since water quality is inextricably tied to water quantity. State law specifically protects water rights, so the quantity issue is directly tied to the statement that the TMDL "will not affect current water rights."

**3n COMMENT:** Given the amount of uncertainty as to what [salinity] targets may be reasonable given inherent natural conditions [of Priest Butte Lakes], this plan needs flexibility and relatively short intervals between review and updates. Such review and updates occasions should incorporate, at a minimum, any new or additional relevant information and the identification of any information gaps and appropriate processes to fill those gaps.

**DEQ RESPONSE:** The Montana water quality act calls for a five-year review for all EPA-approved TMDLs. During that review process, whether or not targets have been met needs to be ascertained. If targets are not being met, then the causative reason is sought, which may be that the targets were inappropriately set, more time is needed for implementation and/or response to activities, or some catastrophic event has occurred that has precluded target attainment. The adaptive management approach discussed throughout the document also implies or states that as new and additional information is acquired the plan will be adjusted appropriately. Finally, this plan does exactly what is being requested, in that the 1999 salinity TMDL for the middle Teton River is being updated and enhanced using all the data that MFWP has collected subsequent to the initiation of that plan.

**3o COMMENT:** Targets may be attainable, but it will take many years and be very expensive. What is the definition and expectation of "Target"?

**DEQ RESPONSE:** Targets are measurable water quality endpoints, such as a direct

numeric measure of a pollutant (for example: one microgram per liter of phosphorous) or a target can be a “surrogate” target (for example: a measure of percent shade for a thermally impaired stream). The restoration targets define water conditions equivalent to water quality standards and are **indicators** that water quality standards are being achieved. Water quality restoration plans often have more than one target, and ideally at least one target will be directly linked to the restoration of the impaired beneficial use (how the restoration actions will achieve the water quality standard). Targets are indicators that water quality standards are being achieved. The expectation is that a target gives evidence that the water fully supporting its designated beneficial uses.

The Teton water quality targets include: **Total Dissolved Solids** - Priest Butte Lakes < 5,000 mg/L; **Specific Conductance** - Priest Butte Lakes < 6,200  $\mu\text{S}/\text{cm}$  at 25 °C; **Selenium** < 5  $\mu\text{g}/\text{L}$ ; and **Nutrients - Chl *a*** 50  $\text{mg}/\text{m}^2$  (May – June maximum), 100  $\text{mg}/\text{m}^2$  (July – September average), 150  $\text{mg}/\text{m}^2$  (July – September maximum). These targets are translated into a Total Maximum Daily Load (the quantity of pollutant removed or the amount of pollutant remaining in the water), such as a 34% reduction in **TDS / SC** for Priest Butte Lakes, a maximum of 0.157 lbs/day of selenium to Priest Butte Lakes from Yaeger seep, and a 16% reduction in **Chl *a*** in Deep Creek.

The steps to achieve targets may be challenging, thus requiring a long period of time to achieve the target.

**3p COMMENT:** Implementation will be a long costly process. Most landowners will need technical and financial assistance. Identify and prioritize problematic diversion structures and inefficient irrigation systems. Identify funding sources and cost-share requirements. A water salvage program is essential to provide instream flow. Restate that salvage water is “dedicated” rather than made “available.” Reiterate that participation is voluntary and existing water rights will not be affected.

**DEQ RESPONSE:** As indicated above, the steps to achieving a target may be challenging, requiring a long period of time. Implementation of the Teton River watershed Water Quality Plan will be the primary responsibility of the Teton River Watershed Group (TRWG) in conjunction with the Teton and Chouteau County Conservation Districts. The TRWG strives to improve water quality in the watershed by assisting in water quality monitoring, project area identification, solicitation of project funding, project implementation and oversight, and through promoting public education and participation.

The Teton water quality plan presents broad-brush strategies and BMPs that, when implemented, are intended to directly lead to full support of designated beneficial uses. Table 5-1 presents the general BMPs intended to reduce impacts from sediment, temperature, and nutrient enrichment as broken down into three broad categories; - irrigation water management, - riparian management on agricultural landscapes, and - riparian management on municipal/residential landscapes. The TRWG will develop the implementation strategy and schedules for working with local landowners and the Conservation Districts for site-specific designs and plans that are developed by individuals qualified in watershed restoration.

As detailed in Section 1.2 of this plan, Montana's TMDL programs are based on **voluntary** participation of stakeholders in implementing identified actions that can reduce non-point source pollutants. The Water Quality Act protects existing "water rights, stating: *"Nothing in this part may be construed to divest, impair, or diminish any water right recognized pursuant to Title 85."* The Montana laws and rules governing water quality require work towards the support of **all** beneficial uses associated with a waterbody. These laws **do not** identify one beneficial use as more important than another, but state that support of all uses should be sought equally where economics or technology do not present limitations.

**3q COMMENT:** Page 112, Table 5-1 Most of these Best Management Practices are time tested-cost effective practices that have worked well for over 100 years.

**DEQ RESPONSE:** Most of the Best Management Practices (BMPs) are indeed time tested-cost effective practices that have worked well historically. The intent of *"all reasonable land, soil, and water conservation practices"* is to include all conservation practices, beginning with currently established BMPs, which may be necessary to maintain or restore water quality to levels that supports all beneficial uses. In a sensitive landscape, such as the Teton drainage, use of agricultural and irrigation BMPs must be particularly effective to achieve water quality restoration. Measures or practices beyond "standard" BMPs may be needed where water quality has not been adequately restored. As shown in sections 3.1 to 3.3, several of the waters in the Teton River basin presently do not reach their required water quality and will need to implement the water quality restoration measures (i.e. BMPs) shown in Table 5.1.

**3r COMMENT:** Table 5-1 and 5-2, pages 112 and 113. Adequate time to study these tables has not been provided. The solutions or activities which are applicable Watershed-wide need to be carefully considered and the economic impacts weighed in each instance. What looks good on paper or in a study may not be feasible from the practical. And we all know about trying to gain the greatest bang for the buck. Some of these solutions or activities may not provide an adequate or even measurable return on the investment. In addition, the return on the investment of time and scarce resources needs to be weighed in each and every instance. Furthermore, the implementation of a solution can have grave consequences across a broad area which have not been anticipated or considered. We could take the time to comment on each and every solution or activity but instead choose to **urge extreme caution** in voluntary implications should landowners choose to participate. Some activities or solutions appear to be contradictory to good husbandry, prior programs of the U.S. Soil Conservation Service and the engineering provided by the U.S. Army Corps of Engineers. Although we recognize that times and technology change, there is reason to be concerned about inserting man into this equation, fearing that what we do today may prove to be more harmful in the future than permitting the River and the Watershed to adapt to the changes that have occurred since man's settling of these areas.

**DEQ RESPONSE:** Most of the Best Management Practices (BMPs) in Tables 5-1 and 5-2 are time tested-cost effective practices that have worked well historically and are derived from Natural Resource Conservation Service measures. Some measures or practices beyond "standard" BMPs may be needed where water quality has not been adequately restored

following application of regular BMPs. The implementation of the watershed plan is the primary responsibility of the Teton River Watershed Group (TRWG) in conjunction with the Teton and Chouteau County Conservation Districts. The TRWG strives to improve water quality in the watershed by assisting in water quality monitoring, project area identification, solicitation of project funding, project implementation and oversight, and through promoting public education and participation.

**3s COMMENTS:** The following comments are related and can be addressed with one response:

- P. 115. The writer proves the point brought up in the Teton Conservation District that there is not sufficient data to be writing this document.
- Section 6.0, pages 115 and 116 point out many though not all of the deficiencies with this study. We question where the resources will come from to implement the gathering of the data to bridge the gap from what is known or suspected to be unknown. What is the cost of developing the data necessary to bridge these gaps and what programs will suffer or be eliminated in order to fund these additional studies? The deficiencies in data are discussed in greater detail in sections that follow section 6.0, beginning with page 116 and ending on page 127. From reading these sections, it would appear that the DEQ is creating many permanent positions for additional employees who, at taxpayers expense, will spend years gathering information and data.

**DEQ RESPONSE:** An adaptive management approach involves ongoing watershed monitoring and provides the information necessary for review/revision of the TMDL activities and outcomes. It acknowledges that additional data is needed and outlines approaches to collect these data. Plan implementation is the primary responsibility of the Teton River Watershed Group in conjunction with the Teton and Chouteau County Conservation Districts. The Teton River Watershed Group has conducted a wide array of water monitoring projects with funding from a variety of competitive grants programs. Section 6 of the Plan identifies three levels of additional data needed to most efficiently achieve the targets, prioritize restoration projects, and to meet water quality standards. The “baseline” data (Tier 1 essential data) is designed to better define loads and sources and guide watershed restoration activities to be most efficient and cost-effective. Tier 2 data collection will expand upon critical data needs and assist in further defining the physical, chemical, and biologic characteristics of the watershed. The Tier 3 data collection will give higher levels of statistical precision (i.e. a confidence interval of 90%). All of this implementation monitoring data will serve to refine and improve the precision of the watershed improvements and assess their relative success in moving toward TMDL targets. DEQ does not anticipate creating many permanent positions for additional employees to gather additional data in the Teton Watershed.

