Upper Missouri Basin Advisory Council Recommendations Development Report

Water Resource Issues and Recommendations for Solving Them
for Incorporation in the Upper Missouri Basin Watershed Management Plan
(Phase 2 Technical Review and Phase 3 Recommendation Development of the Council's Charge)

June 19, 2014

Prepared by

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ACKNOWLEDGEMENTS

This report was prepared based on information shared by DNRC staff, many resource specialists from several agencies and groups, and interested participants who attended public meetings. The Council carefully considered this information to develop these recommendations and thanks the many who shared of their time and expertise.

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I. Introduction and Background

Purpose of This Report

This is a report of the work of the Upper Missouri Basin Advisory Council to:

1) identify and study critical water resource issues in the Upper Missouri Basin, and
2) develop recommendations on water issues of vital importance to the people of Montana for the Montana Department of Natural Resources and Conservation (DNRC) to include in its State Water Plan recommendations to the 2015 Montana Legislature.

The Council encouraged public comment on this document through June 9, 2014, which is also reflected in this report. Full basin plans and recommendations reports were developed for each of Montana's four major basins: Upper Missouri, Lower Missouri, Yellowstone and Clark Fork. Final recommendations of this report, as well as from the other basin recommendations reports, will be reviewed, combined and developed for inclusion in the full State Water Plan (Montana Water Supply Initiative). DNRC will present the State Water Plan to the 2015 Montana Legislature.

Early Deliberations of the Upper Missouri Basin Advisory Council

The diverse 20-member citizen Council met regularly between August and October 2013, first for a kick-off meeting and then for five public scoping meetings conducted throughout the basin. During those meetings, the Council and attending public heard presentations by resource professionals on a variety of pertinent topics and, from these presentations and discussions, the BAC began to prioritize a set of issues to address in these recommendations. A Phase 1 Report[1] from this initial round of meetings articulates 15 issues of interest for further consideration in the Upper Missouri Basin.

II. Process for Developing Recommendations

During the combined Phase 2 (technical review) and Phase 3 (recommendation development) of the Council's work, conducted between January and May, 2014, the Council met five times, often for 2-day meetings, to examine and discuss 12 critical water resource issues (condensed and combined from the original 15 identified during Phase 1), then develop issue statements, recommendations and strategies for future water management in the Upper Missouri Basin. Throughout the process, a facilitator reviewed with the Council the summaries of ideas developed during Phase 1 to assure follow-through and integration of public comments. Between each meeting, the facilitator, with review by the presenters, technical resource advisors and DNRC staff, crafted issue statements and refined recommendations based on the Council's deliberations and feedback. These drafts were regularly circulated to Councilmembers electronically prior to subsequent meetings. At each meeting, Council members commented in

[1] Upper Missouri Basin Advisory Council. Issues Scoping Report. *Montana State Water Plan Update - Upper Missouri River Basin. Prepared by the Council and* Kathleen *Williams. December 17, 2013.*

detail on drafts, with the overall goal of refining statements and recommendations for final public review and presentation to DNRC.

The work of the Council during Phase 2 and Phase 3 was conducted respectfully and collaboratively as a full team with no breakout sessions. Sometimes a sub-team would further develop a particular recommendation between meetings to bring back to the group. Where there was disagreement, issues or statements were reworked or removed from the draft, such that the Council endorsed its draft recommendations at its May 15, 2014 meeting. Table 1, below, shows topics and issues covered during the combined Phase 2 and Phase 3 meetings. Agendas for these five meetings are presented in Appendix A.

Four public meetings on May 21, 2014 (Dillon), May 22, 2014 (Manhattan), May 28, 2014 (Shelby) and May 29, 2014 (Great Falls) offered opportunities for Council members to provide a summary presentation of the draft recommendations, and for the public to register comments. A total of 41 people attended the public meetings. Also, an electronic survey made available between May 19 and June 9, 2014, collected comments from 15 individuals. On June 12, 2014 Council members met by conference call to review the public comments, and make any changes to the draft recommendations it felt important. Comments from the town meetings and electronic survey, as well as the Council's modifications made as a result of those comments, are summarized after each issue below. In general, respondents were pleased with, and grateful for, this effort.

Table 1. Upper Missouri Basin Advisory Council Work Sessions and Topics		
Jan 10, 2014 Helena, MT FWP MT Wild Center		
Tim Davis	DNRC WRD Administrator	**Process and Recommendations Development**
Gayla Wortman	Chair Cascade CD	**Agricultural Water Use and Efficiency Review**
Eloise Kendy & Mark Aagenes	Instream Flow specialists, The Nature Conservancy and Trout Unlimited	**Instream Flow Protection Review**
Bob Hardin & Paul Siddoway	Greenfield Irrigation & Big Hole WS	**Water Storage Review**
Lezlie Kinne	Water Commissioner	**Drought Management Review**
Ann McCauley	DEQ	**Integrated WQ & WQ Mgmt Review**
Vicki Baker	Chair Teton CD	**Groundwater Review**
Lenny Duberstein	Federal Bureau of Reclamation	**Federally-Owned and Managed Projects in the Basin**
Matt Norberg	MT DNRC State Projects Bureau	**State-Owned and Managed Projects in the Basin**
Bob Hardin, Vern Stokes, Vicki Baker, Allen Martinell, Lezlie Kinne	Greenfield Irrigation District, Pondera Canal, Bynum Irrigation District, Lima and Willow Creek	**Locally-Managed Projects in the Basin**

Feb 27 & 28, 2014 Helena, MT FWP MT Wild Center		
John Lafave & Ginette Abdo	MT Bureau of Mines and Geology	**Conjunctive Mgmt**: Groundwater Investigation Program and Case Scenarios
Tammy Crone & Jim Wilbur	Gallatin WQ District & Lewis and Clark WQ District	**Conjunctive Mgmt**: Roles and Responsibilities of Water Quality Districts
Mark Aagenes & Mike McLane	MT Trout Unlimited, MT Fish Wildlife Parks	**Conjunctive Mgmt**: History and Evolution of Conjunctive Management Policies in MT
Wayne Berkas	US Geologic Survey	**Water Info:** Stream Gauging in Montana
Troy Blandford	MT Natural Resource Information System	**Water Info**: MT Water Information System
Brian Domonkos	US Natural Resource Conservation Service	**Water Info**: Snotel and Snowpack Monitoring
John Lafave	MT Bureau of Mines and Geology	**Water Info**: Groundwater Information Center
Gayla Wortman	Chair, Cascade Conservation District	**Local Coop Efforts**: Overview of CDs and Watershed Groups in the Basin
Tim Bryggman	DNRC Economist	**Water's Role in the Economy**: Growth Projections for the Basin
Panel: Anne Yates, Holly Franz & Stan Bradshaw	DNRC Head of legal, Attorney for PPL MT, Attorney for Trout Unlimited	**Water's Role in the Economy:** Policy/Legal/Historic Perspective on the Change Process.
Matt Murphy	DNRC Adjudication Bureau	**Adjudication**: Overview of the Adjudication Process in the State
Judge Russ McElyea	MT Water Court	**Adjudication**: Overview of the Adjudication process in the State
March 27-28, 2014 Healing Waters Lodge, Twin Bridges, MT		
Larry Dolan	DNRC Hydrologist	**Available Water/Climate Change**: Supplies in the Basin Review of Storage Projects in the Upper Mo Basin
Todd Gartner	Senior Associate, World Resources Institute	**Natural Infrastructure for Water**
Lynda Saul	MT DEQ Wetlands program coordinator	**Natural Storage**: Floodplains, Wetlands, Forests and Integrating Natural Infrastructure
Bruce Sims	USFS Region 1 hydrologist	**Natural Storage**: Floodplains, Wetlands, Forests and Integrating Natural Infrastructure
Todd Gartner	Senior Associate, World Resources Institute	**Natural Storage**: Floodplains, Wetlands, Forests and Integrating Natural Infrastructure
April 24-25, 2014, Stage Stop Inn, Choteau, MT		
Melissa Hornbein	Reserved Water Rights Compact Commission	**Large Scale Factors**: Overview of Federal and Tribal Water Compacts in the Upper Missouri Basin
Scott Irvin	DNRC Regional Manager, Lewistown	**Large Scale Factors**: Water Reservations in the Upper Missouri

Mike McLane	Montana FWP	**Instream Flows**: Review of instream Flows Reservations, Leases and Murphy rights
Bryan Gartland	DNRC Regional Manager, Helena	**Instream Flows**: Ecological Considerations for instream Flows
Ann McCauley	DEQ WQ Protection	**Integrating Water Quality and Quantity**: Overview of TMDL and Water Quality Concerns
Joe Little & Randy Pearce	NRCS	**Water Use Efficiency and Conservation:** NRCS irrigation Efficiencies and Program Overview
Larry Dolan	DNRC Hydrologist	**Water Use Efficiency and Conservation:** Consumptive Use and Conservation
Kerri Strasheim & Bryan Gartland	DNRC regional managers, Bozeman & Helena	**Water Marketing and Transfers:** Overview

III. The Recommendations

Summary of Key Issues and Solutions: What Makes the Upper Missouri Basin Unique?

The Upper Missouri Basin is a treasure with its own distinguishing water story that makes it a unique place to live, work and visit. It is the headwaters to the continent, spanning the Rocky Mountain front and two major national parks. It is rich in agricultural tradition and beautiful productive irrigated valleys. Unsurpassed fishing and recreational opportunities attract locals as well as people from around the world. The basin is also a place of rapidly expanding urban and business development and economic growth. But the challenge that rises above all others is the fact that most of the Upper Missouri Basin is closed, and little water is available for new appropriation. This factor alone is woven into many of the following recommendations.

The Upper Missouri Basin Advisory Council took all of these factors to heart as it developed this guiding document on future water management in the Upper Missouri Basin. It decided to present its water plan recommendations in the context of 12 issue areas listed below, but was quick to recognize that all 12 issues are highly interrelated. For example, we cannot study surface water without acknowledging its relationship to groundwater; nor water developments without also understanding their impacts to water quality or instream flows, and so on. Because the issues are all connected, you will see some cross-referencing in these recommendations to other issues. Still, there are important water-related themes in the Upper Missouri Basin that the Council identified with special interest. These include: 1) the need to better define the use of exempt wells in dense developments; 2) recognition of the importance of the statewide adjudication and dependence by many on its completion; and 3) a need to protect natural streamflows in light of the desire to also identify opportunities for built and natural storage in a closed basin.

In its closing deliberations, the Upper Missouri Basin Council thoughtfully stressed three core conditions essential to representing the people, livelihoods, and resources of the Upper Missouri River Basin. The first is that all 62 of the Council's recommendations recognize and support the Prior Appropriation Doctrine and its protection of multiple uses and existing water rights. None of these recommendations should infringe on the Prior Appropriation Doctrine and valid existing water rights. The second is that, like the issues themselves, all recommendations presented are highly interrelated and difficult to consider in isolation. For example, many recommendations deal with improving water-use and management efficiencies that, if carried out, could have both positive and negative impacts. In many cases, systems are already in place, but the recommendations call for additional tools to improve systems management. Finally, it is the ardent hope of the Council that this report does not reside on a shelf, but that it is revisited often as a living document to be updated regularly, especially in a way that keeps local efforts highly engaged. In this regard, the Council hopes to continue to participate and contribute on a regular basis.

Recommendations by Issue

Each of the issues identified by the Council is presented in this format:

1. **Issue Title**
2. **Overall Goal**
3. **Issue Statement**
4. **Objectives**, which are statements of desired future conditions
5. **Recommendations**, numbered in order of presentation across issues to easily identify for discussion
6. **Implementation Tasks**, where the Council wished to enter this level of detail

The issues are presented in the following order, the first four of which the Council considers as priority topics, although all issues are highly interrelated and critical:

A. **Conjunctive Surface Water/Groundwater Management**
B. **Adjudication**
C. **Storage**
D. **Instream Flow**
E. **Local Cooperative Efforts**
F. **Water Use Efficiency and Conservation**
G. **Integrated Water Quality and Quantity**
H. **Water's Role in the Economy**
I. **Water Information Systems**
J. **Available Water Supply and Climate Change**
K. **Water Transfers and Marketing**
L. **Large Scale Factors**

Public comments, and the BAC's response to those comments, are summarized briefly at the end of each issue section. For a copy of all written survey comments and public meeting notes, please contact Ann Schwend, Senior Water Planner at DNRC.

A. CONJUNCTIVE SURFACE WATER/GROUNDWATER MANAGEMENT

Goal: Improve Management of Surface Water and Groundwater as a Conjunctive Resource

The Issue

Surface water and groundwater are usually connected, and withdrawal from or reduced recharge to one can significantly affect availability of the other. Common examples in the Upper Missouri Basin include the potential for well pumping to reduce surface water flow, and where shifts from flood to sprinkler irrigation can decrease aquifer recharge. Aquifer characteristics in the basin vary from limestone, shales and alluvial fill, and these differences can affect water availability. With variability among and even within aquifer systems, the hydrologic connections between surface water and groundwater are difficult to measure and monitor. To help understand trends, several state, federal and local agencies routinely collect data on groundwater quality and quantity. Although the agencies work together, at times they make management or permitting decisions internally without integration of all data, or without optimal data. For example, irrigation return flows and seepage from the more than 3,300 miles of canals in the basin offer potential opportunities to augment groundwater recharge, and this should be factored into decision-making.

Exempt wells were discussed in detail and are a topic of great importance. In particular there is broad agreement that exempt wells should not impact senior water rights. The Council believes that resolution of the exempt well issue is imperative. Since much of the basin is legislatively closed to most new water right appropriations, many new developments have relied on exempt wells to meet the needs of individual lot owners. By statute, these wells are granted a water right by filing a simple "Notice of Completion" after development, and are exempt from permit review criteria required for larger wells or surface water appropriations. Withdrawals from the roughly 53,000 individual groundwater wells throughout the basin, 11,700 of which were drilled between 1990 and 2000, can cumulatively impact surface water availability and quality especially where they are densely located. Impacts vary on the basis of local groundwater availability and extent, and should be addressed accordingly.

Objectives

1. Groundwater and surface water resources are conjunctively managed by DNRC and the Montana Department of Environmental Quality (DEQ)

   ***RECOMMENDATION 1**:* Support cooperative efforts to integrate, share, and analyze the data needed to conjunctively manage surface water and groundwater resources.

   Implementation Task: Enhance a multi-agency water data collection and analysis system managed by NRIS. Assure that this system: 1) houses enough data to accurately describe cumulative impacts of all groundwater withdrawals on recharge and local water supplies; 2) can be used to investigate mitigation strategies, such as enhanced aquifer recharge; 3) is a ready tool to access when surface water and groundwater interactions play into management decisions, especially in areas where streams are already

dewatered or where there is the potential for flow reductions; and 4) is adequately funded.

2. Exempt wells are allowed and managed within the original intent of the legislation.

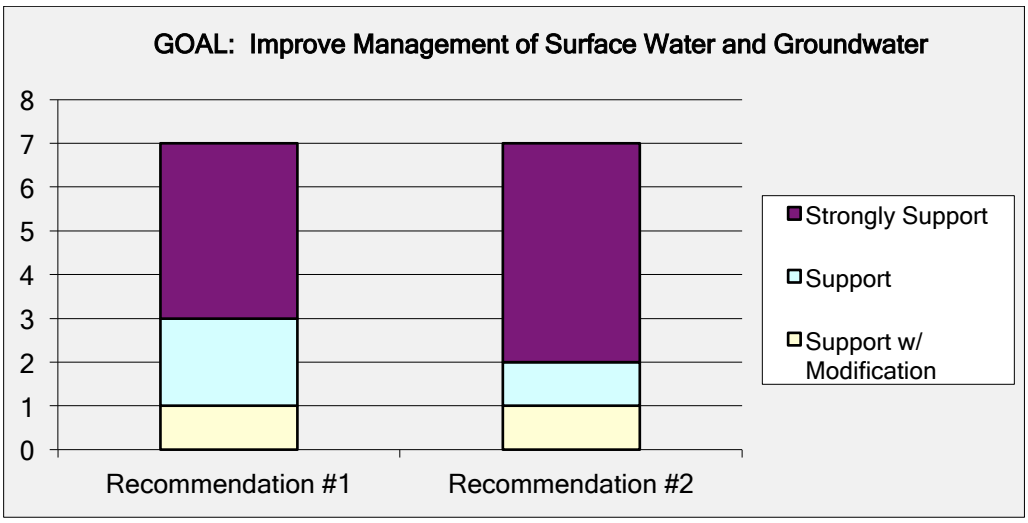
   RECOMMENDATION 2: Implement interpretation of the exempt well statute, which identifies exempt wells as small-scale, widely dispersed groundwater wells with little potential to impact other water rights.

   Implementation Task: Adopt an administrative rule (DNRC) and/or legislation (Montana Legislature) that recognizes the cumulative impacts of densely developed wells on local groundwater supplies and senior water rights. This rule or legislation should take into account the following principles:

   a. *Most wells use less than 2 acre-feet of water, but an exempt well may tap up to 10 acre-feet, which can impact other users.*
   b. *The intent of original legislation was to allow for smaller, widely dispersed uses.*
   c. *High density of exempt wells is a critical issue and needs immediate attention.*
   d. *The density of exempt wells indicates a direct relationship to water quality.*
   e. *Use of exempt wells for stock water is supported.*
   f. *Continued monitoring/study of exempt wells in high-density areas is essential.*

Public Comment

All respondents supported Recommendations 1 and 2. Comments reflected on aquifer subsidence, the impacts of hydraulic fracturing, priority dates for exempt wells, and the impact of dewatering on water quality. The BAC concluded that addressing the recommendations as stated will also address these concerns.



B. ADJUDICATION

Goal: Complete an Accurate and Enforceable Water Rights Adjudication

The Issue

The Statewide Adjudication Process is critical to all water users in the Upper Missouri River Basin, and the Council recognizes that it is already occurring at an accelerated pace. When completed, it will produce enforceable Final Decrees of all historic water rights. Water users in the basin are anxious to complete decrees and resolve issues of enforcement, which are important not only to water users and managers in the basin, but also for protecting Montana's interests against illegal uses of water and downstream claims. Currently, no Final Decrees have been issued in the basin, and sub-basins with Temporary Preliminary Decrees may need further examination to bring them to modern adjudication standards. In sub-basins where water users choose to petition for water distribution and enforcement of water rights according to a decree, a decree must be in place and objections and issue remarks resolved. Final Decree, which is the end goal, is important to water rights holders because it is a declaration that the historical water right can no longer be debated and modified within the current adjudication process. Water right holders acknowledge that adjudication will sometimes only generally characterize water use, but they also recognize that it is a very important tool for moving forward. To that end, additional resources are necessary to achieve enforceable decrees in a timely manner.

Objectives

1. Decrees are accurate and enforceable in the Upper Missouri Basin.

   RECOMMENDATION 3: Continue funding of both the Water Court and DNRC to complete the current adjudication process at the desired level of staffing and to meet benchmarks for accountability.

2. Management roles of the Water Court, District Court and DNRC are well defined.

   RECOMMENDATION 4*:* Create a plan for transitioning to post-adjudication roles. Maintain the current role of the District Court; keep the Water Court focused on adjudication and DNRC focused on new permits, change applications and assisting in the adjudication process.

   RECOMMENDATION 5: Adequately resource and authorize the Water Rights Enforcement Section of DNRC to reduce illegal use of water.

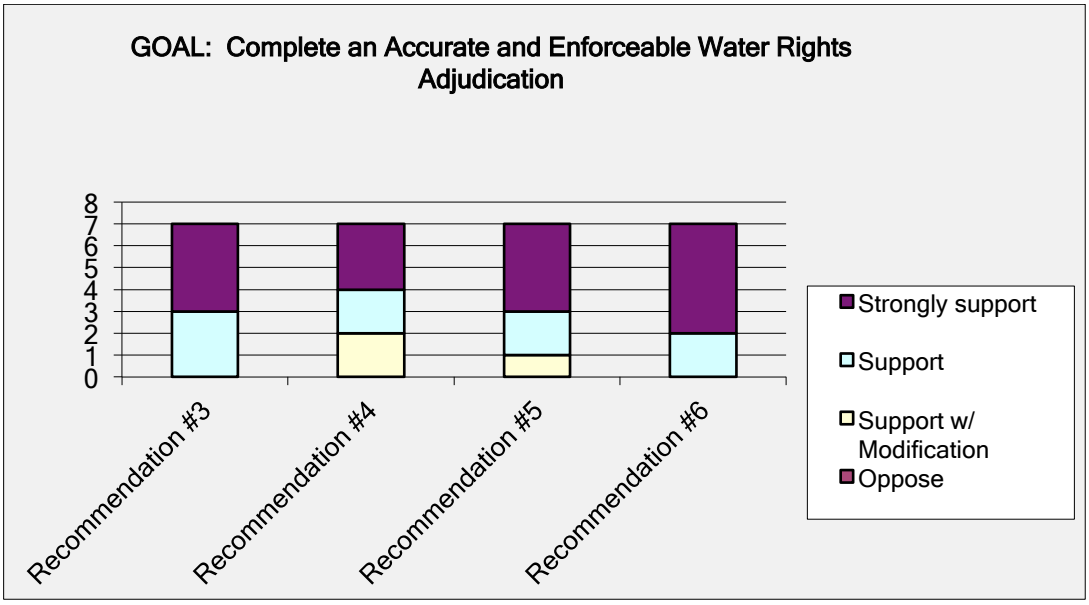
3. The public recognizes the value and outcomes of the d process, and is engaged through informative public education.

   RECOMMENDATION 6: Continue public education and outreach efforts that inform on progress and outcomes of the adjudication.

4. The Confederated Salish and Kootenai Tribe water compact is successfully endorsed and passed during the 2015 Legislative session (**See issue L).**

Public Comment

All respondents supported all recommendations for this issue. Their written comments focused on enforcement of water rights, the roles of the Water Court and the District Court, and public education on the significance of the adjudication. The BAC concluded that addressing the recommendations as stated will also address these concerns. It did add recognition of illegal water use to the issue statement.



C. STORAGE

Goal: Increase Water Availability through Storage and Retention

The Issue

With much of the Upper Missouri River Basin closed to new appropriations, many stakeholder groups hope to find options for additional water storage using a variety of methods. This is especially of interest in the Big Hole River watershed. Stakeholders point to a desire to capture high flows earlier and retain them in the basin longer for additional flexibility in the late season and to accommodate expanded demand. Assessment of multi-use on-stream and off-stream storage is of interest, along with exploring storage tools such as natural storage (in beaver ponds, wetlands and floodplains), retrofitting existing reservoirs, snow banking, and the potential for augmenting groundwater recharge through irrigation canals to recharge basins during high runoff. An increase in natural storage capacity is desirable because of its cost effectiveness. Constructed (built) water storage facilities in the basin are working well and capture water during high flows for use during periods of shortage, but some of these facilities might be retrofitted for efficiency and expanded use.

Objectives

1. There is public understanding of the costs and benefits of built and natural storage to increase the flow of water in the basin when it is most needed.

   RECOMMENDATION 7*:* Develop a comprehensive basin-wide study of natural and built storage potential, including consideration of costs, benefits, watershed characteristics and geologic factors; share findings.

   RECOMMENDATION 8: Identify and develop pilot projects to demonstrate and quantify the capacity of natural storage options in smaller watersheds.

   RECOMMENDATION 9: Increase natural storage capacity (wetland, riparian areas, floodplains) on public and private lands in the basin.

2. There is recognition of the public costs and benefits of both built and natural storage options in decision-making and state funding allocations.

   RECOMMENDATION 10: Review guidelines and criteria for state funding programs (Renewable Resource Grant and Loan Program [RRGL] and Reclamation and Development Grants [RDG]) and agency resource management decisions to include both built and natural storage opportunities.

   RECOMMENDATION 11: Create a position for a State Water Storage Coordinator to work with stakeholders to investigate ideal locations for off-stream storage, natural storage, retrofitting existing facilities for increased storage, and integrating built and natural storage planning.

3. Existing storage facilities (built) are retrofitted, where feasible, to increase storage capacity and uses.

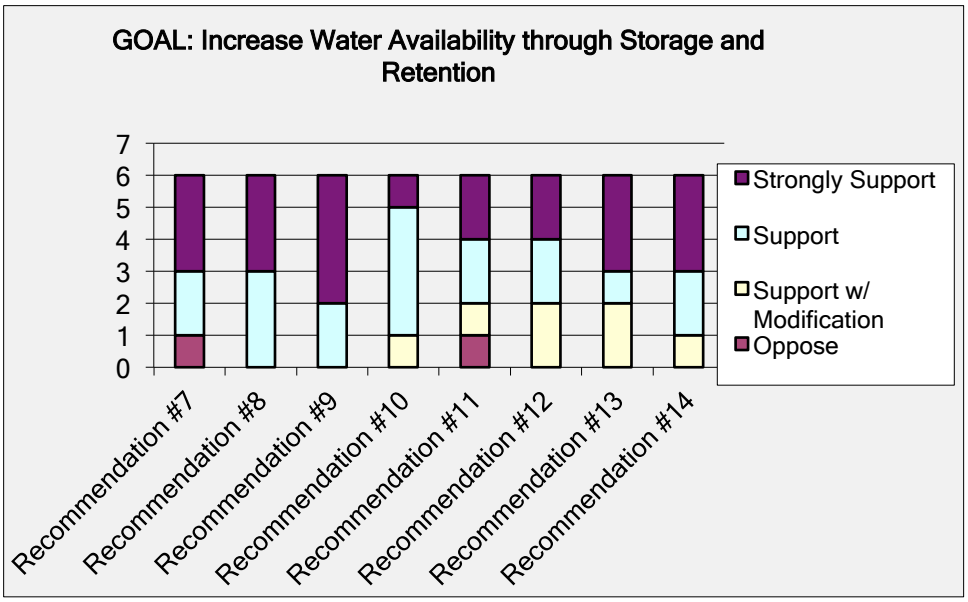
   RECOMMENDATION 12: Identify potential for existing facilities to provide additional municipal supply, streamflow supplementation, hydropower generation and other benefits. Allocate hydropower revenues from these facilities to the reservoir management account for future water storage rehabilitation or construction projects (e.g.; Ruby Dam). For federal storage projects, there is Congressional approval to this effect.

   RECOMMENDATION 13*:* View hydropower retrofits as both an investment in renewable energy and as a source of rehabilitation and construction funding for existing and future projects. Encourage the federal government to relax the Federal Energy Regulatory Commission requirements on smaller, in place storage facilities retrofitted for hydropower generation to make them more economical.

   RECOMMENDATION 14: Consider multiple benefits, including ecological health, in all new basin water storage and management decisions (e.g., reservoir re-operation). (Example: reservoir re-operation to increase storage for offstream use AND increase releases during critical low-flow periods.)

   RECOMMENDATION: **(See Issue D)**

<u>Public Comment</u>
All respondents supported all recommendations for this issue, except for those who question the implications of some recommendations to expand built storage, and one who was opposed to Recommendation 11 unless is was clear that the new coordinator will focus on helping improve municipal and agricultural efficiencies. The BAC recognizes that addition built storage is an option that would take immense planning to accomplish, and only in places where the benefits outweigh the costs. The exploration of natural storage and increased efficiencies is also well-addressed recommendations; therefore, no changes were made in this section.


GOAL: Increase Water Availability through Storage and Retention
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Recommendation #7
Recommendation #8
Recommendation #9
Recommendation #10
Recommendation #11
Recommendation #12
Recommendation #13
Recommendation #14
Strongly Support
Support
Support w/ Modification
Oppose

D. INSTREAM FLOW

Goal: Maintain and Enhance Instream Flow

The Issue

Instream flow pertains to streamflow in rivers and streams used non-consumptively for fish and wildlife, channel maintenance, habitat conservation, recreation, and hydropower. Maintenance of instream flows is a significant issue in the Upper Missouri, especially on tributaries where fish spawn and rear, and on mainstems where native cottonwood forests fail to reproduce. Despite the legal tools available for protecting and restoring streamflows, there are still situations in the Upper Missouri where streamflows are insufficient at critical times. There is a broad recognition that streams and rivers in the Upper Missouri Basin are already heavily utilized for many purposes, yet future water management should strive, when possible, for streamflow conditions that maintain or restore the desired ecological functions and processes, typically but not always, similar to those exhibited in their natural state.

Objective

1. More tools are available to protect or enhance instream flows within the prior appropriation framework.

   RECOMMENDATION 15: Expand statutory authority for the instream flow fishery change use process to include permanent and temporary exchanges and beneficial uses for other species and ecological benefits.

   RECOMMENDATION 16: Create sub-watershed plans that identify where, when, and to what degree flows are insufficient to support healthy ecosystems, and include plans for restoring and protecting streamflows to more efficiently meet the needs of all water users.

   RECOMMENDATION 17: Consider earmarked user fees to recreational users to generate revenue to support instream flows leases, water conservation, stream restoration and watershed health by FWP in critical stream reaches, and then seek Legislative approval of new Montana Fish, Wildlife and Parks (FWP) license fees and a process for setting them.

   RECOMMENDATION 18: Assure that public funding for water development and infrastructure (e.g., RRGL) prioritizes projects that enhance instream flows where needed.

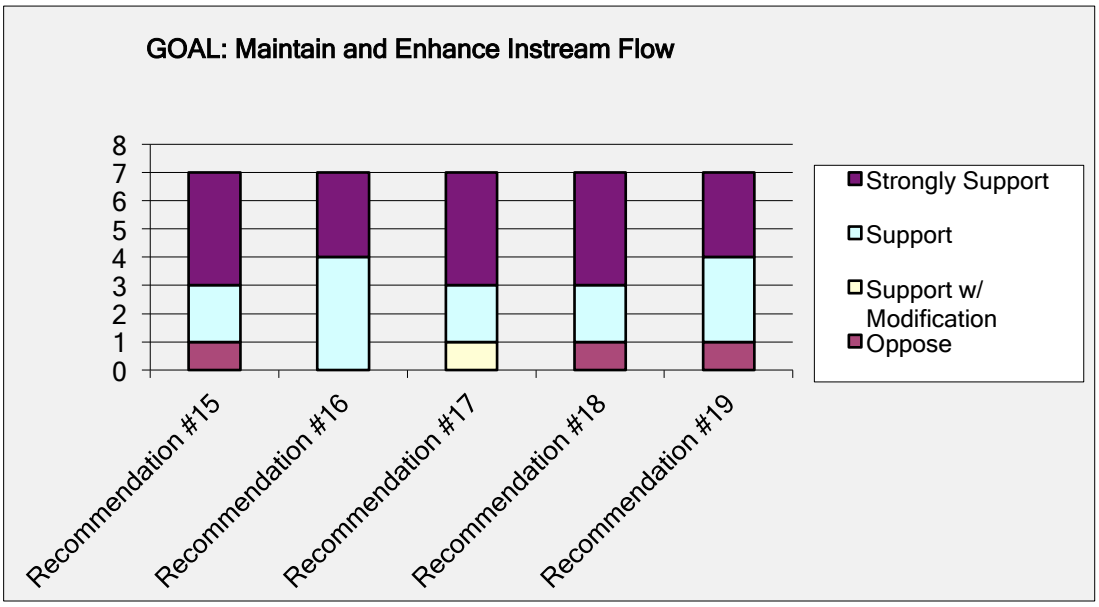
2. Instream flows preserve ecological functions and natural processes.

   RECOMMENDATION 19: Determine the frequency, magnitude, timing, and duration of high (flushing) flows needed to maintain healthy rivers and streams across the basin. Use this information to prioritize water transactions and ensure that new storage (including groundwater) schemes protect these values. Likewise, determine the location, timing, and quantity of instream flow needed to respond to drought conditions.

RECOMMENDATION: **(see Issue C)**

Public Comment

Respondents supported these recommendations except for one who opposed Recommendations 15, 18, and 19 with no reasons presented. The BAC made no changes to this section except for the addition of the word "flushing" in Recommendation 19.



E. LOCAL COOPERATIVE EFFORTS

Goal: Expand General Support for Conservation Districts, Local Watershed Groups and Water Quality Districts

The Issue

Community-based, local watershed groups, water quality and conservation districts, and other informal cooperative efforts are vital connections between water resource agencies and knowledgeable stakeholders. These groups bring diverse water users together to identify, design and implement water management solutions that address local and statewide goals. The Upper Missouri basin has many community-based watershed groups, Conservation Districts and local Water Quality Districts poised to solve local issues, monitor resources and educate the public. There has been significant reliance on these groups to coordinate grants to implement water quantity and quality projects. Budgets have been reduced and general funding for these groups has been extremely difficult to sustain. State and federal funding is often directly tied to projects rather than to operational expenses to retain staff, coordinate projects and maintain community involvement. Local groups rely on a variety of funding sources (grants, donations, project dollars and local mil levies), but overall financial support is limited and often not sustainable. Long-term solutions can best be developed collaboratively through strong partnerships between the local watershed communities that offer on-the-ground feedback and assessment, and the responsible statewide agencies that can offer technical and financial assistance to do so.

Objective

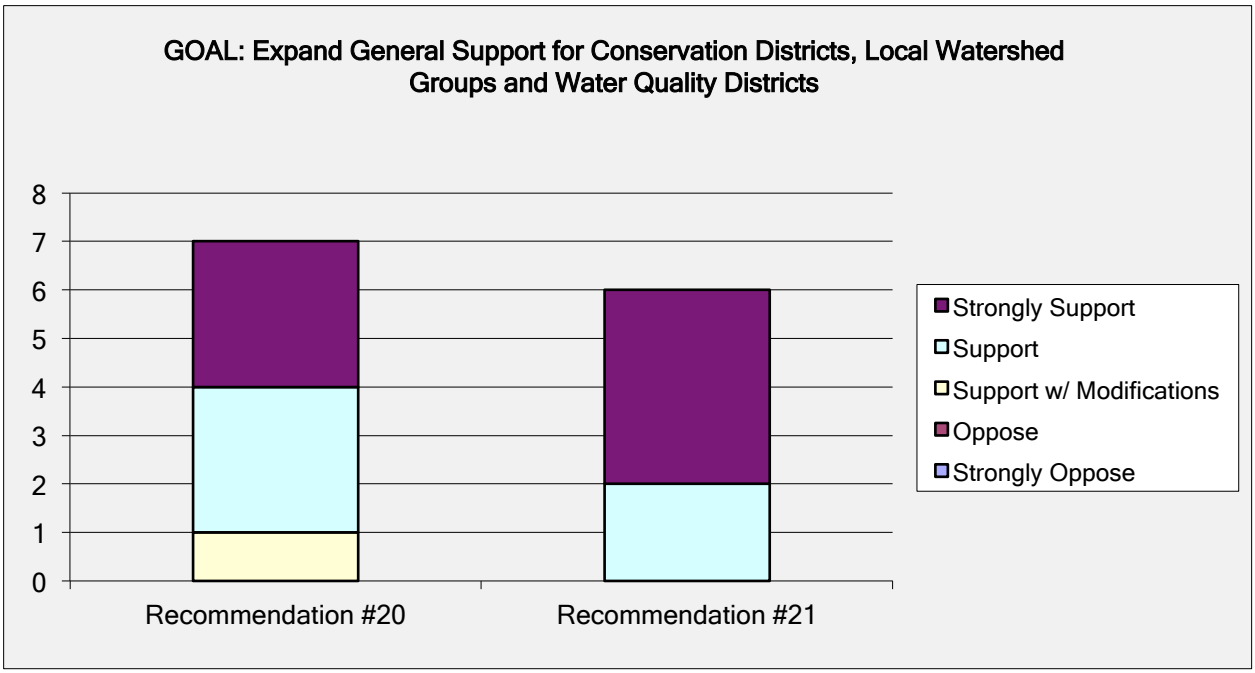
1. There is recognition of on-the-ground water-issue expertise and awareness that local water and land management groups offer; agencies support and make use of this local expertise.

   RECOMMENDATION 20*:* Create a dedicated and sustainable source of funds for both the operational and technical (e.g.; data collection) support of local watershed groups and districts to respond to issues with local expertise.

   RECOMMENDATION 21: Develop an information exchange for sharing data and ideas among local management groups. Also, assure regular communication between local groups and agencies to help identify watershed improvement priorities.

Public Comment

All respondents supported all recommendations in this section. The BAC made two changes to this section to clarify meaning, adding the word “diverse” in the issue statement, and clarifying language in Recommendation 21.


GOAL: Expand General Support for Conservation Districts, Local Watershed Groups and Water Quality Districts
8
7
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Recommendation #20
Recommendation #21
Strongly Support
Support
Support w/ Modifications
Oppose
Strongly Oppose

F. WATER USE EFFICIENCY AND CONSERVATION

Goal: Improve Water Use Efficiency and Conservation

The Issue

With limited supplies, water use efficiency is playing a bigger role in the Upper Missouri Basin, especially in ranching and municipal operations. Many irrigators are converting their fields from flood to sprinkler irrigation systems to decrease labor costs and to improve crop yields. People recognize that these changes in irrigation practices can affect the hydrologic regime and return flow rates. From a flow management perspective, it might make sense to continue flood irrigation practices in some areas, such as headwaters, and convert to sprinkler irrigation in others. Where a particular irrigation system type is most beneficial to the producer will vary depending on local geology and soil type, economics, infiltration return rates, source (groundwater versus surface water), competing uses and time of year. In the end, economic considerations probably will compel most producers to continue to change flood irrigation systems to sprinkler systems. Although improving water efficiency and conservation is important and probably necessary for many ranches to stay economically viable, it also leads to questions about the cumulative impacts of these irrigation system changes on the timing of return flows, depletions, and the legal uses of any associated "saved" water. In municipalities with limited water rights for expanding populations, efficiency measures and storage potentials are the subject of intensive analyses.

Objectives

1. Water use efficiency improvements are in place. There is recognition that certain irrigation methods can have return flow benefits, and that irrigation methods have trade-offs among all water users.

   RECOMMENDATION 22: Support irrigation improvements at the local level (flood to sprinkler, conveyance system upgrades) where it makes economic and hydrologic sense; Identify opportunities to offset or mitigate impacts of sprinkler conversion systems on return flow, and create and fund mechanisms for capturing water (aquifer recharge, constructed wetlands) to offset the impacts of sprinkler conversions.

   RECOMMENDATION 23: Develop a local groundwater assessment for each sub-basin that characterizes geology, infiltration rates and groundwater availability; to compliment these studies, create a basin-wide Council or group that can recommend when efficiency projects are best to implement with public funding (e.g., locations where pivots or canal lining make sense and others where groundwater storage from flood irrigation is desirable).

   RECOMMENDATION 24: Assess banking, leasing and mitigation opportunities to offset water saved through efficiencies for recharge and other uses, without expanding the consumptive or historic use portion of a water right.