**3t COMMENT:** The Teton River TMDL Plan details broad strategies for improving irrigation efficiencies in Table 5-1. These general strategies are a starting point, but would be a more effective tool for implementing on-the-ground projects if greater detail was provided. For example, this plan should specifically identify and prioritize the most problematic diversion structures and the most inefficient irrigation systems. The plan should also identify the means

and potential funding sources to correct these problems. Furthermore, state and federal programs that provide funding or cost-share for irrigation efficiency improvements should be detailed for the benefit of producers.

**DEQ RESPONSE:** The department agrees that greater detail to implementation strategies and plans would be beneficial and are certainly needed prior to expending any resources toward on-the-ground project implementation. However, given court-imposed timelines and available resources this level of detail was not possible. It is the department's hope that the irrigation systems in the watershed are critically evaluated for function and efficiency and then prioritized for improvement or redesign. This process may only occur with the **voluntary** participation of the irrigation companies and water right holders. Again, it is the department's intent to assist as possible with technical assistance and grant support in the evolution and implementation of these projects. The EPA has developed a catalogue of 84 federal funding sources for watershed protection projects, which is now available through an on-line searchable web site. The web site is located at: [http://www.epa.gov/watershed\\_funding](http://www.epa.gov/watershed_funding) or by calling the EPA at (800) 490-9198 and requesting the "Catalog of Federal Funding Sources of Watershed Protection" (EPA 841-B-99-003). This information has also been added to Section 5 Implementation.

#### 4) MONITORING

**4a COMMENT:** The two sites used as historical measurements, i.e. starbane and southeast of Choteau, do not reflect reality. No one that I have talked to knows where starbane is for sure, but is thought to be somewhere near current Bynum diversion is located.

**DEQ RESPONSE:** These sites were established USGS gaging stations and the data they collected is housed in the USGS database. They were used to present a characterization of what the Teton River stream flow was historically and not to suggest what the Teton River stream flow is today. Descriptions of the station locations are provided in Section 2.1.4.2, which was taken from the Water Resources Survey for Teton County published by the Montana State Engineer's Office in 1962 (MSOE, 1962). Finally, the station name is Strabane not Starbane.

**4b COMMENT:** Please include a map showing the location of all proposed monitoring sites.

**DEQ RESPONSE:** Additional maps have been prepared and have been added to Appendix A. These maps reflect the **general** locations of monitoring sites that would be managed by MDEQ or TRWG for continuous temperature data loggers, water quality monitoring locations, and biological monitoring. The actual locations of monitoring sites are subject to landowner cooperation and available access. USGS stations are included at their current locations for completeness of the network. Locations that would be used for monitoring long-term channel geometry have not yet been located since identification of appropriate sites needs more time and assessment. After potential sites have been identified landowners need to be contacted to work out access issues.

**4c COMMENT:** Please identify data gaps, suggestions for collecting the needed information, and who will fund and complete the work. List tasks and timelines.

**DEQ RESPONSE:** This information is provided in Section 6 [Effectiveness Monitoring]. Presently the Teton River Watershed Group has received a 319-Grant to fund some of the monitoring outlined in Section 6. Unfortunately, the 319 resources available statewide was not sufficient to fully fund all of the monitoring needs identified. Thus additional resources will need to be sought out. As more resources are secured more of the monitoring program may be funded and at that time tasks and timelines would be fleshed-out.

## 5) BANK EROSION AND THE 1964 FLOOD

**5a COMMENT:** In 1.1, the opening introduction should mention the devastating effects that the 1964 flood had on the Teton. Most of the bank erosion was caused by the shortening of the length of the river by approximately 40 miles. In an attempt to regain its original length, farmland is now being eroded.

Other factors that have caused damage to the riparian areas and banks, include, ice jams, drought and noxious weeds. Drought, grasshopper infestations and over grazing near stockwater areas have damaged riparian vegetation.

**DEQ RESPONSE:** The NRCS calculated loss of river length using two time periods. Between 1951 and 1990 the upper river (Teton County) lost 21.8 miles while from 1941 to 1966 the lower river (Chouteau County) lost 13.8 miles. The combined total of these values equals 35.6 miles, however the time frames are very different and may not account for subsequent channel migration on the lower river. Regardless, the effect of the '64 flood on stream length was substantial and is now noted in Section 2.2.4.3. Certainly, the river is still responding to that event and factors such as riparian vegetation (i.e. invasive noxious weeds) and grazing management issues will compound erosion of stream banks at higher stream flows.

**5b COMMENT:** The document tried to blame cut bank erosion on farming practices being conducted, when in reality these are natural occurrences due to Mother Nature. The floods of 1964 and 1975 took out what little brush and trees we had on our place.

**DEQ RESPONSE:** The 1964 flood is acknowledged as having a major impact to the stream channel and riparian corridor. The flood was certainly a natural event of a very large magnitude, however the resiliency of the riparian corridor to flood flows is what the document identifies as being reduced by the long history of land use practices in the watershed.

**5c COMMENT:** The TMDL blames logging, grazing, and agriculture for the cause of the 1964 flood (Page 89, fourth paragraph). The TMDL did not take into consideration the major fires of the 1900's that left the mountains littered with debris that was carried down by the floodwater.

**DEQ RESPONSE:** The TMDL does not blame land use practices on the flood. The plan does state that land use practices exacerbated the impacts of the flood. According to USFS fire staff at the Choteau Ranger District, Lewis & Clark National Forest, a “quite a bit” of acres burned during the 1910’s and 1930’s fire’s. However, most of the vegetation in the burned areas would have been well recovered by the 1960’s. Flood damage that may have been a direct result of “fire debris” left over from 30 to 50 years prior is undocumented and not mentioned in any of the flood literature reviewed.

**5d COMMENT:** The upper Teton River is such a dynamic river, with so much elevation change out of the mountains that the river will always be extremely hard to control.

**DEQ RESPONSE:** The purpose of this document is to develop a plan that allows the water quality in the Teton watershed to fully support all designated beneficial uses, not to control the river.

## **6) FISHERIES, WILDLIFE, AND PRIEST BUTTE LAKES RELATED COMMENTS**

**6a COMMENT:** Restoring the fishery in the upper and middle Teton as stated in Sec 1.2, page 2 is not possible. We do not feel that the fisheries issue can be recovered in the middle and upper Teton. We believe the hypothesis is flawed while recognizing that one has to establish goals. Historically, the river has been dewatered for extended periods of time. Freighters traveling along the Teton to Ft. Benton during the early part of the 20<sup>th</sup> century worried about adequate water for the team pulling the wagon. It is a matter of record and oral history from persons who have lived and continue to live in the basin that the Teton has always been a stream suffering from a lack of flow and extended periods of dewatering. People still living in the area who are now in their 90' s speak of the times of freight wagons and trips along the Teton to Fort Benton during the early part of the twentieth century. These stories do not address a river that was flowing wide and untamed. They instead address the problems of making sure there were adequate and subsequent "water holes" along the way at which the horses and mules could be watered several times each day as they progressed along the breaks of the Teton. The freighters consistently worried there would be no water each time they arrived at the riverbed.

**DEQ RESPONSE:** DEQ affirms that the classification for the upper and middle Teton River is accurate and appropriate. This classification states that these waters are to be maintained suitable for growth and propagation of salmonid fish and associated aquatic life. “Water holes” in the history were in reference to the limited water available between the Teton and Marias Rivers, not in the Teton River itself. In addition, given the oldest water right in the lower Teton basin is 1874 speaks to the fact that there was a consistent and reliable stream flow at that time.

**6b COMMENT:** Table 2.4, page 18, should show in what stretches of the Teton these fish did or do exist. A clarification of *this* point might help to visualize the impairment of the water quality in the various portions of the watershed.

**DEQ RESPONSE:** The 303(d) list partitions the Teton River in three segments as noted in Tables 3-1 and 3-2. All of these sections are listed as partially supporting the fisheries beneficial use, the cause primarily due to chronic dewatering – as noted by MFWP. Which species existed where and when appears relatively moot at present. However, if the identification of fish distribution, past and present, proves to be a critical data need for the implementation of this water quality management plan, fisheries biologists at MFWP can be approached to develop such maps.

**6c COMMENT:** In the 1940s, I caught bullhead and goldeneye in the Teton near Carter. But this fishery was lost when the discharge from Priest Butte into the Teton began in the 50s. The pollutants from the discharge still have a greater effect than irrigation withdrawals on the fishery. The economic value of the fishery cannot compare to the economic value of irrigated agriculture.

**DEQ RESPONSE:** The connection of the Priest Butte Lakes to the Teton River certainly had an adverse impact on water quality of the Teton. Where the fisheries may have been just surviving the effects of irrigation withdrawals from the Teton River, the combined affect of water withdrawals and Priest Butte Lakes discharge was enough to impair the river's ability to support a viable fishery. Although the economic value of the fisheries may not exceed that of irrigated agriculture on a river like the Teton, MDEQ is responsible for identifying where beneficial uses are or are not being fully supported and then craft plans that could achieve this support. It is up to stakeholders in the plan area to **voluntarily** implement actions identified in the plan. Additionally, as a result of the Priest Butte Lakes connection, the agricultural activity and economic value of the Greenfield Irrigation District also has a direct impact on Teton River watershed.

**6d COMMENT:** Table 2-4 should list Walleye for the lower river. We used to catch them in the 1970's and 1980's.

**DEQ RESPONSE:** The Montana Fish, Wildlife, and Parks MFISH database does not indicate walleye as a fish that is present in the Teton River. However, this fact is most likely due to limited resources available for MFWP to conduct detailed monitoring in all streams and locations. MFWP biologists state that there has been limited monitoring in the lower Teton River and acknowledge that Walleye are common in the lower Missouri River. These fish may move into the Marias and Teton Rivers during spring high flows to spawn and remain there while stream flows are good. Most fish would likely return to the Missouri by early summer although some may potentially remain in the Teton River year-round.

**6e COMMENT:** Page 44: Both Bynum and Eureka Reservoirs are listed as partially supporting fisheries. Bynum Reservoir has been noted as a terrific trout fishery and an even better walleye fishery. How can it be partially supporting?

**DEQ RESPONSE:** Those listings were on the 1996 303(d) list of impaired water bodies and have subsequently been determined to be fully supporting the fisheries beneficial use on the 2002 303(d) list. Refer to Table 3.2, Table 3.3, and Section 3.3.4.2 (page 57).

**6f COMMENT:** The TMDL seems to have a bias toward MFWP.

**DEQ RESPONSE:** MDEQ does not intend this TMDL to be biased toward any one particular beneficial use or user. The intent is, to the extent possible, objectively identify where water quality problems exist, what the cause and source of the impairment is, determine how much of a particular pollutant the waterbody can receive and still support **all** beneficial uses, and then develop a plan or “road map” on how impairments may be reduced or corrected.

**6g COMMENT:** The Teton drainage is home to a wide variety of fish species. Blue sucker, sauger, and sturgeon chub are mentioned as species of special concern and they are described as “only rarely found in the lower half of the Teton River.” Indeed, all fish species are rare in the Teton in years when the river runs dry. However, in years when flows are adequate, sauger are quite common in the lower half of the river. We believe the Teton was historically a very important spawning and rearing stream for migrant Missouri River sauger, now a species of special concern due to its overall decline in numbers across Montana.

**DEQ RESPONSE:** The referenced language concerning how often sauger is found in the lower Teton has been adjusted to reflect the importance of this section of the river to sauger.

**6h COMMENTS:** The following comments relate to the issue of the Sun River – Teton River hydrologic connection via the Freezout Lake WMA and can be addressed with one response:

- There is a strong, formally recognized connection between Priest Butte Lakes (PBL) and Freezout Lake Wildlife Management Area (FLWMA). There is also a strong, formally recognized connection between FLWMA and the Greenfields Irrigation District (GID). Simply put, FLWMA receives surface and groundwater from GID as GID irrigates regionally valuable malting barley and other agricultural commodities on private properties on parts of the Greenfields Bench. FLWMA ultimately sends the same water to PBL (actually part of FLWMA). These are gravity flow relationships and represent elements of necessity and reality—not choice. From this, any adjustment to the management of PBL stands to potentially influence FLWMA and GID and its ability to irrigate private properties. To be complete, this draft plan needs to more thoroughly enumerate these relationships and values and any potential impacts to these values that any management action may send through these relationships.
- The perennial nature of the water now managed at FLWMA was initiated by water delivered via GID—not by FWP.
- While different arenas (water law, irrigation district boundaries) have drawn lines separating the Sun River watershed from the Teton River watershed or between the GID and PBL, in truth all are connected—and need to be presented as such in order for any plan to be as complete and far-reaching as necessary. Simply put, water from the Sun River is transported via the GID ultimately to end up in the Teton River. Restrictions on one end or the other have the potential to influence the entire “system”.

- The relationship between FLWMA (to include PBL) and GID is often presented only as detrimental. In truth, there is considerable mutual benefit between the two. GID does deliver end-run high quality water to FLWMA and FLWMA does manage that water and seep. Both parties need the other, both parties are connected and both parties must be part of any TMDL plan.

**DEQ RESPONSE:** MDEQ identified the Sun and Teton River basins as separate planning areas based on the 4<sup>th</sup> code HUC boundaries for the purposes of TMDL development. The connection and relationship of the Sun and Teton Rivers is mentioned and explained in Sections 1.4, 2.2.4.4, and again in 4.1.1. Detailed description of the functioning of the Freezeout Lake portion of the WMA and how operation of the GID effect lake levels and water inflows is presented in the Sun River TMDL document the will be released by MDEQ in spring of 2003. This document is titled: “Sun River Watershed Water Quality Restoration Plan and Total Maximum Daily Loads for the Sun River, Muddy Creek, Ford Creek, Gibson Reservoir, Willow Creek Reservoir, and Freezeout Lake.” Department staff working on the Sun and Teton TMDL documents coordinated closely on establishment of Priest Butte Lakes targets understanding that targets set for Priest Butte Lakes would likely have an impact the management and operation of both Freezeout Lake WMA and the GID.

**6i COMMENT:** The draft document needs to adjust its evaluation of the biological aspect of FLWMA. The draft states that there have been 155 species of birds observed at FLWMA. That number is now in excess of 200. From an avian standpoint, one of the most significant contributions and uses of FLWMA is a migration stopover point. The most obvious manifestation of this value is hundreds of thousands of white geese and tens of thousands of swans visiting FLWMA every spring and fall. Although on-site production of avian species occurs at FLWMA, its magnitude is subordinate to the migratory value of the site. This speaks directly to the draft language using mallard duckling survival as a standard for water quality at PBL. The structural habitat at PBL (relatively deep water, little emergent vegetation along the margins) does not speak to waterfowl production or brood rearing. This, combined with what may be water quality limitations related to the natural environment, argues against using mallard duckling survival as the standard. More appropriate would be salinity limits of those species (not necessarily avian) typically associated with salty environments comparable to those found at PBL (sticklebacks, etc.). An extension of this thought process is the inappropriateness to speak of certain introduced fish species not reproducing. That does not necessarily speak to a saline *problem* although it certainly refers to a saline *situation*—one that likely never supported salmonids and other salt-intolerant species.

**DEQ RESPONSE:** The reference to the number of identified bird species has been changed to reflect the newer information provide via this comment. Regarding the setting of salinity target levels for Priest Butte Lakes, the MDEQ is directed by law to protect the most sensitive species or use associated with the waterbody in question. The department does not dispute that Priest Butte Lakes has a natural saline condition, however, numerous waterfowl have been documented breeding in the WMA. Nimick et. al., (1996) reported 352 and 464 breeding pairs/m<sup>2</sup> in 1991 and 1992, respectively, of which, 6.3% were reported as mallards. Additionally, the department is not readily aware of research addressing the salinity tolerance for species such as sticklebacks or other avian species more prevalent to the WMA. This gap

in the scientific data would be beneficial to address when resources are available for such a study. When such data and information has been gained, targets for the lake could and should be adjusted to reflect new and improved understanding of the system and those species that are historically most likely to survive and thrive in a saline lake system. Montana's water quality law dictates a five-year review period for all TMDLs to ascertain the progress made toward achieving targets. If targets are not met, the reason is to be determined and this may be that the initial targets were set at an inappropriate level – even if they were based on the best available data at the time.

**6j COMMENT:** The draft document needs to recognize that the entire PBL basin is—and was—salty even before human influence. Given the soils and historically closed nature of the basin, it cannot be known for certain how much more water quality may be improved. It is even likely that current management dedicated to water quality considerations may have produced water quality levels better than some seen in the recent or even the distant past. Anecdotal comments on historically visible “salt flats” and general discussions on soils being “washed” of some of their salts all add to the potential that things may not now be as bad as they may have been—and that physical, natural realities dictate some amount of salty water (measured as water quality). Despite the best efforts and intents, PBL would likely never support reproducing salmonids (and likely never would have) and for certain the draft should not assume potential water quality improvement to the B1 status. Even more specifically, the document does not address the potential for expressed water quality targets to be set too low to be realistically met given certain environmental realities that are independent of human influence. These comments (and others) are not intended to validate a certain water quality. They are only meant to ensure that prescribed targets, and subsequently the plan itself, are realistic.

**DEQ RESPONSE:** A discussion regarding the B-1 classification of Priest Butte Lakes has been added to the document in Section 3.2.1. The department acknowledges that Priest Butte Lakes may be misclassified. To that end, if local interest exists and a request is submitted, the department may pursue an evaluation of this classification and, if necessary, begin a formal Use Attainability Analysis for Priest Butte Lakes and begin rule making for reclassification. If the lake is subsequently reclassified, then all previous beneficial use support determinations and TMDL targets would need to be reviewed and updated as appropriate.

**6k COMMENT:** There has been considerable survey work done intended to capture any gross biological problems (body deformities) associated with observed water quality. To date, no such occurrences have been observed. What has been noted is that this saline system does indeed function as a biological system with high wildlife and human social values. FLWMA (to include PBL) has been dedicated to appropriate water quality management before this proposed TMDL plan was initiated. Any plan should reasonably expect a continued reasonable and appropriate dedication to water quality—from all parties.

**DEQ RESPONSE:** MDEQ agrees that all parties should participate in the implementation of all reasonable and appropriate activities that seek to maintain or improve, as necessary, water quality in the Teton River watershed.

**6l COMMENT:** The value of the potential for release from PBL into the Teton River needs to be more accurately portrayed. Water quality at PBL is as good as it is only because of periodic, monitored releases into the Teton River. Given that water will flow into PBL, more limited release opportunities increases the total salt content as transpiration potentially becomes more prevalent as a method of water removal. From this, any effort that unduly restricts these periodic releases stands to potentially decrease PBL water quality and so stands in contradiction to the draft plan's expressed intent—with possible far-reaching impacts.