2. Municipal water systems promote and employ water conservation measures wherever feasible.

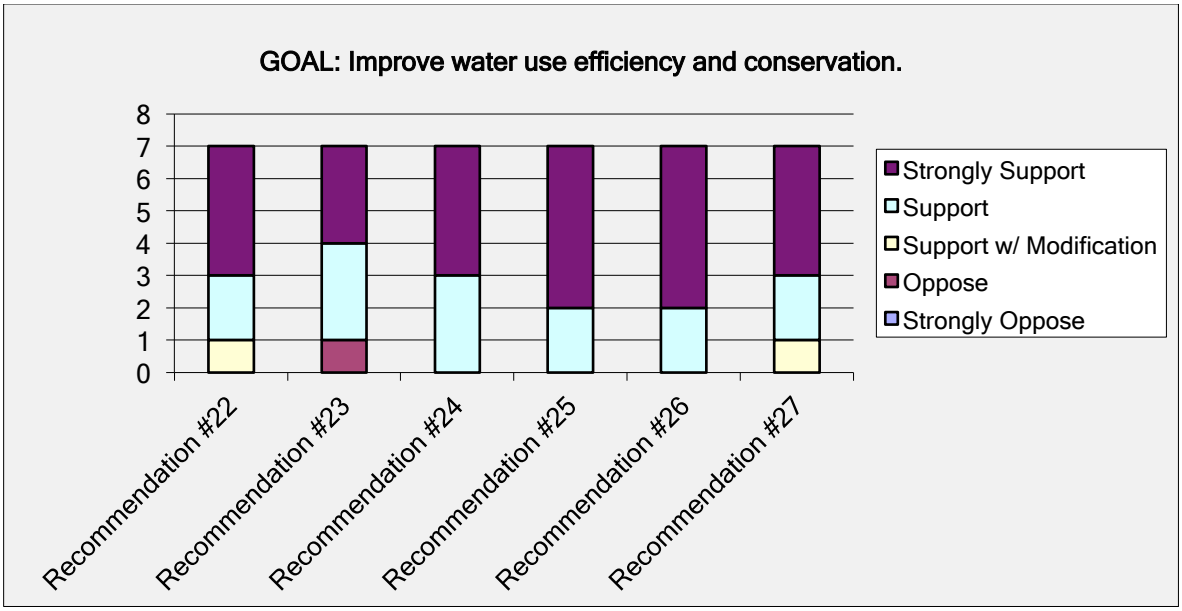
   RECOMMENDATION 25: Implement incentivized conservation programs in high-density municipal areas.

   RECOMMENDATION 26: Assess the legal aspects of wastewater reuse

3. There is public awareness of the effects of water use efficiencies and mitigation measures on local basin hydrology.

   RECOMMENDATION 27: Create a public awareness program, delivered by Conservation Districts, Water Quality Districts, municipalities and watershed groups that describes the benefits and consequences of sprinkler and flood irrigation systems, municipal water conservation measures, and other water efficiency-related topics[2].

<u>Public Comment</u>
All respondents supported all recommendations in this section, except for one who felt that Recommendation #23 would be a staff and time sink. The BAC responds that this kind of effort is critical for setting priorities for improving efficiencies. No changes were made to this section.



[2] Note Colorado SB 14-023 Water Efficiency Savings Bill as one example

G. INTEGRATED WATER QUALITY AND QUANTITY

Goal: Advance Integrated Water Quantity and Quality Management

The Issue

The direct relationship between water quality and quantity in a basin with little available water underscores the importance of their integrated management. Any improvement in water quality requires deliberate attention to nonpoint source pollution, including naturally occurring, which is the cause of the majority of water quality problems in the Upper Missouri Basin. Low streamflows can be a major trigger of water quality concerns as problems intensify when pollutants like nutrients, metals, pathogens, and salinity concentrations are present at low flows. Warm water temperature is also a major water quality and fisheries concern associated with low flows. The biggest challenge to controlling non-point source pollution is the fact that much of its mitigation lies in voluntary, informed action by individuals who contribute to collective results.

Objective

1. Systems are in place to integrally manage water quality and water quantify

   RECOMMENDATION 28: To assist in local, voluntary efforts and improved understanding of instream flow needs, define "low flow alteration" in the DEQ's and FWP's assessment methodologies.

   RECOMMENDATION 29: Expand on current efforts to develop a multi-stakeholder campaign that increases public awareness of non-point source mitigation activities and opportunities.

   RECOMMENDATION 30: Support a program that allows entities needing to meet discharge requirements to purchase a credit from upstream users who deliver clean water downstream.

   RECOMMENDATION 31: Recognize impacts of dense septic system development on water quality, and create incentives and programs for improved performance. (Also see Recommendation 1)

   RECOMMENDATION 32: Recognize the role of healthy municipal watersheds in the reduction of potable water supply treatment costs.

   RECOMMENDATION 33: Create a Strategic Nutrient Reduction Plan for the Upper Missouri basin that assists local governments, Conservation Districts, watershed groups, and local Water Quality Districts to take a deeper role in nutrient-related issues in their watersheds, including septic management in high-density areas.

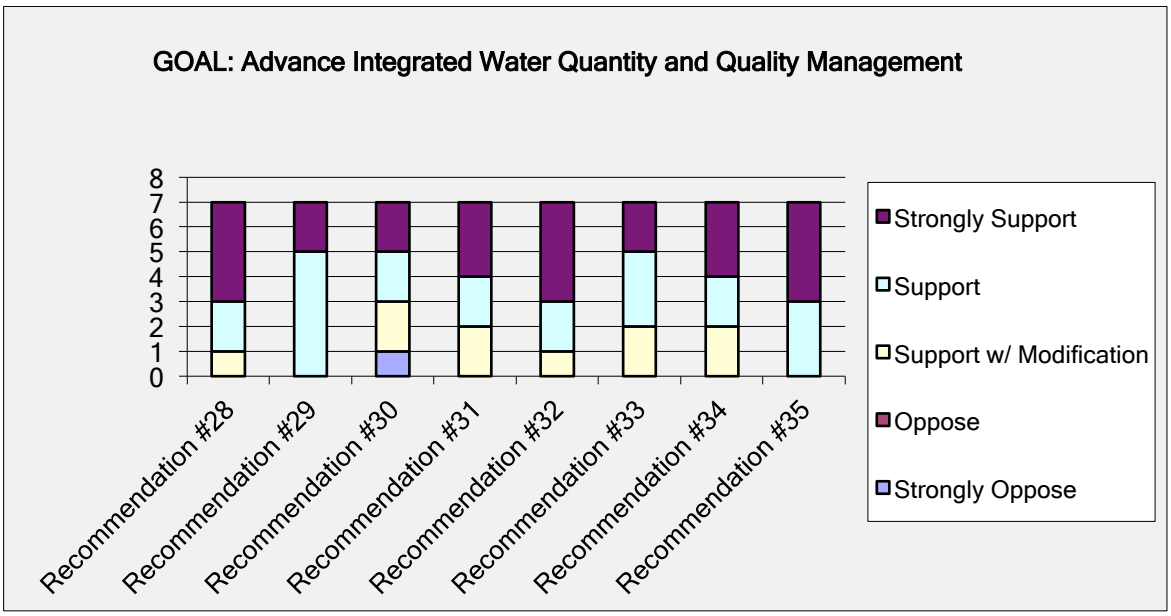
   RECOMMENDATION 34: For each sub-basin in the Upper Missouri, create a baseline

groundwater study that also recognizes the water quality/quantity interface.

RECOMMENDATION 35: Develop a legal analysis of water re-use from a water rights perspective; identify how municipalities might approach water re-use or discharge choices, given recent changes in water quality standards.

Public Comment

All respondents supported all recommendations of this section except for one who strongly opposed Recommendation 30, which recommended a nutrient trading program. The BAC agreed with parts of this comment and modified the recommendation to embrace the concept, but temper the recommendation. The BAC also tightened the language in Recommendations 28, 31, and 33.



H. WATER'S ROLE IN THE ECONOMY

Goal: Recognize the Role of Water in Montana's Growing Economy

The Issue

Even though most of the Upper Missouri Basin is sparsely populated, its urban and industrial centers generate a robust economy and compliment Montana's rich agricultural and outdoor recreation traditions. The Upper Missouri Basin has 31% of Montana's population, nearly 23 % of Montana's land area, almost half of Montana's irrigated agricultural lands (more than 1,000,000 acres), and accounts for 46% of all fishing in the state. Current estimates put the population in the basin at about 313,000, and somewhere between 365,000 and 415,400 by 2035, creating new pressures on housing, water infrastructure and fire control. Water availability, water conveyance, water conservation, and the value of water during rapid development have received immediate attention in response. Many miles of water conveyance infrastructure so important to agriculture have a shared value in providing habitat and a healthy watershed. Besides the value associated with water diverted for agricultural and other uses, maintaining streamflows to protect habitat, offer recreational opportunities, support robust tourism, and generate energy is as important. Given that population growth is inevitable in the basin, careful attention is needed to assure sustainable economic development while protecting senior users and instream resources. Accelerated change in land and water use, and the need to better manage those changes, are drivers of this issue.

Objectives

1. The Prior Appropriation Doctrine and current water uses and conveyances are protected and recognized as supporting the economy.

   RECOMMENDATION: **(see Issue B)**

2. There are incentives and protections to efficiently use and conserve water, and to allow for transfer to other uses while protecting senior users.

   RECOMMENDATION: **(see Issue F)**

3. Municipal water supplies and infrastructure are managed to accommodate economic development and population growth.

   RECOMMENDATION 36: Survey municipal water supply infrastructure and secure funding to repair and update inefficient systems to support additional growth.

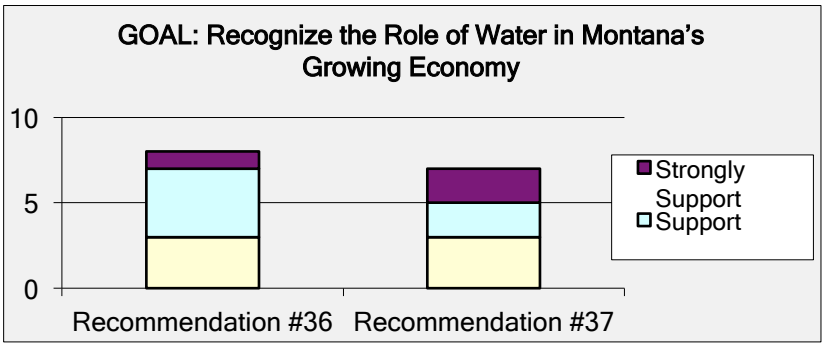
4. Water is available for economic development through well-managed systems that offer opportunities to: a) Market, transfer and lease water including stored water **(see Issue K)***;* and b) utilize water reservations **(see Issue L)**

5. There is a broad recognition that clean water and healthy watersheds support a healthy economy and expanded tourism.

   RECOMMENDATION 37: Provide comprehensive tools to support water conservation, while maintaining and enhancing resources for current and future use, job creation and sustainable economic development. This includes providing water for uses such as irrigation and industrial applications, as well as recreation and tourism. In a region that has a diverse economy, the ability to provide and maintain clean, usable water is critical to all.

Public Comment

All respondents supported all recommendations in this section. One respondent recommended adding the maintenance of water conveyance systems as a key need, and the BAC agreed. This is reflected in the issue statement and the first objective statement.



I. WATER INFORMATION SYSTEMS

Goal: Increase Scope of and Access to Centralized Water Data

The Issue

Rapid response to water problems—flood, drought, dewatering, nutrient overload, pollutant spikes—is impossible without reliable and accessible data. Currently, response to water problems relies on an incomplete data system. Water data collection in the Upper Missouri Basin is the responsibility of several federal, state and local agencies that monitor streamflow, snowpack, well levels, temperature trends, habitat composition and water quality. This is all good, but there are two prominent issues. First, water data collection is varied and highly dispersed among several groups, making access to data complex, time consuming and decentralized. In addition, and probably a bigger issue, is the difficulty of accurately describing local water availability where there are not enough real-time data or monitoring sites.

Objectives

1. Surface water, groundwater and snow data collected by all state, federal, local and private entities are accessible from one portal managed by the State Library Natural Resource Information System (NRIS) Water Data System.

   RECOMMENDATION 38: Assure consistent funding for long-term, full-time NRIS Water Data System staffing needed to centralize, populate, create and maintain a user-friendly navigation tool for the water data access system.

   RECOMMENDATION 39*:* Assure that the Water Data System benefits from data generated and contributed by many state and federal agencies and local groups; collaborate with the Western States Water Council to build a data access system that is compatible with the Water Data Exchange for western states.

   RECOMMENDATION 40: Create a geo-referenced database of the adjudicated places of use and points of diversion that is available through the statewide Water Data System; the geo-referenced database can be used to estimate water uses and to obtain information on water rights during change, transfer or decree administration processes.

   RECOMMENDATION 41: Update an online training tool to help local watershed groups, districts, and the public access information cataloged by NRIS.

2. New stream gages, monitoring wells and snow monitoring sites are installed and managed, and hydrologic monitoring techniques are employed, to characterize hydrologic conditions in areas of special interest and collaboration in the Upper Missouri Basin.

   RECOMMENDATION 42*:* Create agency and local partnerships to prioritize study sites, finance data collection, and make information readily available for problem solving.

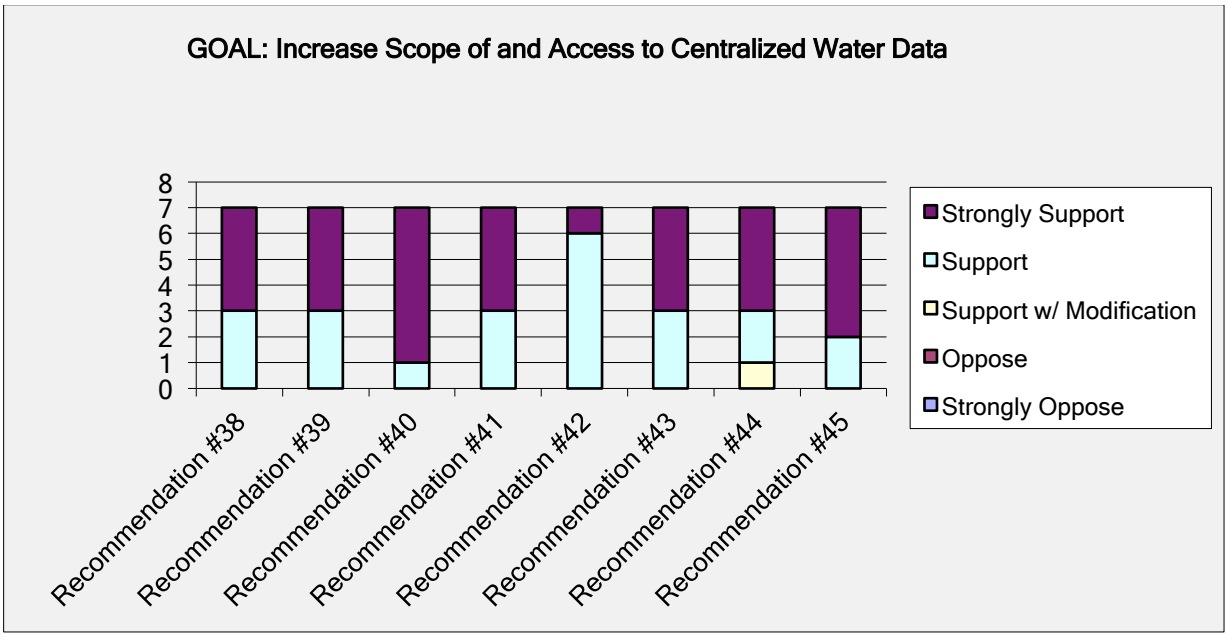
RECOMMENDATION 43: Train and fund local volunteer water-monitoring teams, and improve access to data collected.

RECOMMENDATION 44: Maintain the state's contribution to the vital U. S. Geological Survey (USGS) gauging program and establish a state real-time streamflow monitoring network, to complement the vital USGS system, to include additional sites and locations on smaller streams.

RECOMMENDATION 45: Use more cost-effective hydrologic modeling techniques to estimate streamflow data for ungauged sites.

Public Comment

All respondents supported all recommendations in this section. One comment asked for recognition of the groundwater collection that is already undertaken by the GWIC database. To address this, the BAC clarified in Objective 1 that groundwater, surface water and snow data collected by many agencies should be referenced in the portal.



J. AVAILABLE WATER SUPPLY AND CLIMATE CHANGE

Goal: Protect Available Water Supply and Develop Strategies in Response to Climate Changes

The Issue

Climate change and shifting weather patterns affect the amount and distribution of precipitation, and whether that precipitation occurs as rain or snow. As a result, streamflow is likely to change in the Upper Missouri basin in amount, timing and distribution. Climate changes also affect the rate of evaporation and plant water use by both natural vegetation and irrigated crops. Shifts in seasonal flow and water availability are resulting in earlier spring runoff and lower late season flow. In response, water users are learning to adapt to changes in streamflow, growing season and irrigation demand. Although fire on the land often benefits native fish, and therefore the economy, prolonged drought and increased incidence and intensity of forest fires are other changes affecting water users. Ultimately, management agencies and stakeholders will need to adapt to these shifts in their land- and water-use practices and in their decisions to protect water supplies.

Objectives

1. Adaptive management strategies are in place that respond to shifts in growing seasons and streamflow.

   RECOMMENDATION 46: Investigate adaptive management strategies for existing reservoirs and water distribution infrastructures.

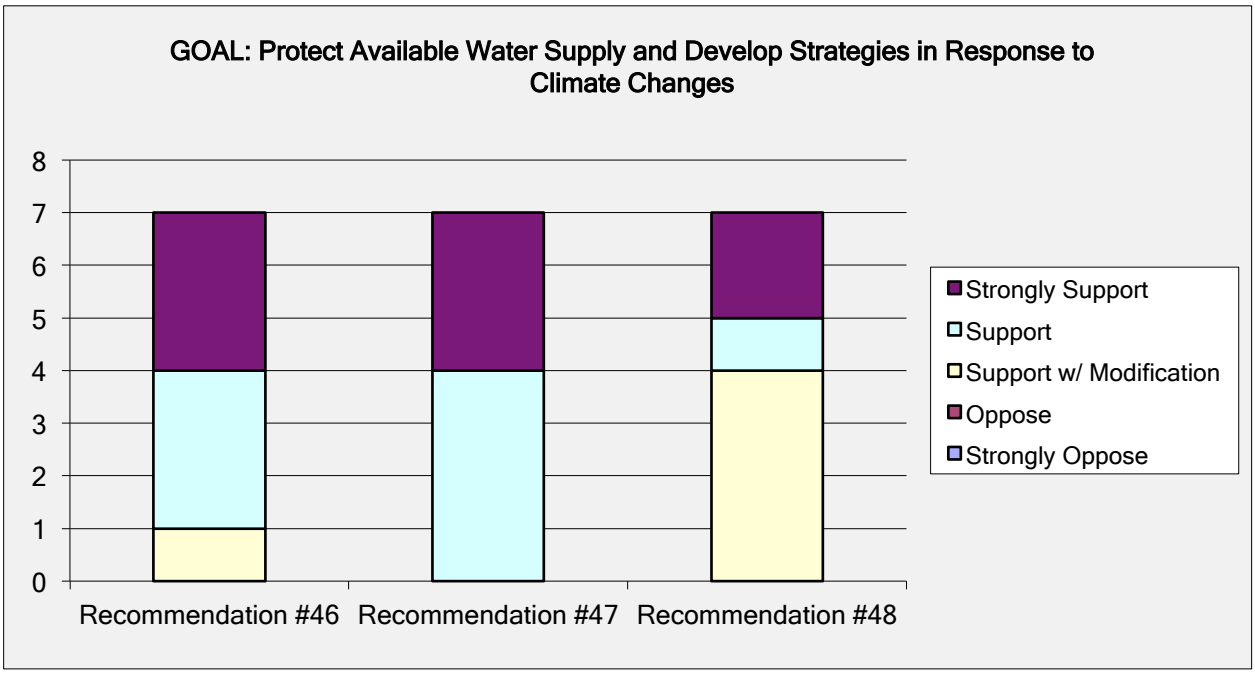
   RECOMMENDATION 47: Review period of use specified on water rights and how we manage those during drought.

2. Forests and rangelands are managed to protect cost-effective natural storage potential and watershed health (optimal forest density, wetlands integrity, reduced soil erosion, etc.); these measure have a direct impact on water quality.

   RECOMMENDATION 48: Implement forest thinning and prescribed burns in areas where high forest stand density has resulted in high risk of wildfire. Work to develop and implement prioritized restoration, soils protection and/or runoff management plans in degraded forestlands and sub-watersheds in the urban/forest interface. In addition to prescribed burn, use mechanical forest thinning to create conditions for allowing the reintroduction of fire.

Public Comment

All respondents supported all recommendations in this section. The BAC made no changes.



K. WATER TRANSFERS AND MARKETING

Goal: Analyze the Scope of Water as a Transferable Property by Exploring Additional Opportunities for Water Marketing, Mitigations and Banking

The Issue

Most western water allocation regimes evolved during periods of relative abundance and are not well suited to the management of water scarcity. Montana can lead the world in its innovative approaches to address scarcity. Right now, there are both unique opportunities for and concerns about water transfers and the need to plan for more water transactions. Water marketing, mitigation and water banking each offer distinct functions and opportunities, and understanding their nuances is the first step for water users in the Upper Missouri Basin. The potential for water marketing (the sale of water or the water right by the owner) is high in the Upper Missouri, especially in a closed basin where the value of water increases with new water demands. Mitigation requires reallocation of surface water or groundwater through a change in appropriation right. It is designed to offset adverse affects resulting from net depletion of surface water that is not legally available. A new "marketing for mitigation" process opens the door in Montana for water banking. It allows for facilitated marketing and a way to determine the amount of water available for mitigation within a water right. The process is in its infancy and only two applications have been made in Montana to date. There are questions about the scope of water banking–the facilitated sale of developed water for another use–and its role in the brokering of conserved water. These issues and opportunities for water marketing, mitigation and banking deserve intensive research and application in the next decade.

Objective

1. Water marketing tools are effectively used as an option to assure fair and effective basin-wide water use.

RECOMMENDATION 49: Create well-managed systems that offer opportunities to market, transfer and lease water including stored water; explore changes to existing water laws.

RECOMMENDATION 50: Build public awareness and understanding of water marketing opportunities.

RECOMMENDATION 51: Create an easily navigable webpage managed by DNRC listing known available water in the market and opportunities for marketing for mitigation

RECOMMENDATION 52: Explore use of water banks to mitigate for exempt wells.

RECOMMENDATION 53: Encourage DNRC (lessee) to work with the Bureau of Reclamation (lessor) to assign blocks of stored contract water to the state from Canyon Ferry and Tiber Reservoirs, which can be marketed incrementally through a user-friendly system; advertise this opportunity to water users.

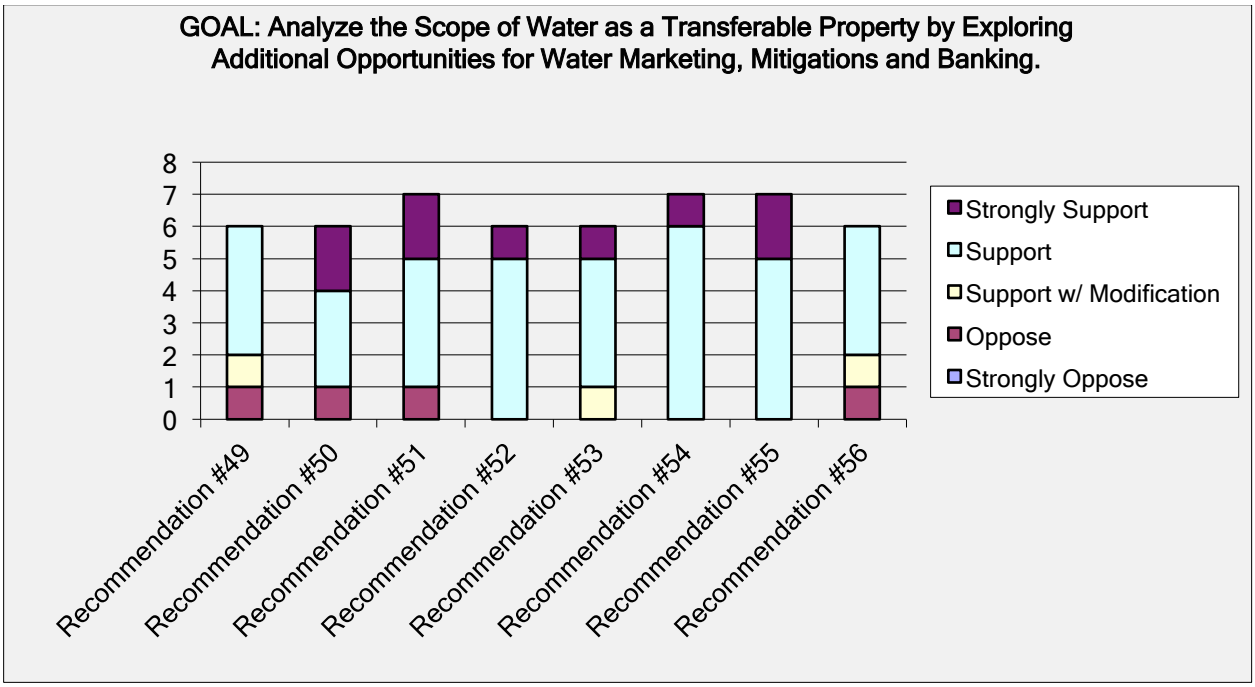
RECOMMENDATION 54: Continue to develop tools or tables to quickly estimate return flows (or conversely, consumptive water use) under different crop, soil, climate, and irrigation conditions. This will reduce the time needed to assess each water transaction.

RECOMMENDATION 55: Encourage water leasing with arrangements that incentivize and reward water savings and protect the full extent of the lessor's water right.

RECOMMENDATION 56: Create or support a Water Bank to facilitate temporary and permanent water transfers for both diversionary and instream uses.

Public Comment

All respondents supported all recommendations in this section except for one respondent who opposed Recommendations 49, 50 51 and 56 with an assessment that marketing would over-value water such that other used would be forgotten/dropped. The BAC responded that systems are already in place to test water marketing and that those systems protect existing uses. No changes were made to this section except in Recommendation 50 to build an understanding of water marketing options.



L. LARGE SCALE FACTORS

Goal: Assess Selected Large-Scale Factors

The Issue

Certain large-scale factors like quantification of the Confederated Salish and Kootenai Tribal (CSKT) reserved water rights through the proposed water rights compact with the state, perfection of state water reservations, implications of the Endangered Species Act, and downstream demands of the federal managed mainstem dams, could impact future water availability in the Upper Missouri Basin. The CSKT Compact is the one remaining compact to be negotiated by the Reserved Water Rights Compact Commission before it sunsets in 2015. With claims to 1855 and "time immemorial" priority dates stemming from the Treaty of Hellgate, the Tribes possess strong claims to water throughout much of Montana. Under the proposed compact, the Tribes have agreed to relinquish all claims to water in the Upper Missouri River basin and elsewhere east of the continental divide. In addition, state water reservations for current and future municipal, agricultural, instream and water quality uses are located throughout the basin. Some are being used, and some are available to be put to use in the future. Uncertainty surrounds still others, such as many Conservation District reservations, regarding whether they will ever be able to be developed. These reservations secure water for both consumptive and non-consumptive purposes. Many water users and others are unaware of the legal status of the reservations but they are certainly a consideration for water management in the Upper Missouri basin.

Objective

1. Large federal, state and tribal water rights are quantified and interpreted such that their impacts to water users are clearly recorded and recognized.

   RECOMMENDATION 57: Endorse resolution and successful passage of the proposed CSKT compact during the 2015 Legislative session to assure prompt continuation of the basin adjudication and protection of Upper Missouri Basin water users from Tribal instream flow claims.

   RECOMMENDATION 58: Promote local proactive involvement in Endangered Species Act listed species protection and recovery programs, and build an understanding on how these programs affect water availability. Promote collaborative and proactive efforts, such as the Big Hole Candidate Conservation Agreement with Assurances (CCAA) habitat conservation plan, that improve streamflows while protecting participants' water rights.

   RECOMMENDATION 59: Determine how changes in downstream needs for navigation and flood control, as outlined in the U.S. Army Corps of Engineers' Master Manual for Fort Peck, affect water management in the Upper Missouri Basin.

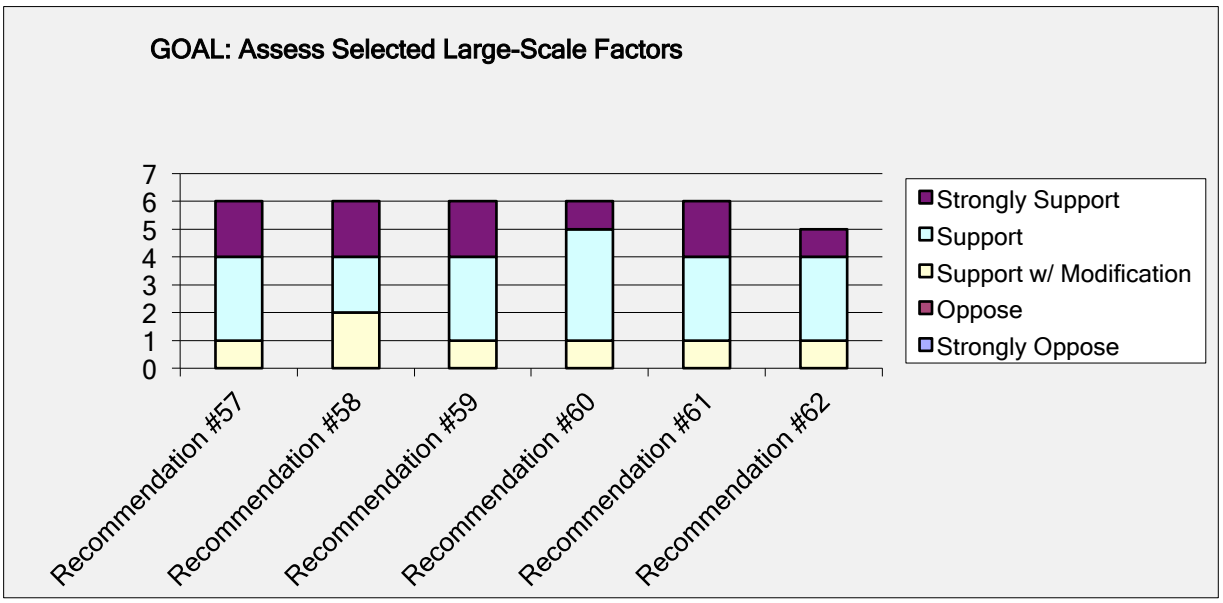
   RECOMMENDATION 60: Provide information to owners of water reservations and to water managers/users regarding the legal status of reservations.

RECOMMENDATION 61: Continue support for the DNRC/U.S. Department of Agriculture Forest Service Compact designed to protect streamflows (Note: The Compact does not have an adverse effect on senior water rights, but does help to protect senior users from future exploitation).

2. Effective aquatic invasive species prevention and education in place.

   RECOMMENDATION 62: Support agency coordination efforts to implement aquatic invasive species programs.

<u>Public Comment</u>
All respondents supported all recommendations in this section. The BAC made no changes to this section.



APPENDIX A. Agendas: Upper Missouri Basin Advisory Council Phase 2 and Phase 3 meetings.

Montana Water Supply Initiative
Upper Missouri Basin Advisory Council Meeting

January 10, 2014
10:00-3:00 pm
Fish Wildlife and Parks MT Wild Center
2668 Broadwater Ave Helena, MT (406) 444-9944

10:00 Welcome, Introductions, review agenda (Chairman Beck)
10:15 Process overview and updates, (Tim Davis, DNRC Water Resources Division Administrator)
10:30 Review of Existing State Water Plan Sections (BAC and RAC members)

- Agricultural Water Use Efficiency
- Instream Flow Protection
- Water Information System
- Water Storage
- Drought Management
- Integrated Water quality and quantity management
- Montana Groundwater Plan

12:00 Working Lunch on site
12:30 Technical Presentations: Overview of Managed Storage Projects in the Basin

- Federally owned/managed (Lenny Duberstein, Bureau of Reclamation)
- State Owned projects (Matt Norberg , DNRC)
- Locally managed projects
    - Greenfield, Pondera Canal, Buyan, Lima and Willow Creek projects

2:30 Upcoming meetings, topics, process, planning ahead
3:00 Public Comment

Upper Missouri Basin Advisory Council Work Meeting

February 27-28, 2014

FWP MT Wild Center
2668 Broadwater Ave, Helena, MT 59602
(406) 444-9944

Thursday 2/27/2014
9:00 Welcome, Introductions and Updates (Chairman Beck)

9:15 ***Conjunctive Management of Groundwater and Surface Water***
(Issue: Better Understand and Manage Surface and Groundwater Interaction)

- GWIP-Groundwater Investigation Program and case scenarios
  (John Lafave and Ginette Abdo)
- Roles and Responsibilities of Local Water Quality Districts (Tammy Crone & Jim Wilbur 15 min)

10:30 Break

10:45 Conjunctive Management continued

- Policy Panel (Mark & Mike 45 min)
  Discussion on history and evolution of conjunctive management policies in MT

11:30 Conjunctive Management Discussion and Draft Recommendations

12:30 Working lunch on site

1:00 ***Water Information System***
(Issue: Increase Amount, Centralization, Diversity, and Access to Water Data)

- USGS Stream Gauging, Wayne Berkas
- MT water information, NRIS, Troy Blandford
- Snotel, Brian Domonkos
- GWIC , John Lafave

2:15 Water Information Systems discussion and Draft Recommendations

3:15 Process review (Chairman Beck)

3:45 ***Local Cooperative Efforts***
(Issue: Promote Local Cooperative Efforts)

- Example of effective local efforts, Big Hole CCAA (Mike Roberts)
- Overview of CDs and Watersheds in the basin (Ann & Gayla)

4:15 Discussion of Local Cooperative Efforts and Draft Recommendations

5:00 Adjourn for the evening

Friday 2/28/2014

8:00 Recap of Thursday work, check-in

8:15 ***Economics of Water***
(Issue: Recognize Water's Role in the Future of State and the Economy)

- Growth projections for the basin (Tim Bryggman)
- Water use Sector Panel discussion (45 min)
  Qualitative value of water and the economy for the different use sectors (Sarah & Joe)
- Municipalities and economic development (Craig)

9:30 Break

9:45 Policy/Legal/Historic Perspective on the Change Process.
Panel discussion (Scott/Holly/Stan)

11:00 Economics Discussion and Draft Recommendations

12:00 Working lunch

12:30 ***Adjudication***
(Issue: Accelerate Water Rights Adjudication Process and Enforce)

- Overview of the Adjudication process and status in the basin (Matt Murphy, DNRC)
- MT Water Court (Judge Russ McElyea)

1:45 Adjudication Discussion and Draft Recommendations

2:45 Wrap Up, next meeting details

3:00 **Adjourn**

Upper Missouri Basin Advisory Council Work Meeting

March 27-28, 2014

Healing Waters Lodge, 270 Tuke Lane, Twin Bridges, MT, 406-684-5960

Thursday 3/27/2014

9:30 **Welcome and Introductions**

9:45-12:00 **Discuss and Revise Draft Recommendations on these Issues* (see handout):**

A. Conjunctive Surface Water/Groundwater Management (Issue #2)
B. Water's Role in the Economy (Issue #3)
C. Local Cooperative Efforts (Issue #5)
D. Water Information Systems (Issue #6)
E. Adjudication (Issue #12)

1:00-3:00 **Continued Recommendation Refinement, then**
Discuss Strategy for Remaining Topics, Process and Timeline:

F. Storage, *presented today and tomorrow* (Issues #1, #13)
G. Available Water Supply, *presented today and tomorrow* (Issue #9)
H. Instream Flow (Issue #4)
I. Water Use Efficiency and Conservation (Issues #7, #8, #15)
J. Water Transfers and Marketing (Issue #10)
K. Large Scale Factors (Issue #11)
L. Integrated Water Quality and Quantity (Issue #14)

3:00-5:00 **Available Water Supply**, Larry Dolan, DNRC hydrologist

5:00 **Break**

6:00 **Dinner**

7:00 **Natural Infrastructure for Water,** Todd Gartner, Senior Associate, World Resources Institute (WRI)

Friday 3/28/2014

8:00-12:00 **Storage: Floodplains, Wetlands, Forests and Integrating Natural Infrastructure**

- Lynda Saul, MT DEQ Wetlands Program Manager
- Bruce Sims, USDA Forest Service Regional
- Todd Gartner, WRI

Review of Storage Projects in Montana (summary from January meeting)

- Larry Dolan, DNRC hydrologist

Noon **Working lunch**

12:30-3:00 **Draft Recommendations for Storage Issue**

3:00 **Head Home**

* The issues have been reorganized; the issue numbers in parentheses ink to the original numbering as presented in the scoping report.