**DEQ RESPONSE:** The intent of both the Teton and Sun TMDLs is to improve water quality in Priest Butte and Freezeout Lakes, **not** limit Priest Butte Lakes' discharge into the Teton River. The department agrees that limiting lake discharge would lead to potentially higher salt conditions in the lake and seeks to improve lake conditions by improving the water quality delivered from Freezeout Lake and by reducing other internal loading sources. The department believes that this plan will ultimately offer greater latitude to MFWP in managing lake levels and discharge to the river while being able to meet the intent of river salinity targets.

**6m COMMENT:** Although intent to maintain or improve PBL water quality at or to some achievable level is laudable, it is not entirely clear how necessary additional in-lake monitoring is. PBL water quality is already monitored at the lake's outlet prior to the Teton River. Arguably, this measured value represents some index to the lake's overall water quality. Requiring or suggesting increased amounts of water quality monitoring within the lake likely represents some redundancy of effort that presumably can be better applied elsewhere (to this matter or any other). This does not necessarily speak to specific efforts intended to better understand where and how certain water inputs into PBL influence overall water quality. However, much of that matter is reasonably understood already.

**DEQ RESPONSE:** The primary reasoning for advocating new/additional monitoring in Priest Butte Lakes is two-fold. First, monitoring is needed to better evaluate the relative contribution, and importance, of other salinity and selenium source areas to the lake beside Yeager Seep and in-flows from Freezeout Lake. Secondly, there has been no dissolved oxygen data collected in the lake since the mid-1980s which preceded, and led to, the lakes' impairment listing on the 1996 303(d) list. Verification of this listing cannot be done without more recent and credible data that can describe the dissolved oxygen conditions of the lake. Finally, additional water quality monitoring data could be useful in exploring any potential reclassification of Priest Butte Lakes.

**6n COMMENT:** Specific entries in this plan (section 4.1.1, page 63) suggest that PBL is *the* primary reason for salinity levels in the Teton River. Certainly it is one contributor to the issue. Unfortunately, this mentality is further reflected in monitoring targets elsewhere along the river. Besides the PBL outlet, there is only one monitoring target applied to the entire stretch of the river from near Choteau to Loma. This ignores the reality of other salinity inputs and the potential to address those inputs throughout this entire stretch of river. For this faulty design, the plan is significantly limited in both its potential and in its applied parity. Salinity issues upstream from Choteau exist as well. From the graph on page 66, there is indicated an increase in salinity levels *above* the PBL discharge.

**DEQ RESPONSE:** Section 4.1.1 presents a discussion of existing conditions and provides a general source assessment of TDS in the watershed. It does not specifically state that PBL is *the* primary source of salinity to the Teton River, but it does present data and information that identifies PBL as a *significant* source. Salinity target monitoring locations are established at three locations - Highway 221 Bridge, USGS Dutton gage, and USGS Loma gage. Other sources are not ignored, as suggested, but these sites provide stable and guaranteed monitoring locations to form the basis of a target-monitoring program. The basic monitoring program described in Section 6 recommends 13 monitoring locations on the Teton River that would include specific conductance measurements, with ten of the sites located below Choteau. Data from these stations will assist in isolating source contribution areas along the middle and lower reaches of the river. Regarding the referenced graph (Figure 4-2), it does indicate a slight increasing trend in salinity above the PBL outlet from early 1997 to early 2000, however whether this trend is statistically significant or not has not been ascertained. What it does suggest is that instream capacity for salinity loading is being reduced by sources upstream of the PBL outlet during this time period. No analysis has been conducted to venture further into this upstream loading. The proposed monitoring plan has a site identified at the USGS South Fork gage that would provide “background” salinity levels. This data can be compared with data from the site upstream of the PBL discharge to investigate salinity loading along the upper river. Refer also to Figure A-17 for proposed water quality monitoring locations.

**60 COMMENT:** Although the document focuses considerable attention on parameter targets, there seems less scrutiny or direction on effective, realistic and appropriate upstream adjustments. For example, while the plan calls for a specific reduction in TDS/SC within PBL, there seems no comparable call for a TDS/SC reduction for the Yeager Seep and other sources—to include the upper Teton River. Put another way, the plan seems to focus too much attention on the “bottom” end of the system. Certainly monitoring should occur there but corrective action needs to be applied nearer the “top”. This may mean other managing parties (public or private) be involved and that speaks again to the plan needing far-reaching completeness and broad-based support.

**DEQ RESPONSE:** Section 4.1.5 deals with the allocation of the TDS/SC loading to Priest Butte Lakes and the Teton River. In this section, Table 4-9 outlines the loading allocation to Freezeout Lake discharge (55,000 lbs/day) and the Yeager Seep (5,000 lbs/day). While the three remaining likely source areas currently have no allocation, this is due to the fact that their contribution has not been quantified – hence the call for additional monitoring in and around Priest Butte Lakes. When these source areas are quantified, the loading allocations would likely be adjusted to reflect a more proportional distribution of loading burden. The last paragraph of Section 4.1.5 describes in narrative form the TDS/SC allocation for the middle and lower river. Identified are farming practices that elevate soil moisture levels or increase shallow groundwater flow rates. The allocation that focused more on the middle and lower river as opposed to the upper river is based on the distribution of soil EC values (Figure A-13a). Soil EC levels in the upper Teton River area are generally lower than elsewhere in the watershed and the current monitoring data reflect lower SC values upstream of the Priest Butte Lakes discharge. That said, Muddy Creek watershed has many areas with

elevated soil EC and may be a significant contributor to TDS/SC in the middle Teton River. Monitoring locations are designed to capture Muddy Creek's influence on Teton River TDS/SC levels as well as partition the stream itself into smaller reaches so source areas may be isolated.

**6p COMMENT:** Specific positive adjustments to management practices seem less prevalent than target monitoring. Further, some suggestions seem erroneous. As examples, removing tree windbreaks near the Yeager Seep does not address the potential for these same breaks to minimize groundwater flow in a beneficial fashion. Grass cover along the seep bottom will only add limited benefit as groundwater flow is well established by this point. There is no mention of emphasizing the value of fresh water delivery to FLWMA from GID or coordinating with work already done by Montana Salinity Control to minimize seep. CRP is mentioned but with no reference to what entity manages that program. Again, this comment suggests more emphasis be placed on specific strategies to match the considerable text associated with targets and monitoring.

**DEQ RESPONSE:** The removal of windbreaks would reduce snow accumulation and hence shallow ground water levels. The evapotranspiration of the trees comprising the windbreaks does not counter the snow accumulating effect for the same reason that the comment suggests the futility of additional acreage of grass along the bottom of the Yeager Seep. The department agrees the benefit of more grass acreage in the Yeager Seep would have limited positive impact on seep flow, however any positive steps would help. This can be done relatively quickly while the seep's groundwater source area is better defined. At that time more effectively targeted management actions can be prescribed in locations that will have the greatest positive impact on seep flow and loading to Priest Butte Lakes. The value of fresh water delivery to the FLWMA from the GID is discussed in detail in the Sun River WQMP and TMDLs due for release later in 2003. Regardless, mention of the important contribution this would make will be added to Table 5-2. The need to coordinate work with the Montana Salinity Control Association will be added to Section 5.1 and finally, CRP is a federal program administered by the Natural Resource Conservation Service of the U.S. Department of Agriculture.

**6q COMMENT:** Water quality targets need to be both realistic and achievable. As a specific example, the draft plan recommends for PBL that a "cap" or maximum be set on SC as well as an average. However, the naturally volatile water quality conditions of PBL (recognized as early as 1958 by a USGS survey) essentially ensure violation of those caps. An average value alone would likely suffice as a target. An important reminder here is the critical value of release potential from PBL. The mechanism for that is to release under monitored conditions. While any release is stopped when water quality and quantity conditions do not favorably address that release, the system is out of necessity a reactionary one. Given that, there must be some tolerance for erratic and unpredictably high SC values to be recognized with a paired stop to the release. An average target alone captures this situation without target violations.

**DEQ RESPONSE:** The TDS/SC targets crafted in this plan are meant to be realistic, achievable, and most critically, supportive of designated beneficial uses. These uses include agricultural, drinking water, and fisheries and associated aquatic life. Target setting began

with the salinity TMDL approved in 1999 where the target was established as “*not to exceed 1,000 µg/L.*” This previously established target is certainly established as a “cap” or maximum value. Development of the targets proposed in the Draft WQMP/TMDLs for the Teton River Watershed evaluated all recent monitoring data (i.e. 1997-2002) collected by MFWP, USGS, MDEQ, and TRWG volunteer monitors. Data indicated that, at least for Priest Butte Lakes discharge, a seasonal average SC target of 1,000 µg/L was reasonable and currently attained.

An upper limit, or cap, was identified to protect fisheries and aquatic life beneficial uses in the river. These uses require more stringent protection than agricultural uses. However, agricultural uses will certainly benefit from lower salinity levels established for the biological life uses. The upper target limit is set to help drive the **voluntary** adjustments to land management that needs to occur with the watershed to improve and maintain salinity levels in the river. Finally, unlike point source regulations, there are no enforcement provisions in non-point source pollution management, thus making the entire program voluntary. It is simply up to local stakeholders to take appropriate actions that assist in the improvement and maintenance of water quality in their watershed.

**6r COMMENT:** It is not clear if the water quality targets in this plan are voluntary. Certainly no water quality standard should be mandated for PBL without a comparable and relevant mandate to the Yeager Seep. As well, it is not clear how this draft document stands relative to the TMDL approved in the late 1990’s for the Teton River and PBL discharge. Current FLWMA water management efforts and results reveal a strong commitment to that guiding document and FWP does not relinquish that document for this one.

**DEQ RESPONSE:** The targets are site-specific interpretations of the state water quality standards. From a non-point source perspective, implementation is voluntary. If the standard (target) is not met, it is likely that the waterbody will continue to be impaired and not supporting all designated beneficial uses. Additionally, MDEQ will continue to encourage all reasonable land, soil and water conservation practices in order to achieve State and Federal water quality goals. Implementation of the plan is voluntary and that has been more clearly stated in Section 1.0. The Yeager Seep has an allocated load to Priest Butte Lakes of 10,000 lbs/day TDS or 15% of the total quantified load to the lake. As other sources are quantified, the allocation would be redefined among all significant controllable sources. Finally, this document is meant to replace the previous TMDL by including all previously collected data into the analysis as well as expanding the analysis to include other source areas beyond the FLWMA.

**6s COMMENT:** The equations on page 68 are difficult to follow and their direct contribution to the draft plan is less than clear.

**DEQ RESPONSE:** Equation 4-1 in Section 4.1.1 (draft page 68; final page 74) is simply a standard equation used to calculate pollutant loading with each term explained below the equation. The equation uses a measured TDS concentration, and measured flow rate and converts them to a “load” in the units and time interval of interest – in this case pounds per day. The equation is used to calculate an estimated daily TDS load from both the Yeager

Seep and Freezeout Lake discharge. The values calculated with Equation 4-1 are those used in Table 4-9 for allocating TDS loads from the seep and Freezeout Lake.

**6t COMMENT:** Much of water quality is tied to water quantity. Further, the Teton River watershed cannot be made healthy without addressing water quantity. Given the human values now tied to this system (agriculture), it is likely that water quality issues cannot be addressed independently of water quantity. This again speaks to some water quality targets being too optimistic and the need for the plan to recognize that potential—and to adjust accordingly.

**DEQ RESPONSE:** MDEQ agrees with this comment. At issue is the ability to write a “TMDL” – Total Maximum Daily Load specifically for flow (i.e. water quantity). However, as the previous comment/response points out flow is directly related to pollutant “loads” through loading calculations. Where specific daily or annualized loads cannot be determined due to the lack of available data, targets have been crafted for the Teton watershed that include water quantity via minimum instream flows. This is specifically the case for sediment and temperature where water quantity is important to the proper functioning of the “system” let alone how it influences the particular load of sediment or temperature. At present, flow targets are those that have been calculated by MFWP as the minimum required to maintain aquatic habitats for macroinvertebrates, and thus support a fisheries. These values have been developed using current stream channel geometry, which in some cases is in a state of flux. It is envisioned that as the stream channel stabilizes the channel geometry will shift to more narrow and deep channels and thus minimum flow requirements would also adjust and most likely to a lesser amount. The adaptive management approach discussed in the document allows for adjusting any or all targets as appropriate as implementation of the plan and subsequent five-year evaluations occur.

**6u COMMENT:** The high solubility of selenium complicates the understanding of volume of water vs. delivered selenium. Less seep water does not necessarily mean less delivered selenium. This complicated relationship needs to be recognized as it could potentially impact management efforts and the intended (vs. realized) results.

**DEQ RESPONSE:** Through the adaptive management approach, TMDL targets will be reviewed at five-year intervals per Montana state law. If TMDL targets (water quality standards) are not being met then “*the department shall conduct a formal evaluation of progress in restoring water quality and the status of reasonable land, soil, and water conservation practice implementation to determine if: (a) the implementation of a new or improved phase of voluntary reasonable land, soil, and water conservation practice is necessary.*” [MCA 75-5-703(9)].

## 7) WATER RIGHTS, INCLUDING INSTREAM RIGHTS

**7a COMMENTS:** The following comments relate to the issue of MFWP instream water reservations and will be addressed with one response:

- It is definitely in the plans of MDEQ to make sure that this amount of water (MDFP water right) will be kept in the Teton River. So much emphasis is put on fisheries, when they are not obtainable in the ways requested by MFWP.
- Page 80: Why should minimal flow reservations requested by MFWP be sought? To make a statement that MFWP reserve requests should be put ahead of all other water rights is a prejudicial statement and needs to be removed from this document. We will resist any attempt by MFWP to interfere with our rights on the river for irrigation and storage of water. We also may consider ending public access to the storage reservoirs for fishing.
- MFWP's water right is so junior that they would only get water if the river were in near flood condition.
- It further appears that Montana Fish Wildlife and Parks is attempting to make a water grab at the expense of the very water rights this document purports to not impact.
- Section 2.3.2.2, page 20 in the paragraph below table 2-5, discusses the reservations filed by the DNRC on the waters of the Teton to maintain "instream flows for the protection of aquatic life, recreation, or water quality." The total requested is 81.4cfs and is described in greater detail in table 2-6. If this study is about water quality and is not supposed to be affecting water rights, why are water rights being discussed? It was our understanding that this study was to be on the pollutants in the Watershed but it appears to have evolved into one studying all beneficial uses—whether they can be supported by a dewatered stream or not. The issues of flows needs to be addressed prior to discussing whether or not the DNRC has a valid claim to any waters.
- The discussion of DNRC's water reservation on page 20, Sec 2.3.2.2 may not be appropriate for a document that isn't dealing with water rights. The issue of flow should be addressed before valid claims to any waters. Sec 2.3.2.2 page 21 should say that the watershed has been adjudicated previously, is a closed basin and seriously over-appropriated. This makes DNRC's claim moot.
- Section 2.3.2.2, page 21, discusses the fact that parts of the Watershed have been adjudicated previously, and it is our understanding that these actions continue to determine the use and priority of use in the adjudicated areas. It is also understood that the Teton is a closed basin with no further claims permitted. With the Teton River seriously over-appropriated, this discussion of instream reservations by the DNRC would appear to be moot. At this point, we would refer you to a paragraph that causes us great concern at the top of page 80. This paragraph (located in section 4.1.3) is extremely upsetting to those of us on the upper Teton. It appears that Montana Fish Wildlife and Parks is attempting to make a water grab at the expense of the very water rights this document purports to not impact. The final sentence states that the adjudication process should be completed by the Water Courts as soon as possible so that support of instream minimal flow reserves requested by MFWP can be sought. We place you on notice at this time that we will resist with all the resources at our disposal any attempt by MFWP to interfere with our rights on the river for irrigation and storage of those waters.

- I am apprehensive any time our decreed water rights come up for public discussion. I hope that the assurances in the TMDL law that this report will have no effect on present water rights will be honored. The last sentence of 4.1.3 TMDLS on page 80 does not seem compatible with the assurances: “Water right adjudication of the Teton River watershed should be completed as soon as possible and then support of instream minimal flow reserves requested by MFWP should be sought.” The MFWP wants to keep water in the upper Teton River to help dilute their self inflicted salinity problem East of Choteau where they dump in high salinity water from their Freezeout Lake Project.
- The same (prior water rights have been adjudicated and over-appropriated) can be said for Sec. 4.5.5 page 110 final paragraph. The intent seems to be to maintain a year-round flow in the watershed for fish and aesthetics. It continually seems as the objective is for the MFWP to keep water in the Teton River for their beneficial use.
- I am somewhat suspicious as to the purpose of this study. One statement was “water rights adjudication of Teton River water should be completed as soon as possible & then support of instream flow resources requested by MFWP should be sought.” Could this study be used for fish and game to get even greater control of river. The statement that this study can in no way affect existing water rights needs to be more prominent. I would suggest it should be on the cover in bold print.
- Section 4.5.5, page 110. In the final paragraph, the author again presses for the instream flows and reservations requested by DFWP. To reiterate an earlier point: With the Teton River seriously over-appropriated, this discussion of instream reservations by the DNRC would appear to be moot. We would refer you again to a paragraph that causes us great concern at the top of page 80. This paragraph (located in section 4.1.3) extremely upsets those of us on the upper Teton. We repeat that it appears that Montana Fish Wildlife and Parks is attempting to make a water grab at the expense of the very water rights this document purports to not impact. The final sentence states that the adjudication process should be completed by the Water Courts as soon as possible so that support of instream minimal flow reserves requested by MFWP can be sought. We place you on notice at this time that we will resist with all the resources at our disposal, any attempt by MFWP to interfere with our rights on the river for irrigation and storage of those waters. We note the statement that “ no adjudicated water right may be diminished via implementation of this water quality management plan.” But the intent of this paragraph leads us to believe that this cooperation is intended to extend to maintaining a year-round flow in the Watershed for the fish and aesthetics of the stream.

**DEQ RESPONSE:** Water quality can most easily be restored by decreasing the amount of pollutant entering the waterbody (pollutant load reduction through BMPs and water quality restoration measures) and/or by increasing the amount of clean flowing water, which serves to dilute the pollutant. Using established protocols for beneficial use determination, these waterbody uses are being moderately to severely impaired - depending on the degree and magnitude of dewatering (MDEQ, 2002a; Table 12, page A-37).