Upper Missouri Basin Advisory Council Work Meeting

April 24-25, 2014

Stage Stop Inn, 1005 Main Ave. North, Choteau, MT 57422, (406) 466-5900

Thursday 4/24/2014

9:30 **Welcome and Introductions**

9:45-12:00 **Review and discussion of draft recommendations to date**

- Conjunctive SW/GW Management
- Water's Role in the Economy
- Supporting Local Efforts
- Water Information Systems
- Adjudication
- Built Storage and Natural Storage
- Available Water Supply

12:30-3:00 ***Issue*: *Large Scale Factors***

(Endangered Species, Water Reservations, Compacts. Discussion and draft recommendations)

- Melissa Hornbein (RWRCC, tribal and federal compacts)
- Scott Irvin (DNRC, water reservations)

3:15-5:00 ***Issue: Instream Flow*** *(Discussion and draft recommendations)*

- Review of instream flow reservations, leases, Murphy rights
- Ecological needs

Friday 4/25/2014

8:00-10:00 ***Issue: Integrating Water Quality and Quantity*** *(Discussion and draft recommendations)*

- Ann McCauley, DEQ
- Kitt Dale, MT Mining Association

10:15-12:00 ***Issue: Water Use Efficiency and Conservation***

- Joe Little, NRCS
- Larry Dolan, DNRC

12:00 **Lunch, then continued discussion and recommendation development on Efficiency**

1:30-3:30 ***Issue: Water Marketing and transfers*** *(Discussion and draft recommendations)*

- Kerri and Bryan, DNRC

3:30 **Head Home**

AGENDA

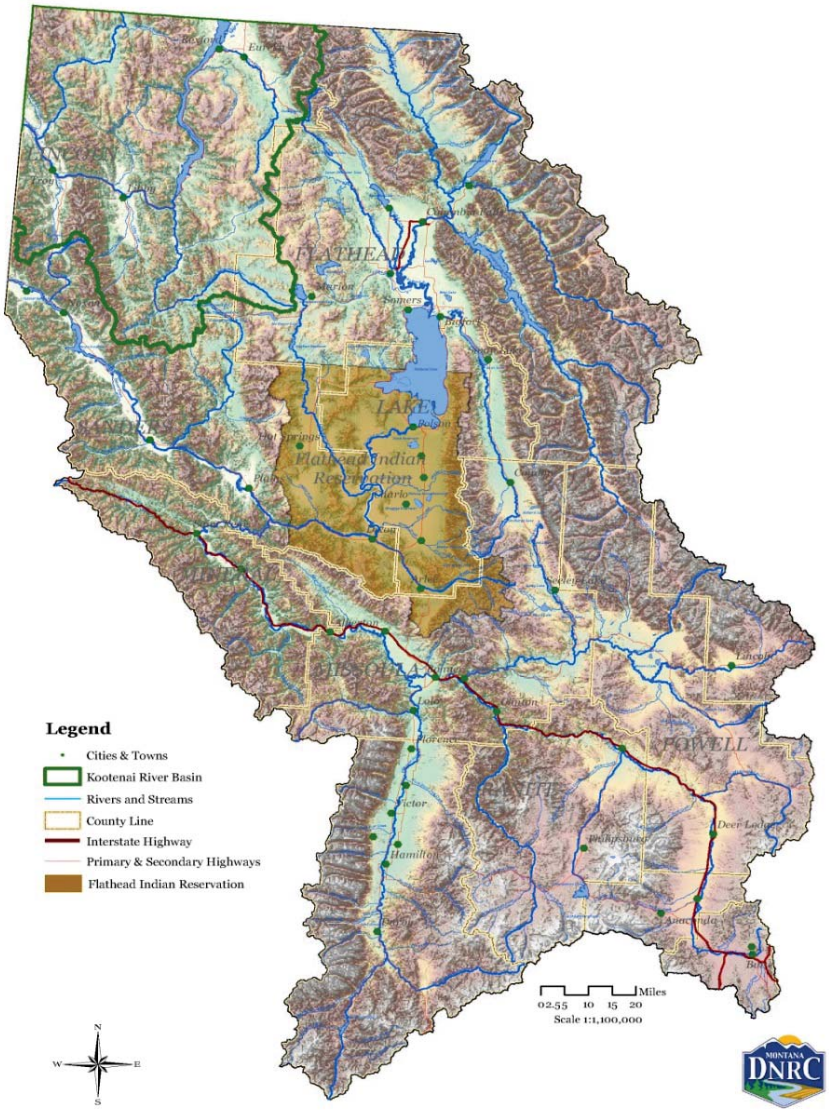
Upper Missouri Basin Advisory Council
Thursday, May 15, 2014
10:00 am - 3:00 pm
Wingate Hotel, 2007 N. Oakes, Helena, MT (Cedar St. Exit from I-15)

10:00 am	WELCOME AND INTRODUCTIONS
10:15 am	PROCESS NOTES • Public Comment Meeting Schedule **Wednesday May 21**, Dillon, UM Western, 6:30-8:30 pm, ballroom **Thursday May 22**, Gallatin CD Office, Manhattan, 6:30-8:30 pm **Wednesday May 28**, Shelby, location and time TB **Thursday May 29**, Great Falls Cascade CD conference room (bank building basement) • Modifications Process from Public Commentary • Final Report
10:30 pm	DRAFT RECOMMENDATIONS *Review of comments; modify language of 5/6/14 draft*
12:30 pm	Lunch
1:00 pm	ORDER OF RECOMMENDATIONS
1:30 pm	KEY SUMMARY POINTS
2:30 pm	OTHER NOTES OF INTEREST, CONCERN, SUGGESTION & APPROVAL OF DRAFT RECOMMENDATIONS
3:00 pm	ADJOURN

Clark Fork River Basin Task Force

Montana Water Supply Initiative
Clark Fork and Kootenai River Basins

RECOMMENDATIONS DEVELOPMENT REPORT



Prepared by the University of Montana
Center for Natural Resources & Environmental Policy

June, 2014

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I. Introduction

The Clark Fork River Basin Task Force is currently working with the Montana Department of Natural Resources and Conservation (DNRC) to update and revise the State Water Plan. The process is composed of three "phases," including public scoping, information transfer, and development of recommendations.

This report describes the process the Task Force went through to develop recommendations to address water management issues facing the Clark Fork and Kootenai River Basins, and includes the list of agreed-upon recommendations. The recommendations will become the central element of the Clark Fork and Kootenai River Basins Plan. Recommendations with statewide implications will join those from the Upper and Lower Missouri and Yellowstone River Basins to form the State Water Plan.

The recommendations in this report represent the beginning of an iterative planning process to manage water more effectively in the Clark Fork and Kooteani River Basins. Due to time and resource constraints the Task Force would like to emphasize that these recommendations have not been perfected. Going forward, the recommendations will continue to evolve and be improved based on feedback from the public and policy makers regarding needs, management implications, and implementation requirements.

The Task Force suggests that the recommendations be reviewed and potentially revised, based on legislative action, between July 1 and December 31, 2015. Following an initial review, the Task Force suggests reviewing and revising the recommendations in five-year intervals.

Background

In 2013, under direction from the Montana Legislature, the DNRC launched the Montana Water Supply Initiative (MWSI) to work with citizens and community leaders to transform the current Montana State Water Plan into a dynamic guide to help residents and water managers in the state's major river basins: the Clark Fork and Kootenai, Yellowstone, Upper Missouri, and Lower Missouri.

The DNRC organized Basin Advisory Councils (BACs) representing a broad range of interests and organizations in each of the four basins to develop strategies and

recommendations that address the needs and priorities of each basin. In the Clark Fork and Kootenai River Basins, the Task Force was chosen to serve as the advisory council. Appendix A lists Task Force members. The Task Force was created by the Montana Legislature in 2001 for the purpose of developing the original *Clark Fork River Basin Water Management Plan*.[1] Since 2001, the Task Force has collaborated to work on solutions for many of the most complex, challenging water issues in the Clark Fork River Basin, and has diligently taken the task of updating the 2004 water plan for the 2015 MWSI.

II. Process of Developing Recommendations

a. MWSI Phase One: Public Scoping and Engagement

To kick off the MWSI water planning process, the Task Force and DNRC engaged the public to "scope" the major water management issues in the Clark Fork and Kootenai River Basins between October and December 2013. The citizen input helped the Task Force to identify and prioritize a variety of water management issues. The University of Montana Center for Natural Resources & Environmental Policy (CNREP) was contracted to facilitate the public engagement process. Citizen input was gathered through two efforts:

- Public meetings were held in Anaconda, Deer Lodge, Hamilton, Kalispell, Libby, and Missoula, and attended by 169 participants. Meeting locations were chosen based on input from the Task Force and DNRC. All meetings were publicized through local newspaper ads, radio spots, various listservs, an online video, and word-of-mouth.

Scoping Meetings in the Clark Fork and Kootenai Basins (2013)		
Location	**Date**	**Public Attendance**
Missoula – UM Campus	Oct. 15	41
Hamilton – City Hall	Oct. 17	30
Anaconda – Fairmont Hot Springs	Oct. 24	13
Kalispell – Best Western	Oct. 29	38
Libby Dam Visitors Center	Oct. 30	21
Deer Lodge – Powell County Community Center	Nov. 13	26
	Total	**169**

[1] Clark Fork River Basin Task Force. *Clark Fork River Basin Water Management Plan* (2004). Available at: http://dnrc.mt.gov/wrd/water_mgmt/clarkforkbasin_taskforce/water_mgmt_plan.asp

- A public survey was completed by 57 individuals from 17 different zip codes across Western Montana.

In sum, participants engaged in the public scoping efforts identified 308 individual water management issues and concerns in the Clark Fork and Kootenai River basins. Staff from CNREP organized the 308 issues into 21 issue categories, including categories such as "gauges and monitoring" and "water rights enforcement." In order to develop a realistic scope of work, the Task Force deliberated and discussed the 21 issue categories and themes from the scoping efforts, built off the public's input, and prioritized issues to address with recommendations in the next phases of the MWSI. The Task Force selected the following categories:

- **Meeting Future Water Demand**, which includes future growth and development (industrial, municipal, and agricultural), water storage, and groundwater wells
- **Ensuring Natural Systems Health**, which includes fisheries, instream flow, riparian areas, and water quality
- **Maintaining Water Availability**, which includes water conservation and efficiency and drought readiness
- **Water Rights Administration and Protection**, which includes the water rights change process, water rights enforcement, water allocation, and adjudication

In January 2014, the Task Force and DNRC began work to frame each of the issues in a way that better explained the issue rationale and reasoning. Based on the initial framing of each issue, the Task Force was able to start developing options and alternatives for water planning strategies and recommendations. The next two sections of this report describe the process the Task Force used to move from the four broad issues to specific goals, objectives, and recommendations.

b. MWSI Phase Two: Information Transfer Process

The Task Force held monthly meetings between September 2013 and May 2014. Beginning in November 2013, members transferred information and knowledge among each other and from outside experts. The group chose each expert speaker deliberately in order to improve and invigorate the Task Force's existing body of knowledge and directly address issues the Task Force was struggling to resolve. The Task Force membership represents a significant body of water management, conservation, law, and science expertise, so the group also benefitted from strong meeting attendance and

vigorous discussion. Below is a summary of the information transfer process, including meeting dates, times, attendance, and information presented.

November 2013

- *Meeting Date and Time:* November 6th, 2013; 10:00 AM-3:00 PM
- *Meeting Attendance:* Twenty-eight Task Force members, DNRC conveners, members of the public, and facilitation team members were present.
- *Summary of Information Presented:*

Task Force member Stan Bradshaw discussed the framework of Montana's water rights change process. Topics covered included "water rights 101" and an explanation of the detailed procedures involved in a water rights change (both historically and since 2012, when the DRNC began calculating historical consumptive use for the applicant).

Task Force member JR Iman discussed formation of the Painted Rocks Water Users Association in the larger context of historic water management struggles and success in the Bitterroot subbasin. JR explained that local interests must tackle local issues if they want to be effective. He also suggested that water management will continue to change in the future and – as they have done in the past - water managers will continue to improve upon their management strategies.

December 2013

- *Meeting Date and Time:* December 4th, 2013; 10:00 AM-3:30 PM
- *Meeting Attendance:* Thirty Task Force members, DNRC conveners, members of the public, and facilitation team members were present.
- *Summary of Information Presented:*

Task Force member Mary Price presented on the topic of the "Proposed Water Rights Compact between the State of Montana, the Confederated Salish and Kootenai Tribes and the United States." Mary's presentation focused on the Flathead System Compact Water, which is one component of the CSKT Compact, and involves the portion of the CSKT water right that the Tribes may withdraw from the Flathead River or Flathead Lake, which includes 90,000 acre feet per year stored in Hungry Horse Reservoir.

January 2014

- *Meeting Date and Time:* January 8th, 2014; 9:00 AM-5:00 PM

- *Meeting Attendance:* Twenty-seven Task Force members, DNRC conveners, members of the public, and facilitators were present.
- *Summary of Information Presented:*

Aaron Fiaschetti presented on the topic of "Provisional Numbers for Water Supply and Demand in the Clark Fork and Kootenai Basins." Aaron discussed groundwater, water storage, water demand, irrigation consumption, and non-consumptive use across Western Montana.

February 2014

- *Meeting Date and Time:* February 12, 2014; 9:00 AM – 5:00 PM
- *Meeting Attendance:* Twenty-four Task Force members, DNRC conveners, members of the public, and facilitators were present.
- *Summary of Information Presented:*

A working group charged with reviewing the status of recommendations developed as part of the 2004 Clark Fork Water Management Plan presented their findings to the group. Led by Holly Franz, the Task Force discussed each recommendation made in 2004, the status and recent developments for each recommendation, and any thoughts as to whether or not the recommendations should be carried forward as part of the updated plan. Many of the Task Force's 2004 recommendations had been implemented.

John Wheaton, from the Montana Bureau of Mines and Geology (MBMG) Ground Water Investigation Program (GWIP), presented an "Overview of Past, Current, and Discussion of Possible Future MBMG research in the Clark Fork." John explained GWIP's project identification process, research focus areas, and prospects for future research.

Andrew Larson, Forest Ecologist with the University of Montana Department of Forest Management, presented on "Forest Canopy Effects on Snow Accumulation and Ablation." While discussing recent findings and future research prospects, Andrew explained that mean winter temperatures in the Clark Fork and Kootenai River Basins suggest that high forest density may not result in greater snow retention. In some cases, lower forest density will result in greater snow retention.

March 2014

- *Meeting Date and Time:* March 12, 2014; 9:00 AM – 5:00 PM

- *Meeting Attendance:* Twenty-four Task Force members, DNRC conveners, members of the public, and facilitators were present.
- *Summary of Information Presented:*

In order to invigorate and better inform the Natural Systems Health-focused discussions (one of the four primary issues), Bruce Sims, U.S. Forest Service Northern Region Hydrologist, discussed "The Role of Wetland, Riparian, and Floodplain Water Storage in Montana's Water Supply Initiative." The presentation was co-authored by Lynda Saul (Montana Department of Environmental Quality).

In order to inform and help guide the Administering/Protecting Water Rights discussions (one of the four primary issues), Holly Franz led an interactive discussion with Task Force members focused on water rights enforcement mechanisms, water commissioner operations, and Montana's water rights legal framework.

c. MWSI Phase Three: Recommendations Development Process

The Task Force began to work towards developing recommendations in January 2014. To initiate this effort, the DNRC provided a framework for writing recommendations intended to ensure consistency across the Clark Fork and Kootenai, Lower Missouri, Upper Missouri, and Yellowstone River Basins. According to the framework, an "issue statement" explains the importance and rationale of the issue. Following the issue statement, several goals and objectives specify the purpose and best possible outcome of the recommendations. Recommendations are then suggested for each objective. Implementation tasks, or specific steps needed to carry out the recommendations, add a final layer of specificity to certain recommendations.

Developing Issue Statements

The Task Force divided their efforts into four working groups at the January 2014 Task Force meeting to draft and refine issue statements for the four primary issues (*Meeting Future Demand, Ensuring Natural Systems Health, Maintaining Water Availability, and Water Rights Administration and Protection).* After drafting the statements, the entire Task Force reviewed each issue statement and suggested changes. Task Force members continually revised and improved the issue statements between January and April 2014.

Developing Alternatives

The following process was used to develop alternatives for water management planning:

January 2014: The same working groups that developed issue statements met via conference call to develop goals and options, or *alternatives*, to address each issue statement. The options were viewed as strategies that could be used to address the goal. For example, in order to address the goal of improving water rights enforcement, one suggestion, or *alternative,* was that DNRC should improve the training offered to water commissioners.

February 2014: Working groups met during and between Task Force meetings to draft goals and brainstorm objectives for each of the four issues. During the February Task Force meeting, members also agreed on a list of evaluation criteria, or criteria used to screen recommendations. The criteria are below.

- *Is it [the recommendation] specific?*
- *Is it technically feasible?*
- *Is it politically feasible (with the governor's likely support)?*
- *Is it financially feasible?*
- *Is there public support?*
- *Are there likely willing partners (for implementation)?*
- *Is it actionable?*
- *Does the pertinent agency have the authority to implement?*
- *Does the pertinent agency have buy in?*
- *Is it in accordance with the MT Constitution?*
- *Is it in accordance with statutory & administrative law?*
- *Is it in accordance with case law?*

March 2014: Task Force members finished drafting and refining issue statements, goals, and objectives, and began to draft recommendations. In order to better develop the recommendations, members chose a five-person team of "point people" to represent each of the four issue-based working groups. The team put in a tremendous amount of work to draft recommendations and refine documents containing issue statements, goals, and objectives.

April 2014: As a plenary The Task Force evaluated and screened all drafted recommendations, along with the goals, objectives, and issue statements. In addition to evaluating recommendations for each of the four issues, a proposal for continued funding of the Task Force was included as a fifth issue. The product of the April meeting was therefore a set of preliminary, draft issue statements, goals, objectives, and

recommendations. The Task Force was able to reach preliminary agreement via consensus on roughly 80% of the draft recommendations. However, several recommendations represented "areas of disagreement," and were therefore discussed in more depth at the May meeting discussion

Gathering Public Input

The Task Force and DNRC hosted a public review and comment period between April 28 and May 16, 2014. The Task Force decided at the March 2014 meeting to gather public input via a two-part approach. First, participants decided to schedule a series of informal public discussions. Task Force members volunteered to "host" the public discussions in their communities, and took responsibility for scheduling the meetings and advertising the meetings to their networks. DNRC and CNREP staff assisted with advertising, including press releases, flyers, and legal notices.

Second, the Task Force asked the DNRC to develop an online survey to distribute widely to the public. DNRC staff developed the survey in SurveyMonkey, and prepared a "portal" for each of the five issues. The survey yielded thirteen online survey responses. In addition, the Task Force received three public comment letters, including one official letter from the Montana Department of Fish, Wildlife and Parks.

A summary of the public meeting location, dates, and attendance is below.

Public Discussion Sessions in the Clark Fork and Kootenai Basins (2014)		
Location	**Date**	**Public Attendance**
Missoula – Holiday Inn Downtown	April 30	3
Kalispell – Flathead Conservation District	May 1	2
Hamilton – City Hall	May 1	13
Libby – Venture Inn Hotel	May 5	9
Deer Lodge – Powell County Community Center	May 7	30
Deer Lodge – Elks Lodge	May 7	5
	Total	**62**

Refining and Reaching Agreement on Recommendations

May 2014: At the meeting held May 29, in order to refine and reach agreement on the draft recommendations, Task Force members:

(1) Refined the issue statements, goals, objectives and recommendations based on public input;

(2) Revisited areas of disagreement from the April meeting;
(3) Discussed specific implementation steps for certain recommendations;
(4) Prioritized recommendations within each of the five issues; and,
(5) Reached agreement on recommendations from each of the five issues.

Members used the following "test for consensus" to arrive at agreement for each of the five issue areas (and therefore all of the goals, objectives, and recommendations falling within the issue area):

1- Wholeheartedly agree
2- Good idea
3- Supportive
4- Reservations – would like to talk
5- Serious concerns – must talk
6- Cannot participate in the decision – must block it

If all participants fell between one and three, members reached consensus. During the discussions to "test for consensus" for the Water Availability issue one Task Force member was at level five. He believed a "who" (*who* needed to complete each item) and "when" (*when* the recommendation should be completed) needed to be added to each recommendation. However, after discussion with other members the member agreed that he could "live with" the package of recommendations.

During the tests for consensus a majority of members were "supportive" of the final product (level three), most likely due to the lack of time to fully develop and perfect the recommendations. Based on the discussion, all members present agreed that a statement specifying the iterative nature of the process – this is the beginning, not the culmination – must be included in the Recommendations Report. This language is now included on page one of this report.

At the May meeting, the Task Force also chose two representatives, Maureen Connor and Marc Spratt, to represent the Clark Fork and Kootenai River Basins during the process to "roll up" the basin plans into the State Water Plan, which will take place in Helena on July 22 and 23, 2014.

The final recommendations Task Force members reached agreement on will become part of the Clark Fork and Kootenai River subbasin plan, and recommendations with statewide implications may become part of the 2015 State Water Plan. The DNRC will host a formal public review process in fall 2014 once the State Water Plan is drafted.

d. Key Issues Limiting Implementation of the Plan *(Identified at the May 2014 Clark Fork Task Force Meeting)*

Implementation of many recommendations developed by the Task Force hinges on an understanding of the legal availability of water. Absent a full picture of water availability in the basins, many of these recommendations will be difficult or impossible to implement. Therefore, the Task Force recommends:

(1) Completion of basin-wide adjudication for the Clark Fork and Kootenai River Basins, and,

(2) Settlement of the Confederated Salish and Kootenai Tribes' (CSKT) water rights through the Montana reserved water rights compacting process.

III. Final Recommendations

Montana Water Supply Initiative – Clark Fork and Kootenai River Basins
Basin Issues & Recommendations

1.0 Issue: Maintaining Water Availability

1.1 Statement of the Issue:

Occurrence of water in the Clark Fork and Kootenai Basins is limited by climatic conditions, precipitation, and snowpack. Water availability varies among years and dramatically between seasons of a given year. Recent data suggest changing trends in water availability, with earlier onset of spring snowmelt and runoff.

Montanans use water for many purposes. Whether used for commercial, conservation, domestic, flood control, industrial, irrigation, power generation, or recreation purposes, water availability can be increased or decreased by the associated method of diversion, amount of consumption, and timing. These influences will continue to affect water availability into the future. It is also important to be mindful that changing how the water is used in the future could result in associated changes in water availability.

Looking ahead, we must focus on finding innovative strategies to use water more wisely and educate water users about their role in conservation. Water regulations and

management should be modified to recognize the limited nature of the resource. With proper regulatory and physical measures in place, we can maintain water availability for existing uses and help accommodate future growth.

1.2 **Goal:** Implement measures that improve the ways in which we manage and conserve water resources.

1.2.1 **Objective:** Encourage existing programs that implement and support conservation measures from all types of water users at the watershed, subbasin and basin levels.

1.2.2 **Recommendations:**

1.2.2.1 Implement water conservation incentives within three years that are adaptable to the needs of individual watersheds. These incentives should focus on encouraging programs such as irrigation efficiency, water banking, drought management plans, etc.

1.2.2.2 Ensure that water regulations clarify that water users participating in water conservation measures will not be penalized.

a. For example, DNRC could investigate the existing options to avoid abandonment by evaluating code section 85-2-404, "Abandonment of appropriation right" subsection 3 and develop provisions that insulate water right holders who participate in voluntary drought response efforts from the risks of water right abandonment.

1.2.2.3 The State should collaborate with other agencies, local entities and non-governmental organizations (NGOs) to establish additional, shared resources for coordinated education and outreach that encourages water conservation and efficiencies, along with a portal to disseminate those education resources.

1.2.2.4 Identify, protect, maintain, and restore constructed and natural storage features that can maintain and improve seasonal water availability.

1.2.2.5 Identify potential options for new constructed storage, evaluate the conditions, and, where appropriate, develop new storage.

a. In the short-term, DNRC, as part of the 2015 State Water Plan, should develop a summary of actions taken and accomplishments made under the Water Storage Policy Act of 1999 (85-1-701 through 704), including:

i. Accomplishments made using the state water storage development fund and well as other funding sources used to complete those projects;

ii. A summary list of priority water projects identified in bi-annual reports from 1999 to 2014 and delineate those project completed and those projects still pending and their ranking in priority (the bi-annual report and as required by 85-1-704 (1)(a));

iii. An evaluation of the potential of the Act to facilitate the protection or restoration of natural recharge functions; and,

iv. Recommendations to improve the Act.

1.2.2.6 The State should maintain a strong voice or role in how flows are maintained from federal dams in Montana.

1.2.3 **Objective:** Montana should be fully represented and engaged in trans-boundary water management planning efforts that affect federal dam operations in the state.

1.2.4 **Recommendations:**

1.2.4.1 Montana should ensure that federal dams are managed in a way that protects state water interests through continuous engagement in the Northwest Power Planning Council and other forums. In Western Montana, this includes operation of Libby and Hungry Horse Reservoirs.

1.2.4.2 Montana should ensure that re-negotiation of the Columbia Basin Treaty with Canada protects state interests.

1.2.4.3 DNRC should ensure that state residents and water interest are continuously informed on trans-boundary or regional water management efforts, and that stakeholder groups such as the Flathead Basin Commission and Task Force have opportunities to provide input on these processes.

1.3 **Goal:** Better understand surface and ground water resources and the potential for future natural and human changes to those resources.

1.3.1 **Objective:** The State of Montana, in coordination with local and federal agencies, should continue to participate in, improve and expand efforts to gather the best scientific information available to better understand physical water availability.

1.3.2 **Recommendations:**

1.3.2.1 State agencies, universities and others should identify and pursue research needed to develop new water management and conservation options, including but not limited to:

- Gray water use options;
- Return flows;

- Stream depletion zones / groundwater-surface water connections; and,
- Cost-benefit analysis of both natural and built storage options.

1.3.2.2 The DNRC should determine the accuracy of existing water rights claims to understand actual physical and legal availability. The water court should continue examining water rights to determine existing water rights.

1.3.2.3 State and federal agencies and private entities should collaborate to develop more information and data on consumptive water use.

1.3.2.4 Montana Bureau of Mines and Geology should characterize and assess groundwater resources in the greater Tobacco Valley.

1.3.2.5 Agencies and partners should evaluate proposed water conservation actions, such as converting to sprinkler irrigation or lining ditches, to define benefits and impacts to water supply and existing water uses.

a. DNRC should conduct, facilitate or fund additional subbasin hydrologic studies.

i. Emphasis for studies should be placed on water bodies with dewatering conditions or those with high levels of diversionary water use

ii. Study examples include, but are not limited, to the *"North Fork Blackfoot Hydrology Study"* (March 2001) or *"Flint Creek Return Flow Study"* (December 1997).

iii. Future study reports should include options for water conservation and improved water management with some evaluation of potential benefits and impacts to the water supply system and flow conditions.

1.3.2.6 The state should encourage land management agencies to manage forest vegetation (e.g., prescribed fire, harvesting, etc.) to promote healthy forest conditions and increase physical water availability.

1.3.2.7 The DNRC should implement improved methods of water use measurement for management and enforcement.

a. DNRC should continue its annual water commissioner training but should enhance that activity by:

i. Providing more online materials and resources related to water measurement and control, and

ii. Expanding classes on water measurement and enforcement to a larger audience of water users with priority given to new administration of water rights under a Water Court Enforceable Decree or areas of known water use conflict.

b. DNRC should continue or increase funding for installation of water measurement and water control devices at stream points of diversion.

c. DNRC and the Montana Water Court should host and fund a round table to evaluate, and if warranted, make recommendations for improving the

effectiveness of the state's water commissioner regulations. Invited participants should include water users, Water Commissioners and District Court judges involved in water right enforcement, and legislators from the Environmental Quality Council (EQC) and the Water Policy Interim Committee (WPIC).

1.3.2.8 Support partnerships among federal, state, tribal and local governments, agencies, and organizations to prioritize and fairly pay the costs of installing and maintaining existing and new stream flow gages.

a. Governor's Office and state agencies (DNRC, the Department of Environmental Quality [DEQ] and the Department of Fish, Wildlife and Parks [FWP]) should actively work with Montana's Congressional Delegation to support and increase funding for both the U.S. Geological Survey (USGS) National Stream Gauging Network and the USGS cooperative program for stream gauging.

b. Governor's Office should actively promote state funding for Montana's participation in the USGS cooperative stream gauge program.

c. Governor's Office and state agencies (DNRC, DEQ and FWP) should actively work with Montana's Congressional Delegation to restore and enhance the USDA Natural Resources and Conservation water supply program including support for Snotel and manual snow courses, web based real time data sharing and monthly water supply forecasts and reports.

d. Evaluate the development of a state sponsored and maintained stream gauging network on tributary

streams.

1.3.2.9 Investigate the role of seasonal recharge on groundwater availability.

1.3.2.10 Repeat and update the Montana Water Resources Survey.

a. The Montana Water Resources Survey was collected and published from 1943 through 1965 by the State Engineers Office and from 1966 through 1971 by the Water Conservation Board. Survey data was derived from courthouse records in conjunction with landowners, field investigations and aerial photography, and other data sources.

b. Although the Survey is an excellent resource for various state and federal agencies, water users, and the public, the Survey's age (which many believe is outdated) represents a large data gap. Many water use changes have occurred since the Survey data was collected and published.

1.4 **Goal:** Facilitate collaborative responses to issues of water availability

1.4.1 **Objective:** In recognizing that water availability depends on conditions that vary locally at the watershed level, pursue opportunities to increase interaction among water users and develop collaborative stakeholder approaches to maintaining water availability.

1.4.2 **Recommendations:**

1.4.2.1 Continue to fund the Clark Fork Task Force as a mechanism for water user networking, knowledge sharing, public engagement, and interaction on current water availability issues in the Clark Fork and Kootenai River Basins. Consider

broadening the group's name to be more inclusive of both basins.

1.4.2.2 Provide public forums for water information sharing among scientists, technical experts, communities, landowners, NGOs, policy-makers, and others.

1.4.2.3 Offer funding, capacity-building, and technical assistance mechanisms to support the work of collaborative local watershed groups.

1.4.2.4 Develop better data on the local variability of watershed conditions and provide data at the watershed level to assist communities, agricultural producers, NGOs and others in collaborative planning.

2.0 Issue: Ensuring Natural Systems Health

2.1 Statement of the Issue:

Western Montana's natural water bodies and watersheds and associated biological resources support our recreational opportunities, quality of life and economy. The availability of water in the appropriate quantity, quality, timing and duration is necessary to ensure the health of water-dependent natural systems. Challenges and threats associated with water availability have resulted in natural systems impacts. Population growth, associated development, and increasingly uncertain weather patterns will increase risks to these systems in the future. Proactive policies and management practices which balance natural systems health with other important priorities must be pursued to support the health of these valuable systems.

2.2 **Goal:** Restore and/or maintain surface water flows and groundwater levels needed to protect natural systems health over seasonal and long-term climate cycles.

2.2.1 **Objective:** Establish a more effective partnership between DNRC, DEQ and FWP to proactively identify and address current flow-related

impairments of waterways, and to effectively address associated future threats to these systems.

2.2.2 **Recommendations:**

2.2.2.1 Agencies that designate waterways with flow related impairments and/or chronic or period dewatering should make maps and data on impairments and dewatering accessible through the Montana State Library.

2.2.2.2 The Task Force is proposing that the Montana Legislature direct DNRC, DEQ, FWP and other entities to work together to determine the flows needed to address these impairments and dewatering so as to support beneficial uses and system health, including fisheries health.

2.2.2.3 The Montana Legislature should request that the Water Policy Interim Committee complete a study to proactively identify and report future threats and solutions to natural system health from increased water demands of population growth and development and other environmental changes within the Clark Fork and Kootenai River Basins.

2.2.2.4 The Task Force is proposing that the Montana Legislature direct DNRC, DEQ, FWP and other entities to work together to identify and report adaptive management and mitigation options to avoid/mitigate/adapt to future threats.

2.2.2.5 The Task Force or DNRC should propose legislation to enable the permanent change of an existing water right to instream use, similar to all other beneficial uses.

2.2.3 **Objective:** More effectively manage (i.e., restore and/or maintain) natural storage systems to promote retention and infiltration of surface runoff resulting in beneficial release during low flows.

2.2.4 **Recommendations:**

2.2.4.1 Relevant state agencies should adopt best management practices to promote natural infiltration and preserve natural storage systems.

2.2.4.2 In managing storm runoff, consider natural storage options, or combined natural and artificial storage (e.g. detention and retention basins, wetlands, etc.) options that protect natural system health and store water for later use.

2.2.4.3 Allow use of water development funding for natural storage restoration projects.

2.2.4.4 Relevant state agencies should investigate feasibility and cost effectiveness of using and improving natural storage options like ground water recharge, wetland restoration, headwater ponds/reservoirs, beaver dams, etc.

2.2.4.5 Relevant state agencies should identify obstacles to restoration of natural storage.

2.2.5 **Objective:** Establish a more effective coordination mechanism between DNRC (and appropriate sister agencies) and citizen watershed restoration groups to implement flow restoration projects and programs throughout the basin.

2.2.6 **Recommendations:**

2.2.6.1 The State Water Plan should prioritize coordination among DNRC and watershed groups or other relevant entities carrying out watershed restoration projects with a significant flow-restoration aspect.

2.2.6.2 The State Water Plan should prioritize coordination between the DNRC and the Department of Justice Natural Resource

Damage Program in order to implement the flow restoration projects identified in the Final Upper Clark Fork River Basin Aquatic and Terrestrial Resources Restoration Plan (December 2012) within the 20 year timeline established by the Plan.

2.2.7 **Objective:** Establish a more effective partnership between DNRC, DEQ, FWP, the Montana Department of Transportation (DOT), and the U.S. Department of Agriculture (USDA) to pro-actively manage and reduce risk of introduction and spread of Aquatic Invasive Species (AIS).

2.2.8 **Recommendations:**

2.2.8.1 In managing water resources, consider AIS that reduce water supply (e.g. salt cedar), species that become problems when flow is reduced (e.g. milfoil) or temperature increases due to lower flows.

2.2.8.2 Develop preapproved AIS responses for water management actions, such as herbicide applications, needed to prevent spread of harmful AIS.

2.2.8.3 Increase funding for watercraft inspection stations and public education in Montana in order to prevent introduction and spread of AIS.

3.0 Issue: Water Rights Administration, Protection and Enforcement

3.1 Statement of the Issue:

Montana water users of both surface and groundwater sources rely on a clear expectation of their rights to water. There is an opportunity to improve complex issues through modified procedures.

These complex issues include:

- Protection of water rights through enforcement of existing rights.

- Consistent, transparent, and streamlined administration of water rights and adjudication processes; measurement and monitoring; and planning.

3.2 **Goal:** Maintain a system and process for changing existing water rights and allowing new water rights that both protects existing water rights while providing a transparent, coherent, and expeditious process for reviewing proposed water rights changes and new uses.

3.2.1 **Objective:** Currently, DNRC requires change applicants to provide detailed explanations of how water rights were used prior to July, 1973. At times, this evidence is difficult to produce. DNRC should review its pre-1973 historic use criteria to ensure that it accurately assesses the effect of a change of use on other water rights. If the historic use criteria is modified, DNRC should assure that any modifications not sanction any post-1973 illegal expansions of use.

3.2.2 **Recommendations:**

3.2.2.1 DNRC should explore the issue of pre-1973 historic use criteria described in objective 3.2.1 and, if appropriate, propose administrative or legislative action that may implement a solution.

3.2.3 **Objective:** Review of change and new use applications from one region to another continues to vary as to the standards applied and as to the level of documentation expected of applicants. DNRC should work to assure consistency and clarity in DNRC's review process from one region to another and from one application to another.

3.2.4 **Recommendation:**

3.2.4.1 DNRC should establish a statewide point of contact for water rights review process questions. The Task Force envisions this as a clearinghouse where questions would be answered with consistency and authority, thereby solving the problem of current regional inconsistency.

3.3 **Goal:** Protect water rights through enforcement of existing rights.

3.3.1 **Objective:** Increase the DNRC's role in enforcement as it relates to illegal water use under the Montana Water Use Act.

3.3.2 **Recommendations:**

3.3.2.1 Increase DNRC's on-the-ground enforcement capability by providing it with more FTEs dedicated to water rights enforcement under the Montana Water Use Act.

3.3.2.2 Provide DNRC with express statutory authority to issue cease and desist orders against and administratively levy civil penalties for illegal water use (i.e. water use not authorized under an existing water right or permit) and increase civil penalties from the current $1,000/day to an amount sufficiently large to act as a deterrent against illegal water use.

3.3.2.3 The DNRC should determine the accuracy of existing water rights claims to understand actual physical and legal water availability.

a. State of Montana must continue funding and support of the Montana Water Court as it continues the process of adjudicating pre-1973 water rights.

b. State of Montana must continue funding DNRC's adjudication staff as the Water Court's technical assistant. (DNRC's technical expertise is provided to the Court upon request to evaluate technical issues that arise during the settlement and potentially litigation phases.)

c. DNRC's claims examination process should be funded, allowing the Water Court to review the interlocutory decrees know as Temporary Preliminary Decrees that

were adjudicated prior to the establishment of the Supreme Court's "Claim Examination Rules".

3.3.3 **Objective:** Assure that the mechanisms for the enforcement of existing water rights (i.e., the appointment of water commissioners) are clear to existing water users and are adaptable to decrees that will be issued from the adjudication.

3.3.4 **Recommendation:**

3.3.4.1 The water court, in concert with DNRC and district courts in the state, should clarify how decrees within subbasins will be administered when a water rights dispute arises within the subbasin.

3.3.5 **Objective:** Explore and adopt additional strategies in advance and in lieu of litigation for the resolution of water rights disputes.

3.3.6 **Recommendations:**

3.3.6.1 DNRC and the Water Court should create and actively fund a water rights dispute mediation unit and promote it to water rights holders as an alternative to traditional litigation.

3.3.6.2 DNRC should offer mediation training to water commissioners.

4.0 Issue: Meeting Future Water Demand

4.1 Statement of the Issue:

Montana needs to address future demands for water while meeting existing water rights and uses. The economies of our communities are dependent upon water availability. This requires projecting where and when demand will occur and what type of supply will be required to meet that demand. Ascertaining future demand for water is a precursor to planning for and anticipating opportunities within the Clark Fork and

Kootenai basins, and assessing those opportunities against potentially competing demands within the larger Columbia Basin.

4.2 **Goal:** The availability of water in Montana to meet future demands is supported by a concise, predictable, and defensible legal framework.

4.2.1 **Objective:** Montana's existing laws regarding the availability of water should be complete, concise, and defensible.

4.2.2 **Recommendations:**

4.2.2.1 The 2015 Montana Legislature should authorize and fund a comprehensive independent review of existing laws regarding water rights in Montana and forward recommendations to the 2017 Legislature, CFTF, WPIC, and the governor to ensure, to the best of our collective abilities, that Montana has a predictable and transparent legal framework that can guide future water use.

4.2.2.2 Identify regulations and legislation that impede the implementation of sound water use or water allocation practices because the regulations and legislation do not recognize site- and watershed-specific conditions. Forward recommendations for changes to the 2017 Legislature, CFTF, WPIC, and the governor.

4.2.3 **Objective:** Encourage the development of water use plans, including drought and conservation plans, while protecting water rights.

4.2.4 **Recommendations:**

4.2.4.1 Based on a review of existing laws regarding water rights (as described above), DNRC should develop and fund programs to present to the CFTF and 2019 Legislature that encourage the implementation of watershed-based collaborative water use plans while protecting existing and future water rights.

4.2.4.2 DNRC will review the process and incentives for transferring water in support of a watershed-based collaborative water-use plan.

4.2.5 **Objective:** Determine if existing laws need to be modified to address concerns regarding water availability.

4.2.6 **Recommendations:**

4.2.6.1 Modify state subdivision rules to recognize the need for an applicant to identify a path to a legally available water supply as a component of the subdivision review process.

4.2.6.2 Modify state subdivision rules to incentivize the implementation of community wells.

4.2.6.3 Water rights of the CSKT should be quantified.

4.3 **Goal:** Montana actively pursues the development of water resources to meet future water demands with specific attention given to the spatial and temporal (seasonality) of those resources and the associated demand.

4.3.2 **Objective:** The quantification of water resources and water demand should be advanced to support the prioritization of opportunities that can improve the physical availability of water to meet anticipated demand.

4.3.3 **Recommendations:**

4.3.3.1 DNRC, in cooperation with other state agencies, should complete a quantification of potential future water demand increases of water with a 20-year outlook with review and revision every 10 years.

4.3.3.2 Where demand warrants, the Montana Bureau of Mines should identify possible sites for aquifer storage and determine the feasibility of aquifer storage and recovery.

4.3.3.3 Building from the Montana Bureau of Mines work and warranted water demand, DNRC should determine if the deep aquifer in the Kalispell area can be developed without impacting other users or the resource itself.

4.3.3.4 DNRC should explore the use of Hungry Horse stored water, Flathead System Compact Water and Libby Dam storage water for use by the State of Montana.

4.4 **Goal:** Montana meets future demand through education, outreach, and a shared understanding of the importance of water to the economic, social, and environmental well-being of the citizens of Montana.

4.4.2 **Objective:** Agencies and relevant NGOs should continue to invest in an outreach program to engage existing water users.

4.4.3 **Recommendations:**

4.4.3.1 Agencies and relevant NGOs should educate water users regarding the existing processes to obtain water for new uses.

4.4.3.2 Agencies and relevant NGOs should initiate a systematic effort to develop and fund community driven, place-based drought and flood plans for each watershed within each basin**.** Provide grants to incentivize community-driven, placed-based watershed scale drought planning.

4.4.3.3 Agencies and relevant NGOs should develop a subbasin water plan/assessment program, perhaps patterned after the Bureau of Mines Groundwater Assessment Program (GWAP), to incorporate into future planning. Subbasin plans will assess vulnerabilities and opportunities for water supply and water quality relative to future water demands.