MDEQ and MFWP are not in collusion to acquire adjudicated waters, and it is not the sole intent of this plan to gain the instream flows **for** MFWP. Simply, the Teton River, Deep Creek, and Teton Spring Creek have been identified as chronically dewatered and thus the rivers' beneficial uses are being impaired. These beneficial uses include agriculture, fisheries, and aquatic life. Given that the state of Montana's non-point source program (i.e. TMDL) must use voluntary implementation and that water rights are explicitly protected under Montana law (see Section 1.2 of this document), instream flow requests made by MFWP will only occur with the voluntary leasing, sale, or donation of existing water rights. The statement on page 80 of the draft document concerning MFWP instream flow reservations has been deleted.

**7b COMMENT:** Section 3.3.7, page 62 presents a statement in the first paragraph that is moot. The Teton is a dewatered stream and fisheries are not going to exist or be recovered without dramatic changes that would be devastating to local agriculture. The economic impact of leaving the water in the river and not permitting its utilization to agriculture would be catastrophic to the population and the towns of the area particularly in view of the fact in dry years the River is naturally dewatered.

**DEQ RESPONSE:** It is the department's legislatively established mandate to protect for **all** beneficial uses associated with a water body's classification. Where impairments result from point sources, permits and enforcement actions exist. However, for non-point sources of impairments no such permits or enforcement regulations exist. Compliance or participation in a non-point source management plan is strictly voluntary. Stakeholders may choose to take no effective action in mitigating non-point source pollution issues. The result is that the waterbody remains impaired and does not support all or some beneficial uses. However, the department seeks to work with local stakeholders in collaborative ways and assist with technical and financial resources, to the extent possible, to find ways that support all beneficial uses while maintaining the economic viability of local economies.

**7c COMMENTS:** The following comments are related and can be addressed with one response:

- On page 31, the TMDL says water rights will not be affected but on page 62, it says dewatered streams do not support recreational uses.
- The Teton River is over appropriated, hence there is not enough water for agriculture, let alone for recreation.

**DEQ RESPONSE:** Contact recreation does not just refer to floating a craft on a stream but also includes activities such as swimming, wading, and fishing. Regardless, MDEQ has a documented protocol for making beneficial use support determinations, which can be found in Appendix A of the 2002 303(d) list. The protocols for contact recreation state that this use is moderately to severely impaired depending on the degree and magnitude of dewatering (MDEQ, 2002a; Table 12, page A-37). The fact that this beneficial use is impaired however, does not mean that existing water rights will be invalidated in favor of instream flows for contact recreation. However, contact recreation would be enhanced or improved if instream flows were ever regained.

**7d COMMENT:** A disproportionate amount of the blame for dewatering the Teton has been laid at the feet of irrigation. It seem that the answer to any problem with flow on the Teton is too easily explained by the Department by simply asserting that irrigation is the problem. However, it appears that no real attempt has been made to study other potential sources for this problem. For example, local knowledge asserts that the waters to the Teton have gone underground since the 1964 and 1975 floods. Yet no study has been conducted measuring the effect of these floods on the geology of the streambed and its ability to retain water.

**DEQ RESPONSE:** True, a study of the flood impact on the streambed geology has not been conducted and would likely provide useful information. In fact, it would probably suggest that the conductivity of the streambed has increased - as the comment implies - and that the river goes “subterranean” during low flow periods. It would also assist in evaluating the connection between surface waters and the alluvial aquifer allowing for a better approximation of the impact from ground water withdrawals on stream flow. The past flood events have deposited an extreme amount of large cobbles and gravels in the upper river that has destabilized and widened the river channel. However, the ability of the river to transport these in-channel sediments is greatly diminished because high flows are diverted to fill irrigation reservoirs and some diversion structures capture bedload sediments. In an effort to maintain diversion structures that function as desired, frequent manipulation of the channel bottom is required which prevents the channel from stabilizing and contributes to the persistent channel instability (Watershed Consulting, 1999). The current state of the river channel only worsens the over-appropriation of water resources in the basin.

**7e COMMENT:** The chart on pages 112-113 puts agriculture in an unfavorable light. We already do most of the suggested practices and have for 120 years.

**DEQ RESPONSE:** The tables referenced are a compilation of current best management practices designed for agriculture, irrigation, and salinity control issues. Where land managers have implemented these, they are applauded. Where these practices are not fully implemented, and water quality is subsequently diminished, then land managers are encouraged to find ways to implement any and all economic feasible practices.

**7f COMMENT:** Improvement of irrigation efficiency will do little to restore beneficial uses in the Teton River unless conserved water is dedicated to instream flows. Consequently, we feel the development and implementation of a water salvage program that improves instream flow is critical and should be of the highest priority. The plan states any salvaged water would be 'available' for instream beneficial uses. This should be restated that salvaged water must be 'dedicated' for instream flow if the plan is to succeed. Implementing this type of program would not affect existing water rights and would help improve stream flow and natural stream function, which is imperative to restoring several of the impaired water quality parameters identified in the plan.

**DEQ RESPONSE:** MDEQ agrees with this comment and changes have been made to Table 5-1. While MDEQ supports the development of such as program and would encourage the participation in it by local stakeholders, it should be noted that the development of such a

program would be led by state or federal fisheries agencies with support from other land management and conservation agencies as appropriate.

## 8) STREAM FLOWS

**8a COMMENT:** Section 2.1.4.2, page 10 in the first paragraph states that "The nature and consistency of stream flow in the Teton is a point of debate in the watershed." We believe that by interviewing old-timers in the area, much of this "debate" could be settled. The measuring site of Strabane was located at an old stage stop on the Teton River, between where Jim Peebles' ranch and the old Bynum diversion are located on the River (source: personal communication with Leslie Chalmers). It was put in place to qualify the water right for the Bynum Reservoir project and after proving the right the site ceased to exist. This site and the one SE of Choteau are not representative of the river. We wonder who is debating the issue regarding past river flows and the fact that the Teton goes underground for portions of its course. In the memory of anyone who has lived in this area for 90 plus years, the Teton has never been a reliable source of water flowing 365 days a year.

**DEQ RESPONSE:** Information garnered by interviewing "old-timers" cannot be interpreted or used as factual data in a scientific analysis. Anecdotal information may be constructive but may also confuse or distort factual reality given that current old-timers are only aware of what they have seen or heard anecdotally in their lifetime, which was already altered by the work of European settlers. The historical USGS gaging station data in this document is used to provide a representation of the river's historical flow regime prior to the 1964 flood and subsequent instream work by the Corp of Engineers that has dramatically destabilized the channel USGS gaging stations are considered the most defensible source of stream flow and water quality data for hydrologic analysis or interpretation.

**8b COMMENT:** Page 62, Sec. 3.3.7: Dewatering streams do not support beneficial uses? This statement implies that agriculture is not a beneficial use. To sacrifice agriculture's beneficial use of the water in order to enhance a fishery does not make economic sense.

**DEQ RESPONSE:** Although agricultural beneficial uses are supported through diversion, State and federal law requires that the Department of Environmental Quality protect for ALL beneficial uses, which includes growth of fish and associated aquatic life. Additionally, in over-appropriated basins such as the Teton, when a stream is dewatered from agricultural withdrawals and all water rights are not filled, then agricultural beneficial uses are also not fully supported. Such is the case also in the Teton Basin where some senior water rights in both the upper and lower basins do not receive full appropriation due to upstream withdrawals.

**8c COMMENT:** The Teton historically goes dry about one half mile below Teton Cooperative Canal diversion to about three miles north of Choteau.

**DEQ RESPONSE:** The Teton River Aquifer has been described in the Source Water Protection Plan for the City of Choteau (MDEQ, 2001), which noted that segments of the Teton River are either gaining or losing reaches depending on location and season but does

not identify where these reaches are located. This section may be one of the losing reaches noted. Coarse sediments deposited after the 1964 flood would have certainly had an impact on the "hydraulic conductivity" of the Teton's channel and presently the stream may simply be a few feet under the new steam bed. The historical period noted by the commenter is not defined and low stream flows may now be lost in the post-flood channel bed. A river of the magnitude of the Teton is not likely a **naturally** intermittent stream. As was noted in the Lewis and Clark journals a party arrived at the Teton River [probably in the lower basin] in late July - early August 1806 on found a channel 50' wide with the river flowing 3' deep by 35' wide (Moulton, 1999).

**8d COMMENTS:** The following comments are related to the issue of water quantity vs. water quality and can be addressed with one response:

- Water quality cannot be separated from water quantity. If there is very little flow, the salinity and suspended solids increase markedly. Water taken directly from the river or pumped from wells is saltier and murky. This water is used for human and animal consumption.
- Montana Fish, Wildlife & Parks classifies the Teton River as "chronically dewatered" from Bynum Diversion to its mouth, a reach of 188 river miles. This lack of adequate streamflow is the primary factor limiting the entire aquatic community, and to a lesser extent some wildlife species, in the Teton drainage. We recognize the Plan is intended to specifically address water *quality* (but not *quantity*) issues. However, the two issues are directly linked in chronically dewatered rivers like the Teton and they cannot be considered independently. The beneficial uses (fisheries, aquatic life, human consumption, agriculture) currently not supported by the Teton River and associated tributaries cannot be restored and maintained solely by improving water quality to meet state and federal standards. Water *quantity* issues must also be addressed effectively for the plan to succeed. As clearly stated in Section 4.3.1.1 of the Teton River TMDL Plan: "Stream flow is one of the most, if not the most, critical issues related to water quality in the Teton River watershed."
- Section 3.3, page 31 paragraph 2 needs to be moved to the very beginning of the document; especially the portion stating that "Flow alteration and dewatering are quantity issues; a TMDL is prepared to address water *quality*, not *quantity*. Water rights will not be affected by this plan unless willing parties lease, donate, etc. individual water rights." This issue is critical to us. This statement is unacceptable to us and has nothing to do- with the science of this study.