4.4.4 **Objective:** Invest in a program to educate individuals and communities on water use and availability in Montana.

4.4.5 **Recommendations:**

4.4.5.1 DNRC should work with the Montana State Library's Water Information System, other state agencies, and stakeholder groups to continue to advance a one-stop clearinghouse for the citizens of Montana on resources for water availability, water quality, and water rights in Montana. Recommendation 2.2.2.1 could also be addressed by this recommendation.

4.4.5.2 DNRC should enhance the Montana Water Information System to allow the public to visualize the spatial and temporal nature of water right information in an intuitive and interactive manner.

4.4.5.3 DEQ should create a GIS overlay with comprehensive septic system information.

4.4.5.4 DNRC will work with stakeholder groups to develop a common approach, such as the Global Water Footprint Standard, as a method for quantifying and communicating water use, re-use, and availability.

5.0 Issue: Use of Water User Councils for Implementation of the State Water Plan and Management of the State's Water Resources

5.1 Statement of the Issue:

The Clark Fork Task Force (CFTF) was created in 2001 with passage of House Bill 397 (MCA 85-2-350). The CFTF's work in developing a water management plan for the Clark Fork Basin and in the implementation of that plan serves as a model for similar organizations in the other major Montana river basins. Given that water in the Clark Fork and Kootenai Basins is a limited resource, carefully structured allocation and

management is necessary to sustain and improve the economic health of the basin communities while meeting the needs of various competing uses.

Moreover, the CFTF is charged with coordinating various entities in order to achieve long-term sustainable water management. Per MCA 85-2-350, the CFTF is mandated to coordinate local basin watershed groups, water user organizations, and individual water users and provide a forum for all interests to communicate about water issues. The CFTF must also advise government agencies about water management and permitting activities in the Clark Fork Basin and consult with local and tribal governments within the Clark Fork River basin. The CFTF's role, which has expanded in the last six months to include the Kootenai River basin, is of great importance.

5.2.1 **Recommendations:**

5.2.2 The Water Use Councils defined in the Montana Water Supply Initiative (MWSI) should be permanently recognized as continuing organizations tasked to implement and modify the basin plans as needed, and to make recommendations regarding proposed changes in the state water management.

5.2.3 Council activities receive continuing support, including a professional facilitator to organize monthly meetings, keep records, and speak for the council as directed by the Council. Other needs include funding for organizing and conducting public meetings and symposia, publications, and coordination as needed between subbasin groups and the major basins themselves. These activities include:

i. watershed meetings to evaluate/propose actions for solving problems;
ii. annual symposia regarding forecasts water availability and related issues;
iii. educational publications regarding plan changes, descriptions of program/legal requirements, experiences in managing water requirements, differing program approaches in other areas, etc.; and,

iv. collaboration with DNRC and other appropriate entities in the implementation of the Clark Fork and Kootenai Basins water management plan.

5.2.4 Legislative amendments should be considered to redefine the tasking of the current Clark Fork Task Force under any revised Water Use Council system (i.e., rename the CFTF the Clark Fork and Kootenai Basins Water User Council). Current CFTF reporting requirements should be retained for each council as well as routine coordination between councils and the state water management program.

5.3 The initial, and perhaps only, question is why an advisory council structure is needed in addition to permanent state water management program staff. Based on CFTF experience, **the proposed structure presents the following advantages:**

5.3.1 **The councils would be a powerful tool for communication of management actions and problems between the state program and local users.** Each council would bring together a group of volunteer, concerned individuals with significant expertise and knowledge regarding the local needs of the basin. *This may be extended to persons or groups representing local subbasin concerns.* Councils would regularly report to WPIC and other state bodies, serving as a critical link and continual interface between the Legislature, state agencies, and local water users, enabling a more proactive approach for state programs.

5.3.2 **Councils would provide a local contact point for concerned citizens.** This allows problems to be recognized and perhaps solved on the local level prior to required state action. A local judgment may also be made that local problems do represent something requiring state program attention. This is a special advantage if, as is expected, most problems have specific local circumstances.

5.3.3 **Councils will develop a wide network of contacts with local basin citizens, groups, and government interests through representation by council members, council contacts with local groups, and public**

meetings and education. This can provide an ongoing review by the public of water management issues that should facilitate any needs for state program public hearings.

5.3.4 **Councils would encourage solutions such as local drought management plans.** Organization such as that described for the councils seems essential to encouraging and supporting any drought management plan.

5.3.5 **Councils may assist in drafting of workable and effective legislation from water users' points of view.** Frequently legislation prepared by local legislators fairs better in the legislative process, especially when the legislation requires additional funds. Councils may also independently propose budget changes from water users' perspectives.

5.3.6 **Selection of Council members with applicable levels of expertise enables consideration of local technical problems and may result in proposed solutions that have not occurred to state program staff.** Such coordinated state/local "brainstorming" offers an efficient approach to the best possible program. Obviously, such volunteer work may greatly reduce state costs as opposed to developing and overseeing similar contract work. These technical solutions may involve specific planning activities to increase water availability, consideration of various types of connections between surface and ground water, ongoing evaluation of priority for state hydrological research and measurement, and coordination meetings between major basin representatives. Watershed meetings could be held to evaluate and/or propose actions for more widespread concerns, as well as annual symposia regarding forecast water availability and related responses and problems, as well as publications addressing citizen concerns.

5.3.7 **Council members will represent a number of different types of water users, including irrigators, public water system managers, hydrologists, tribal governments, ecologists, ranchers, real estate developers, hydropower generators, and other special interests (e.g., watershed groups, hunters, anglers, guides, tourism representatives,**

conservationists, forestry professionals, etc.). When a particular issue is reviewed by a council it will be considered from many different points of view resulting in a more thorough evaluation and possible prevention of unintended adverse impacts.

5.4 Clark Fork Task Force Operations

5.4.1 *Task Force Administration*

- Facilitator
- Meeting Expenses (lunch, reproduction costs, speaker stipends, video conferencing)
- Travel Expenses

5.4.2 *Task Force Conferences*

- Biannual water supply conferences
- Annual technical conference (focus on water availability and allocation)
- Annual Watershed Council coordination for Clark Fork & Kootenai Basins (may already being done by others).

5.4.3 *Task Force Publications-Research & Education*

- Public outreach – coordinate with existing entities (e.g. Montana Water Center)
- Publish topical documents (e.g. Prior Appropriation booklet) and conference proceedings.
- Define needed research, and oversee completion of such projects. Coordinate research among the various agencies and academic institutions to facilitate water management.

5.4.4 *Task Force/Agency Coordination*

- Coordinate water use and regulation among State and Local agencies (annual meeting?).
- Review and make recommendations for Columbia River Treaty negotiations to State and Federal entities.
- Review water right process and make recommendations to DNRC and Legislature. Potentially prepare necessary legislation.
- Develop water management structure for Basins - Based on experience in the Ogallala, management from the bottom up is working better than top down.

Appendix A: Clark Fork Task Force Membership

Last Name	First	Primary Affiliation	Organization
Bradshaw	Stan	Conservation	Trout Unlimited
Connor	Maureen	Agriculture/Public Interest	Upper Clark Fork Steering Comm.
Doney	Kerry	Agriculture	Jocko Irrigation District
Franz	Holly	Energy	PPL Montana
Hacket	Harvey	Agriculture	Bitterroot Irrigation District
Hall	Nate	Energy	Avista
Hall	Barbara	Conservation	Clark Fork Coalition
Iman	JR	Agriculture	Ravalli Irrigation District
Irvine	Lloyd	Tribes	Confederated Salish & Kootenai Tribes
Jackson	Verdell	Government / Agriculture	MT Senate District 5
Lammers	Paul	Mining	Revett Minerals
Miller	Ross	Municipal	Mountain Water
Patton	J. Gail	Agriculture	Sanders / Mineral Counties
Schoonen	Jennifer	Conservation	Blackfoot Challenge
Skorpik	Molly	Agriculture	Mt Assoc. Dams & Canals Systems
Spratt	Marc	Agriculture	Flathead Conservation District
Sugden	Brian	Timber	Plum Creek Timber
Turner	Susie	Municipal	City of Kalispell
Watson	Vicki	Public Interest	Academia
Williams	Ted	Conservation / Recreation	Flathead Lakers

Ex Officio Members:

Edge	Derek	Consulting	ARCADIS, u.s., Inc.
Hoffman	Gregory	Libby Dam & Lake Koocanusa	U.S. Army Corps of Engineers
Magruder	Ian	Consulting	Kirk Engineering
McLane	Mike	Government	Department of Fish, Wildlife and Parks
Miske	Caryn	Flathead Basin Commission	DNRC
Philmon	Dennis	Government	Bureau of Reclamation
Sweet	Michael	Academia	Montana Climate Office
Trum	Eric	Government	Department of Environmental Quality

Proxy & Alternate Members:

Fyant	Shelly	Tribes	Alternate for CSKT/Lloyd Irvine
Price	Mary	Tribes	Proxy for CSKT/Lloyd Irvine
Sirucek	Dean	Agriculture	Proxy for Marc Spratt
Stevens	Patty	Tribes	Alternate for CSKT/Lloyd Irvine
Susan	Lake	Agriculture	Proxy for Kerry Doney

Appendix B: Glossary of Terms

abandonment –The intentional, prolonged, non-use of a water right, resulting in the loss of the right.

adjudication— In the context of Montana water law this refers to the statewide judicial proceeding to determine the type and extent of all water rights claimed before July 1, 1973.

adverse effect— In water rights, something that impedes the ability of a water user to make use of water. Change in use must avoid an adverse effect to other water users.

appropriate—To capture, impound, or divert water from its natural course and apply toward a beneficial use.

appropriator —One who applies water to a beneficial use. An appropriator owns a water right.

aquatic invasive species—Are organisms that were unintentionally brought into Montana from other places. These include clams, fish, mussels, plants, weeds, and disease-causing pathogens.

basin—The area drained by a river and its tributaries, such as the Clark Fork River or Kootenai River basin.

beneficial use –Use of water for the benefit of the appropriator, other persons, or the public, including but not limited to agricultural (including stock water), domestic, fish and wildlife, industrial, irrigation, mining, municipal, power, and recreational uses; a use of water to maintain and enhance streamflows to benefit fisheries pursuant to conversion or a lease of a consumptive use right.

change in appropriation right – A change in the place of diversion, the place of use, the purpose of use, or the place of storage of a water right. These changes need the approval of the Department of Natural Resources and Conservation (DNRC) to assure that the change will cause no adverse
effect to other water users.

claim—An assertion that a water right exists, usually occurring during the adjudication process.

compact—A legal agreement between Montana and a federal agency or an Indian tribe determining the quantification of federally or tribally claimed water rights.

conservation district—A political subdivision of state government, possessing both public and private attributes, that primarily distributes irrigation water in a given region and that may also administer electric power generation, water supply, drainage, or flood control.

consumptive use—A beneficial use of water that reduces supply, such as irrigation or household use.

cost-benefit analysis – Can be explained as a procedure for estimating all costs involved and possible profits to be derived from a business opportunity, proposal, project or activity.

dewatering of streams, chronic and periodic – Dewatering is a reduction in stream flow below the point where stream habitat is adequate to support healthy fish populations. Chronic dewatering is a significant problem in all years while periodic dewatering is a significant problem only in drought years.

detention basin – See retention and detention basins.

diversion—An open, physical alteration of a stream's flow away from its natural course.

existing water right –"Existing right" or "existing water right" means a right to the use of water that would be protected under the law as it existed prior to July 1, 1973. The term includes federal non-Indian and Indian reserved water rights created under federal law and water rights created under state law. (MCA Section 85-2-102)

flow augmentation –The addition of water to a river system from reservoir storage.

flow dependent aspects of watershed restoration projects –Many efforts in watershed restoration projects are focused on flows. Watershed restoration projects attempt to improve water quality, the viability of fisheries, the stability of stream banks, the condition of stream side vegetation – and all of these depend on flows. Hence watershed restoration projects often strive to bring flows closer to their natural pattern by managing how water is yielded from the watershed and how it is used. Measures frequently include conservation measures to reduce the amount of water diverted from streams and land restoration to increase infiltration of water (which recharges the groundwater and ultimately helps support base flows in surface water).

flow restoration—Usually involves attempting to restore as much as possible of a stream's natural flow pattern over the year. Sometimes the focus is on restoring critical low summer flows to natural levels or to minimum target flows.

flow rate—That rate at which water is diverted, impounded, or withdrawn from the source of supply for beneficial use, and commonly measured in cubic feet per second (cfs) or gallons per minute (gpm). Put in everyday terms, when you turn on the faucet in your kitchen sink, the water comes out at a certain rate of flow (gpm).

flow related impairments –Waterways are considered impaired when the water is too polluted or degraded to meet water quality standards & support beneficial uses. Almost all impairments are related to flow. Lower flows often contribute to warmer stream temperatures, lower dissolved oxygen levels, and more concentrated levels of dissolved pollutants. Higher flows contribute to erosion & scour, mobilizing sediment bound pollutants.

Global Water Footprint Standard—A water footprint is an indicator of freshwater use that looks at both direct and indirect water use of a consumer or producer. The water footprint of an individual, community or business is defined as the total volume of freshwater used to produce the goods and services consumed by the individual or community or produced by the business. The water footprint is a geographically explicit indicator, showing not only volumes of water use and pollution, but also the locations. The *Global Water Footprint Standard* is a scientifically credible, internationally recognized methodology developed to make all water footprints comparable. For more information, visit http://www.waterfootprint.org.

gray water—Wastewater generated from baths, sinks, washing machines, and other household sources.

ground water — Any water beneath the land surface, bed of a stream, lake, or reservoir.

ground water area—An area enclosing a single, distinct body of ground water.

ground water recharge or aquifer recharge—This can refer both to the natural process of ground water recharge (achieved by infiltration of precipitation or discharge from surface water) OR can refer to human efforts to store more water in groundwater. Artificial aquifer recharge (AR) is the enhancement of natural ground water supplies using man-made conveyances such as infiltration basins or injection wells. Aquifer storage and recovery (ASR) is a specific type of AR practiced with the purpose of both augmenting ground water resources and recovering the water in the future for various uses. More at http://water.epa.gov/type/groundwater/uic/aquiferrecharge.cfm

healthy forest conditions—Conditions sufficient to achieve management goals. For example, healthy forest conditions may be present if insect and disease are at endemic levels, if a mosaic of trees and openings is available to provide wildlife habitat, if the forest is disturbed by fire at a severity and frequency that mimics what once happened naturally, or if a forest is capturing snow and releasing water as snow melts. In short,

what is considered a "healthy forest" depends on how and for what purpose the forest is managed.

instream flow—Wter left in a stream for nonconsumptive uses such as preservation of fish or wildlife habitat.

junior appropriator—A secondary user on a watercourse who holds a water right inferior to previous (senior) users.

legal water availability—See water availability.

Montana Code Annotated (MCA)—The laws of Montana classified by subject.

natural storage of water—See storage of water, natural.

natural system health—Natural systems include all landscapes and water bodies that were not created by human technology. However, the water plan is mostly focused on waterways and watersheds, so see 'waterway health' and 'watershed health'.

nonconsumptive use—A beneficial use of water that does not reduce quantity, quality, or timing of water in the source of supply, such as an instream use.

permit—An authorization to use water, issued by the state, specifying conditions such as type, quantity, time, and location of use.

physical water availability—See water availability.

Preapproved AIS Response – Required whenever the eradication of AIS species poses less environmental harm than allowing the species to infest a given area. Prompt response is essential to prevent exponential growth of some species and to reduce the area of treatment needed. This may not allow the normal time periods needed for environmental regulatory impact studies, and other means are needed to make these early decisions. This appears to require predicted possible scenarios and an evaluation of responses for effectiveness and acceptable environmental impact under limits of the scenario prior to actual occurrence of AIS infestations.

priority date—The official date of an appropriation, generally the date of established intent; used in determining seniority among water users.

recharge—The resupply of water to rivers or aquifers.

reserved water right—A special water right accompanying federal lands or Indian reservations, holding a priority date originating with the creation of the land.

retention and detention basins—Depressions in the landscape used to store stormwater runoff, hence reducing flooding and erosion and improving water quality. A DETENTION BASIN is an area where excess stormwater is stored or held temporarily and then slowly drains when water levels in the receiving channel recede. In essence, the water in a detention basin is temporarily detained until additional room becomes available in the receiving channel. A RETENTION BASIN also stores stormwater, but the storage of the stormwater would be on a more permanent basis. In fact, water often remains in a retention basin indefinitely, with the exception of the volume lost to evaporation and the volume absorbed into the soils. This differs greatly from a detention basin, which typically drains after the peak of the storm flow has passed, sometimes while it is still raining. Additional uses for stormwater retention are to help recharge large underground water aquifers.

return flow—Part of a diverted flow that is applied to irrigated land and is not consumed and returns underground to its original source or another source of water, and to which other water users are entitled to a continuation, as part of their water right.

senior appropriator—An original user on a watercourse who holds a water right superior to all subsequent (junior) users.

storage of water, artificial or constructed—Storing water in reservoirs or other human made impoundments.

storage of water, **natural**—Storage of water in natural landscape features such as groundwater aquifers, ponds (including beaver ponds, floodplain ponds), wetlands & swales . Note that humans may manage water to store more of the water in natural storage – through land application and land management to increase infiltration.

stream depletion zone—An area where hydrogeologic modeling concludes that as a result of a ground water withdrawal, the surface water would be depleted by a rate equal to a rate of at least 30% of the ground water withdrawn within 30 days after the first day a well or developed spring is pumped at a rate of 35 gallons a minute. (MCA Section 85-2-102)

subbasin – A structural geologic feature where a basin forms within a larger basin. For example, the Bitterroot river is sometimes referred to as a subbasin of the Clark Fork River basin.

surface water — Water above the land surface, including lakes, rivers, streams, wetlands, wastewater, flood water, and ponds.

wasteful use—The unreasonable loss of water through the design or negligent operation of an appropriation or water distribution facility or the application of water to anything but a beneficial use.

waterway and water body—Usually refer to surface water features like rivers, streams, lakes, ponds.

waterway health—Waterways are considered to be healthy when surface & groundwater flows & levels are of a timing and duration that provides habitat capable of supporting self-sustaining populations of native fish species and water dependent wildlife. In addition, waterway health refers to flows that help meet water quality standards, support beneficial uses, and support stream renewal functions.

water commissioner—Local water users can petition for a water commissioner after the water rights in a basin have been verified by the Montana Water Court. The commissioner ensures that daily water allocations in the basin occur in accordance with the users' rights. The local district court appoints the commissioner, and oversees his or her work.

Water Court—Located in Bozeman, the Water Court's primary function is to carry out the state-wide adjudication. Disputes between water right holders are still handled in local district court, and the local district courts still oversee any water commissioners in their area.

water quality—Chemical, physical, and biological characteristics of water that determine its suitability for a particular use.

watershed—All the land that drains to a river or lake, with boundaries defined by surface water (and includes wetlands, floodplains, riparian areas and uplands). For the purpose of this planning document, the term "watershed" is referring to a subunit of a subbasin (smaller area).

watershed health—The health of ecosystems and landscapes is much more complex to define than the health of an organism. However, a watershed is often considered healthy if the watershed is being used sustainably so that it can continue to perform without depletion or degradation of watershed services such as: water collection storage & delivery, flood and drought moderation; water purification, wildlife habitat and support of waterway health.

Recommendation Development Report

Yellowstone Basin Advisory Council

2015 Montana Water Supply Initiative

Yellowstone Basin Advisory Council Meeting
Billings, Montana
December 13, 2013

Prepared by Beck Consulting
Red Lodge, Montana

June 3, 2014

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EXECUTIVE SUMMARY

The Yellowstone Basin Advisory Council (YBAC) was formed in 2013 to advise the Montana Department of Natural Resources and Conservation on development of the Montana Water Plan (the Montana Water Supply Initiative) in the Yellowstone River Basin. The recommendations contained in this report are offered with full recognition of the prior appropriations doctrine afforded under the Montana Constitution and state law.

The YBAC was made up of 20 members spread across the reaches of the basin within Montana representing a diverse range of interests. The interests included agriculture, industry, tribal, and conservation. The YBAC also had ex-officio members from state and federal agencies with water management responsibilities.

The YBAC went through a three-phase process over an 18-month period to arrive at the recommendations contained in this report. The formation and work of the YBAC was organized under a set of Guidelines. With the exception of two recommendations, one each under Water Administration and Beneficial Use and Instream Flow Maintenance, the recommendations in this report have the consensus of the participating YBAC members. The process began with public scoping in the summer of 2013. After the scoping, YBAC members ranked the issues from scoping. In the fall of 2013, technical experts made presentations to the YBAC on the top ranked topics.

Following the information transfer, the YBAC developed preliminary recommendations for the state water plan. The process of developing recommendations within the Yellowstone River basin concluded in late April 2014. At that time, the YBAC held a three-week public comment period that included a series of meetings throughout the basin. Based upon the input received during the comment period, the YBAC finalized their recommendations on May 29. The YBAC's recommendations are documented in this Recommendation Development Report.

The council chose to make recommendations on nine issues.

- Drought readiness
- Water Information
- Integrated water quality and quantity management
- Water administration and beneficial use
- Watershed planning
- Ground water/surface water nexus
- Instream flow maintenance
- Water storage, and
- Funding.

The YBAC offers the recommendations contained in this report on these issues for inclusion in the state water plan (Montana Water Supply Initiative.)

I. INTRODUCTION

PURPOSE

The purpose of this Recommendations Development Report (RDR) is to present the recommendations developed by the Yellowstone River Basin Advisory Council (YBAC) in support of the Montana Water Supply Initiative.

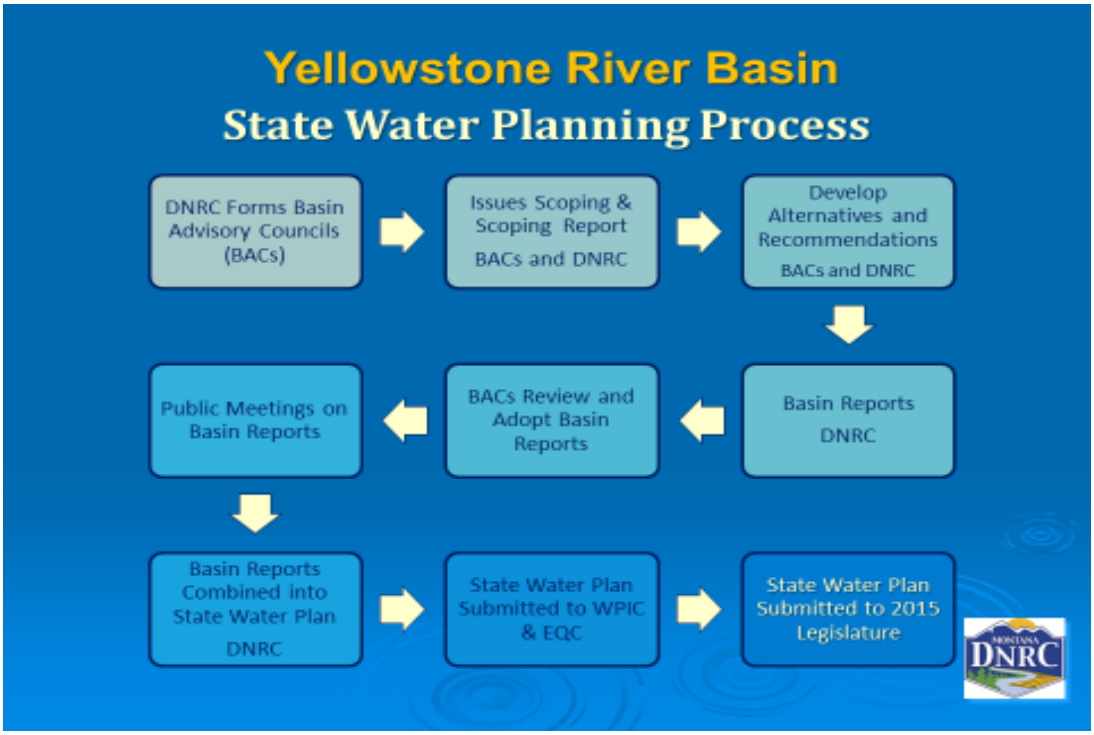
As directed by the 2013 Montana Legislature, the Water Resources Division of the Department of Natural Resources and Conservation (DNRC) launched an initiative to update the Montana State Water Plan (see Figure I.1). The 2015 Montana Water Supply Initiative (MWSI) has engaged a broad range of interests and citizens in a planning process to develop strategies and recommendations for meeting the future water needs of Montana. The YBAC operated at all times in full recognition of the prior appropriations doctrine, advancing only recommendations consistent with this framework.

The purposes of the MWSI are to: 1) provide up-to-date water resource information essential for planning and estimating future water demand, and 2) actively engage citizens in developing an adaptive State Water Plan that identifies options to meet future needs, satisfy existing beneficial uses, and protect the state's water resources. This report documents the results of the second purpose and serves as a companion document to the basin water plan which addresses the technical information requirements as set out by the Legislature in the water planning statute (85-1-203, MCA.)

The Yellowstone Basin Advisory Council (YBAC) was formed as a result of this legislative mandate and has been working for more than a year to develop recommendations to the State Water Plan that will reflect the issues and concerns of the Yellowstone River Basin. Basin Advisory Councils have also been formed to develop recommendations for the Lower Missouri, Upper Missouri, and Clarks Fork River basins. Each of the councils will produce its own basin plan. The recommendations in the individual basin plans are being used to develop the State Water Plan. The state water plan will be presented to the 2015 Montana Legislature.

The work of the YBAC to develop basin-wide recommendations was guided by The Yellowstone Basin Advisory Council Guidelines. The Guidelines were developed by the DNRC as a set of organizing principles. The Guidelines address the purpose of the YBAC, duties and responsibilities of YBAC members, member qualifications and selection, types of YBAC members, meeting procedures and meeting management, and communications. These Guidelines are posted on the Yellowstone Basin Advisory Council web page (www.dnrc.mt.gov/mwsi).

Figure I.1 State Water Planning Process



REPORT ORGANIZATION

The report is organized into five sections with appendices.

Section I. Introduction explains the purpose and contents of this report and lists the members of the Yellowstone Basin Advisory Council. The Introduction also explains the relationship of the Yellowstone River Basin Plan to the Montana State Water Plan.

Section II. Recommendation Development Process summarizes the process to develop recommendations--including the three phases of the process, how scoping was conducted, the results of the scoping effort, the meetings of the Council, the public review of the preliminary recommendations, and the process to finalize the recommendations.

Section III. Yellowstone River Basin Issues lists the issues identified during public scoping, describes the process used to prioritize and refine the issues, and provides the highlights from the Council's discussion of the issues.

Section IV. Public Comments provides an overview of comments received on the preliminary recommendations.

Section V. Final Recommendations provides the recommendations adopted by the YBAC following a three-week public comment period and consideration of the comments offered.

The RDR is a summary of the work of the YBAC. Additional documentation from all three phases of the planning process can be found on the DNRC website at www.dnrc.mt.gov/mwsi.

Figure I.2 Phase 2 Technical Presentations to the YBAC, November 15, 2013

Membership of the YBAC

The following is an alphabetic list of the twenty members of the YBAC, the primary interests they represent, and their county of residence.

Table I.1: Membership of the Yellowstone Basin Advisory Council

Council Member	County of Residence	Primary Affiliation
Beaudry, John	Stillwater	Industry-Stillwater Mining Co.
Cole, Mack (Chair)	Treasure	Agriculture-Montana Farm Bureau
Cumin, Cal	Yellowstone	Instream Montana Wilderness Assoc. Yellowstone River Parks Assoc.
Galt, David	Lewis and Clark	Industry-Montana Petroleum Assoc.
Gatzemeier, Paul	Yellowstone	Industry
Haidle, Lynn	Prairie	Agriculture-Conservation District
Lackman, Greg	Treasure	Agriculture-Conservation District
Lowe, Dan	Big Horn	Agriculture-Conservation District
Moorhouse, John (Vice-Chair)	Yellowstone	Instream Yellowstone River Conservation District Council
Muggli, Roger	Custer	Agriculture-TY Irrigation Canal
Mumford, Dave	Yellowstone	Municipal Water Supply
O'Hair, Jerry	Park	Agriculture-Conservation District Outfitter
Osborne, Tom	Stillwater	Industry-Hydrology Consultant
Penfold, Mike	Yellowstone	Instream Our Montana
Petermann, Kay	Wibaux	Agriculture-Conservation District
Pulasky, John	Yellowstone	Agriculture and Economic Development
Pust, Steve	Richland	Agriculture-Conservation District
Rostad, Dan	Sweet Grass	Agriculture-Conservation District, Boulder River Watershed Group
Sauer, Brad	Rosebud/Sweet Grass	Instream, Northern Plains Resource Council
Spang Gion, Shanny	Rosebud	Northern Cheyenne Nation

YBAC Staff Support: Jim Robinson, Water Planner, DNRC; Chuck Dalby, Hydrologist, DNRC; Dr. Susan Gilbertz, Instructor Alyson Rode, Dr. Matthew Anderson, MSU-Billings; Dr. Luke Ward, Rocky Mountain College; Barb Beck, Coordinator, Beck Consulting. The YBAC also had a cadre of ex-officio members from supporting state and federal agencies. The list of ex-officio YBAC members can be found in Appendix B.

The following map depicts the entire Yellowstone River Basin. For purposes of the Yellowstone Basin Advisory Council's work the area under consideration was that which is situated within the State of Montana.

Figure I.3: Yellowstone River Basin

II. Recommendation Development Process

The work of Yellowstone Basin Advisory Council culminating in the development of recommendations for the state water plan was organized into three phases. The phases are summarized below.

Phase 1: Public Scoping

The Yellowstone Basin Advisory Council (YBAC) process began in the spring of 2013 with a three-step selection process for membership. During this first phase, 20 YBAC members were selected to represent a broad cross-section of interests and expertise, and to span the geography of the Yellowstone River Basin in Montana. The members and their primary affiliations are provided in Section I of this report. The YBAC was convened with the assistance of Montana State University-Billings (MSU-B.) Under contract to DNRC, MSU-B provided a coordinator, logistical support, and meeting documentation. Rocky Mountain College also assisted with meeting support. Students from both MSU-B and Rocky Mountain College helped with and observed the YBAC meetings as part of their studies.

The YBAC hosted scoping meetings to gather input from the public on water issues in the Yellowstone River basin. Additional information on the results of the public scoping is provided in this Recommendations Development Report, Section III Yellowstone River Basin Issues. A report titled *"Yellowstone River Basin Advisory Council Membership and Report of 2013 Public Scoping*" was produced documenting the establishment of the YBAC and public scoping process—the work of Phase 1. The report can be viewed at www.dnrc.mt.gov/mwsi.

Phase 2: Technical transfer

During this phase, technical experts made presentations on a wide range of water-related topics during three days of YBAC meetings in November and December of 2013. The experts included staff from local, state, and federal agencies, non-profits, and organizations that directly manage water. DNRC staff identified and invited the experts based upon the issues raised during public scoping and then prioritized by the BAC. Presentations were diverse and ranged from highly scientific to day-to-day practical management and water allocation decision making. Some examples of the topics addressed included, but were not limited to: drought planning in the Blackfoot, the science of climate change, water distribution in the Musselshell drainage, federal reservoir operations, the Crow Water Compact, the water information system, instream flow tools, and water quality in the Yellowstone River basin.

The purpose of the technical transfer phase was to provide the YBAC members with information on the science and the status of on-going programs and projects. The YBAC also had the opportunity to ask questions of the experts and explore topics of interest related to the issues under consideration. The technical transfer established a foundation for subsequent recommendation development discussions by the YBAC. Many times during their deliberations, YBAC members cited knowledge they had gained from the presentations during Phase 2.

More information on the Technical Transfer, including a listing of all topics, presenters, and dates can be found in *Yellowstone Basin Advisory Council Montana Water Supply Initiative Summary*

Report—Phase 2 at www.dnrc.mt.gov/mwsi. The website also contains the presenters' abstracts.

Phase 3: Recommendation development

The YBAC held three recommendation development meetings on February 25, March 12, and April 9 of 2014. During discussions, the YBAC recognized that they were operating within the prior appropriation legal framework. The fourth and fifth YBAC recommendation development meetings took place on April 25 and May 29. During the April 25 meeting, the YBAC reviewed the entire package of preliminary recommendations and prepared for the four public comment meetings held May 12, 13, 14, and 15 in Glendive, Forsyth, Billings and Big Timber, respectively. At their May 29 meeting, the YBAC reviewed the public comments and finalized their recommendations.

Prior to each meeting, the DNRC water planner and hydrologist developed staff papers for each issue. The staff papers contained relevant background information (existing policies, programs, statutory language, etc.) that staff thought would assist the YBAC in their discussions. The papers also contained suggestions on the types of recommendations the YBAC might wish to consider. The YBAC members stated that they found these staff papers useful in setting the stage for their deliberations and modified (edited, deleted, or added to) the staff suggestions as they deemed appropriate.

Several overarching themes surfaced as the YBAC developed and discussed the preliminary recommendations:

- The recommendations should not threaten the prior appropriation doctrine.
- The recommendations should be stated in simple, non-technical terms.
- There should not be redundancy of recommendations where issues overlap, for emphasis, or for any other reason.
- YBAC wanted to and did consider water issues within their charge regardless of which state agency has the lead for a particular issue. For example, water quality was important to the YBAC although the lead for this issue is the Montana DEQ rather than the DNRC.
- The YBAC believes that state agencies should work closely together to benefit water users and Montanans.
- The YBAC was conscious of the financial implications of recommending anything new or adding a level of effort to on-going work.

At their February 25 meeting, the YBAC members all worked together as one group on the issue statements and preliminary recommendations. The size of the group proved unwieldy. Progress was slow and YBAC members were frustrated. The facilitator recommended that the group be divided in two for subsequent discussions with the two groups reporting back to each other at the conclusion of each issue and recommendations discussion. Members of the public, ex-officio

YBAC, and others present were invited to join and observe whichever group they were most interested in.

This split group format was used for discussions to develop recommendations at the March 12 and April 9 meetings. Each group had a facilitator and recorder. YBAC members felt the discussions were more productive and allowed for better participation due to group size.

Assignments of individuals for the small group discussions were made by first asking YBAC members if they had a preference for issues they wished to work on. Any requests received were honored, and then the Chair, Vice-Chair, DNRC staff, and facilitator made the rest of the small group assignments to balance agriculture, industrial, conservation, and other interests in each of the two small groups.

Figure II.1: Small group work on instream flow maintenance

A high level of trust was exhibited between the YBAC members since each member was not involved in every discussion. Three things likely contributed to this trust; the appropriate balance of interests in each of the small groups, the debriefing of the small groups with the whole YBAC at the end of each discussion, and the fact that the preliminary recommendations for each issue would be revisited at one or more subsequent meetings so that additional edits could be made at that time. This also allowed members who missed a meeting to weigh in on topics discussed in their absence.

As per Section 6.1 of the YBAC Guidelines, the "*members agree to seek consensus within the Yellowstone BAC. Consensus means that even though a voting member may not agree that a given issue or recommendation warrants inclusion in the Yellowstone River Basin Plan, he/she does not disagree enough to warrant opposition to its inclusion.*" The Guidelines go on to state that the members agree to participate fully and consistently in the process unless they withdraw; fully explore and understand all issues before the YBAC; and search for creative solutions to address the interests and concerns of all members. The Guidelines further state that each

member has the ability to disagree with any reasonable and/or legitimate proposal, but assume responsibility for providing constructive feedback.

Section 6.2.1 of the Guidelines addresses lack of consensus: "If consensus is not achieved on any issue/recommendation, the BAC shall report to DNRC on the issue/recommendation dividing the membership, along with a voting record. Under these circumstances a minority report will be included with any recommendation arising from a split vote."

The language in the Guidelines related to decision making and the desirability of achieving consensus for the YBAC's recommendations was visited and discussed at three of the meetings (December 13, 2013, February 25 and April 25, 2014) to ensure there was shared understanding of this goal and that members understood the options for their input should consensus not be reached for any particular recommendation.

Phase 2 and 3 YBAC Coordinator, Barb Beck, prepared a draft of this document, the Recommendation Development Report (RDR), once the YBAC had completed its work on the preliminary recommendations. The draft RDR was approved by the YBAC on April 25, 2014, for release to the public and was posted on the Yellowstone BAC web page (www.dnrc.mt.gov/mwsi) for the duration of the public comment period which ran from May 2 to May 23.

Following the close of the public comment period, the summary of public comments was provided to the YBAC via e-mail. This summary is available on the Montana Water Supply Initiative web page (www.dnrc.mt.gov/mwsi).

The YBAC held their final meeting on May 29, 2014 to consider the public comments. The comments were discussed at the meeting, public comment heard, and the preliminary recommendations were finalized.

Two recommendations did not have full consensus of the YBAC. One recommendation each under Water Administration and Beneficial Use, and Instream Flow Maintenance did not have consensus. The text of the two recommendations is as follows:

Water Administration and Beneficial Use Issue
Preliminary Recommendation D.3.b

"Require all users to measure at or near the point of diversion from the river or stream."

Instream Flow Maintenance Issue
Preliminary Recommendation I: Channel Maintenance

"Recognizing lateral migration processes as important, efforts to maintain instream flows should include provisions for retaining or reestablishing alluvial channel form and function with associated biological communities."

Those present at the May 29 meeting voted on the two recommendations and they were affirmed by the majority present. The coordinator was asked to poll those YBAC members not present so that the vote could include all YBAC members, not only those present at the meeting.

The coordinator polled the absent members via e-mail. Both recommendations were affirmed by the majority of the YBAC at the meeting and again once the polling was completed. A minority report was drafted by the coordinator and reviewed and approved by the minority voters in each case. The minority reports are presented as Appendix D of this document.

At the meeting on May 29, the YBAC worked systematically through the summary of public comments by issue and recommendation to finalize the language in the recommendations. They noted and specifically discussed comments provided by the public that were in opposition to their recommendations, new topics that they had not considered, and a variety of other suggestions from the public

To address recurring public concerns about perceived threats to the prior appropriations doctrine the YBAC directed staff to add language to both the Executive Summary and the Introduction. Language has been added explaining that the YBAC's work was conducted within the framework of the prior appropriations doctrine.

The YBAC did not make any changes to the preliminary issue statements, but did make a small number of wording changes to goal statements and recommendations in response to public comments--to better clarify their intent. The meeting notes from May 29 document the changes that were made between the preliminary and final recommendations. The YBAC did not delete any recommendations. One recommendation was added. Recommendation B.2 was added under the Ground Water/Surface Water Nexus Issue to encourage action by the legislature to optimize the use of surface and ground water resources.

The final recommendations as agreed to by the YBAC members are provided in Section V of this report.

Table II.1: Summary of Phase 3 YBAC meetings

Meeting Date	Primary Agenda Topics	Products
Feb. 25, 2014	• Summary report for Phase 2 • Status updates on all basins and MSWI • Review and development of 8 issue statements • Review of evaluation (screening criteria) • Development of preliminary recommendations for 2 issues	• First draft issue statements for 8 issues • Adoption of screening criteria • Preliminary recommendations for the Water Information and Water Storage issues
March 12, 2014	• Development of preliminary recommendations on 4 issues	• Preliminary recommendations for 4 issues—Water Administration and Beneficial Use, Watershed Planning, Drought Readiness, and Ground Water/Surface Water Nexus. Funding issue added
April 9, 2014	• Discussion of draft fracking position paper • Review of preliminary recommendations for first 7 issues, development of preliminary recommendations for final 2 issues • Public comment meetings	• YBAC position on fracking for the RDR, • Consensus on preliminary recommendations for the five March 12 Issues • Preliminary recommendations for the Water Quality/Water Quantity and Instream Flow Maintenance issues
April 25, 2014	• Review of preliminary recommendations on last two issues (from April 9 meeting) • Review of the RDR draft for public comment • Public comment meetings and process • Evaluation of YBAC's work to develop recommendations for the MSWI	• RDR with final package of preliminary recommendations approved for public comment meetings • YBAC commitments to attend public comment meetings • Self- evaluation of YBAC and lessons learned
May 29, 2014	• Review of public comments	• Finalize preliminary recommendations

III. Yellowstone River Basin Issues

Issue development began during Phase 1 of this project. Four public scoping meetings—one each in Glendive, Forsyth, Billings, and Big Timber were advertised and held in March, April and May of 2013. There were a total of 150 participants at these four regional meetings.

Using a social science technique (during the Phase 1 Scoping process) called Q-Sort, five archetypal views emerged with respect to the Yellowstone River Basin. Simply put, an archetype is a pattern. Q-Sort documents the variety of legitimate perspectives held in the Yellowstone River Basin. The five views were:

- Pro Development,
- Pro Ecosystems,
- Pro Irrigation/Anti-Markets,
- Pro Irrigation/Pro Markets, and
- Pro Storage and Conservation.

Based on the information obtained (through a questionnaire at the Phase 1 Public Scoping meetings) the Q-Sort identified three statements that had strong positive agreement across the participants. The following three statements represent common and agreed-upon values among the people of the Yellowstone River Basin. The YBAC considered these statements in selecting issues for further discussion.

1. As we move into the next decades, water management will become more complex due to interstate demands, both upstream and downstream,
2. The lack of water information hinders water development,
3. The number one issue for water planning is to prepare for future severe droughts and precipitation events.

The public scoping meetings were organized as roundtables to provide the opportunity for participant discussion. Each discussion resulted in a list of concerns and an audio recording. The content was organized into themes and then distilled into a primary set of concerns. Twenty-eight primary concerns were voiced by the public during the roundtable discussions. This list of 28 concerns can be found in the *"Yellowstone River Basin Advisory Council Membership and Report of 2013 Public Scoping*" posted on the Montana Water Supply Initiative's webpage of DNRC's website.

Following the identification of the 28 primary concerns, each of the YBAC members was asked to rank his or her top seven issues in terms of importance. The YBAC's Ex-officio members also ranked their top seven issues separately. (The interests of the YBAC and Ex-officio members were closely aligned with each other.) The rankings were converted to numerical scores based on the number of YBAC members who had ranked an issue as their #1 priority and the number of YBAC members who had ranked an issue within their top 7 issues. At the December 13, 2013 YBAC meeting the group went through an exercise to look at the calculated rankings of the 28 issues and select those issues that they determined were the highest priority issues and for which they would discuss developing a recommendation for the Yellowstone River Basin plan.

The following issues—not prioritized against each other – were selected for further discussion and the possible development of recommendations; drought readiness, enforcement/senior rights, water quality, instream flows, irrigation technologies, storage capacities, gauges and monitoring, and beneficial use.

During this discussion it became apparent that many of the issues listed above were related to each other and to issues that had fallen lower on the overall 28-issue ranking list. And, it was determined that many, if not all of the issues, could be seen as falling under a general category of "water availability." For example, availability could encompass the issues of wildlife and fisheries, recreation, and tribal reserved rights.

Initially, there was a desire to address all of the issues that had arisen during scoping. However, a candid discussion about the time and resources available to the YBAC for development of recommendations resulted in a decision to set aside and/or remove the following issues from consideration at this time: future allocations/additional rights, reservations (protected Montana rights), planning, incentives and support for new technologies and conservation, current allocations, and hydro-fracturing a.k.a. fracking.

The YBAC discussed a number of issues surrounding the use and generation of water associated with petroleum extraction and deliberated use of water for fracking on several occasions during the course of their meetings. After considering both oral and written comments, the YBAC decided to develop a position paper on the issue. That paper was subsequently drafted and reviewed by the YBAC at their April 9 meeting. At that meeting the YBAC decided by consensus to explain their position with the following language:

"As directed by the Montana Legislature, the Water Resources Division of the DNRC has launched an initiative to update the Montana State Water Plan. During discussions with citizens in the scoping process, oil and gas "fracking" was often mentioned in comments as an issue of concern. After discussion at several YBAC meetings, it is the position of YBAC to not include recommendations regarding issues surrounding "fracking" practices for oil & gas exploration in the Yellowstone River Basin. The YBAC recognizes that "fracking" for oil and gas is a beneficial use of water under Montana statute. The role of the YBAC does not include making specific recommendations regarding issues and concerns about any of the consumptive uses, including "fracking," in the Yellowstone Basin."

Once the 28 issues had been distilled to eight issue topics through an iterative process with DNRC staff and YBAC input, the YBAC proceeded by first defining an issue, then describing the desired condition with respect to the issue. After doing this the YBAC members considered what they had learned about the issue during scoping and what they had learned from the technical experts in Phase 2. This formed the basis for developing the preliminary recommendations.

Drafts of the Issue Statements were initiated by DNRC and ex-officio staff and brought to the YBAC. The YBAC first reviewed and edited all of the original eight issue statements at the February 25, 2014 meeting. Staff took the language suggested by the YBAC and reworked the issue statements. The statements were then revisited and finalized by the YBAC members over

the course of the next two meetings (March and April), during the focused discussions for each of the issues when preliminary recommendations were developed.

The following are the issue statements as adopted by the YBAC for the original eight priority issues identified by the YBAC, plus a ninth issue that arose during the March 12 meeting discussion. The 9th issue was funding. The YBAC's rationale for the importance of these issues and their decision to select and discuss each issue is provided in these issue statements.

DROUGHT READINESS: Numerous extended dry periods are documented in the Yellowstone hydrologic record. Water availability and drought preparedness are motivating factors in any water resource sustainability strategy. Many tools and policies are available, including conservation, to assist with effective water allocation that maintains economic viability and preserves resource values during drought (see Water Information, Watershed Planning, and Water Administration).

WATER INFORMATION: The adequacy of existing water information, along with its availability, and ease of access to water users, water managers, and the public is an issue. Sufficient water data needs to be collected and made available so that all relevant water information pertaining to a water body can be readily accessed and used to make informed decisions.

INTEGRATED WATER QUALITY AND QUANTITY MANAGEMENT: Water use and water quality are linked. Every use of water affects its quality and as water consumption increases or the characteristics of the supply change, new and alternative uses can be affected. Water quality is an important issue in all areas of the Yellowstone River basin and influences beneficial uses.

WATER ADMINISTRATION AND BENEFICIAL USE: Enabling fairness under Montana's water law is a significant issue in the Yellowstone Basin. Uncertainty is created by the large number of unused claims in the DNRC water rights system and senior users are sometimes unable to meet their water right due to misappropriation by other users. Any strategy to meet future water demand and put water to beneficial use needs to include examination of Montana's water right system so as to identify opportunities to maximize administrative efficiency and ensure proper monitoring and enforcement of water rights.

WATERSHED PLANNING: Many water resource problems are watershed-specific and their solution requires a collaborative stakeholder approach within small- to medium-sized watersheds within the Yellowstone River basin, while other issues require a basin-wide approach. The need for planning and technical services, and access to information to develop and implement watershed plans, is expected to increase as demand for water increases. Existing funding mechanisms and personnel to support locally-led watershed planning are presently insufficient to meet current and projected demand.

GROUND WATER/SURFACE WATER NEXUS: Ground and surface water are linked, often in complex interactions that can only be characterized through site-specific long-term measurement and monitoring projects. Although ground water usage in relation to surface water is relatively minor in the Yellowstone River basin, localized problems exist, particularly in areas impacted by land use changes or conversion from flood to sprinkler irrigation.

INSTREAM FLOW MAINTENANCE: Despite the lack of on-stream main stem storage reservoirs, the natural hydrology of the Yellowstone River has been significantly altered by present-day levels of development. Instream flow maintenance pertains to maintenance of a stream's complete hydrologic regime. Maintenance of instream flows is a significant issue, not only on the main stem Yellowstone River and its larger tributaries, but also on smaller tributaries necessary for the functionality of the river system.

WATER STORAGE: Water storage is an important part of integrated water management in the Yellowstone River Basin. However, traditional storage projects (dams and reservoirs) are expensive to plan, construct, manage, and maintain. In addition to construction of new storage, alternatives such as the prioritization of uses for water stored within existing reservoirs, maintenance of storage facilities, and modification of existing projects are important tools to mitigate effects of water supply variability. Managing stream and wetland systems to enhance natural channel and floodplain storage can augment structural measures by reconnecting streams to their floodplain, protecting wetlands, and encouraging healthy riparian vegetation.

FUNDING: The legislature directed that DNRC update the MWSI. In order to implement the statewide water plan, funding is required.

Figure III.1: YBAC members Cole and Spang Gion at the April 9 meeting

DECISION CRITERIA

Early in the discussion about developing recommendations for the priority issues (December 2013), the YBAC addressed the need for screening or evaluation criteria. DNRC staff presented a list of possible decision criteria for the YBAC's consideration. Six possible criteria were suggested. Following discussion, the YBAC decided upon four questions they would use to evaluate potential recommendations.

1) Is it technically feasible?
2) Is it politically feasible?
3) Is it financially feasible?
4) Is it socially acceptable?

The YBAC chose not to eliminate or screen out potential recommendations that would require a change in statute or that did not apply to the whole basin. In other words, if a change in statute would be required to implement one of their recommendations or if one of their recommendations applied to an area within, but not to the whole basin, the YBAC wanted those recommendations to go forward.

These four screening questions (decision criteria) were recorded on a flip chart and consulted at subsequent meetings when preliminary recommendations were reviewed. Rather than taking each recommendation through the evaluation questions in a formal step-by-step process, the discussions typically considered the criteria when a YBAC member voiced concern that a recommendation would not pass one or more of the screening questions. Many of these were judgment calls on the part of the YBAC, but there was general consensus each time a member suggested that a recommendation under discussion would not pass one of screening questions. A number of ideas under discussion were eliminated based on application of the screening questions.

IV. Public Comments

The YBAC held four public comment meetings on the preliminary recommendations. The meetings were advertised in two ways. First, they were advertised by a press release submitted to the newspapers throughout the river basin and secondly, an e-mail was sent to interested parties, conservation districts, and watershed groups. YBAC members at their discretion circulated the e-mail invitation to their own individual contacts. In addition, members of the MSU-Billings team made approximately 50 phone calls for each of the public comment meetings to persons who, in other circumstances, have demonstrated an interest in the water resources of the Yellowstone River basin. These calls were made approximately one week prior to the meeting dates.

Table IV.1: Public Comment Meetings Summary

Date	Location	Number of public Attendees	YBAC members in attendance
May 12	Dawson Community College Glendive	13	Mack Cole Kay Petermann John Pulasky Steve Pust Dan Rostad
May 13	Forsyth Public Library Forsyth	14	Mack Cole Greg Lackman John Moorhouse Roger Muggli Shanny Spang Gion
May 14	MSU-Billings Library Billings	38	Mack Cole John Beaudry Cal Cumin Paul Gatzemeier John Moorhouse Mike Penfold Dan Rostad
May 15	Big Timber Public Library Big Timber	31	Mack Cole Dave Galt Jerry o'Hair Tom Osborne John Pulasky Dan Rostad Brad Sauer

At least five YBAC members were present at each meeting to listen to comments and respond to questions. DNRC staff Jim Robinson and Chuck Dalby attended each meeting with local DNRC staff present at the Billings and Big Timber meetings. Facilitator, Barb Beck also attended the meetings. Drs. Matt Anderson and Alyson Rode from MSU-Billings, and Dr. Lucas Ward from

Rocky Mountain College, plus three students were present at all four meetings providing logistical support and documenting comments.

Figure IV.1: Participants at the Forsyth public comment meeting. Photo Courtesy of Chuck Dalby

All of the meetings followed the same agenda and format. First, YBAC Chair, Mack Cole welcomed the participants and thanked them for coming. DNRC Water Planner, Jim Robinson then made a brief presentation on the state water planning process. Facilitator, Barb Beck followed with a second presentation about the YBAC and the process the YBAC has used to develop the preliminary recommendations. Participants were offered the opportunity to ask questions.

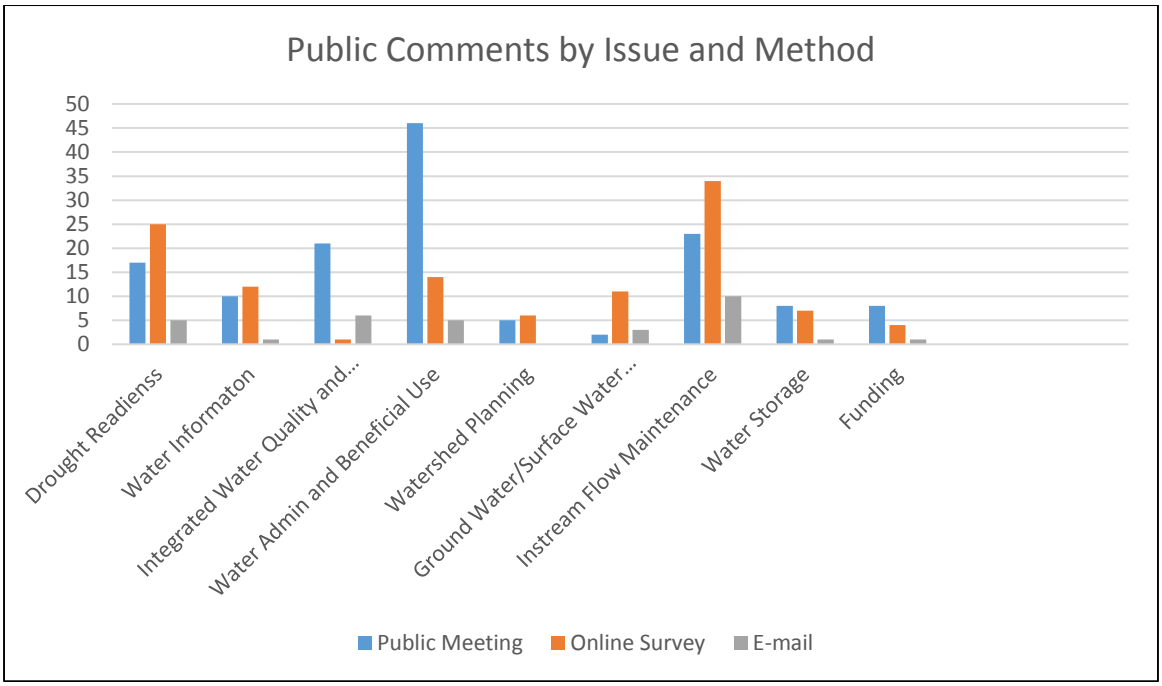
Following the presentations participants were encouraged to circulate around the meeting room. Large sheets containing the nine issue statements and preliminary recommendations were posted on the walls. One of the MSU-Billings/Rocky Mountain College staff members was available next to each set of issue charts with recommendations to record comments on a flip chart. The college staff visited one-on-one with the participants and recorded their comments on the charts during the discussions. YBAC members and DNRC staff circulated around the room informally. College staff was present to record comments and not as subject matter experts. When content questions arose they engaged either a member of the YBAC or DNRC staff for answers.

Comments were accepted in three ways—verbally at the meetings, through the DNRC's website, and on comment sheets available at the meetings. DNRC's mailing address was provided on the

comment sheets for individuals that wished to take the form and send it in at a later time. The comments were entered into spreadsheets by meeting location and by issue following the meetings.

The YBAC received 298 comments--124 comments through the online survey, 34 via e-mail, and 140 at the public meetings. No comment sheets were returned. The 124 comments from the online survey came from 46 respondents. Respondents were able to make more than one comment. The large majority of the online respondents characterized themselves as "individuals." Please see the figure below for the numbers of comments received by issue. Ninety-six individuals (not counting YBAC members, project staff, or other DNRC employees) attended the public meetings. Commenters who provided their e-mail addresses have been added to the interested parties e-mail list so that they can receive future updates on the Montana water planning process.

Figure IV.2 Public Comments



Following the close of the public comment period all comments were compiled into spread sheets and organized under one of the nine issues. The YBAC members asked that the comments be summarized by staff rather than forwarding all comments to the YBAC members. Comments were compiled by Water Planner, Jim Robinson, then summarized by YBAC Coordinator, Barb Beck, who then organized the comments into one of four categories by each major issue. The four categories are: 1) comments in support of YBAC recommendations, 2) new issues not considered by the YBAC, 3) comments in opposition to YBAC preliminary recommendations, and 4) other. New issues, comments in opposition to recommendations, and other comments potentially warranted additional YBAC consideration.

This summary looked at the content of every comment to identify substantive issues within the scope of the YBAC's work. Comments were not considered to be votes. A number of the comments were questions rather than comments and these were not included in the summary report unless they suggested a certain course of action for a recommendation. Each comment was treated individually without regard to whether it originated from one or more individuals. Therefore, the number of comments received does not equal the number of commenters. Most individuals commented selectively on one or more issues/recommendations, but not on all of the issues.

There were many comments in support of the YBAC's preliminary recommendations, several issues that received very few comments, and several issues that received a large number of comments. The Instream Flow Maintenance, Water Administration and Beneficial Use, and Drought Readiness issues in descending order together received approximately half of all comments. The Watershed Planning, Water Storage, Ground Water/Surface Water Nexus, and Funding issues each received a much smaller number of comments.

Concerns about protecting existing water rights and following the prior appropriations doctrine were expressed repeatedly, crosscut most of the issues, and were the most frequently expressed concerns. Commenters also criticized the YBAC under many of the issues for their decision not to make recommendations specific to oil and gas use of water, particularly with respect to fracking. Other general comments offered in response to many recommendations were the use of undefined, vague or technical terms, and the lack of specificity or detail in the recommendations. Some commenters wondered how certain recommendations would be implemented and how they would be paid for. Although there were relatively few comments entered under the Funding Issue section, concerns about where funds for implementation will be found were expressed under many of the other issues.

The two recommendations that generated the most disagreement in the comments were the recommendation to require measurement of water used for irrigation (Water Administration and Beneficial Use Recommendation D.3.b) and the recommendation for channel maintenance that recognizes lateral migration processes as important (Instream Flow Maintenance Recommendation I.) These are issues that the YBAC discussed at length in developing their preliminary recommendations and the issues remain of intense interest to the public. Comments were received both in support and opposition to these two recommendations. There was no consensus expressed by the public.

V. Final Recommendations

These final recommendations are the result of discussion and deliberation by the YBAC over many months and in consideration of the comments submitted by the public.

Drought Readiness Issue Statement: Numerous extended dry periods are documented in the Yellowstone hydrologic record. Water availability and drought preparedness are motivating factors in any water resource sustainability strategy. Many tools and policies are available, including conservation, to assist with effective water allocation that maintains economic viability and preserves resource values during drought (see Water Information, Watershed Planning, and Water Administration).

Goal: *Provide sufficient information, and legal and administrative capacity to minimize adverse impacts during times of water scarcity.*

Objectives: (desired conditions)

A. Support and expand Montana's existing drought readiness efforts at local levels.

1. Expand the capability of the Governor's Drought and Water Supply Committee through implementation of information systems to support drought monitoring and availability of water information to water users and watershed groups for purposes of watershed planning.
2. Strengthen support and funding for programs, including Montana university and college programs--including the Montana Climate Office--involved in drought monitoring and forecasting;
3. Establish a statewide task force to coordinate water and climate information in an effort to eliminate duplication.
4. Develop adequate funding sources and incentives for mitigation of drought impacts for all water users.

B. Strengthen existing policies and statutes necessary for effective management of water resources.

1. Recommend changes, if necessary, to statutes and DNRC policies regarding water planning and management to improve the availability and distribution of water during droughts.

2. Recommend changes, if necessary, to statutes and DNRC policies that encourage conservation of water for all water uses and provide incentives for implementation of conservation measures.

C. **Provide tools (policies and legislation) for temporary water-supply management during extended droughts**. (The implementation items below would require assurances that the water-right holders' original entitlement and priority date remain unaffected, once the temporary use terminates):

1. Explore the feasibility of water banks.

2. During a declared drought emergency, develop water-use permits under an expedited process— drought permits would be limited to replacement of water not available under a permanent water right.

3. Develop temporary emergency water-use permits that include changes in type of use (including instream flow), place of use or point of diversion of an existing water right.

WATER INFORMATION ISSUE STATEMENT: The adequacy of existing water information, along with its availability, and ease of access to water users, water managers and the public is an issue. Sufficient water data needs to be collected and made available so that all relevant water information pertaining to a water body can be readily accessed and used to make informed decisions.

Goal: *Provide sufficient water information to efficiently and legally administer water rights, and promote an integrated approach to water resource management.*

Objective(s): (desired conditions)

A. **Education and Outreach**. Provide adequate education and outreach to ensure water user understanding of Montana water right law, hydrologic principles, water commissioner competency, and uniform enforcement of water right decrees.

1. Prepare an Education and Outreach Plan that examines the existing programs and curriculum offered by DNRC and the Montana Watercourse for water-related training and education to determine the need for and costs associated with expanding these programs.

B. **Water Information System**. Improve Montana's Water Information System to allow better access to water supply and availability information and promote an integrated approach to water resource management.

1. Upgrade the accuracy of Montana's Spatial Data Infrastructure (MSDI) Hydrography Framework Layer for purposes of organizing and distributing water information such as:

a. Dam and reservoir mapping,
b. Aquatic habitat information,
c. Water right diversions,
d. Water quality data and discharge permits,
e. Wetlands data,
f. Floodplains, Riparian Zones and Channel Migration Zones.

2. Invest in analytical tools that provide basic hydrologic information on which to base management decisions by:

   a. Conducting a Yellowstone River Basin Water Availability Assessment using a water availability model with updated software and inputs based on known factors such as decrees, compacts, the Yellowstone water reservations, historic stream gauge records, and updated water use estimates to determine the effect of increased water use and climate variability on Yellowstone water users, and

   b. Continuing development of StreamStats - an interactive, Web-based map application for providing streamflow statistics, such as the 100-year flood and the 7-day, 10-year low flow on streams and rivers with limited hydrologic information.

INTEGRATED WATER QUALITY AND QUANTITY MANAGEMENT ISSUE STATEMENT: Water use and water quality are linked. Every use of water affects its quality and as water consumption increases or the characteristics of the supply change, new and alternative uses can be affected. Water quality is an important issue in all areas of the Yellowstone River basin and influences beneficial uses.

Goal: *The desired condition is one in which current and future water use and water quality are balanced in the water administrative and regulatory framework*.

Objectives: (desired conditions)

A. **State Management of Water Quality in Water Quantity Allocation.** DNRC and DEQ should determine the best administrative and organizational procedures to assure coordination and carrying out current law and regulations related to:

   1. Changes in water quality that would adversely affect the ability of an existing appropriator to exercise his/her water right.

   2. Changes in water quality that would make a water body unfit for supporting beneficial uses.

   3. Changes in the wetland and riparian conditions necessary to sustain water quality.

   4. Changes in water quality or quantity that would inhibit the ability of existing discharge permit holders to satisfy effluent limitations.

5. Maintain consideration of current and future flow in authorizing point source discharges.

6. Continue assessment of state waters for flow-related, beneficial use impairments.

7. Provide financial and technical support for activities designed to restore water quality in waters that currently do not support their beneficial uses.

B. Support Activities and Programs to Benefit Both Water Quantity and Water Quality.

1. Maintain funding for improving and protecting water quality using best management practices at all levels of implementation. Promote Integrated Water Resource Management by improving coordination among state and federal agencies, tribes, local watershed groups, and the public.

WATER ADMINISTRATION AND BENEFICIAL USE ISSUE STATEMENT: Enabling fairness under Montana's water law is a significant issue in the Yellowstone Basin. Uncertainty is created by the large number of unused claims in the DNRC water rights system and senior users are sometimes unable to meet their water right due to misappropriation by other users. Any strategy to meet future water demand and put water to beneficial use needs to include examination of Montana's water right system so as to identify opportunities to maximize administrative efficiency and ensure proper monitoring and enforcement of water rights.

Goal: *Improve the existing water right administrative system to ensure water allocation according to established priority and identify unallocated water to satisfy current and future claims.*

Objective: (desired conditions)

A. Water Right Adjudication Process

1. Maintain necessary water right claims examination services provided by the DNRC in support of the Montana Water Court.

B. Abandoned (Orphan) Water Rights

1. Provide clarity through legislation to the administrative and water court processes used to identify abandoned and overstated water rights.

C. Water Right Enforcement. Ensure proper measurement and distribution of water under decree.

1. Enact legislation that allows water right holders to permanently establish enforcement projects through an administrative process, in addition to the legal process (filing suit in district court.)

2. Enact legislation that grants DNRC authority to directly enforce against illegal water use, including the imposition of penalties substantial enough to discourage such use.

3. Develop a method for disseminating information related to illegal water use complaints.

4. Maintain a water rights change process that requires applicants to accurately identify and describe historic use.

D. **Measurement, Monitoring and Assessment**. Require measurement and increase monitoring so that it is sufficient to understand water supply and use, enforce water right decrees and compacts, and to better understand the relationship between water quality and quantity.

1. Maintain the existing stream gauge network operated by the USGS for key mainstem and tributary gauges via the USGS/DNRC Cooperative Agreement Program.

2. Institute a telemetered (real-time) stream gauge program operated by DNRC/MBMG.

3. Strengthen the capability to conduct an inventory of consumptive and non-consumptive uses.

    a. Develop the capability to measure agricultural water use using remote sensing, compare results of pilot studies to previous methods, and evaluate the overall cost-effectiveness of using remote sensing to measure water use.

    b. Require all users to measure at or near the point of diversion from the river or stream.

4. Provide assistance to water users to measure water at or near the point of diversion from a stream.

    a. Offer a tax credit for the cost of installation.

    b. Expand the DNRC Irrigation Development Program to provide grant dollars to pay costs.

    c. Facilitate the installation of measurement devices on development of Renewable Resource Grant applications for large volume ditches.

5. Knowing that these recommendations will incur costs, encourage multiple party collaborations and partnerships that yield creative funding mechanisms to pay for them.

WATERSHED PLANNING ISSUE STATEMENT: Many water resource problems are watershed-specific and their solution requires a collaborative stakeholder approach within small- to medium-sized watersheds within the Yellowstone River basin, while other issues require a basin-wide approach. The need for planning and technical services, and access to information to develop and implement watershed plans, is expected to increase as demand for water increases. Existing funding mechanisms and personnel to support locally-led watershed planning are presently insufficient to meet current and projected demand.

Goal: *Establish a collaborative problem-solving approach to watershed planning resource management.*

Objectives: (desired conditions)

A. **Resolve Basin-Wide Water Management Issues.** Increase interaction and communication between water users, watershed groups, technical specialists, policy-makers, and water management agencies at all levels of government.

   1. Continue to fund a basin-wide stakeholder group (such as the Yellowstone BAC) The purpose of the BAC would be to review progress on recommendations developed during the 2013/2014 biennium, advise DNRC on future water resource management priorities, and serve as a forum on basin-wide water-related issues.

   2. Expand the scope of this group to include water quality, instream flow, ground water, funding amounts and sources, and other related issues.

B. **Resolve Watershed-Scale Water Management Issues.** Increase interaction and communication between watershed stakeholders.

   1. Use existing and potential funding mechanisms to provide technical and financial support to collaborative watershed groups in order to support recommendations in this plan.

GROUND WATER/SURFACE WATER NEXUS ISSUE STATEMENT: Ground and surface water are linked, often in complex interactions that can only be characterized through site-specific long-term measurement and monitoring projects. Although ground water usage in relation to surface water is relatively minor in the Yellowstone River basin, localized problems exist, particularly in areas impacted by land use changes or conversion from flood to sprinkler irrigation.

Goal: *Better manage water resources (rivers, streams, lakes, aquifers, wetlands, riparian zones, etc.) in the Yellowstone River basin by obtaining information on surface water and groundwater sufficient to determine the potential effects of existing and future land use changes and drought, especially in aquifers and surface waters that are necessary to sustain beneficial uses.*

Objectives: (desired conditions)

A. **Ground Water Measurement, Monitoring and Assessment.** Obtain information sufficient to understand the potential consequences of land use change on ground and surface water resources.

   1. Continue and, if necessary, expand the Montana Bureau of Mines and Geology groundwater monitoring and assessment programs.

B. **Ground Water/Surface Water Interaction.** Obtain information sufficient to understand the localized effects of ground water/surface water interaction.

   1. Establish a surface water assessment program jointly operated by DNRC and MBMG to investigate the interaction between ground water and surface water at sub-basin scales.

   2. The legislature should review and make any changes in statutes necessary to optimize use of surface water and ground water resources.

C. **Ground Water Conservation**. Conserve ground water resources in the Yellowstone River basin.

   1. Encourage local jurisdictions (i.e. counties, cities and conservation districts) to identify the hydrologic effects of land use change.

   2. Encourage landowners to reduce the amount of discharge from uncontrolled flowing wells in the lower Yellowstone and Powder River basins by proper winterization and installation of discharge control valves using a combination of DNRC-Conservation and Resource Development Division (CARDD), private grant funds, NRCS grant funds, and landowner in-kind services to install and operate.

INSTREAM FLOW MAINTENANCE ISSUE STATEMENT: Despite the lack of on-stream main stem storage reservoirs, the natural hydrology of the Yellowstone River has been significantly altered by present-day levels of development. Instream flow maintenance pertains to maintenance of a stream's complete hydrologic regime. Maintenance of instream flows is a significant issue, not only on the main stem Yellowstone River and its larger tributaries, but also on smaller tributaries necessary for the functionality of the river system.

Goal: *Provide sufficient protection for instream flows within the prior appropriation framework to maintain aquatic ecology and for other values, such as recreation and aesthetics.*

Objectives: (desired conditions):

A. **Provide specific "Change in Use" mechanisms that allow and incentivize users to assist in maintaining instream flows without compromising their ability to use water or fundamental water right.** Usage of existing tools, such as temporary

and permanent changes to instream flow, should be expanded and promoted to protect instream flows within the prior appropriation framework.

B. **Improve recognition of the surface water/ground water nexus.** Recognizing the hydrologic interconnectivity between ground water and surface water, and affirming the need to protect instream flows, the waters of the basin should be better managed as an interconnected system.

C. **Impact of future water development.** In the context of existing and future development demands, the ability of the existing water supply to meet instream flow rights must be considered in approving new water developments (see B.2.a - water availability assessment under Water Information.)

D. **Yellowstone Water Reservation Review Process.** The water reservation review process established by the Board of Natural Resources and Conservation (now DNRC) should be implemented for all Yellowstone Water Reservations to determine whether or not the objectives of the individual reservations are being met and, if necessary, whether individual reservants have prepared water conservation and drought contingency plans as required by the Order of the Board.

E. **Maintain an intact hydrologic regime.** Manage river and stream flows in ways that avoid threats to the long-term health or survival of native species and implement practices that maintain or restore indigenous ecological communities, processes and functions.

F. **Reservoir Management.** Procedures to maintain instream flows should be developed with attention to the effects of new and existing dams on sediment transport, water temperature and the hydrologic regime. Strategies for water releases and sediment management should minimize the negative effects to riverine processes below the dam.

G. **Longitudinal Connectivity.** Procedures to maintain instream flows should recognize and document the importance of connectivity within stream systems, and efforts should be made to restore connectivity where needed by modifying in-channel barriers.

H. **Drought Planning.** Drought planning efforts within the Yellowstone Basin must include the development of legal, physical, and management mechanisms or plans to implement water conservation during drought periods to protect essential instream flows.

I. **Channel Maintenance.** Recognizing lateral migration processes as important, efforts to maintain instream flows should include provisions for retaining or reestablishing alluvial channel form and function with associated biological communities.

J. **Continued Study and Monitoring**. As the science of instream flow advances and more field data is collected, evaluation of instream flow needs must be ongoing.

Monitoring riverine resource responses to instream flow prescriptions is a fundamental component of effective instream flow maintenance.

WATER STORAGE ISSUE STATEMENT: Water storage is an important part of integrated water management in the Yellowstone River Basin. However, traditional storage projects (dams and reservoirs) are expensive to plan, construct, manage, and maintain. In addition to construction of new storage, alternatives such as the prioritization of uses for water stored within existing reservoirs, maintenance of storage facilities, and modification of existing projects are important tools to mitigate effects of water supply variability. Managing stream and wetland systems to enhance natural channel and floodplain storage can augment structural measures by reconnecting streams to their floodplain, protecting wetlands, and encouraging healthy riparian vegetation.

Goal: *Maintain existing storage projects and with the exception of the main stem Yellowstone River, develop new storage, including non-structural alternatives such as enhanced groundwater recharge, to improve seasonal and year-to-year availability of water for new and existing uses of water.*

Objectives: (desired conditions)

A. **Prioritize New Projects**. Affirm the use of criteria contained in the Montana Water Storage Prioritization Policy (MCA §85-1-704 (2)(a) through (2)(j)) as applied to the prioritization of new storage projects. Enhancing alluvial aquifer recharge via wetland and riparian zone improvement projects should also be considered as a means for reducing flow variability and maintaining the natural hydrologic regime for streams and rivers in the Yellowstone basin.

B. **Maintain Existing Storage Projects**. Affirm the use of criteria contained in the Montana Water Storage Prioritization Policy (MCA §85-1-704 (3)(a) through (3)(c)) as applied to setting priorities among storage rehabilitation projects.

C. **Allocation of State Funds for Storage Projects**. Affirm the use of criteria contained in the Montana Water Storage Prioritization Policy (MCA §85-1-704 (4)(a) through (4)(c)) as applied to setting budget priorities among new storage construction and rehabilitation projects.

D. **Water Storage Financing**. The State of Montana should focus resources on understanding, coordinating, and improving funding programs for water storage development, operation, maintenance, and rehabilitation.

FUNDING ISSUE STATEMENT: The legislature directed that DNRC update the MWSI. In order to implement the statewide water plan, funding is required.

Goal: *Identify current and potential funding sources*.

Objective: (desired conditions)

A. Revenue Sources: Look for revenue from new and existing sources.

1. Look for revenue sources from all those who benefit from access to state water resources (including recreationists, irrigators, municipalities, water-rights holders, etc.)
2. Look for revenue from existing funding sources (such as the Resource Indemnity Trust and other programs for example.)

APPENDICES

APPENDIX A: YBAC MEMBER MEETING ATTENDANCE, PHASES 2 AND 3

Council Member	Primary Affiliation	11/14-15/13	12/13/13	2/25/14	3/12/14	4/9/14	4/25/14	5/29/14
Beaudry, John	Industry-Stillwater Mining Co.	X	X	X		X		
Cole, Mack (Chair)	Agriculture-Montana Farm Bureau	X	X	X	X	X	X	
Cumin, Cal	Instream, Montana Wilderness Assoc., Yellowstone River Parks Assoc.	X	X	X	X	X	X	X
Galt, David	Industry-Montana Petroleum Association	X	X				X	X
Gatzemeier,Paul	Industry	X		X	X			X
Haidle, Lynn	Agriculture-Conservation District							
Lackman, Greg	Agriculture-Conservation District	X	X	X	X		X	X
Lowe, Dan	Agriculture-Conservation District	X	X		X	X	X	X
Moorhouse, John (Vice-Chair)	Instream, Yellowstone River Conservation District Council	X	X	X	X	X	X	X
Muggli, Roger	Agriculture-TY Irrigation Canal			X	X	X	X	
Mumford, Dave	Municipal Water Supply	X	X		X	X	X	
O'Hair, Jerry	Agriculture-Conservation District, Outfitter	X	X	X		X	X	X
Osborne, Tom	Industry-Hydrology Consultant	X			X		X	X
Penfold, Mike	Instream Our Montana	X	X	X	X	X	X	

Council Member	Primary Affiliation	11/14-15/13	12/13/13	2/25/14	3/12/14	4/9/14	4/25/14	5/29/14
Petermann, Kay	Agriculture-Conservation District	X	X	X	X	X	X	X
Pulasky, John	Agriculture and Economic Development	X	X	X	X	X	X	X
Pust, Steve	Agriculture-Conservation District	X		X	X	X		X
Rostad, Dan	Agriculture-Conservation District, Boulder River Watershed Group	X	X	X	X	X		
Sauer, Brad (Golder, Fix)	Instream, Northern Plains Resource Council	X	X	X	X	X		
Spang Gion, Shanny	Northern Cheyenne Nation	X	X		X	X	X	

APPENDIX B: EX-OFFICIO YBAC MEMBERS

Name	Agency
Benoch, Gerald	U.S. Bureau of Reclamation
Brummond, Andy	Montana Department of Fish, Wildlife and Parks
Duberstein, Lenny	U.S. Bureau of Reclamation
Frankfurter, Jill	U.S. Geological Survey
Frazer, Ken	Montana Department of Fish, Wildlife and Parks
LaFave, John	Montana Bureau of Mines and Geology
Ockey, Mark	Montana Department of Environmental Quality
Opitz, Scott	Montana Department of Fish, Wildlife and Parks
Philbin, Mark	U.S. Bureau of Land Management

APPENDIX C: ACRONYMS

BAC: Basin Advisory Council

BLM: Bureau of Land Management

CARDD: Conservation and Resource Development Division (a part of Montana DNRC)

DEQ: Montana Department of Environmental Quality

DNRC: Montana Department of Natural Resources

EQC: Environmental Quality Council

FWP: Montana Department of Fish, Wildlife and Parks

GWIC: Ground Water Information Center

GWAP: Ground Water Assessment and Monitoring Program

GWIP: Ground Water Investigation Program

MBMG: Montana Bureau of Mines and Geology

MCA: Montana Code Annotated

MGWPCS: Montana Ground Water Pollutant Control System

MSDI: Montana Spatial Data Infrastructure

MSU: Montana State University

MWSI: Montana Water Supply Initiative

NRCS: Natural Resources and Conservation Service

RDR: Recommendations Development Report

RRGL: Renewable Resources Grants and Loans

TMDL: Total Maximum Daily Load

USBR: United States Bureau of Reclamation

USGS: United States Geological Survey

WRD: Water Resources Division of DNRC

WPIC: Water Policy Interim Committee

APPENDIX D: MINORITY REPORTS FOR TWO ISSUES LACKING YBAC CONSENSUS

The YBAC was unable to reach consensus on the following two recommendations. A vote was held and this minority report prepared for the DNRC as per the Guidelines. The report was drafted by the coordinator and approved by the minority voters for each recommendation. The public commented both in favor of and in opposition to the recommendations.