**DEQ RESPONSE:** The purpose of the TMDL and water quality management plan is to evaluate where and why beneficial uses of state waters or not being fully supported, to identify targets or target conditions that reflect support of those beneficial uses, and to provide guidance as to what activities can and should be implemented to achieve beneficial use support. The direction for developing and implementing these plans is provided to MDEQ via the federal Clean Water Act and Montana's Water Quality Act. MDEQ believes that water quality cannot be strictly separated from quantity however legislation also protects

valid water rights within the Montana water quality and water use acts. The fundamental basis of how water quantity relates to TMDLs is discussed in Sections 1.2 and 3.3.

## 9) GROUNDWATER EFFECTS ON TETON FLOWS

**9a COMMENT:** Please discuss all sources of dewatering not just agriculture. What is the contribution of groundwater to flow rate in the Teton? Some reaches of the river flow underground as the result of the gravels that were deposited by past floods.

**DEQ RESPONSE:** Section 4.3.1.1 Stream Flow Related Issues discusses the effect of groundwater pumping on stream flows. In alluvial aquifers, such as the Teton River Aquifer, groundwater pumping has an impact on surface flow by effectively lowering groundwater levels and increasing infiltration rates via “induced infiltration.” This effect of lowered groundwater levels on reduced stream flows has been in the scientific literature for at least 55 years (refer to Kazmann, 1948). The Source Water Protection Plan for the City of Choteau (MDEQ, 2001) noted that segments of the Teton River are either gaining or losing reaches depending on location and season. The contribution of groundwater **into** the Teton River is not known, however the hydraulic properties of the Teton River Aquifer have been determined based on field measurements. The hydraulic conductivity was measured at 321 – 642 ft/day and the aquifer transmissivity was calculated as 8,021 – 11,090 ft<sup>2</sup>/day, where transmissivity is the product of hydraulic conductivity and aquifer thickness. The coarse sediments deposited after the 1964 flood would have certainly had an impact on the “conductivity” of the Teton’s channel and presently the stream may simply be a few feet under the new steam bed.

**9b COMMENT:** No adequate research has been presented by this plan demonstrating the effect of ground water use on the flow rate of the river.

**DEQ RESPONSE:** References have been added to Section 4.3.1.1 (Stream Flow Related Issues) citing previous research and literature reviews concerning the connection of surface water to groundwater in alluvial aquifers and the effect that groundwater pumping has on stream flows. However, the Department is not aware of any study that has quantified the effect of groundwater pumping on Teton River flows. This would certainly be useful data, if collected.

**9c COMMENT:** Section 4.3.1.1, page 92 paragraph 3 is an interesting paragraph in that the DNRC has denied the interdependence of groundwater and surface water for years. To see this interdependence acknowledged in this document is quite remarkable and could have far-reaching effects on the appropriation of Montana groundwaters

**DEQ RESPONSE:** The interrelationship of groundwater and surface water has been part of the common knowledge and understanding of hydrology for many years and is certainly not new. In fact, the MDNRC recently released a “position paper” entitled “Report on Groundwater – Surface Water Interactions” (Uthman, 2001) that discuss the interrelationship of these waters in alluvial aquifers. Possibly, the commenter is referring to what is termed a “confined aquifer” where an aquifer is isolated from surface water expression by the

existence of a widespread confining, or “impermeable,” layer of fine-grained material such as clay. However, even this is somewhat a misnomer since water can and will seep through a clay bed, albeit at a very slow rate.

## 10) CLIMATE

**10a COMMENT:** In 2.2.12, weather data from the Choteau airport does not characterize the lower river watershed climate. Please contact Jim Wood of Loma who has kept the National Weather Service records for this area of Chouteau County for many years.

**DEQ RESPONSE:** The intent of the climate discussion in Section 2.2.2 is only to provide a broad-scale look at the climatic patterns and averages of the basin and not to describe all possible “micro-climates” in the basin.

**10b COMMENT:** Concerning page 11, second paragraph: 1929-1932 was a very dry time for the watershed; the assumption of not being able to discern whether or not it was a result of climactic conditions isn't valid.

**DEQ RESPONSE:** The statement was altered to state that a dry climatic pattern might have contributed to the zero flow conditions.

## 11) PUBLIC INVOLVEMENT PROCESS

**11a COMMENT:** This draft has been written by the full resources of the MDEQ and has been sent to us to digest and respond in such a short period of time, that those of us out here that were lucky enough to even see a copy don't have a chance to respond in a proper manner. MDEQ would be very unfair to not extend the comment period for this TMDL Draft.

**DEQ RESPONSE:** DEQ provided more than a 30-day public comment period. The comment period was originally set to end February 21, 2003 as reported in the Great Falls Tribune on March 2. MDEQ decided to extend the comment period till February 27, 2003 and reported the new date in the Choteau Acantha, Dutton Dispatch, Trader Dispatch and Ft. Benton River Press.

**11b COMMENT:** While it is given that not all the interested parties in this process can be made to agree on the interpretation of much of the data or theoretical goals presented in this document, it appears that this document heavily sways towards the pervasive political agendas of the Department and its other institutional contributors. This inevitably creates, at least, the appearance of a conflict of interest between MDEQ's political agenda and those of the advising individuals. Other than in this public comment context, this process provides no real opportunity to present true counter points to MDEQs assessment of any data that has been gathered in this process or provide alternative evaluations of any absence of data. Additionally, no other stakeholder (other than institutional stakeholders or government agencies, supported by taxpayer's dollars) have the requisite time or assets to present an informed counter to any conclusion MDEQ has written in this plan. Therefore, to maintain that this plan is citizen

supported is to understand that the citizenry's only real contribution is through tax revenue spent by the Department.

**DEQ RESPONSE:** Comment noted. The department appreciates the time you have spent to review the document and make comments. Your comments and those made by other watershed residents were used to modify many sections of the draft document.

In producing this document, the department is fulfilling the requirements set out by the Montana Legislature in 1997. The Board of Environmental Review, a citizen board appointed by the governor, sets the water quality standards used as targets in the document. Members of the Statewide TMDL Advisory Group advised MDEQ on developing the TMDL program to assure effective and fair implementation.

**11c COMMENTS:** The following comments are related and can be addressed with one response:

- Montana's TMDL law describes a process that is local, grass roots, citizen driven and advised. The Teton TMDL has not been locally created or generated even though a local watershed group and conservation districts meet monthly and wish to provide the input that the legislature intended. The TMDL contains language that these groups are opposed to. This plan is not citizen-supported as the legislature intended.
- First, let us complain bitterly about the lack of time permitted for study and comment. The 30 days permitted are not sufficient to properly disseminate the document to the public, allow for it to be studied and discussed by the impacted parties, and formulate and present viable alternatives. We obtained our copy of this document on the 14th of March, and were informed of its existence only by accident. It would seem that those who live and depend upon the resources of this watershed would have been contacted by the Department of Environmental Quality and/or the Teton County Soil Conservation Service and/or the Teton River Water Users Association in order to prevent the appearance of a railroad style of adoption. From our perspective, the public is not being fully engaged in these very critical decisions that affect all of us in the basin in a very personal manner.
- We would encourage the DEQ to extend the comment period to a full 90 days in order that the document, which has been prepared at public expense; can be more fully disseminated, studied and discussed by our stockholders. This will permit us to prepare an informed comment that can be formulated and distilled and then shared with your department. Right now, we are being asked to respond to a document and to formulate alternatives and comments when we have no budget and no time; while your people have worked on the same document for over a year with a virtually unlimited budget.
- We reiterate our concerns regarding not having had the opportunity to more fully study this plan and offer more compelling arguments and suggestions for improvement or change. Given the brief period of time that this document has been in our possession and the lack of copies to share among the Directors and stockholders of the Company, we may have made some erroneous assumptions. Additionally, the short comment period has not provided

opportunity to meet with representatives of the DEQ. We request that the DEQ extend the public comment period to 90 days in order for this plan to be more widely disseminated for input and comments from the people who will be most directly affected by its voluntary implementation.

- While it is the obvious intention of the legislator that the TMDL process be a local, grass-roots, citizen driven, and advised process, that has not been Eldorado's experience with this process. Very early on in this process it was unfortunately clear to us that this plan was being created by MDEQ. Though a local advisory group is loosely established and meets on a monthly basis, and on occasion the Conservation District has been advised, it is clear that this plan has not been locally created or generated. Many of the points, observations, and suggestions of the local group are not well represented by this document even after they have been forwarded consistently to MDEQ. In some cases, suggestions from the advisory group have been ignored. Suggested deletions have in some cases been disregarded and in other cases they have been simply moved to another part of this document. Additionally, throughout the many drafts of this plan, MDEQ has consistently inserted language in the document which has not been approved by the advisory group or the Conservation District.

**DEQ RESPONSE:** The Teton Conservation District and the Teton River Watershed Group (TRWG) have been generous with their time and advise in contacting residents, assessing riparian resources, overseeing data collection by the USGS, and reviewing several versions of the draft document before it was released for the general public comment. Without this input the draft document would have looked very different. It is, however, the responsibility of MDEQ to develop the document in a way that does not favor any one group, but looks at the big picture for ALL beneficial uses. MDEQ tried to incorporate the thoughts of many divergent interests, but some views and opinions are contrary to the legal mandate of MDEQ to address ALL beneficial uses.