Water Administration and Beneficial Use Issue
Preliminary Recommendation D.3.b
"Require all users to measure at or near the point of diversion from the river or stream."

YBAC members that could not support this recommendation were opposed to it for the following reasons;

- Implementing this recommendation would create a cost burden for water users and the cost burden could be substantial,
- Implementation of this recommendation could require measurement of water used from very small streams which was seen as unreasonable,
- Implementing this recommendation could lead to inappropriate use of the information collected against irrigators, and
- Implementing this recommendation could pave the way for additional measuring requirements (such as measuring agricultural return flows) in the future.

This recommendation received 7 yes votes and 3 nay votes at the May 29, 2014 meeting. This recommendation received 7 additional yes votes and no nay votes when YBAC members absent from the May 29 meeting were polled.

Instream Flow Maintenance Issue
Preliminary Recommendation I: Channel Maintenance
"Recognizing lateral migration processes as important, efforts to maintain instream flows should include provisions for retaining or reestablishing alluvial channel form and function with associated biological communities."

YBAC members that could not support this recommendation were opposed to it for the following reasons;

- Implementing this recommendation could make it difficult or impossible to use riprap in the future,
- Maintaining existing channels (versus allowing channels to migrate)protects against soil and property loss, and
- Implementing this recommendation could threaten a property owner's ability to retain and protect their property.

This recommendation received 6 yes votes, 3 nay votes, and 1 "present" vote at the May 29, 2014 meeting. This recommendation received 7 additional yes votes and no nay votes when YBAC members absent from the May 29 meeting were polled.

Appendix E: Glossary of Terms

7-day, 10-year low flow: The 7-day 10-year low flow (Q7,10) is a statistical estimate of the lowest average flow that would be experienced during a consecutive 7-day period with an average recurrence interval of ten years. Because it is estimated to recur on average only once in 10 years it is usually an indicator of low flow conditions during drought.

100-year flood: A 100-year flood is a peak flow that generally occurs once in 100-years and has a one percent chance of occurring in any given year. It is possible, but unlikely, for more than one 100-year flood to occur in a 100-year period—or even occur in two consecutive years (as happened in the Upper Yellowstone basin in 1996 and 1997). When this happens, the largest flood becomes the 100-year flood and the lesser, becomes a "near-100 year flood".

alluvial channel form: the physical appearance of a river channel as viewed on a map or aerial photograph along with its channel width, depth and slope.

alluvial channel function: the primary functions of alluvial channels are sediment erosion, transport and deposition that create and maintain the primary channel, side channels and floodplain of rivers and streams.

alluvial river channel: a river channel that flows through sediments it is capable of transporting. Most of the Yellowstone River has an alluvial channel; however some segments in the Upper Yellowstone (for example Yankee Jim Canyon) are not and have a bedrock bed and banks.

aquatic ecology: The relationships among aquatic living organisms and between those organisms and their water environment.

Channel Migration Zone: Channel Migration Zone mapping is based on the understanding that rivers are dynamic and move laterally across their floodplains through time. As such, over a given time period, rivers occupy a corridor area whose width is dependent on rates of channel shift. The processes associated with channel movement include lateral channel migration and more rapid channel avulsion. The fundamental concept of CMZ mapping is to identify the corridor area that a stream channel or series of stream channels can be expected to occupy over a given timeframe. A 100-year CMZ is a typical timeframe.

consumptive use: a beneficial use of water that reduces supply, such as irrigation or household use.

flowing well: an oil or water well from which the product flows without pumping due to natural or artificially supplied subterranean pressure.

hydrologic regime: The distribution over time of water in a watershed, among precipitation, evaporation, soil moisture, groundwater storage, surface storage, and runoff.

in-channel barriers: dams or other flow obstructions that prevent upstream or downstream migration of fish and humans.

indigenous ecological communities: a species is defined as native (or indigenous) to a given region or ecosystem if its presence in that region is the result of only natural processes, with no human

intervention. Every natural organism (as opposed to a domesticated organism) has its own natural range of distribution in which it is regarded as native. Outside this native range, a species may be introduced by human activity; it is then referred to as an introduced species within the regions where it was introduced.

instream flow: water left in a stream for non-consumptive uses such as aquatic habitat, recreation, navigation, or hydropower.

interstate compact: a legal agreement between two states that divides (or apportions) water crossing the state's boundaries.

lateral channel migration: natural movement of river channels from side-to-side through the processes of erosion and deposition.

longitudinal connectivity: connectivity in rivers is measured in four ways: longitudinal, vertical, lateral, and over time. Longitudinal (along the stream) connectivity allows water and sediment to move downstream and aquatic organisms like fish to migrate upstream and downstream. It is also can refer to the transport of humans and the shipping of goods (navigation.)

natural hydrology: the pattern of streamflow (amount and seasonal timing) that occurs without human influences such as water storage and diversions for consumptive use.

non-consumptive use: a beneficial use of water that does not consume water.

Prior Appropriation Doctrine: a legal principle applied in Montana and other western states that holds that water rights are unconnected to land ownership, and can be sold like other property. The first person to use a quantity of water from a water source for a beneficial use has the right to continue to use that quantity of water for that purpose. Subsequent users can use the remaining water for their own beneficial purposes provided that they do not impinge on the rights of previous users. Often cited as "first in time, first in right".

Resource Indemnity Trust: Article IX of the Montana Constitution provides for the protection and improvement of the Montana environment and requires the existence of a resource indemnity trust (RIT) fund for that purpose, to be funded by taxes on the extraction of natural resources.

riparian: riparian means related to or situated on the banks of a river. A *riparian* zone or *riparian* area is the interface between land and a river or stream.

riverine processes: the processes of erosion, transport and deposition of sediment that shape a river's channel(s) and floodplain.

state compact: a legal agreement between Montana and a federal agency or an Indian tribe determining the quantification of federally or tribally claimed water rights.

stream gauge: a stream gauge measures the flow of water at a point along a stream. Because there are many types, the U.S. Geological Survey (who implements and oversees the nations water measurement program) defines a stream gauge as, "is an active, continuously functioning measuring device in the field for which a mean daily streamflow is computed or estimated and quality assured for at least 355 days of a

water year or a complete set of unit values are computed or estimated and quality assured for at least 355 days of a water year".

telemetered (real-time) stream gauge: a telemetered gauge has the electronic capability to transmit water elevation and streamflow data to a central location where it may be viewed (for example, on the internet) as the data is collected. USGS telemetered stream gauges provide updated observations every 15 minutes.

water bank: is an institutional mechanism used to facilitate the legal transfer and market exchange of various types of surface, groundwater, and storage entitlements. Water banks use the market to make water available for new uses.

Yellowstone Water Reservations: In December 1978, the Montana Board of Natural Resources and Conservation (now defunct), issued an order on the reservation of water in the Yellowstone River Basin. The order reserved, or set-aside, a block of water for future municipal and agricultural use, off-stream storage and instream flow.

Lower Missouri River Basin Advisory Council Recommendation Development Report

Milton Mediation and Facilitation
Roundup, Montana

May 28, 2014

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Lower Missouri River Basin Advisory Council Recommendation Development Report

May 28, 2014

1 SYNOPSIS

The Lower Missouri River Basin Advisory Council (LMR BAC), comprised of twenty members selected from applicants representing a variety of interests in the expansive lower Missouri River area of eastern Montana, began the difficult task of addressing water resource issues of concern in August, 2013. Basin residents were invited to attend a series of six scoping meetings held in September and October. Issues raised during those meetings were winnowed down by the LMR BAC to five core topics detailed in a Final Issues Scoping Report released December 31, 2013. Those issues were Surface Water Availability and Quality, Groundwater Availability and Quality, Water Management, Future Needs, and Implementation Strategies.

In January, 2014, the LMR BAC began meeting to address issues identified in the Scoping Report, with assistance from technical presenters who filled knowledge gaps. The goal was to craft specific recommendations for each issue that could become part of the statewide water plan. As members discussed alternative strategies to employ in solving the state's water resource problems, they relied on some implicitly agreed-upon criteria to filter proposed recommendations.

1. Under Montana's Prior Appropriation doctrine of water rights, all beneficial uses that have a water right, consumptive or non-consumptive, are equal. Beneficial use includes, but is not limited to the following categories: agriculture, domestic, industry, recreation, energy development, commerce, and ecology (i.e., fish, wildlife, habitat, river health.) No single beneficial use will be targeted by the BAC's recommendations.
2. The ultimate success of the Montana Water Supply Initiative and state water plan will depend on education of the public. Members of the BAC learned a great deal as they investigated water resource issues raised during the public scoping process. Adopted recommendations are to be based on facts rather than perceptions.
3. Residents in sub-basins cannot expect the state or federal government to solve all of their water resource problems. Local grassroots organizations can provide an effective vehicle for achieving measurable results. In particular, infrastructure repair or rehabilitation must be attacked at the local level, with costs determined, specific projects prioritized, and funding explored.
4. While many of the BAC's recommendations may have associated costs, it is up to the state legislative and executive branches to set priorities and appropriate funds to implement them.

BAC members are not tasked with nor equipped with the tools necessary to make cost estimates.

5. If there are existing statutes and regulations that satisfactorily address particular issues, those issues will not be addressed by BAC recommendations.

The BAC met a number of times face-to-face and by conference call to develop specific, actionable recommendations for each of the issues outlined in their Final Issues Scoping Report. As those recommendations were vetted by the group, some adjustments in issues statements were necessary. The categories of the Council's final recommendations included Water Use Administration; Storage, Distribution, Infrastructure Maintenance, and Application Efficiencies for Irrigation Water; Water Resource Inventory and Measurement; Groundwater Aquifers: Quantity and Quality; Future Demands on Water Resources; and Watershed Organizations. In addition, issue statements and recommendations were developed by each of the four sub-basin groups represented on the BAC – Judith River, Milk River, Missouri River below Ft. Peck dam, and Musselshell River – for consideration by local watershed groups that might be interested in pursuing implementation in the future.

A draft Recommendation Development Report was released for public comment in mid-April, and four additional meetings in the lower Missouri River basin were scheduled to listen to what citizens had to say about the LMR BAC's efforts. The BAC met again at the end of May, 2014 to modify and finalize the recommendations.

2 INTRODUCTION AND BACKGROUND

To begin the legislatively mandated update of the state water plan, the Department of Natural Resources and Conservation (DNRC) launched the Montana Water Supply Initiative (MWSI). DNRC determined that public involvement was crucial to acceptance of any plan that might be implemented by the state. To find out what water resource issues were of most concern to Montanans, DNRC chose to appoint a 20-member Basin Advisory Councils (BAC) in each of the major river basins in the state for the purpose of conducting public scoping sessions. Because the Missouri River watershed is so large, because its climate and geographical features are so variable, and because the upper reaches of the basin are closed to new water appropriations while the lower reaches are not, it was split into an Upper and Lower basin. In the case of the Lower Missouri River Basin (LMRB), a facilitation contractor was engaged in early July to begin the process of soliciting and selecting BAC members.

Through phone calls, emails, and personal contacts, a list of over one hundred potential candidates, or organizations that might wish to put forth candidates' names, was developed, and letters and/or emails were sent out requesting applications. At the same time, several press releases were disseminated from DNRC headquarters for state-wide distribution, and by the LMRB facilitation

team for local distribution. Cooperation from news media was good, and enough applications were received to constitute broad representation on the LMR BAC. A kick-off meeting of the BAC was held in Malta on October 2, 2013.

Six BAC Scoping Meetings were scheduled in the LMRB, and an advertising campaign successfully produced press coverage of the meeting schedule and purpose by newspapers, regional agriculture publications, watershed newsletters, television stations, and radio stations. Paid display advertisements were also placed in newspapers serving the six areas where meetings were scheduled.

Location	BAC Members	Staff Members	Technical Advisers	Public	Total Attendance
Lewistown, 10-8-13	7	5	4	14	30
Glasgow, 10-23-13	5	7	4	1	17
Culbertson, 10-24-13	7	4	1	13	25
Roundup, 10-30-13	4	7	1	15	27
Harlowton, 10-31-13	5	6	4	22	37
Havre, 11-7-13	6	7	2	16	31

Table 1: LMRB Scoping Meeting Attendance

Total attendance for the six scoping meetings was 167, including 81 members of the public.

Each of the scoping meetings began with introductions around the tables. For purposes of education on the MWSI process and current available data on water resources, DNRC staff members made brief presentations, and the whole group participated in a discussion of water resource issues. The Facilitator made sure that every person attending had an opportunity to express personal concerns about water resources, and participants rated the meetings successful. Some written testimony was presented by participants, or was submitted later, and that testimony is a part of the record for the scoping meetings. (For a complete list of issues developed at the six scoping meetings, refer to Appendix A of the Final Issues Scoping Report available online at Montana State Water Plan).

At the conclusion of the scoping meetings, the BAC met again to prioritize issues raised by the public, then select issues for which recommendations would be developed during the next phase of the Water Supply Initiative process. Issues selected included:

1. Surface Water Availability and Quality – which includes information required to determine the amount of water that is legally and physically available for existing and future uses; options to capture additional spring runoff; voluntary conservation programs, or in the case of industrial water use, development of recycling technology; addressing aging infrastructure, effects of poor water quality on domestic and agricultural uses; and better coordination among the state agencies charged with managing water quantity and quality.

2. Groundwater Availability and Quality – which includes mapping and characterizing aquifers that might provide opportunities for future uses; increased understanding of recharge rates, quality, and usage of groundwater; better understanding of the interactions between groundwater and surface water; and long-term monitoring of wells to gather information on changes in water quality and groundwater levels in response to climate variability and nearby water use.

3. Water Management – which includes fair enforcement of water rights decrees; protection of senior water rights; the need for streamflow gages to support the work of water commissioners; and management of water levels in reservoirs in the Lower Missouri basin is critical to recreational uses and to the businesses that depend upon those uses.

4. Future Needs – which includes recognition that Montana will need more water rather than less in the future; factors, including climate change, that may affect water supply; changes in the timing of spring run-off may impact access to available water necessitating revisions of water management practices; and recognition that water quantity and quality are directly related, and that poor water quality impacts some types of beneficial use.

5. Implementation Strategies – which include reservations about how a state-wide water use plan can be implemented; the need for local watershed organizations to serve as examples of the positive results of communication and collaboration on local water management issues; and the need for the state-wide water use plan to be adaptable and responsive to changing water resource supply and demand.

3 RECOMMENDATION DEVELOPMENT

In January, 2014, the Lower Missouri River Basin Advisory Council began the process of developing recommendations to address the water resource issues raised during the scoping process. Council members recognized that there were gaps in their knowledge of existing statutes, regulations, policies, and research relating to water, so presentations by state and federal agency staff were scheduled. Information on USGS water quality issues and studies related to energy development in Montana; DEQ water quality monitoring programs; US Bureau of Reclamation operation and information on Milk River projects; US Army Corps of Engineers practices and policies; MT Board of Oil and Gas procedures, policies and authority; and DNRC water rights statutes and regulations was shared and thoroughly discussed.

Water resource issues identified in the scoping process and selected by the LMR BAC for consideration in the recommendations phase of the Montana Water Supply Initiative process were modified during meetings and conference calls in February, March, and the first part of April. Many drafts were considered and debated. Some issues and recommendations were dropped from the process while new ones were added. The recommendations presented in this report are the result of many hours of hard work by BAC members, DNRC staff, and BAC Technical Advisers.

A number of issues were identified as specific to the four sub-basins in the lower Missouri River basin: the Musselshell, the Judith, the Milk, and the Missouri below Ft. Peck Dam. Those issues, drafted by BAC members residing in the sub-basins, appear in Section 5 of this document. They will not be considered by DNRC for inclusion in the final state water plan document, but will instead serve to inform watershed organizations about issues that need to be explored and addressed locally.

The next step in completion of a Recommendation Development Report that will be submitted to DNRC by the BAC by June 15, 2014, was to allow the public in the Lower Missouri River basin time to comment on the proposed recommendations. Four meetings were scheduled to gather comment, and there was also be an opportunity for individuals to submit written comments on the recommendations before the BAC's final meeting May 28. At that meeting, the task of BAC members was to further modify and adopt recommendations to be included in the final report.

3.1 BAC Phase 2 – Summary of Information Transfer and Alternatives Development

The Lower Missouri River Basin Advisory Council was assigned "homework" by Facilitator Bill Milton. Each member was to submit at least one recommendation alternative for compilation and distribution to all the other BAC members. A conference call was scheduled for discussion of the submissions. The results were mixed, with some members successfully focusing on recommendations rather than issues, but it was apparent that additional information from technical presenters would be necessary before any meaningful alternatives could be developed. Facilitator Milton also decided that the staff supporting the BAC would draft a list of issue statements based on the group's Final Scoping Report for distribution to and consideration by the BAC. Face-to-face meetings were scheduled for information transfer, with conference calls interspersed to begin hammering out recommendation language for each of the draft issue statements.

3.1.1 Meeting #1 – February 18, 2014, Lewistown

Jill Frankforter, USGS Water Quality Section Chief, Helena, gave a presentation on USGS energy-related surface and groundwater research in the Williston Basin, which extends into northeastern Montana, since the 1980s. The agency has built aquifer modeling systems for shallower aquifers and is now beginning to look at deeper aquifers in the area. One of the most prominent studies was begun on tribal land north of Poplar when contamination from leaking oil wells and brine pits built in the 1950s impacted drinking water. Remediation efforts have been partially successful, but there are on-going problems with water quality and the systems used to transfer water from the Missouri River to residents. (The tribe has also pointed out in a recent news story that aquifers under their land have become unusable for any future purpose, and that has an ongoing economic impact.)

Frankforter went on to say a small groundwater baseline testing program was initiated in the Williston area last year, but there is no way of knowing for sure whether water quality had already been degraded by energy development. Researchers wish the project could have been started six years earlier, and that funding could be assured for long-term follow-up monitoring. USGS is working to coordinate with Montana's DEQ and MBMG to test wells in northeastern Montana as soon as possible. In 2012 some oil production wells were tested to establish their production water's chemical signature in case any contamination occurs in the future.

In addition to aquifer water quality research already under way, USGS planned studies include a groundwater availability "budget" for the Williston Basin, a study on how much water will be required for fracking activities during the expected life of the basin's oil boom, and a groundwater quality study on Blackfeet tribal lands.

The next technical presenter was Clayton Jordan, Bureau of Reclamation Reservoir Operations, Milk River Project. Jordan's presentation began with a summary of the history of the project. The original authorization was to provide irrigation water to the area, and flood control became a part of the project in 1957. Other uses now include recreation, fish and wildlife, municipal drinking water, and industrial uses. The Montana FWP division, Blackfeet Tribe, NRCS, Army Corps of Engineers, and Milk River Joint Board of Control work together with the Bureau of Reclamation to manage the project.

The entire Milk River Project infrastructure is in need of rehabilitation, but at this time, there is no funding available for major repairs or replacement. The system has not met reliability standards for the past twenty years. A large portion of the cost burden will most likely be borne by project water users, which total 140,000, including Bureau of Reclamation lessees, tribal users, and private water rights users.

Infrastructure failure is not the only concern for Milk River water users. Sedimentation has reduced the capacity of the two lower Milk River reservoirs, Fresno and Nelson. Fresno now holds 92,000 acre/feet at full pool, while it was built for 120,000 acre/feet. Nelson has also lost capacity, and leaks about 1,800 acre/feet per month due to seepage through its dikes. A dam safety project will start next year, but it will not address the seepage issues.

The third and final presenter at Meeting #1 was Tom Richmond, Administrator, Montana Board of Oil and Gas. Richmond displayed several charts showing data for drilling permits issued in Montana. Coal bed methane permits peaked in 2005, and had nearly disappeared by 2008. Natural gas permits peaked in 2006, and oil permits are peaking now. Economic factors play a large role in which types of permits are sought by energy companies. Most of the current oil drilling permits have been issued in Richland and Roosevelt counties, closer to the most productive areas of the Bakken play. Since 2000, 700-800 oil wells have been drilled in Richland County in Montana. Other old wells were re-drilled horizontally to increase production. In areas outside the Bakken, oil drilling permit numbers are at their lowest point since the beginning of the period that started

in 1960. In central Montana, where the rate at which oil can be pumped from the Heath Shale does not match production from the Bakken, drilling is not cost-effective given the current price of oil.

BAC member Eric VanderBeek asked about drilling activity in the Judith River basin, through what process are permits are granted by the Board of Oil and Gas, and does the Board ever deny a permit.

Richmond replied that the drilling in the Judith is for "geologic exploration," even though there is no category for that, so the permits were granted for oil wells. When permits are requested for an area outside of an existing oil field, the Board of Oil and Gas publishes a notice of the application, and there is a 10-day protest period. If a hearing is scheduled, persons who wish to comment must appear at the hearing. The Board of Oil and Gas does not deny permits, as that would be a "taking" of property rights, but there can be conditions attached to the permits. The Minerals Management Bureau of DNRC processes leases on state-owned land, and the BLM is the primary regulatory agency on tribal lands. The EPA monitors drilling activity on private and public lands.

BAC member Kristi Kline asked when the BOG looks at water resource issues in the permitting process, and BAC member Dave Galt asked about fracking chemical disclosure rules.

Richmond said current regulations were developed to protect shallow, good quality aquifers. Oil and gas well casings must be solid from the surface to a point below the lowest fresh water aquifer. No holding ponds are now allowed for production water, the wells must use a closed system. The Board looks at existing water wells in the area of development to determine the depth of aquifers.

In August, 2011, the state adopted rules that require all well fracturing material components be disclosed, and that well fracturing is part of the initial drilling process. If fracturing is contemplated on an existing well, a permit must be obtained. The fracturing material website is at frackfocus.org, and it is a central U.S. depository of data.

BAC member Dick Iversen commented that the footprint of an oil well operation is 5-6 acres, and once surface water leaves the site, the EPA or Montana DEQ is responsible for water quality regulation. Sites are bermed to prevent drilling and production water from leaving the site. Richmond added that energy companies must have a spill control plan approved by the EPA. Generally no enforcement action occurs unless there is an uncontained spill.

DNRC Water Resource Planner Michael Downey mentioned that the Board of Oil and Gas regulates Class 2 injection wells that are used for either enhanced oil or gas production, or for production waste water disposal. BAC member Doug Hitch asked whether all production water is injected.

Richmond replied that production water can be discharged at the surface if it meets water quality standards established by DEQ. He said that much of it is of high enough quality to be used for drilling or fracking purposes. The Board of Oil and Gas regulatory program does not cover water

quality testing. He suggested that private well owners should test their own water and that way the results would remain confidential. The MBMG was allocated $660,000 by the 2013 Montana Legislature for groundwater monitoring. The agency is considering using the funding for long-term research.

BAC members Dave Galt and Jane Holzer described the MBMG coal bed methane groundwater testing program being administered by conservation districts. About 10-15 wells per county can be tested once by the program. Jane said the program would be more beneficial if more wells in more areas could be tested, especially in far eastern Montana. Some energy development companies have domestic or stock wells tested in the vicinity of their operations, but the results do not become public.

The remainder of the day's meeting was spent developing a short list of possible recommendations related to draft Issue Statement #5, Groundwater Aquifers – Quantity and Quality. Recommendations suggested were:

- Short-term, identify 3-5 major aquifers that should be more thoroughly defined and characterized by research
- Expand funding for aquifer research
- Revise the method for prioritizing research locations so that sparsely populated areas of the state receive the same attention as densely populated areas
- Add a risk factor for contamination to the list of criteria considered in the research prioritization process.
- Tie water quality and quantity together in issuance of new groundwater permits
- Account for wastewater when considering available water quantity

3.1.2 Meeting #2 – March 5, 2014, Ft. Peck Dam Interpretive Center

DNRC Water Resource Planner Michael Downey summarized the basin water plan process, and how the BAC's work will be incorporated into the statewide water plan. At present the Lower Missouri Basin Plan is about 50% completed at 100 pages long. The BAC recommendations that will be adopted by the end of May, 2014, will become a part of the basin plan. The basin plan includes scenarios that consider increasing population, and long-term drought conditions. The statewide water plan will reference the four individual basin plans rather than incorporating them in entirety. Recommendations from the individual basins will be considered for inclusion in the final state plan that will be presented to the 2015 Legislature.

John Daggett, US Army Corps of Engineers presented information on the Corps' management of the Missouri River through and below Ft. Peck Reservoir. All six dams operated on the Missouri by the Corps are treated as one system. The Corps is authorized to manage for flood control,

hydroelectric power, water supply, water control, recreation, fish and wildlife, navigation, and irrigation. The Corps looks at plains snowpack, mountain snowpack, and rainfall each year to determine how much storage capacity may be necessary to store floodwaters.

Reservoir Control Center presents an annual plan for public comment each year. The plan considers hydroelectric needs, endangered species, navigation, irrigation (when possible), and flood control. The hydroelectric facility at Ft. Peck produces about 10 billion KW each year, which markets first to preference customers (non-profit rural electric companies), then to the open market. Water releases year around are ordered every day or so to meet power requirements.

About 140 private irrigators are located between Ft. Peck Dam and the North Dakota border. When possible, especially during drought periods, the Corps tries to release enough water to fill irrigation needs, but there is no contractual obligation to do so. Channel changes and new sand bar formations have interfered with irrigators' ability to reach the river, so higher releases would be necessary to allow easy access to the water. There is water available in the Missouri River below Ft. Peck for additional irrigation, but it may be difficult to access. There are no guarantees, however, that irrigators will receive enough water without having to move their pump sites. The irrigation water authorization only applies to federal water delivery projects, not private irrigators. Tribal rights and water reservation demands must also be met.

During drought conditions, all the federally-authorized purposes pay a price, including recreation facilities. Businesses, especially at the upper end of the reservoir, may be left with the water far from their boat ramps. The Corps tries to help by extending the boat ramps where possible, or putting temporary boat ramps in place.

Water releases vary from day to night, as does the river level below the dam. At night, the release might be 9,000 cfs, and during the heat of the day in the summer, 13,000 cfs. Floating pumps can make use of water more reliably than fixed sites. Some of the conservation districts have helped producers by removing sand bars to improve accessibility to the river. The Corps tries to give producers information in advance of releases. Municipalities haven't had problems accessing water.

BAC member Jim Peterson asked whether DNRC will be doing an analysis of water availability both above and below Ft. Peck, and developing a statistical model to estimate the effects of drought on the statewide water use plan.

Michael Downey replied that there are several modeling efforts going on. The Bureau of Reclamation is studying water availability from the headwaters of the Missouri to Ft. Peck. The water plan that results from the Water Supply Initiative project will raise more questions than it answers on what data is needed for good forecasting of water availability and use.

Peterson asked how a water permit applicant can know whether his application will be granted, with so many agencies involved in determining availability in the Missouri below Ft. Peck.

Michael Downey said there is water available, and DNRC is granting new water right permits. If a downstream state were to try to call for water from Montana, a legal battle would ensue. An individual in Montana who has a water right cannot be forced to give up that right to someone downstream out of state.

The Corps is selling excess water in North Dakota that comes from reservoirs. Last year, barge operations needed more water, and the Corps denied the request. The only releases made are based on the annual operating plans for the reservoir system. The Corps did file for a water right in the 1970s for some of its authorized uses.

Michael Downey gave a short summary of the issue of flowing wells in Montana (artesian wells). There are about 1,500 mostly stock water wells in the Lower Missouri and Yellowstone that run continuously at 10-20 gallons/minute, allowing 24,000 acre/feet to flow onto the ground, down drainage ditches and eventually into rivers. The water quality is probably lower than that of the river. Some of these wells are losing productivity as the water level in the aquifers drops. The BAC could make a recommendation that valves be installed on these wells to control the flows and conserve water, with some cost sharing by federal and state grant programs. This would be a voluntary program that should elicit good support. If a water right holder on a flowing well filed for 100 gallons/minute, by installing a valve that reduces the flow to 10 gallons/minute, the water right beneficial use quantity would not be reduced.

A pilot program in Petroleum and Fergus counties demonstrated that adding valves to flowing wells did make a difference in aquifer water levels.

The group began working through the draft Issue Statements, refining language on both issues and recommendations.

Discussion of Issue Statement #1, Water Resource Inventory

There were differences of opinion about what should be included in Issue Statements #1 and #2. After some discussion, it was decided that Issue Statements #1 and #2 would be handled by an irrigator sub-committee: Bill Bergin, Bob Goffena, Jim Peterson, Peter Marchi, with assistance from Bill Milton, Michael Downey, and any other BAC members who want to participate by conference call.

Issue Statement #3, Storage, Distribution Infrastructure Maintenance

Federal government, the state, and local communities in the Milk River need to get together and plan for the St. Mary's diversion project collaboratively. How should this apply to other areas in the Lower Missouri River basin?

Michael Downey explained that two programs, the Renewable Resource Grant and Loan program and the Reclamation Development Grant program, are used to help share costs for projects that enhance water and other renewable resource projects across the state. DNRC staff ranks grant applications by set criteria, then forwards recommendations to the legislature for funding every two years. Unfortunately, the funding assistance is seldom enough to pay for construction of major projects. Grants can, however, pay for preliminary engineering to help design the projects.

BAC member Dick Iversen suggested that basins use a strategy that in the short-term, project design be accomplished using state grants; medium-term, study the project and do preliminary engineering; long-term, look for funding sources from all stakeholders.

Downey said that the Milk River has been studied and re-studied, and estimated costs determined, which were overwhelming. If the diversion canal failed catastrophically, 80% of the flow of the Milk River would be lost to all users. The agricultural users should not be the only ones who share in the cost of repairs.

BAC member Rhonda Knudsen suggested a recommendation of establishing watershed councils in the short-term to develop funding methods.

BAC member Jim Peterson said the legislature is not likely to respond to a request for enough money to make major repairs. Instead, a package should be developed that might include tax-free bonds, tax incentives, private contributions to combine with state and federal funding sufficient to fund a project. The plan should come from the local citizens who are affected by the project, and there should be some benefits to the private partners in the process. Tax credits might help encourage participation. Establish working groups to assess local capacity, incentives, public/private partnerships, and financial commitments to address infrastructure needs.

BAC member Kristi Kline said that the St. Mary's Working Group came to a standstill because they need a local coordinator to help keep the group going. The groups need assistance from the state to develop capacity and operational security.

Downey suggested adding that the state should provide operational funding to assist in the establishment of the working groups.

Issue Statement #4, Water Measuring Devices

At present, gaging maintenance is a federal/state/local partnership. There is a budget request from DNRC now to increase funding for streamflow gages.

Each sub-basin should make decisions about where new gaging stations should be placed, and how those stations should be paid for.

Issue Statement #5, Groundwater Aquifers: Quantity and Quality

In addition to groundwater quality monitoring, connections between aquifers and surface water should be identified and characterized.

There was some discussion of whether private well owners would want the results of their well testing to be public information. Participation in a groundwater testing program would be voluntary.

Michael Downey explained the Colorado, Wyoming, Utah, and New Mexico have adopted or are in the process of adopting statutes to bring the oil and gas industry back into the regulatory framework for meeting water quality standards. In 2005, the industry was exempted from meeting Clean Water Act Regulations.

Meeting participant Deb Madison, who works for the Ft. Peck Tribe in its environmental issues office, said that after the Poplar aquifer contamination came to light, the tribe has adopted new rules for testing domestic and stock wells within a mile of an oil field or proposed oil field to establish baseline water quality data.

It was decided to recommend that the governor appoint a taskforce to address perceived water quality issues with the energy industry by using standards recently adopted by other western states. This recommendation will be discussed at future meetings when other members of the BAC have had a chance to study it.

Another recommendation was added for supporting federal efforts to deal with flowing wells.

Issue Statement #6, Future Demands

The US Army Corps of Engineers can't promise to make more water available for new water rights permits on the Missouri River downstream of Ft. Peck Dam. Federal law may not allow releases for irrigation. A study in 2009 investigated whether the Corps' original authorizations were still valid, and nothing was changed. There is at present, however, enough water to allow some new permits to be issued.

There was some discussion about keeping the Lower Missouri River Basin Advisory Council going beyond the Water Supply Initiative process. Funding to keep the BACs operating year-round is not a likely scenario, but the legislature might be willing to fund BACs every other year, 6 months before each legislative session. The BACs could evaluate how implementation of their recommendations is going, and what needs to be changed in the statewide water plan.

Smaller, sub-basin groups might be able to function better than a large-scale BAC, especially in eastern Montana where geographical distance impedes collaboration, as do differing issues in each sub-basin.

A recommendation was drafted to support continuation and expansion of the Watershed Capacity Building Program initiated by the 2013 Legislature.

Before the meeting adjourned, BAC members agreed to participate in weekly conference calls, facilitated by Bill Milton, to continue working on issue statements and recommendations.

Location	BAC Members	Staff Members	Technical Advisers	Public/ Presenters	Total Attendance
Lewistown, 2-18-14	14	5	5	5	29
Ft. Peck, 3-5-14	12	5	3	5	25

Table 2: LMR BAC Information Transfer and Alternative Development Meetings

3.2 BAC Phase 3 – Summary of Recommendation Development

After receiving a quick primer on water resource statutes, regulations and procedures during two information transfer meetings, members of the BAC were ready to begin finalizing the set of recommendations proposed in various forms since the end of January, 2014. Issue statements underwent several re-organizations along the way, and recommendation language was considered and debated during face-to-face meetings and conference calls. By the third week of April, the BAC was ready to present its work to the public for comment.

3.2.1 Meeting #3 – April 10, 2014, Lewistown

After the meeting began, there was a lengthy discussion of how to handle differences of opinion on final recommendations and possible BAC member proxy member participation in those decisions. No resolution of these matters occurred, but members agreed to address the issues either by conference call before the final BAC meeting, or during the final BAC meeting.

Krista Lee Evans, sitting in for BAC member Dave Galt, raised a question about the purpose of the public comment meetings the BAC will schedule for the end of April and beginning of May. DNRC Water Resource Planner Michael Downey responded that a draft recommendation report will be made available to the public prior to the meetings, which will be both informational and provide an opportunity for the public to comment on specific recommendations. It is even possible that new issues will be raised that should be addressed by the BAC. At the BAC's final meeting, amendments to the draft recommendations report will be considered.

Downey went on to explain the process that will be used by DNRC to draft the statewide water plan that will be presented to the Legislature at the end of summer. DNRC staff will review all the draft recommendations coming from all four river basins in the state, and put together a draft plan. Then two BAC members selected by each basin group will travel to Helena, review the draft

report, and make comments or suggestions for changes. That revised draft will be sent out to all BAC members around the state for additional comment, then DNRC will finalize the plan.

A brief update on sub-basin issue statement and recommendations followed, with BAC members from each sub-basin agreeing to continue meeting locally to finalize language.

Issue Statement #3 – Water Resource Inventory and Measurement

Krista Lee Evans suggested that "physically available" be changed to "legally available" in the first sentence of the issue statement. After some discussion, the group decided to change the phrase to "legally and physically available." The word "fairly" was struck from the phrase, "It is difficult for managers to fairly distribute water without knowing how much is available,…"

The phrase, "that protect fisheries, and recreational use" was replaced with "and those who want to know streamflow levels" in Goal 1) Objective a).

In Goal 1) Objective b), the word "unmetered" was inserted before "municipal water systems." In section i) the phrase "point of use" was changed to "point of diversion."

In Goal 1) Objective c), the $1 million set amount was changed to "adequate funding."

There was some discussion about exempt wells and whether there should be a change in language about measuring devices on "large volume" wellheads. The phrase "large volume" was dropped from Goal 1) Objective b). No additional language on exempt wells was added, as the legislature is already addressing the issue in the 2015 session.

Issue Statement #2 – Storage, Distribution, Infrastructure Maintenance, and Application Efficiencies for Irrigation Water

Krista Lee Evans suggested changing references to "streamflow" to "surface water." There was no objection from BAC members, so the changes were made.

To avoid confusion about state-owned infrastructure in Goal 1), first sentence, the beginning of the sentence now reads, "~~The state's~~ Montana's aging ~~irrigation~~ water storage and delivery infrastructure inventory must be updated,…"

Tim Davis, DNRC Water Resources Bureau Chief, called in via conference call after lunch. He said he was pleased with the diversity of BAC members, and encouraged by progress made in all four basins around the state. He expects that there will be considerable overlap of issues across all the basins, but recommendations for addressing those issues will vary. DNRC will make sure that BACs are involved in reviewing the draft state water plan before it is finalized for the legislature.

Jim Peterson reminded those present that the water plan will be presented to the 2015 legislature, not for adoption, but for possible amendment by resolution. The Executive Branch will adopt a final plan. Implementation of the recommendations in the plan, however, can be controlled by legislative funding appropriations.

Issue Statement #5 – Future Demands on Water Resources

Michael Downey said that after listening to Bureau of Reclamation and US Army Corps of Engineers representatives at BAC meetings, there is no additional water held in federal projects (Fresno and Nelson) in the Lower Missouri River basin besides Fort Peck (where none is needed) that can be released for new uses. The phrase, "approaching federal water managers with the goal of releasing more impounded water for use within the state," was dropped from Goal 1) Objective a).

Krista Lee Evans asked that the short-term recommendation of Goal 1) Objective a) be dropped as it targeted the oil and gas industry. The permitting process has already been changed to make it easier to put production water to beneficial use, and BAC member Jim Peterson said no use should be singled out for favor, so the recommendation was dropped.

BAC member Bob Goffena said small off-stream storage projects could help capture spring run-off for use later in the irrigation season, and also retain contract water releases when water users forget to notify water managers that they have finished using their water. A recommendation to explore possible off-stream storage sites was added to Objective a).

A discussion of water banking followed, the group decided to move the first sentence of Objective b) to a Short-term Recommendation: "Water banking strategies should be explored as a tool to facilitate transfers of water to differing uses."

Issue Statement #1 – Water Use Administration and Enforcement

Several BAC members expressed the view that problems with the adjudication process should not be mentioned in the final Recommendations Development Report. The process needs to be completed as efficiently and accurately as possible, but there should be no implication that any existing problems warrant starting all over again.

Krista Lee Evans outlined the details of a Montana Water Court order and supplemental order that will require re-examination of some claims using a more stringent process than was originally applied to them. Scott Irvin said that the re-examination will still not be as rigorous as that used in many basins, and that adjudication will never result in completely accurate water rights decrees. Peter Marchi reminded the group that objections made before Final Decrees can help clean up inaccuracies. Scott Irvin said keeping a strong change of use process in place will also help resolve issues of acreage expansion, over-stated claims, or abandoned claims. The group agreed to strike language pointing out discrepancies in water right claims from Issue Statement #1. A summary

of the discussion will appear in the final Recommendation Development Report so the public knows that the BAC wrestled with the issue in response to comments made at scoping sessions.

Support for timely completion of the adjudication process was unanimous, and the 2020 deadline for completion of Temporary Preliminary or Preliminary Decrees for all the basins in the state was re-affirmed. An additional deadline of 2027 was added for completion of Final Decrees. An interim deadline of 2024 was added for moving all Temporary Preliminary Decrees to Preliminary Decrees. Once issue remarks and objections have been addressed, both Temporary Preliminary and Preliminary Decrees become enforceable, and eligible for creation of enforcement projects by petition to a district court.

Because of confusion about the status of the Montana Water Compact Commission, the reference to that body was dropped in Goal 2) Objective b) Recommendation i), and the word "state" substituted. The BAC agreed that federally-ratified water compacts with all the tribes in Montana should be in place as soon as possible to end uncertainty about reserved water rights.

Several meeting participants found the language of the second paragraph of the issue statement confusing. It was changed to read, "With regard to illegal water use, there is growing sentiment for enforcement against such use," but that sentence may be removed if all of the objectives relating to enforcement are removed from 3) Goals. Other objectives in 3) Goals may be retained. Michael Downey will work with Peter Marchi to develop language about possible state-wide standardization of qualifications, pay, liability, accountability, and training for water commissioners. The section encouraging (not mandating) water measuring devices for all diverted water was also considered important. There may also be a more efficient and less antagonistic way to handle illegal use of water, i.e. with a state water use ombudsman, and that issue will be further explored before final recommendations are finalized.

<u>Issue Statement #4 – Groundwater Aquifers: Quantity and Quality</u>

Krista Lee Evans recommended dropping the phrases, "industrial development continues" and "before such development occurs" from the second sentence in the issue statements. There was no objection, although there was some discussion about leaving in the word "development." It was decided that DNRC couldn't hold up issuing permits while waiting for additional aquifer research to occur. All BAC members agreed that more aquifer research is necessary and needs to be funded by the state.

Krista Lee Evans asked that Objective b) be dropped. A compromise on language was reached, with the following adopted as a short-term recommendation: "Request that DEQ and DNRC work together to educate and encourage local sub-basin groups to address water quality and other issues associated with water use or activities that affect water quantity or quality."

Objective c) was modified to include all aquifers for monitoring against over-use, not just the ones where high-volume wells were contemplated or drilled. The question of exempt wells was

discussed again, and there was agreement that a cluster of many exempt wells can use more water than one high-volume well. There was also agreement on the need to spread aquifer research dollars to all four river basins in the state rather than expending funds mainly in the more highly populated closed basin areas of the state. The first short-term recommendation was modified to read, "Support local, state, and federal efforts and increase funding through existing DNRC grant programs to control artesian flowing wells to better conserve groundwater resources."

Before the meeting adjourned, a schedule for public meetings was adopted:

April 29 – Harlowton
April 30 – Lewistown
May 6 – Havre
May 7 – Wolf Point

The meetings are proposed to begin at 6:30 p.m., and last until approximately 8:00 p.m., or longer if necessary. Copies of the draft recommendations will be made available for public review as soon as possible.

3.2.2 Summary of BAC Conference Calls

Nine facilitated conference calls were conducted by the BAC between January 23, 2014 and May 20, 2014. The primary purpose of the calls was to discuss various recommendation drafts that would be reviewed later by a larger group at face-to-face meetings. They also served to work out details of meeting agendas and procedural issues. At two of the face-to-face meetings, conference calling was made available so that BAC members and technical advisers who were not able to travel to the meetings could participate in discussions.

CC January 23, 2014

Call participants discussed how to encourage the public to attend the meetings scheduled to receive comment on draft recommendations; considered the selection of technical presenters at the upcoming BAC meeting on February 18; reviewed a sample recommendation that had been previously distributed so BAC members would better understand how to frame recommendation language; and talked about the possibility of DNRC lobbying legislators on bills introduced in 2014 to implement some of the BAC's recommendations (Michael Downey said he would check on DNRC protocol on this issue.)

CC February 6, 2014

Michael Downey reviewed the DNRC guidelines for selecting and presenting recommendations in the final report due May 31, 2014. Concern was expressed by some participating BAC members that criteria listed in the guidelines may limit the work of the BAC, and it may be difficult for BAC

members to know whether a particular recommendation satisfies all the criteria. The BAC should be listening to public input, and not necessarily thinking about the political consequences of certain recommendations.

Other participants said the guidelines will provide a useful framework for determining whether potential recommendations will have a chance for advancement through the entire planning process. They will also serve to remind BAC members that their choices need to be realistic. Advice on whether a particular recommendation meets all the criteria can be sought.

A discussion of the first three draft issue statements prepared by BAC advisers and staff followed.

Draft Issue Statement #1 – Water Resource Inventory

Most participants agreed with both the issue statement and the goal/objective statements. Further work on the idea of how to re-adjudicate basins that inaccurately represent historic consumptive use needs to be done. More questions will arise as the BAC works through implementation alternatives, and it may make sense to have a separate issue statement on the adjudication process.

Draft Issue Statement #2 – Watershed Organizations

There was some discussion about whether local watershed organizations should be established by statute or continue to be varied in structure. Funding may or may not be more readily available for formally established organizations. One major concern about local organizations is lack of on-going funding for staff. Some participants feel that conservation districts provide a good vehicle for staffing and funding, and that partners in the organization should step up and provide funding by self-imposed user fees. These suggestions may be translated into implementation alternatives by the BAC. The group's consensus was to let the organizations be developed as local residents wish, without statutory authority.

Draft Issue Statement #3 -- Storage, Distribution, Infrastructure Maintenance, and Application Efficiencies for Irrigation Water

There was general agreement among call participants that Montana doesn't need any more studies that will sit on a shelf and have no impact on water resource issues. The recommendations should lead to a prioritization method for infrastructure repairs, alterations, or maintenance, and funding to assist local water users once a project is approved. To consider additional funding sources, a sentence was added: “New funding methods that involve all stakeholders who benefit from water projects should be explored.“ A possible implementation alternative might be to consider the local economic benefit of infrastructure projects when funding is being sought. This issue will need more work by the group during the February 18 meeting.

CC February 11, 2014

Call participants discussed four new issue statements drafted by BAC technical advisers and staff.

Draft Issue Statement #4 -- Water Measuring Devices

Most participants agreed with both the issue statement and the goal/objective statements. All agreed that more measuring devices need to be installed throughout the Lower Missouri River basin, especially on the tributaries to Ft. Peck Reservoir, in light of the new CMR Compact. The language was altered slightly to cover all water users instead of just irrigators in Objective b) ii.

Draft Issue Statement #5 -- Groundwater Aquifers: Quantity and Quality

After some discussion, call participants agreed that this issue statement should be broader in focus, not just targeting the oil and gas industry for water quality concerns. Also, the group agreed that aquifer definition and characterization research and water quality monitoring should occur across the state, not just in eastern Montana. BAC member Jane Holzer said that quite a lot of work is being done right now by several agencies, including the Montana Bureau of Mines and Geology. The BAC needs more information on the monitoring programs already in place. This issue statement will be re-visited during the meeting on February 18 in Lewistown.

Draft Issue Statement #6 -- Future Demands on Water Resources

There was general agreement with this issue statement. BAC members asked DNRC Regional Office Manager Scott Irvin to give a short presentation on the "water banking" idea at the meeting on February 18. One question was raised about negotiating for more water released from federally controlled reservoirs, while still meeting the goal of keeping enough water in them to serve recreational uses. Some language clean-up was accomplished in the first paragraph.

Draft Issue Statement #7 -- Water Use Enforcement

BAC members questioned whether this issue statement should stand alone or be combined with water rights adjudication. The issue or orphaned or abandoned rights was moved to Issue #1, b) ii More discussion on combining water use enforcement with another issue will follow during the February 18 meeting in Lewistown.

BAC member Eric VanderBeek wondered whether the issue of wells producing less than 35 gallons/minute (excepted from permitting requirement) but manifolded together for larger flows should be included in Issue #7, or another issue statement. That question will be discussed February 18.

CC March 13, 2014

The purpose of the call was to discuss just one issue statement: Water Use Administration and Enforcement. Participants included six BAC members from the Musselshell River and Judith

River sub-basins, two technical advisers, facilitator staff, and Legal Counsel for DNRC Water Rights Division.

BAC members all agreed that the statement, as written, was much too detailed, and more suited to a draft bill for legislative consideration than a water use plan. They had some concerns about allowing DNRC too much administrative authority over enforcement of water rights, and felt it should remain a judicial process.

Technical advisers from DNRC clarified that the intent of the recommendations was to make the process of enforcing against illegal use of water less time-consuming, rather than to enforce lawful water right decrees. Illegal water use was a concern mentioned at most of the public scoping meetings.

There was a discussion of inaccurate Temporary Preliminary decrees and whether they can be re-examined before Final decrees are issued. Walt McNutt and Jim Peterson, who both served as members of the Montana Legislature, said it was not likely that the lawmakers would appropriate additional funds to re-examine basins. Instead, persons who feel there are inaccuracies should file objections at the next opportunity in the adjudication process, where issue remarks will need to be resolved before Final decrees are issued. Inaccuracies could also be corrected during any change of water right use application process.

All participants agreed that the adjudication process should be completed as soon as possible, and the Montana Legislature should provide sufficient funding to do so. Tribal water compacts should also be negotiated and ratified to allow completion of adjudication in basins where water quantities associated with tribal rights have yet to be established.

The recommendations related to enforcement against illegal water use were set aside, to be re-considered by the BAC before adoption of the final Recommendations Development Report.

CC April 1, 2014

Two BAC members, a DNRC water resource planner, and two Facilitator staff members conducted a short conference call to review a revised version of Issue Statement #1: Water Use Administration and Enforcement.

Walt McNutt, BAC member and former Montana legislator, suggested that it would be unwise to raise the issue of possible inaccuracies in the existing water right decrees, and language referring to such inaccuracies should be removed from the issue statement. Bob Goffena, BAC member, and Michael Downey, DNRC water resource planner disagreed. Wendy Beye, BAC Administrative Assistant, reminded call participants that a number of comments were made during the scoping sessions by citizens concerned with inaccuracies in adjudication decrees.

Call participants did agree that DNRC and the Water Court should do a better job of communicating with the public on the progress of adjudication, which is ahead of schedule this year.

There was some discussion of the recommendation for water measuring devices on all points of diversion, and call participants agreed that measurement should be encouraged, but not mandated.

CC April 2, 2014

The purpose of the call was to discuss how to move the issue statements/recommendations process forward, and the best approach for soliciting public comment on the draft Recommendation Development Report.

Most of the seven BAC members participating in the call were reasonably comfortable with the current version of the issue statements.

Walt McNutt said there have been some changes made by conference call in Issue Statement #1, Water Administration and Enforcement. It is important that only legal and accurate statements are included in the state plan, and that public comments are vetted for accuracy and validity. He feels that some special interests have influenced the BAC to include instream flows as a specific beneficial use of water. All uses are equally important. He again stressed that "legal availability" should replace the words "physical availability."

Eric VanderBeek would like to see some information from the Madison Group/Kootenai aquifer research report considered by the BAC. Water quality and quantity are linked, so both should be included in the state water plan. The energy industry should be brought under the same regulatory umbrella as all other industries for water quality protection.

Doug Hitch asked about the confusion between Temporary Preliminary and Preliminary decrees, and which one will be required in all basins by 2020. Walt McNutt suggested changing the terms to "enforceable decrees."

Facilitator Bill Milton asked call participants to think about how to approach the public comment portion of this process: where, when, time of day, how do we get the information out in advance of meetings?

Kristi Kline asked that the draft recommendations be sent out by email, as well as publicized in newspapers, on radio, and by television coverage. We also need a way to record on-line comments. To help encourage participation, we should contact conservation districts, watershed groups, water districts, municipalities, counties, and any other groups we can think of. BAC members themselves will have to thoroughly understand the draft report so they can discuss it competently.

Doug Hitch said the draft report should also be available for download or reading on-line, on the MWSI website, and the link could be listed in all advertising.

Participants decided to hold the public meetings in the evening rather than during the day so that the working public would be more likely to attend.

CC April 15, 2014

The purpose of the call was to revise the Lower Missouri River Sub-basin Issue Statements.

Call participants included six BAC members, a Ft. Peck Tribes Environmental Programs Manager, two BAC technical advisers, and Facilitator staff.

Some discussion of the first paragraph of Issue Statement 2.1 resulted in the following language being adopted: "When large releases of water from Ft. Peck Dam occur, the resulting flows damage irrigation infrastructure downstream, and the cold water from the power plant affects warm water fisheries. The fast-moving water also causes channel migration that can prevent water rights holders from accessing water from the Missouri River."

Dwight Vannatta's suggestion that irrigation canals along the Milk River be used to hold flood waters raised some questions about flood timing and the canals already being full in years when heavy rainfall in the area contributes to flood problems. The recommendation was modified to read: "Explore capacity of Milk River watershed to help control floodwater."

Vannatta also suggested as a recommendation that the Missouri River's banks downstream of the dam be stabilized, especially in areas near pump sites. No large-scale stabilization projects will occur because there is a federal goal of keeping the river as natural as possible, allowing channels to migrate. Dwight said there is a real problem of landowners losing property and mineral rights to the river, as well as having to move or replace pump sites. The recommendation was modified to read, "Encourage bank stabilization along the Missouri River at points of diversion."

Dave Galt asked that the last sentence of the first paragraph of Issue Statement 2.2 Missouri River and Aquifer Water Quality and Quantity be removed, as it targets the oil and gas industry. He also asked that "oil and gas" be removed from the last sentence in the first paragraph of Goal 1) and that Objective c) include acknowledgment of the existing state Water Pollution Control Advisory Council. A local group should not be drafting legislation.

Michael Downey (DNRC) commented that a local group established to work with DEQ on eastern Montana water quality issues might want to recommend new legislation. The WPCAC does not meet in eastern Montana, so residents feel that their concerns are not being adequately addressed.

Denise Biggar (DNRC) pointed out that statistically, the oil and gas industry uses very little water from the Missouri River and from area aquifers. She compiled use from water depot and other

energy-related permits in the area: 15.3 cfs from the Missouri River; 2.2 cfs from the Yellowstone River; 5.7 cfs from Fox Hills and Sidney aquifers – a total of less than 25 cfs.

Walt McNutt concurred with avoiding singling out any particular industry. The state's Clean Water Act enforces EPA standards, and unverified concerns should not be included in the state water plan.

Michael Downey said the public concerns about water quality and quantity expressed during the public scoping meetings should be addressed somehow.

Denise Biggar agreed with Downey, and Dick Iversen said he likes the idea of local stakeholders meeting with DEQ to address concerns.

The sentence remained as modified, "Development is impacting both ground and surface water quality in the area."

The next question was whether the sentence, "Existing laws and regulations governing the oil and gas industry for water quality should be enforced, and perhaps strengthened," should remain in Goal 1), first paragraph, or should "oil and gas" be removed.

Rhonda Knudsen said that laws and regulations are already being enforced, but Dwight Vannatta feels that once a permit is issued, there is not much enforcement occurring. Dick Iversen concurred, reporting on a personal experience with surface run-off from a drilling pad that impacted a pasture on his property. He reported it to DEQ, and they wrote a letter to the company, but nothing beyond that was done. DEQ told him they did not have the staff available to enforce against the drilling company.

Denise Biggar and Walt McNutt agreed that the sentence should remain, without singling out the oil and gas industry.

Deb Madison thought oil and gas should remain, but suggested that the energy companies should be required to do their own testing and send results to DEQ. The state is not likely to increase funding for enforcement staff and testing costs. Other entities are required to regularly test water quality and submit the results to DEQ.

Dwight said if other industries have to test, then the oil and gas industry should too. Rhonda Knudsen said all industries should pay for testing and report results for surface and ground water.

Dick Iversen agreed that a re-write should include having water permit holders do their own water quality testing and monitoring.

Walt McNutt said DEQ should require water quality testing, then worry about enforcement, but that the problems with contamination will never go away.

Participants agreed that the day's discussion was a good one, and that some new ideas resulted.

CC April 22, 2014

The purpose of the call was to hear a summary of what the state is already doing to address some of the issues raised by the MWSI process, review the latest versions of the issue statements, review the public comment process for LMR BAC draft recommendations, and confirm the date for the last full BAC meeting in May.

Michael Downey (DNRC) explained that DNRC's budget requests will include funding for continuing the work of the four BACs. In addition, shared funding support for some streamflow gages being re-activated, or new ones being installed, by USGS is also included in DNRC's proposed budget for 2015. The requests are submitted through the Executive Planning Process that develops the governor's budget for the next biennium.

Some minor language clean-up was suggested on Issue Statements #1-3, but the general content was satisfactory to call participants.

Issue Statement #4 has a new recommendation added that would require new permit holders for all water uses that can cause ground or surface water contamination to be required to pay for water quality testing and periodic monitoring. This recommendation was added at the request of the lower Missouri River sub-basin group that met by conference call on April 15. The recommendation also appears in the sub-basin issues statements.

Dick Iversen commented that it makes sense for a contaminator to pay for testing, and he would like to see the recommendation remain in the whole basin Issue Statement #4. Rhonda Knudsen concurred, and said that surface water should also be covered by the recommendation, as well as monitoring for any interruption of water source. Arnold Bighorn wanted to see the recommendation stay, so the public can comment on it at the upcoming meetings. Bill Bergin said it makes sense, as he has to monitor water quality around his feedlot. Bob Goffena suggested adding the phrase, "to a substantial degree," to avoid the problem of agricultural producers having to monitor water quality around their fields when they apply fertilizer or herbicides. Doug Hitch and Mike Lawler said the language was perhaps too broad or generic, and the recommendation should be re-written. Eric VanderBeek went along with a re-write, but wants to see the recommendation stay in the report. Delores Plumage concurred.

Walt McNutt said the section should be removed for now, and reconsidered for the final report. Call participants agreed, but were adamant that the recommendation be discussed further at the next BAC meeting in May.

Issue Statement #5 had no new language changes, but Bob Goffena wondered if "water banking" should be defined, as it can mean different things to different people. Michael Downey responded

that the recommendation to explore the possibility of water banking would allow the state and private entities to consider all forms of the concept. Eric VanderBeek felt that some mention of enforcement by the state should be included. Dick Iversen said that the current water leasing statutes and regulations work, and the water transferred is verified by DNRC to make sure there is no over-use of a water right. Mike Lawler pointed out that the language is a suggestion, and details could be worked out by appropriate entities. Walt McNutt agreed with the concept, explaining that the Water Policy Interim Committee has been looking at the issue for ten years.

Issue Statement #6 prompted some discussion of the word "authorize" in the first sentence of Goal 1). Michael Downey said that some of the most successful groups are those that were not set up by the state, but instead arose from grassroots movements. Mike Lawler asked for a word to replace "authorize" that may be stronger than "encourage." Dick Iversen agreed that "authorize" should be changed to something else, and Rhonda Knudsen suggested "recognize." Arnold Bighorn liked that proposal. Bill Bergin liked "encourage," and Doug Hitch said the state should not mandate watershed groups, as that doesn't work. Walt McNutt and Eric VanderBeek agreed that grassroots organizations work the best. The words "should encourage, and/or authorize and support" were replaced with "should recognize and support."

Dave Galt asked if there would be a formal state process for public comment on the state water plan, and Michael Downey said yes, a 30-day comment period would be announced for written comments on basin recommendations and the state water plan. The legislature will not, however, vote on the state water plan.

Wendy Beye explained the process of publicizing the public meetings. A press release has already been sent out to all newspapers, television stations, and radio stations in the Lower Missouri River basin, as well as to the Montana Watershed Coordination Council for publication. The press release lists the link to the DNRC MSWI website where a copy of the draft recommendations will be posted as soon as it is complete, and a link to an online survey site to capture public comments. In addition, the draft recommendations will be sent out by email to conservation districts and all the addresses (199) that have been gathered over the past year from public meetings and other contacts. Bill Milton encouraged all BAC members to make personal phone calls to invite the public to the meetings.

Michael Downey reminded call participants that they should be thinking about how they want to handle votes on recommendations where consensus cannot be reached by the BAC. That issue will be addressed during the conference call May 20 so that a procedure will be in place before the last BAC meeting.

CC May 20, 2014

A short conference call to confirm the BAC decision-making process if votes are required at the May 28, 2014 meeting and to discuss a method to address public comments was conducted on May 20, 2014.

Only three BAC members participated in this call, but Michael Downey had conducted an on-line survey on the matter of how to settle issues when no consensus could be reached by BAC members. A slim margin of respondents to the survey voted to require a super majority to adopt a position on an issue or recommendation. All BAC participants in the call agreed to that procedure.

Staff agreed to email a summary of public comments, along with and itemized list of actionable suggestions to all BAC members before the May 28 meeting to help focus the discussion.

Other items placed on the agenda for the May 28 meeting included:

1. Decisions on whether minority reports will be necessary, and who will be responsible for writing them.
2. Selection of two BAC members to represent the Lower Missouri River BAC in July to work on the draft state water plan.
3. Review the steps in the MSWI process after the BAC submits its Recommendations Development Report June 15, 2014.
4. Review the effectiveness of the entire MWSI process.
5. Briefly review the sub-basin issue statements for any possible modifications.

There was some discussion of the minority report process. Call participants wanted to be sure that minority reports were expressions of concern rather than an offering of alternative recommendations. The Recommendation Development Report should not present conflicting recommendations. Any minority reports written will be presented in an appendix to the final recommendations report.

Location	BAC Members	Staff Members	Technical Advisers	Guests/ Public	Total Attendance
Lewistown, 4-10-14	13	5	3	2	23
Conf. Call, 1-23-2014	11	3	0	0	14
Conf. Call, 2-6-2014	9	3	2	0	14
Conf. Call, 2-11-2014	6	2	3	0	11
Conf. Call, 3-13-2014	7	3	2	1	13
Conf. Call, 4-1-2014	2	3	0	0	5
Conf. Call, 4-2-2014	7	3	2	0	12
Conf. Call, 4-15-2014	6	3	2	1	12
Conf. Call, 4-22-2014	11	3	0	0	14
Conf. Call, 5-20-2014	3	3	0	0	6

Table 3: LMR BAC Recommendation Development Meetings and Conference Calls

3.3 Public Meetings for Review of Draft Recommendations

Four public meetings were held in the Lower Missouri River basin:

Harlowton, April 29
Lewistown, April 30
Havre, May 6
Wolf Point, May 7

The meetings each began at 6:30 p.m. with a brief review of the MWSI process by DNRC Water Resource Planner Michael Downey. An announcement of the meetings was sent to all newspapers, radio and television stations in the area, and emailed to a list of 199 individuals who had participated at some point in the MWSI process in the Lower Missouri River basin. The emails also contained a copy of a report containing the draft recommendations and a brief summary of how the MWSI process worked.

3.3.1 Harlowton, April 29

The public comment meeting in Harlowton lacked public participation. Only a few people not associated with the MWSI process attended. In spite of that deficiency, there was a good discussion among agency representatives (DNRC, MT FWP, a county Weed Coordinator, a conservation district council Director, and a project manager for a water users association) on the value of considering fishery health when irrigation infrastructure projects and reservoir water releases are contemplated. The group concluded that good communication among all water users is crucial to planning. Several BAC members present lacked information about important fishery cycles that require increased streamflow. Representatives of MT FWP asked that a mention of streamflows to support fish habitat be added to the draft recommendations.

The topic of additional offstream water storage projects prompted comments from FWP and from Kevin Smith, DNRC Water Projects Bureau. Smith said new projects may be prohibitively expensive, and a cheaper alternative might be to improve the efficiency of delivery canals to existing reservoirs, and increasing the holding capacity of reservoirs. That would allow the reservoirs to fill more quickly during periods of run-off, and store more water for use during the irrigation season.

3.3.2 Lewistown, April 30

The meeting in Lewistown was well-attended by the public, with many members representing the Big Spring Creek Watershed Council and the Snowy Mountain Chapter of Trout Unlimited. Some

general comments were made following Michael Downey's presentation on MWSI. Several members of the public were suspicious that the MWSI process would not lead to better management of Montana's water. Others pointed out issues they felt had not been seriously addressed, including streamflows to protect fisheries, the cumulative effect of exempt wells (less than 35 gpm flow), protection of water from downstream out-of-state claims, and how can a water inventory be accurate when the adjudication process has not yet been completed.

Meeting participants agreed with Issue Statement #1 that calls for accurate and timely completion of the water adjudication process.

Issue Statement #2 prompted a comment that water users who benefit financially from infrastructure projects that deliver water should pay for maintenance, repairs, and replacement rather than expecting state taxpayers to foot the bill. If the state believes that irrigation infrastructure universally benefits the public, then it should impose taxes and fees universally to pay for it.

Issue Statement #3, proposing that additional water measuring be installed around the state, especially on tributaries, was accepted by meeting participants. Some had suggestions about where new streamflow gages should be placed.

Groundwater quantity and quality, addressed by Issue Statement #4, prompted more lively discussion. There was a concern expressed about a proposed transfer of water from the Madison Group Aquifer to the Musselshell River basin to serve eight communities. Residents of the Judith River basin are worried that removing water from the Madison aquifer might affect the flow from springs in the Lewistown and Great Falls area. BAC members present assured the public that the concern is being addressed by recommendations encouraging additional groundwater research projects in the area.

Issue Statement #5 raised a question of what is contemplated by "water banking." Andy Brummond of MT FWP explained that the process would allow water rights holders to quantify a portion of their beneficial use to be set aside ("banked") for a different use in the future, without risking the loss of their water right. This would require some changes to existing water right regulations and statutes. Several people pointed out that streamflows to protect fisheries should be a part of this issue statement. Michael Downey mentioned that the existing water leasing regulations do allow water rights holders to lease all or a portion of their water to FWP to enhance instream flows.

Additional comments relating to Issue Statement #5 included a suggestion that it should address future oil and gas industry water uses, and the impacts of energy development on water quality. Dave Galt, BAC member representing the oil and gas industry in Montana reminded meeting participants that the oil and gas industry uses a very small fraction of the total amount of water beneficially used in the state. There are regulations in place to help protect surface and groundwater near energy development sites.

Issue Statement #6, encouraging the state to increase support for local watershed groups, was well-received.

A short discussion of the Judith River sub-basin recommendations followed. The need for research on the Madison Group and Kootenai aquifers was reiterated. The research should be completed as soon as possible, before additional development of the aquifers occurs.

Wrap-up comments included difficulty of funding implementation of a state water plan, future demands for Montana's water from other states, the state's residents need to work together to find solutions to water resource problems, and education of the public is an important step toward solving future problems relating to water.

3.3.3 Havre, May 6

There were some new participants in the MWSI discussion at the Havre meeting. Several county commissioners and state legislators attended, along with a staff member from Congressman Steve Daines' office, a representative of the Montana Water Well Drillers Association, and a reporter from the local radio station.

Issue Statement #1 elicited a comment from two DNRC representatives that water adjudication issues in the Milk River basin are complicated by tribal water rights. Denise Biggar from the Glasgow DNRC office said that while Temporary Preliminary Decrees can be issued before federal water reservation issues have been settled, a Preliminary Decree must wait for resolution of those issues.

Issue Statement #2 is of special importance to the Milk River sub-basin, as the St. Mary's Rehabilitation Project has been languishing for lack of funding for many years. Kris Hansen, a Montana legislator, said that if the state had funded a portion of the project and begun the work immediately, some of the cost escalations might have been avoided. No federal money has been authorized for the project through the Bureau of Reclamation. Randy Reed, BAC member from Chinook, said the project is very complex, involving both the Ft. Belknap and Blackfeet tribes, Canada, and all the water users on the Milk River. A local/state/tribal partnership may be the only way to advance the project, as money is not likely to come from the federal government.

Water measurement, covered in Issue Statement #3, was important to meeting participants. Kris Hansen suggested that all the agencies and entities that measure water should submit data to a centralized place such as the state's GWIC site so the public and water managers can access it easily.

Issue Statement #4 was supported by those present. Kris Hansen said, though, that MBMG isn't likely to hire more hydrologists to complete groundwater research more quickly. The western part of the state has received more research attention because of the many closed basins, where

additional water must be purchased. There is pressure to add new groundwater sources to the mix to meet demand.

For Issue Statement #5, a suggestion was made that existing water storage facilities be expanded rather than building new storage projects to capture additional run-off.

Meeting participants supported Issue Statement #6. Local watershed groups are the best way to address local water resource issues and manage water, and should be better supported by the state with funding.

The discussion then turned to the Milk River sub-basin issues. Kristi Kline, BAC member from Kremlin, said the St. Mary project and the Milk River Bureau of Reclamation system are very different from any other infrastructure problems in the state, so should be handled separately. Repairs are being made to the system each year, funded by the irrigators, but can't keep up with the pace of deterioration. A strategy involving all water users is difficult to craft because the original Congressional authorization of the projects lists only one use: irrigation. Municipalities using the water do pay a portion of repair costs on certain parts of the system. The Milk River Joint Board of Control has prioritized maintenance projects, but emergency repairs disrupt implementation of an orderly plan. Kris Hansen said there is room to ask for more money from the water resource appropriations at the next legislative session rather than waiting for money from the federal government. Local match and support from the Governor's office would speed the process.

Another issue in the Milk River sub-basin is sedimentation of Fresno and Nelson reservoirs. Neither holds as much water as originally designed in spite of dredging efforts over the years. Randy Reed said that the St. Mary's project turned the Milk River, which was a prairie stream, into an irrigation canal that carries more water all year around. Any flood event scours out the vegetation and moves the soil down river and sends it to the reservoir. Cody Nagel, MT FWP, said that without the addition of warm water from the Milk River to the Missouri River below Ft. Peck dam, there wouldn't be a warm water fishery there. There are about 40 species of warm water fish that like the type of water that is present in the Milk River. There is a good population of walleye in the Milk River, but not many people fish because the river is not suitable for float trips.

All those present agreed that the Milk River basin faces many challenges in the years to come, and finding appropriate responses will be difficult.

3.3.4 Wolf Point, May 7

Attendance at the Wolf Point public meeting was sparse. The editor of the Wolf Point Herald did attend and write a story to help inform the public about the BAC recommendations report.

Issue Statement #1 was accepted as presented. Denise Biggar, DNRC Glasgow, pointed out that DNRC is ahead of schedule in water right claim examinations, and now it is up to the Water Court to complete the adjudication process by 2020, the deadline set by the legislature.

Issue Statement #2 addresses the need for funding assistance for irrigation infrastructure repairs all over the Lower Missouri River basin. Denise Biggar said that infrastructure could even include irrigation pump access to the river. Many pump sites have been damaged in the past few years by flood events.

Water measurement is becoming more critical in the state as water demands increase. Issue Statement #3 calls for additional stream monitoring gages to be operated by DNRC and USGS. It was suggested that placement of new gages be determined with assistance from local watershed groups who understand where those gages will be most useful. Darryl Crowley, a rancher, commented that crops grown now may require more water than crops that were grown sixty years ago, and that will affect the volume of water diverted from the river by a water user.

Issue Statement #4 calls for additional aquifer research, especially in the eastern half of the state, which hasn't received the same level of attention as the western half has. The question of whether the recommendations should address exempt wells was raised. Michael Downey, DNRC Water Resource Planner, said that at a previous BAC meeting it was decided to leave the issue up to the legislature and the courts. Dwight Vannatta, BAC member from Bainville, said that it might be helpful if the BAC recommended that the legislature address the issue sooner rather than later, as it is becoming an issue on the lower Missouri River. Denise Biggar explained that we are really talking about wells that are excepted from the water use permitting process – less than 35 gpm and 10 acre/ft per year production. Exempt wells are those that existed before 1973 and the users were not required to file for a water right on them.

There was a short discussion of "water banking" relating to Issue Statement #5. Dick Iversen, BAC member from Culbertson, asked whether anyone had yet taken advantage of the new water leasing statute passed during the last legislative session. Denise Biggar said there haven't been any "takers" yet because irrigation water use is limited to just the irrigating season, and the new users (i.e. water depot sales) need water all year round.

The group discussed Issue Statement #6, and concluded that local watershed groups can play an important role in educating the public about water resource issues. Dwight Vannatta suggested that keeping the BAC functioning might help pull local groups together and keep them running.

The discussion then turned to sub-basin issues on the Missouri River below Ft. Peck dam. Dwight Vannatta asked whether the group could draft a recommendation to deal with the loss of land due to bank erosion, and the ensuing battles over mineral rights underneath where the ground used to be. Once the land is washed away, the new river channel becomes state property. Dick Iversen said that was probably more a land use issue than a water resource issue. There is a recommendation to encourage bank stabilization along the river. Steve Dalbey, MT FWP, said

that his agency is working with the Army Corps of Engineers to include recreational demands and fish habitat needs in the river modeling in the future. He also said that on the western side of the state, Bonneville Power Administration is obligated to provide funds to mitigate the impacts of their dams and powerlines. There is no similar program on the eastern side of the state for the hydroelectric power produced by project dams.

Location	BAC Members	Staff Members	Technical Advisers	Guests/ Public	Total Attendance
Harlowton, 4-29-2014	4	5	1	8	18
Lewistown, 4-30-2014	6	5	1	28	40
Havre, 5-6-2014	4	5	0	9	18
Wolf Point, 5-7-2014	4	3	1	3	11
BAC Meeting to Respond to Public Ft. Peck, 5-28-2014	13	4	3	1	21

Table 4: LMR BAC Public Meetings and Meeting to Respond to Public Comments

3.4 BAC Meeting to Respond to Public Comments, May 28

Reports of the proceedings of the four meetings held in the Lower Missouri River basin for the purpose of hearing public comments on draft recommendations were sent to all BAC members. In addition, comments received in writing or via the survey conducted on the internet site SurveyMonkey were compiled and distributed, as well as a list of actionable recommendations gleaned from public input (shown in the section below in italics type.) The LMR BAC met at the Ft. Peck Dam Interpretive Center on May 28, 2014, to consider responses to public comments and suggestions.

As a result of the many meetings and conference calls conducted by the LMR BAC from January to mid-April, several over-arching premises implicitly guided the members' final deliberations on recommendations:

1. Under Montana's Prior Appropriation doctrine of water rights, all beneficial uses that have a water right, consumptive or non-consumptive, are equal. Beneficial use includes, but is not limited to the following categories: agriculture, domestic, industry, recreation, energy development, commerce, and ecology (i.e., fish, wildlife, habitat, river health.)
2. The ultimate success of the Montana Water Supply Initiative and state water plan will depend on education of the public. Members of the BAC learned a great deal as they investigated water resource issues raised during the public scoping process. Adopted recommendations are based on facts rather than perceptions.

3. Residents in sub-basins cannot expect the state or federal government to solve all of their water resource problems. Local grassroots organizations can provide an effective vehicle for achieving measurable results. In particular, infrastructure repair or rehabilitation must be attacked at the local level, with costs determined, specific projects prioritized, and funding explored.
4. While many of the BAC's recommendations may have associated costs, it is up to the state legislative and executive branches to set priorities and appropriate funds to implement them. BAC members were not tasked with nor equipped with the tools necessary to make cost estimates.
5. If there are existing statutes and regulations that satisfactorily address particular issues, those issues will not be addressed by BAC recommendations

Michael Downey, DNRC Water Resource Planner who acted as a liaison for the Lower Missouri River BAC, began the meeting with a reminder that the Recommendation Development Report adopted by the group is not the end of the MWSI process. Recommendations included in the state water plan will come too late for any action by the 2015 Montana Legislature. The planning process for water resource management is just beginning, and adjustments to the state plan will be made periodically into the future.

The BAC then tackled actionable recommendations (in italics type) offered by the public.

Issue Statement #1

The public and agencies are in agreement with this issue statement and its associated recommendations.

A suggestion made through the SurveyMonkey site: Reverse temporary ruling that individuals may lease their water rights to energy companies.

BAC members agreed that because the water rights prior appropriation doctrine does not favor any one beneficial use over another, there should be no limits placed on the kinds of beneficial uses water may be leased to fulfill.

Another SurveyMonkey suggestion made by a number of responders for Objective b), Recommendation i): Education is of absolute importance in issues such as this however the verbiage "importance of a robust change process" leaves an intimidating connotation and should be removed from the recommendation.

There was a discussion about whether the word "robust" was slightly intimidating. The focus of the recommendation is education, rather than the change process itself, so the word "robust" was dropped.

Issue Statement #2

There was a suggestion to add "increasing funding for the current grant and loan program" to Objective a), Recommendation ii).

Walt McNutt, BAC member and former legislator reminded the group that funding for the grant and loan program comes from coal severance taxes, and the amount is dependent upon what is being mined, not an act of the legislature. The phrase was modified to read "…increase funding caps for currently authorized grants and loans," and added to the recommendation. This would allow DNRC more discretion in awarding financial assistance for infrastructure projects that may require larger grants and loans than are currently available.

It was suggested that the state could stipulate that there is a universal public benefit from use of water storage and supply infrastructure, and there should then be universal payment to support its continued existence – through user fees, taxes, etc. – a multi-pronged approach to funding.

BAC members agreed that the state cannot "stipulate" a public benefit, and that state taxpayers are already helping to pay for infrastructure projects through the coal severance tax on a resource that belongs to all the residents of the state. Infrastructure repairs will be accomplished one project at a time, with costs shared by water users and the state through grants and loans.

In regard to the St. Mary's diversion, a local/state/tribal partnership may be the only way to advance the project, as money is not likely to come from the federal government. If local users and the state can set aside funding to begin working on the project a piece at a time, catastrophic failure of the system might be avoided.

The group decided that the St. Mary's Rehabilitation Project should be addressed at the sub-basin level, and in fact, affected water users have been meeting again to work through the funding issue. Kristi Kline, BAC member from the Milk River sub-basin said that since the Bureau of Reclamation controls the project, there isn't much the state can do. The original authorization by Congress limits financial responsibility for repairs or replacement to irrigators and the Bureau of Reclamation.

Montana FWP suggests encouraging consideration of fishery issues when infrastructure repair or replacement is in the planning stage so that costs can be shared and the public benefited.

BAC member Peter Marchi asked why beneficial use of water to support fisheries should be highlighted above other uses. Andy Brummond of FWP said that sometimes planning for infrastructure projects is too far along by the time fisheries issues are considered. The group decided that conservation districts, who issue 310 permits for work along streams, must involve FWP in the early planning stages, and that provides sufficient opportunity for collaboration.

Issue Statement #3

Any new streamflow gages added to the existing network should be placed in consultation with local watershed groups and water users.

This item was already addressed in Objective a) ii) of Issue Statement #3.

Data from streamflow, canal, and water diversion measurement devices operated by entities other than USGS and DNRC are not often made public. Tribes, the Dept. of Agriculture, water user associations, and other entities should be encouraged to share data.

Several BAC members pointed out that stream gages operated by entities other than USGS or DNRC may not be as accurate, may not measure anything other than flow rate, and do not transmit data electronically, so it is not feasible to include them in the state's public network.

Changes in the types of crops irrigated are changing the amount of water being put to beneficial use. Without water measurement, the impacts of the changes cannot be anticipated.

Rhonda Knudsen, BAC member from Glasgow, said that producers plan their water use for the thirstiest crop they may plant. Some years they use all their water right, others, they don't, but the full amount is accounted for.

Issue Statement #4

A suggestion from SurveyMonkey: The Montana Water Supply Initiative (MWSI) should include estimation of the water resources needed for oil and gas production, how extraction of these resources will impact groundwater aquifers and where those water resources will come from. Groundwater Control Areas should be established by the state where groundwater withdrawals in recent decades have outstripped the pace of recharge.

Again, BAC members declined to single out any one industry for special attention in its recommendations. Groundwater Control Areas are already authorized as a tool to be used by DNRC.

Several members of the public expressed concern about inter-basin groundwater transfer projects. A recommendation about how to address these transfers might be something the BAC should consider.

BAC members decided that the issue was already addressed by Objective c) ii) in this issue statement.