The public review draft document was released on February 27, 2003 with the comment period set to run through March 27, 2003. This was reported in the Choteau Acantha, Dutton Dispatch, Trader Dispatch, and Ft. Benton River Press. On March 3, TRWG members were briefed about the availability of the draft TMDL and how to access the WEB version. On March 10, the TRWG coordinator delivered hard copies of the draft to the Teton County Conservation District office providing one copy for each irrigation project and one for the CD.

The TRWG coordinator met with the irrigation groups on March 20 to discuss the TMDL. This meeting was not a formal public meeting but was designed to allow people to discuss the complex document. On March 20, TRWG coordinator emailed the irrigation group's request to MDEQ for an extension to the comment period. The extension was not granted because of time and resource constraints faced by MDEQ as a result of the court imposed TMDL schedule.

MDEQ is not in a position that would allow for longer comment periods on TMDL plans due to the existing court order, budget, and resource constraints. It is the hope that since this is a

dynamic and evolving document that all parties will work together to improve monitoring, evaluation, and implementation of what can and should be accomplished.

The department appreciates the time that has been spent by all the interested individuals to review and provide comments on this document. These comments and those made by other watershed residents have been used to modify many sections of the draft document.

## 12) OTHER COMMENTS, CLARIFICATIONS, ADDITIONS, AND CORRECTIONS

**12a COMMENTS:** The following comments are related and can be addressed with one response:

- There should be one table in the document that shows current conditions and targets, side-by-side.
- Perhaps a table could be developed that would show where the Teton Watershed is at this point in time and in a second column, the target could be presented. It would better describe the Watershed to everyone reviewing the document and visually display the areas that are in greatest need of immediate attention.

**DEQ RESPONSE:** Table E-2 in the Executive Summary lists all TMDLs and/or targets and provides a cross-reference to document tables that compare current conditions with targets/target conditions.

**12b COMMENT:** The water users and general public would like to work with DEQ in putting together the final TMDL.

**DEQ RESPONSE:** Due to time and resource constraints this is not possible. However, MDEQ has carefully reviewed all comments and has worked with the Teton River Watershed Group in an effort to make this document as fair as possible given the varying viewpoints. Future teamwork will afford basin water users and other interested stakeholders input into the evolution of this document. Additionally, the public comment period provided a venue by which any interested party had an opportunity to submit comment regarding the draft document. All comments received have been reviewed and responded to with many suggestions being incorporated into the final document in addition to the actual comment being presented in this appendix.

**12c COMMENT:** We also feel that too much “old” data is being emphasized (section 2.1.4.2, p. 10). Climatic changes and changes in the river due to flooding makes the “old” data irrelevant in modern day.

**DEQ RESPONSE:** The inclusion and review of historical stream flow data is a way to understand what the system was prior to significant channel and stream flow altering events such as the 1964 flood. Without a historical context the present day state of the river cannot be understood or appreciated. Thus, historical data is considered critical to our

understanding of “how things were” and assists in the development of a rational approach to future management of the river and water resource.

**12d COMMENTS:** The following comments are related and can be addressed with one response:

- On page 19, I don’t believe that Brady Irrigation Co. is only irrigating 195 acres. Section 2.3.2.1, fourth paragraph: References to Brady Lake Reservoir are erroneous even if quoting MSEO, 1962. Brady possibly irrigates 6000 acres from waters stored.
- Section 2.3.2.1; page 19; talks about the various infrastructure and facilities that have been developed to facilitate agricultural activities in the Watershed. There is no mention of the development by the Farmers' Co-Operative Canal Company and their off stream storage in Farmers and Harvey Lakes. Is this an oversight or an intentional omission?

**DEQ RESPONSE:** The irrigated acreage for Brady Lake has been corrected. The omission of the Farmers and Harvey lakes was an unintentional oversight and the section has been corrected to reflect this information. The local canal and irrigation companies, via TRWG coordinator, relayed all information added to the water resources section.

**12e COMMENT:** Please include the existing permits and statement of basis for City of Choteau and FWP Priest Butte.

**DEQ RESPONSE:** All of the existing Teton basin water pollution discharge elimination permits (MPDES) are displayed on Figure A-15 of Appendix A. The current permit for the City of Choteau will be re-written in the near future by MDEQ. The existing permit expired in 2000 and was administratively extended in November of 2000. The city has their application on file at the department and is currently working with the department’s Technical and Financial Assistance Bureau in their facility design. The Statement of Basis and current MPDES permit is on file at MDEQ and a copy may be obtained by contacting the department. MFWP does not have a discharge permit for Priest Butte Lakes under the Montana Pollution Discharge Elimination System. Priest Butte Lakes discharge is currently managed under the EPA-approved 1999 Salinity TMDL for the middle and lower Teton River. This document is intended to amend that TMDL using the additional data and information collected subsequent to that document. A complete listing of all existing water discharge permits (MPDES) is available via the Internet from the Montana State Library’s Natural Resource Information System (NRIS). The following link will provide a map of all MPDES permits and links to data reports that contain more detailed and specific permit information.

<http://nr.is.state.mt.us/mapper/MapWindow.asp?name=nrismap&Profile=615100&Cmd=Build+Reports>

**12f COMMENT:** Section 4.1.2, page 76 in the last paragraph on that page discusses the water requirements for proper growth of various crops. Locally, we are unaware of anyone who applies 30" of water to their fields and would ask that this be either documented (not from a personal communication) or struck from the document.

**DEQ RESPONSE:** The draft document states that “*up to 30 inches*” may be applied to field crops using flood irrigation. The amount of irrigation water generally applied to alfalfa using flood irrigation was confirmed to range between 25 to 30 inches by the District Conservationist in the local NRCS Choteau office. For purposes of calculating a rainfall correction factor (equation 4-2) and establishing SC targets the 30-inch depth of irrigation water was used.

**12g COMMENTS:** The following comments are related and can be addressed with one response:

- A start date of March 1 for the irrigation season is probably too early by a month or two.
- Is March 1 an appropriate start date for the irrigation season? Should it be later than this?

**DEQ RESPONSE:** The target season for irrigation will be adjusted to begin at May 1 based on information received from the Watershed Coordinator for the TRWG. Accordingly, the salinity target for SC is adjusted to an average value of 1,000  $\mu\text{S}/\text{cm}$  between May 1 and September 30.

**12h COMMENT:** Sec 4.5.1 page 102 paragraph, if the statements are true, targets and a plan of action are foolhardy.

**DEQ RESPONSE:** The statement is accurate and true in that “hard” water quality data and detailed source assessment has been limited. To that affect, the plan calls an adaptive management approach where by targets and recommended actions may be adjusted as new data is collected and analyzed. Site specific management actions are not sought that have not undergone due consideration as to their economic impact as well as their appropriateness for local site conditions.

**12i COMMENT:** Page 110, paragraph two, asks all water users to work in a cooperative manner. This would imply that maybe we have not been working together. This is a slap in the face to all the water users.

**DEQ RESPONSE:** This statement was **not** meant to infer, in any way, how water users have been working or interacting with one another. However, the fact remains that the basin’s water resources are stretched beyond their limits and ability to support **all** beneficial uses, including irrigated agriculture. The statement acknowledges the fact that in the future water scarcity will only become more prevalent.

**12j COMMENT:** FWP supports the idea that any viable plan must have strong elements of broad-based support, accuracy and focus, effectiveness, efficiency, completeness, adaptability and realism. Further, FWP supports the idea that this draft plan needs positive adjustments before it can be viable.

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**DEQ RESPONSE:** MDEQ agrees and, to the extent possible given available resources and timelines seeks, to provide plan that meets these criteria. The department has also responded to and, incorporated where appropriate, public comments concerning many elements of the plan cited above.

### **13) COMMENTS THAT DO NOT ELICIT A RESPONSE.**

- This TMDL document has evolved into an inordinately long, repetitive, and difficult document to manage for citizens for whom the creation of TMDLs is not their full time employment. MDEQ uses scientific data that may not be fully understood by the Department and surely is not fully appreciated by the local group. The relative girth of this document does not reflect a concise analysis of the basis for this plan, but rather justification for employment on the part of it's institutional contributors and drafters.
- In Section 6.0, Effectiveness Monitoring, p. 115, the TMDL must collect additional data. The TMDL is based mainly on professional judgment rather than factual data.
- DFWP will do whatever is necessary to keep water in the all of the rivers, but this benefits no one because the water runs out of state and that is what this TMDL is all about – getting water for the Department of FWP. Let the Teton River water be managed by the experts – the farmers and ranchers who have done a very good job for 120 years.
- Section 4.3.1.1, page 92, the first two sentences are true. However the issue in this study is not about stream flow as the author stated in Section 3.3, page 31, paragraph 2. Stream flow is not going to change unless, as the author suggests, "willing parties lease, donate, etc. individual water rights." The Teton River is not going to return to its pre-1900 state.
- The TMDL is a document filled with mostly assumptions and very little data.
- In sec. 4.3.1.1, I agree the river has not historically been intermittent. Current Stream Flows, 2.1.4.2 shows that stream flow below five cfs was not reported on the Dutton USGS gauge until 1984, after which date, several years have seen flows less than one cfs (1984, 1985, 1988, 2000, 2001).
- FWP supports the idea of maintaining or improving water quality in the Teton River Watershed.
- FWP supports the idea that ALL interested parties in this matter are “stakeholders”.