Wells that are excepted from the water use permitting process – less than 35 gpm and 10 acre/ft per year production – were a topic of discussion at several of the public meetings. It was suggested that the Montana Legislature be encouraged to resolve the issue.

Walt McNutt, former legislator, said a legislative committee is already working on addressing the issue.

According to several members of the public, the question of how the oil and gas industry will impact the state's aquifers should be in the water use plan.

A lengthy discussion of oil and gas development's effects on water supply led to an uneasy agreement among BAC members that again, a particular beneficial use should not be singled out for attention by a state water plan. The state's Groundwater Assessment Steering Committee is already in the process of revising its method of choosing aquifers to be the subject of research, and will likely begin looking at more aquifers on the eastern edge of Montana. Public education on how energy development uses water, and in what quantities, will be necessary to offset perceptions that may not be based on fact. Denise Biggar, DNRC Glasgow, said that all permitted groundwater uses are quantified and water right holders must submit reports to DNRC. Dave Galt, BAC member, said that the quantity of water disposed of in injection wells is also documented and reported to the Board of Oil and Gas. Montana has a strict fracking chemical reporting system, and all the data are available to the public, with much of it posted on websites. Walt McNutt pointed out that in heavily populated areas of western Montana, there is a risk of groundwater contamination from multiple septic systems, so again, a particular beneficial use of water should not be singled out for regulation.

The following came from SurveyMonkey:

Add Short term recommendation, Objective a): DEQ and DNRC to be tasked to provide more on-the-ground inspectors to ensure accurate tracking and record-keeping system is properly employed.

BAC member Rhonda Knudsen said that state agencies should not be told how to spend their budget, for example by hiring additional staff. Their funding is finite, and they may have other priorities in mind. Michael Downey suggested that a recommendation wouldn't force an agency to hire more staff, but would highlight the importance of an issue raised by the public. The BAC decided not to add the recommendation.

The draft recommendations would benefit by including a mention of the importance of groundwater springs on fish & wildlife.

Once again, the BAC decided not to favor any particular beneficial use. When aquifer research is undertaken, all uses of the water will be considered.

Add the following as stated objectives: 1- Permits for uses that could contaminate groundwater should require the applicant to test and periodically monitor for contamination, sending results to DEQ and the GWIC public database at the Montana Bureau of Mines and Geology. 2- The

Montana Board of Oil and Gas Conservation and the Department of Environmental Quality should jointly analyze data to project the volumes of hydraulic fracturing flow back water and produced water that will need to be disposed of in the next decade in Montana. They should establish as soon as practicable a system to track and account for each truckload of flow back and produced water, to ensure safe and legal disposal methods are used and to track and verify the actual volumes of water involved. 3-MSU Energy Research Institute, Montana Board of Oil & Gas, the Department of Environmental Quality and the Water Resources Division to provide analysis and assistance to the energy industry to recycle and reuse flow back and produced water to minimize destruction of clean water.

Several BAC members pointed out that any number of beneficial uses of water could contaminate groundwater. A permit that does not normally involve discharge of wastewater does not require any monitoring. Dick Iversen, BAC member from Culbertson, said that local governments have the power through existing statutes to regulate proposed development that might contaminate groundwater. Dwight Vannatta BAC member from Bainville said that in several instances, DEQ said they didn't have sufficient staff to investigate incidents of surface water contamination when they were reported. A decision was made to not add the recommendation, as many BAC members were of the opinion that there is no way to guarantee 100% compliance with regulations, no matter how many inspectors are deployed by the state.

Issue Statement #5

At all the public meetings, the need for instream flows to protect native fisheries was a topic of discussion, with the issue raised by both FWP and the public. The new water leasing procedure has not helped improve winter river flows because most water rights are only effective during the summer irrigation months. FWP needs to make sure water users understand their local fishery's critical water needs so that water can be managed using the "rule curve" approach. In developing rule curves, simulated models of water flows are created based on estimates of how much water will be available each year, and water managers try to follow the plan, even through the winter months.

Andy Brummond, MT FWP, explained the "rule curve" approach to reservoir water release management. He also said that FWP reserved water rights for instream flows are very limited in quantity, and are only sufficient to "wet the backs" of fish rather than enhance habitat. Additional instream flows not associated with a water right or water reservation are not considered by DNRC when new water use permits are considered. He suggested adding an addition to Objective a) i), "…considering both consumptive and non-consumptive uses, which may or may not have associated water rights, existing on the stream." After some discussion and questions, and a reminder from Denise Biggars, DNRC, that the agency is not allowed by statute to consider non-consumptive uses that have no associated water right or water reservation, the BAC decided not to add the phrase to the recommendation. A compromise was suggested by Kristi Kline, to add "…which may include consumptive or non-consumptive uses" to Goal 1).

A suggestion was made that the title of Issue Statement #5 should be changed, as it doesn't address future oil and gas industry water use or the impacts on water quality.

This suggestion was addressed by the decision to not single out a specific beneficial use of water.

From SurveyMonkey, Objective a): Add short term recommendation ii: Establish areas where groundwater withdrawals in recent decades have outstripped the pace of recharge and whether or not establishment of Groundwater Control Areas is appropriate, to avoid drawing down of water table. Add short term recommendation iii: It should be noted that increasing water supplies is the only strategy to meet future demands. State resource agencies also should work together to conserve water supplies by restricting and monitoring water use that cannot be returned to the aquifer. The US Geological Survey (USGS) notes that available surface water supplies have not increased in 20 years, and groundwater tables are dropping at an alarming rate. As water supplies diminish, the majority of water used in hydraulic fracturing (fracking) cannot be recycled and cannot return to the hydrological cycle.

This proposed recommendation was not adopted for the same reasons given above – no particular beneficial water use should be singled out in the state water plan.

Also from SurveyMonkey, a specific recommendation: A statement demonstrating that thorough evaluation of water development alternatives and their impacts not only to water users, but also to natural systems and fish & wildlife resources, is needed in the BAC's recommendations.

Again, no special attention should be given to a particular beneficial water use.

A suggestion from SurveyMonkey for Objective b): Add short term recommendation ii: Review specific industrial uses of water (for example, exploratory and oil and gas drilling) that deplete the supply of usable water by extracting ground and surface water and mixing it with toxic chemicals. Once used, this produced water cannot be returned to the water supply and is instead stored indefinitely in tanks or ponds. In comparison, water used for agricultural and livestock can be recycled back into our water supply.

Even though the end results of water use for industrial purposes as compared with agricultural uses may differ, no distinction should be made among beneficial uses.

Issue Statement #6

There was wide-spread public support for the state playing a financial role in helping watershed organizations thrive. They can look at citizens' values in a way the state can't, and those values should underlie the state water plan in addition to data and facts. The state might benefit by asking local watershed groups for input whenever the state water plan is updated in the future.

DNRC is likely to ask for input from local groups when the state water plan is next updated.

A responder to SurveyMonkey suggested for Objective b): Add short term recommendation iii: DNRC, DEQ and other "water regulatory" agencies need to provide a single voice (including funding requests) to the Montana Legislature.

Members of the BAC decided that this goal is unattainable.

The following section of this report contains the recommendations, as modified after consideration of public comment, adopted by the Lower Missouri River Basin Advisory Council.

4 ISSUE STATEMENTS AND RECOMMENDATIONS

4.1 WATER USE ADMINISTRATION

The principle of beneficial use is a cornerstone of the Prior Appropriation Doctrine. Beneficial use is the basis and measure of a water right. The accuracy of water right processes is paramount to the protection, administration and enforcement of valid water rights. The accuracy of existing claims is critical to the future development of state waters. Any strategy to meet future water demand needs to include examination of Montana's water right system to more closely align water use with established priority and legal availability. The water rights adjudication process must be accurately completed to determine how much water is legally and physically available for existing and future use.

There is growing public sentiment for enforcement against illegal water use. Montana's water users are hesitant to file suit against their neighbors. They want assurances that existing water rights will be protected whenever new water right permits and changes in use are granted by the state. Water users also want a more efficient, less expensive, and less adversarial approach to the enforcement of water rights.

1) **<u>Alignment of Adjudication with Actual Historic Use</u> – Goal:** The support of efforts and processes to address claims of water use, and proposed changes to claimed water rights is essential for the protection of existing, valid water rights. It is also critical for determining how much water is available for future development and beneficial use.

   a) **Objective:** Water right decrees should accurately reflect the status of existing water rights as they historically existed prior to July 1, 1973. By strengthening the existing water right system, water managers would be in a better position to ensure that water is allocated according to established historic beneficial use.

i) **Short-Term Recommendation:** The Water Court and DNRC need to do a better job of communicating the adjudication process generally and the process of filing appropriate objections specifically to ensure the most accurate adjudication process possible.

ii) **Long-term Recommendation:** Evaluate and develop processes to ensure water rights are accurately and consistently defined across Montana. DNRC and the Water Court should work together to develop a post-adjudication strategy to address issues such as place of use on claims that were verified by a less demanding process than current examination methods. This effort will ensure a more consistent evaluation of all water right claims across Montana.

b) **Objective:** Analysis of historic water use in DNRC's change application process is important for the protection of existing water rights. The DNRC administrative process is more rigorous than that conducted for adjudication purposes, and is science based. DNRC must maintain the integrity of its change process and continue to analyze water right claims for actual, historic beneficial use, including consumptive volume. However, there are issues of trust and credibility that undermine implementation of the change process. Better understanding among the public on the change process would strengthen this system.

i) **Short term Recommendation:** DNRC needs to educate water users and other appropriate agencies and entities of the importance of the change process. DNRC also needs to provide a better explanation of measures that have streamlined and simplified the current change process.

2) **<u>Completion of Adjudication</u> -- Goal**: Completion of the adjudication process is critical to the ability of water users and water managers to understand, manage, enforce, and defend Montana's water resources.

a) **Objective:** The completion of water rights adjudication process will determine how much water is put to historical beneficial use. The process must be completed as efficiently and accurately as possible.

i) **Short-term Recommendation:** Provide the tools (funding and personnel) necessary for the Water Court and DNRC to complete the adjudication process at least to the point of Temporary Preliminary or Preliminary decrees not later than 2020.

ii) **Medium -term Recommendation:** Support funding and if necessary extension of the Adjudication Program to move Temporary Preliminary to Preliminary decrees to complete an accurate adjudication process by 2024 and Final Decrees by 2027.

b) **Objective:** The resolution of outstanding federal and tribal reserved water rights presents an obstacle to the final adjudication of state water rights. The state must continue its efforts to negotiate water compacts with tribal nations, and advocate for ratification by Congress.

i) **Short-term Recommendation:** The state and the state's Congressional delegation must continue working to complete all the tribal water compacts still in process.

4.2 Storage, Distribution, Infrastructure Maintenance, and Application Efficiencies for Irrigation Water

Montana's irrigation water storage and distribution infrastructure is in many cases nearly a century old, and has become increasingly inefficient in storing spring runoff and delivering it to crops during the irrigation season. Once the water reaches the end user, application efficiency may be improved by a switch to, for instance, pivot sprinkler systems, but the switch may have unanticipated effects on surface water or groundwater. There is a lack of research on the consequences of changing delivery systems and application methods.

1) **Strategy for Updating Infrastructure – Goal:** Montana's aging water storage and delivery infrastructure inventory must be updated, and a prioritization process for repair, alteration, or replacement implemented. In addition, more research on the positive and negative consequences of changing methods of water application will help avoid unintended consequences in the future.

   a) **Objective:** The cost of maintaining and/or altering water storage and delivery infrastructure is often too high to be paid by local water users alone. The state needs to develop a project prioritization strategy to use available funding in the most efficient manner possible. New funding methods that involve all stakeholders who benefit from water projects should be explored

      i) **Short Term Recommendation:** Support operational funding to develop public/private partnerships to assess local capacity, incentives and financial commitments necessary to support state and federal authorizations that are adequate to complete infrastructure rehabilitation efforts.

      ii) **Short-term Recommendation:** Set up an infrastructure improvement funding program to address problems with water storage and delivery systems, and increase funding caps for currently authorized grants and loans.

   b) **Objective**: Improvements in water storage and delivery efficiency may have either positive or negative effects on surface water. Improved methods of water application on crops may conserve water, but the effects of changing methods on return flows, groundwater, soil, and water quality vary from site to site, and need to be carefully explored before any particular method is encouraged.

      i) **Short-term Recommendation:** Quantify the surface water-ground water impacts from changes in irrigation water distribution, application methods and timing across watersheds to account for wide-ranging precipitation patterns, geology and topography.

4.3 WATER RESOURCE INVENTORY AND MEASUREMENT

The current status of water measurement and water resource research makes it difficult to determine how much water is legally and physically available for existing and future uses. Wise management of the state's water resources requires an adequate assessment of surface and groundwater availability and an inventory of how much water is beneficially used. The state's network of streamflow gages does not cover enough streams to provide critical water quantity and quality data in all the sub-basins. In addition, many water delivery systems have no accurate method of recording the quantity supplied to a specific user. It is difficult for managers to ~~fairly~~ distribute water without knowing how much is available, and how much is arriving at the place of use. The State of Montana needs to increase its water measurement and monitoring program so that it is sufficient to understand water supply and use, enforce water right decrees and compacts, and better understand the relationship between water quality and quantity.

1) **Streamflow Gages -- Goal*:*** Funding for Montana's existing streamflow gage network must be ensured, and new gages installed to monitor flows on streams that lack historical data. Selected water quality parameters should also be monitored by many of the gages. As demand for water within and outside the state increase in the future, measurement of water availability and water deliveries to end users will be essential for sound water management.

   a) **Objective:** Partnerships among federal, state, and local agencies and organizations should be supported to fairly pay the costs of installing and maintaining streamflow gages. The data collected needs to be immediately available to anyone who needs the information for impending flood warnings, water availability, distribution of water, wastewater releases, water quality, and those who want to know streamflow levels.

      i) **Short-term Recommendation:** Maintain the existing stream gage network operated by the USGS for key mainstem and tributary gages via the USGS/DNRC Cooperative Agreement Program.

      Note: USGS maintains approximately 180 gages in Montana; there are many local, state and federal cost-share partners on these gages. DNRC provides cost-share on 43 of these gages with annual budget of $296,000. The cost share program is continually facing reductions federal funding forcing Lower Missouri Basin users to make choices between gages—Musselshell River gages are examples.

      ii) **Short-term Recommendation:** Institute a telemetered (real-time) stream gage program operated by DNRC/MBMG. Sub-basin watershed organizations should submit recommendations for new streamflow gage installation sites.

   b) **Objective:** In order to distribute available water to users, measuring devices should be installed on pumps, headgates, unmetered municipal water systems, and all non-exempt wells in all watersheds.

i) **Medium-term Recommendation:** DNRC should develop a program to encourage and incentivize the installation of measuring devices at the point of diversion.

c) **Objective**: A good understanding of surface and groundwater resources is necessary to ascertain the status of water resources in Montana. Surface and groundwater research, whether accomplished by federal, state, or contracted private entities, must be funded, starting with the most critical areas first, and eventually the entire state.

i) **Short-term Recommendation:** Adequate funding should be appropriated for research on surface and groundwater quantities in the state.

ii) **Short-term Recommendation:** The Ground Water Steering Committee should re-evaluate project funding criteria for the Ground Water investigation Program to better reflect statewide priorities and directly implement priorities reflected in the State Water Plan.

4.4 GROUNDWATER AQUIFERS: QUANTITY AND QUALITY

There is a need for additional research on the quality and quantity of Montana's aquifers. As more users tap the state's groundwater sources, it is essential to document the quality and quantity of groundwater. Water quality must be periodically monitored using site-specific parameters. An aquifers' ability to recharge at a rate that meets water withdrawals/discharge must be monitored to avoid depleting the resource.

1) **Groundwater Monitoring -- Goal*:*** A more comprehensive system of groundwater monitoring for quantity and quality should be adopted by the state.

a) **Objective:** Montana's aquifers and groundwater/surface connections must be defined and characterized.

i) **Short-term Recommendation:** Support additional funding for groundwater assessments and investigations so that additional aquifers and groundwater/surface connections can be defined and characterized.

ii) **Short-term Recommendation:** Identify and develop public/private partnerships to accomplish the stated objectives.

iii) **Short-term Recommendation:** Change the Ground-Water Assessment Steering Committee prioritization process for groundwater research to divide the funding among all four state river basins. This will balance priorities across rural-urban conflict

situations, emerging ground water needs/limitations and quantifying new ground water resources.

b) **Objective:** Statewide groundwater testing data should all be included in the existing public web portal. The availability of improved data will help inform and protect all water users.

   i) **Short-term Recommendation:** Request that DEQ and DNRC work together to educate and encourage local sub-basin groups to address water quality and other issues associated with water use or activities that affect water quantity or quality.

c) **Objective:** As more groundwater is used for beneficial operations, aquifers must be monitored to avoid overuse or adverse impacts to surface water connected to aquifers.

   i) **Short-term Recommendation:** Support local, state, and federal efforts and increase funding through existing DNRC grant programs to control artesian flowing wells to better conserve groundwater resources.

   ii) **Medium-term Recommendation:** Increase funding levels for the Ground Water Assessment Program (GWAP) and the Ground Water Investigation Program (GWIP) administered through the MT Bureau of Mines and Geology to advance more projects across all four major river basins. Funding needs to address the increased need for information and keep pace with rising research costs.

4.5 FUTURE DEMANDS ON WATER RESOURCES

Basin scoping meeting participants agreed that more water from spring runoff should be captured by increasing the capacity of existing reservoirs, by building new small-scale off-stream reservoirs, or by enhancing natural floodplain wetlands water storage. Negotiation for additional water from federal storage projects to meet demand within the state is a possibility, keeping in mind the role full reservoirs play in recreation. Adoption of voluntary conservation programs, or in the case of industrial water use, development of recycling technology, might free up water for reallocation to additional uses. Some of the state's aquifers contain water of sufficient quantity and quality to help meet new demands. A water banking program could serve as a tool to help facilitate transfers of water to uses associated with rapidly changing demands.

1) **<u>Future Demands</u> -- Goal:** There may be strategies that if adopted would increase the quantity and quality of water available to help meet future resource demands for both consumptive and non-consumptive uses.

   a) **Objective:** State water resource agencies should work together to increase water supplies by actively exploring additional storage opportunities, considering incentives for voluntary

water conservation by users, instituting more aquifer monitoring programs, and testing new wastewater recycling technologies.

i) **Short-term Recommendation:** Explore the potential for small off-stream storage projects in the Lower Missouri River basin

b) **Objective:** Water banks would create greater certainty for prospective water users, thereby enhancing economic development and providing options to boost stream flows during periods of drought.

i) **Short-term Recommendation:** Various water banking strategies should be explored as a tool to facilitate transfers of water to differing uses.

4.6 WATERSHED ORGANIZATIONS

During the Montana Water Supply Initiative scoping meetings in the Lower Missouri River Basin, four facts became evident. First, local watershed organizations provide a very important structure for promoting communication and collaboration on water resource issues. Second, local watershed organizations provide an effective forum that earns the trust and respect of participating stakeholders. Third, functioning watershed and sub-basin groups provide a workable and cost-effective structure for local stakeholders, state agencies, and federal agencies to communicate more effectively and arrive at solutions that all parties support and are willing to implement in good faith. Fourth, local mediation efforts reduce the need for costly judicial solutions to water resource management.

A number of sub-basins across the state have established watershed organizations with a goal of promoting communication and collaboration on water resource-related issues -- efforts that have reduced the need for costly judicial solutions to water resource problems. Existing groups, including the Clark Fork Coalition, the Musselshell Watershed Coalition, the Big Springs Watershed Council, the Greater Gallatin Watershed Council, the Big Hole Watershed Committee, and the Blackfoot Challenge were organized for different reasons, yet they all provide a trusted forum for discussion of issues. These organizations can serve an educational function, assist in the periodic updating of a statewide water use plan, and evaluate successes and failures in implementation of the statewide plan.

1) **<u>Watershed Organizations</u> -- Goal:** The state should recognize and support autonomous grassroots organizations in watershed basins. These organizations will help local, state and federal agencies, organizations, and citizens work from the same water resource playbook in order to optimize collaborative problem-solving efforts.

a) **Objective:** Local citizen groups allow diverse interests to come together to discuss and adopt water management strategies to solve problems that are critical in their watershed. If water management strategies are to be successful, water users need to trust and respect

the decisions of water managers. Watershed organizations provide a forum for building that trust. Current technical and financial support of these groups by state and federal agencies is a key to their success, but additional funding for general staffing of the organizations is needed.

i) **Short-term Recommendation:** Support continuation and expansion of the Watershed Capacity Building Program initiated by the 2013 Legislature.

ii) **Short-term Recommendation:** Build on Montana's Watershed Coordination Council's work, to increase the capacity of sub-basin community forums to function collaboratively with agencies to identify, respond, and resolve important water quantity and quality issues within their region.

iii) **Short-term Recommendation:** Utilize the MT Watershed Coordination Council to distribute financial and technical assistance to existing and new watershed groups.

b) **Objective:** To request that state and federal agency representatives work with water users, local watershed groups, municipalities, tribes, and conservation districts to improve cooperation and facilitate shared dialogue among all stakeholders in Montana's water resources.

i) **Short-term Recommendation:** Enhance education opportunities through the state's conservation districts to more broadly address water resource issues by providing additional grant funding opportunities.

ii) **Short-term Recommendation:** Review the roles of resource agencies in data collection, data analysis, data publication, collaboration with other state and federal agencies, and enforcement of laws and regulations. Make necessary changes to clarify roles, responsibilities and effectiveness. Create a user-friendly template to communicate all of the above to those who work with and depend on water.

c) **Objective**: Evaluate continuation of the BACs in each region to help support, network, facilitate, and evaluate the implementation of recommendations adopted in the final state water plan.

i) **Short term recommendation:** Convene water resource agencies, BAC members, and local sub-basin stakeholders for conferences and workshops to assess the merits, purpose and structure for ongoing BACs in all the four regions.

5 SUB-BASIN ISSUE STATEMENTS

The issue statements in this section were developed by BAC members residing in each of the four sub-basins of the lower Missouri River basin. Specifically, these sub-basins are the Judith River Sub-basin, Milk River Sub-basin, Musselshell River Sub-basin, and the Lower Missouri River Sub-basin, which is the Missouri River below Fort Peck Dam. These sub-basin issues and recommendations are meant to inform the public of priority issues in each of the sub-basins that emerged through the course of this process. They will not be included in the final state water plan developed by DNRC at the conclusion of this phase of the Montana Water Supply Initiative. Instead, they will serve to inform watershed organizations, conservation districts and other entities in the sub-basins about issues that should be addressed locally.

5.1 JUDITH RIVER

5.1.1 Madison Group and Kootenai Aquifers in the Judith River Basin

Judith River basin residents are protective of the quality and quantity of water flowing from Big Spring. There is a concern that development of high volume wells tapping the Madison Group and Kootenai aquifers, and an increase in activities that could contaminate the aquifer, will jeopardize the quantity or quality of the water.

1) **Aquifer Research – Goal:** A better understanding of the dynamics of the Madison Group Aquifer's recharge capacity and of the hydrological connections between the aquifer and the surface water of the Judith River basin, is essential to protection of water quality and quantity.

   a) **Objective:** The state should conduct additional research on how the Madison Aquifer functions, and on the connections between the aquifer and its surface outlets.

      i) **Short-term Recommendation:** The BAC supports the 2014 RRGL application by the Central Montana Regional Water Authority to characterize the hydrology of the Madison Group and Kootenai aquifers.

      ii) **Medium-term Recommendation:** The BAC supports development of private/public partnerships to explore the effects of large volume groundwater water withdrawals on springs and other wells to ensure no adverse effects on existing water rights in the Judith River basin.

   b) **Objective:** Effective regulations addressing monitoring and control of possible sources of contamination of the Madison Group, Kootenai, and other shallower aquifers should be adopted as soon as possible.

i) **Short-term Recommendation:** Regulations governing surface and groundwater quality monitoring should be strengthened, and agencies involved in enforcement or monitoring activities encouraged to share data with each other and the public.

5.2 LOWER MISSOURI RIVER BELOW FT. PECK DAM

5.2.1 Impacts of Water Releases from Ft. Peck Dam and Flood Waters From Tributaries

When large releases of water from Ft. Peck Dam occur, the resulting flows damage irrigation infrastructure downstream, and cold water from the power plant affects warm water fisheries. Fast-moving water also causes channel migration, causing water rights holders additional expense to access their water from the Missouri River.

1) **Mitigation of damage – Goal**: The state, municipalities, landowners, the Fort Peck Tribes, and the Army Corps of Engineers need to discuss ways to mitigate damage caused by releases of water from Ft. Peck Dam.

   a) **Objective:** Agencies that have interests in the Missouri River below Ft. Peck Dam, i.e., the Army Corps of Engineers, county DES offices, Montana FWP, irrigation districts, municipal water departments, should work together to develop joint plans to address potential damage caused by water released from the dam.

      i) **Short-term Recommendation:** Explore capacity of Milk River watershed to help control floodwater.

      ii) **Short-term Recommendation:** Encourage bank stabilization along the Missouri River at points of diversion. Initiate at a minimum bi-annual stakeholder meetings to monitor and assess what is working and what is not working in mitigation efforts

5.2.2 Missouri River and Aquifer Water Quality and Quantity

There is increasing development along the Missouri River and its drainages below Ft. Peck Dam. This leads to a concern that new water uses could contribute to increased sediment levels, chemical contamination and excessive aquifer depletion of the water resources. Development is impacting both ground and surface water quality in the area.

1) **Water Quality and Quantity in Lower Missouri River Watershed – Goal:** Water quality in the Missouri River below Ft. Peck Dam should be monitored for contaminants. Existing laws and regulations governing water quality should be enforced, and perhaps strengthened.

The major aquifers, such as the Fox Hills Formation, need additional study and monitoring to determine the recharge capacity. Currently the aquifers have no quantity limits on withdrawal.

a) **Objective:** DEQ should implement practices and policies to require testing by all entities holding permits under Montana's Clean Water Act to make sure water quality standards are being met.

   i) **Short-term Recommendation:** Agencies charged with enforcement of water quality standards and drilling practices must be given the resources to do their job.

   ii) **Short-term Recommendation:** Permits for uses that could contaminate groundwater or surface water should require the applicant to test and periodically monitor for contamination after the permit is issued, with test results submitted to DEQ and/or the GWIC public database at the Montana Bureau of Mines and Geology. This would require a change in existing statutes.

   iii) **Short-term Recommendation:** Install streamflow gages on tributaries, and include water quality monitoring for sedimentation and contamination of surface water.

b) **Objective:** The study of the Fox Hills aquifer should be completed in the next two years. This should determine the recharge quantity and withdrawals allowed to achieve sustainability in the aquifer. It has been shown recently that over-withdrawal effects others' ability to get water at an artesian level and also threatens the aquifer itself with possible collapse.

   i) **Short-term Recommendation:** Adequate funding is needed for this additional study.

   ii) **Short-term Recommendation:** A locally-driven group, with state DNRC guidance, needs to help monitor the aquifer.

c) **Objective:** The MT DEQ director has agreed to meet and discuss local water quality concerns. A small (working) group made up of all concerned and affected parties should be organized. This group will help guide DEQ on real, not perceived, issues, help to assure that current laws are followed, and that local individuals and companies are educated on the current laws. If current laws are not adequate, then this group would recommend changes.

   i) **Short-term Recommendation:** Organize a local watershed group to work with DEQ to address water quality concerns.

5.3 MILK RIVER

5.3.1 St. Mary's Diversion Project

The Milk River contains "natural flow" from runoff that originates in the basin and "project water" from the Bureau of Reclamation (BOR) Milk River Irrigation Project that includes an inter-basin transfer water from the St. Mary River Basin and diversion structures. Without this transfer of water, natural flows alone would not keep the Milk River flowing 6 out of 10 years. The majority of the infrastructure of the St. Mary's Diversion and Conveyance Project is 100 years old and in danger of failure. In addition to tribal water claims, the project serves ten to fifteen thousand domestic users and approximately 700 farms comprising more than 110,000 irrigated acres on the Milk River. The loss of the diverted water from the St. Mary's river would be catastrophic for the individuals that depend on this source as well as for the river ecosystem.

1) **<u>Address St. Mary Diversion and Conveyance Works infrastructure</u> – Goal:** A collaborative effort for repairing or replacement of the St. Mary Diversion and Conveyance Works infrastructure should be implemented before catastrophic failure occurs.

   a) **Objective:** Create sufficient capacity for the St. Mary's Rehabilitation Working Group to achieve its ultimate goal for a complete rehabilitation.

      i) **Short-term Recommendation:** Provide funding to hire a coordinator for the St Mary's Rehabilitation Working Group.

      ii) **Short-term Recommendation:** Secure support from the Governor's office to recognize and elevate this project as priority within its administration.

      iii) **Short-term Recommendation:** Secure support from Montana's Congressional Delegation to prioritize this project at the national level.

      iv) **Medium-term Recommendation:** Develop the local capacity and financial commitments across the Milk River sub-basin necessary to support a state and federal authorization that is adequate to complete the rehabilitation project.

5.3.2 Milk River Basin Erosion and Sedimentation

Increased siltation occurring in storage facilities at Fresno Dam is reducing storage capacity. Riverbed siltation downstream from Fresno Dam has presented extra management for operation of water intakes/pumps along the river for irrigators and municipalities. Flooding events erode stream banks and move sediment in the river basin, affecting water quality. Riverbed siltation

downstream from Fresno Dam has presented extra management for operation of water intakes/pumps along the river for irrigators and municipalities.

1) **<u>Milk River Water Quality</u> – Goal:** Better understanding of the Milk River water quality issues and storage capacity concerns to improve protection of water quality and quantity.

   a) **Objective:** Investigate and research storage capacity improvements to Fresno Dam facility while addressing water Final ratification of the Blackfeet Tribal Water Compact should occurquality issues within the Milk River Basin.

      i) **Short-term Recommendation**: Investigate the options and benefits of adding storage to Fresno Dam facility with an inflatable bladder dam**.**

      ii) **Short-term Recommendation:** Establish collaborative effort with stakeholders to develop ideas and solutions

5.3.3 Tribal Water Compacts

Until water rights compacts within the Milk River Basin have been ratified by Congress and the Tribes, planning for rehabilitation of the St. Mary's Diversion Project is difficult.

1) **<u>Establish Communication</u> -- Goal**: Tribal leadership and the Montana Water Compact Commission should be encouraged to communicate and work to resolve differences.

   a) **Objective:** Final ratification of Tribal Water Compacts should occur within the next five years.

      i) **Short-term Recommendation:** Re-establish the legislative authority of the Montana Water Compact Commission and fund its work until all the compacts have been ratified by Congress and the tribes.

5.4 MUSSELSHELL RIVER

5.4.1 Musselshell River Water Rights Adjudication

The water rights adjudication process in the Musselshell River basin occurred at an accelerated pace during a period when water disputes were common and creation of a water enforcement

project was an immediate necessity. The claims verification process used was less stringent than that used in some other basins around the state, and the inaccuracies have yet to be corrected. Most of the Musselshell's tributaries have not yet been adjudicated. All three of the Musselshell River's adjudicated sub-basins, and the tributaries, would benefit from accurate completion of the adjudication process to the point of Preliminary decrees.

1) **Water Rights Adjudication – Goal:** Accurate adjudication of all three Musselshell River basins.

   a) **Objective:** Bring water rights adjudication in the Musselshell basins up to the same standards that were applied in examination of other basins in the state.

      i) **Short-term Recommendation:** DNRC should review claims in the Musselshell basins' Temporary Preliminary decrees using resource surveys, and any other data available, to determine which should have issue remarks to be resolved.

   b) **Objective:** Bring Musselshell tributaries up to the same standards imposed on the mainstem for water measurement and distribution by the time Preliminary decrees are issued.

      i) **Short-term Recommendation:** Water Court and DNRC need to complete Temporary Preliminary decrees on the Musselshell River tributaries.

   c) **Objective:** Create a uniform process for accurate distribution and measurement of decreed water upon issuance of a Preliminary decree.

      i) **Short-term Recommendation:** Encourage the Lower Missouri River Basin Advisory Council to support uniformity of decreed water distribution in all basins in the state.

5.4.2 Off-Stream Water Storage

The Musselshell River frequently experiences short, intense periods of spring run-off that can cause flood damage to homes and infrastructure. The existing off-stream storage projects (Martinsdale Reservoir and Deadman's Basin Reservoir) do not have inlet canals of sufficient size to divert more than a small fraction of the run-off, so most of it goes on downstream through Ft. Peck Reservoir, and out of state, its use lost to Montana.

1) **Water Storage – Goal:** More spring run-off should be stored within the Musselshell River watershed for use during periods of limited precipitation.

   a) **Objective:** Additional off-stream water storage sites should be evaluated and funded. The state should identify more funding partners for potential projects, including recreational

users, flood control agencies, wildlife resource agencies, hydroelectric companies, and irrigators.

i) **Short-term Recommendation:** Water users interested in pursuing off-stream storage projects should work to secure funding sources and the state should support their efforts through grant funding.

5.4.3 Riparian Weeds

The 2011 flood delivered millions of weed seeds to the banks and gravel bars of the Musselshell River. There is no coordinated effort among all the counties through which the river runs to control the resulting infestations, which have now gained a firm foothold.

1) **Noxious Weeds – Goal:** To successfully combat noxious weeds, infestations must be controlled by cooperative efforts throughout a watershed.

   a) **Objective:** The state should encourage counties to pool allocations from the weed trust fund to establish cooperative weed management areas, and provide additional sources of funding to combat weeds in riparian areas.

      i) **Short-term Recommendation:** The state could allow bonus grants of Weed Trust funds when multi-county cooperative weed management areas are established.

5.4.4 Musselshell Watershed Coalition

The Musselshell Watershed Coalition (MWC), established in 2009, has brought stakeholders in the basin together to work collaboratively to manage water resources and improve the ecological health of the river. By working together, the partners have implemented a number of successful strategies and projects with funding assistance from DNRC, DEQ, NRCS, and non-profit organizations. Many of the administrative functions of MWC have been provided by volunteers. The organization has reached a point in its evolution where secure funding for a Coordinator is a necessity.

1) **Capacity-Building – Goal:** MWC needs some assurance that its efforts on behalf of helping to better manage the state's water resources will be supported into the future by secure funding assistance.

   a) **Objective:** MWC partners should adopt long-range goals for capacity-building for the organization.

i) **Short-term Recommendation:** MWC should work with the Montana Watershed Coordination Council go develop a long-range plan for building capacity and securing funding.

ii) **Short-term Recommendation:** The state should allocate a portion of its water resource budget to support local watershed organization staff expenses now and into the future.

6 APPENDICES

6.1 LOWER MISSOURI RIVER BASIN ADVISORY COUNCIL MEETING MINUTES

6.1.1 Lewistown, February 18, 2014

Lower Missouri River Basin Advisory Council
Recommendation Meeting Report
Lewistown, February 18, 2014

Present: Bill Milton, Facilitator
Michael Downey, Water Resource Planner, DNRC
Wendy Beye, BAC Administrator
Jill Frankforter, USGS
Tom Richmond, Montana Board of Oil and Gas
Clayton Jordan, US Bureau of Reclamation
Eric VanderBeek, BAC member
Arnold Bighorn, BAC member
Bill Bergin, Sr., BAC member
Peter Marchi, BAC member
Mike Lawler, BAC member
Kristi Kline, BAC member
Dave Galt, BAC member
Rhonda Knudsen, BAC member
Jim Peterson, BAC member
Mike Nieskens, BAC member
Dick Iversen, BAC member
Jane Holzer, BAC member
Doug Hitch, BAC member
Monty Sealey, BAC Technical Adviser, Central Montana Regional Water Authority
Andy Brummond, BAC Technical Adviser, FWP
Scott Irvin, BAC Technical Adviser, DNRC
Attila Folnagy, Groundwater Hydrologist, DNRC
Dave Amman, Hydrologist, DNRC
Dianna Hewitt, Lewistown City Commissioner
Adam Haight, Northern Resource Council

Present Via Conference Call: Dolores Plumage, BAC alternate member
Mark Ockey, BAC Technical Adviser, DEQ
Denise Biggar, BAC Technical Adviser, DNRC

Facilitator Bill Milton called the meeting to order at 10:05 a.m. Introductions included an answer to the question, "What have you learned so far from the Water Supply Initiative process?"

Answers included: water resource issues haven't changed much over the years; there is a great deal of overlap in issues from basin to basin; data on water resources is available, but may be difficult to locate; the eastern part of the state and groundwater have not received as much attention as the western part of the state and surface water have; even though issues have remained constant, the social, political and economic context has changed.

Presentation – Jill Frankforter, USGS Water Quality Section Chief, Helena

The USGS has been conducting energy-related surface and groundwater research in the Williston Basin, which extends into northeastern Montana, since the 1980s. The agency has built aquifer modeling systems for shallower aquifers and is now beginning to look at deeper aquifers in the area. One of the most prominent studies was begun on tribal land north of Poplar when contamination from leaking wells and brine pits built in the 1950s impacted drinking water. Funding for this project came from USGS, EPA, the Ft. Peck Tribe, and some of the energy companies involved. Remediation efforts have been partially successful, but there are on-going problems with water quality and the systems used to transfer water from the Missouri River to residents. (The tribe has also pointed out in a recent news story that aquifers under their land have become unusable for any future purpose, and that has an ongoing economic impact.)

Another research project involves the Prairie Pothole Region, mostly in North Dakota, where oil and gas production brine chemical signatures have been found in naturally-occurring wetlands. Impacts on plants and invertebrates that populate the wetlands are still unknown, but natural remediation would occur very slowly if the contamination sources were removed.

A small groundwater baseline testing program was initiated in the Williston area last year, but there is no way of knowing for sure whether water quality had already been degraded by energy development. Researchers wish the project could have been started six years earlier, and that funding could be assured for long-term follow-up monitoring. USGS is working to coordinate with Montana's DEQ and MBMG to test wells in northeastern Montana as soon as possible. In 2012 some oil production wells were tested to establish their production water's chemical signature in case any contamination occurs in the future.

Additional USGS studies planned include a groundwater availability "budget" for the Williston

Basin, a study on how much water will be required for fracking activities during the expected life of the basin's oil boom, and a groundwater quality study on Blackfeet tribal lands.

Some discussion about the USGS research followed. Dave Galt pointed out that Montana regulations require release of the list of chemicals used by companies in the fracking process after the process has been completed. The lists are available online. He asked whether baseline testing results on private wells are made public. The answer was yes, through the MBMG's Ground-Water Information Center, where it is possible to discover the owners of the wells tested.

Presentation – Clayton Jordan, Bureau of Reclamation Reservoir Operations, Milk River Project

The Milk River Project was authorized by the Secretary of the Interior in 1903 and constructed over the next decade. The original authorization was to provide irrigation water to the area, and flood control became a part of the project in 1957. Other uses now include recreation, fish and wildlife, municipal drinking water, and industrial uses. The Montana FWP division, Blackfeet Tribe, NRCS, Army Corps of Engineers, and Milk River Joint Board of Control work together with the Bureau of Reclamation to manage the project.

Lake Sherburne collects water from the mountains of Glacier Park, and a canal moves it to the Milk River where it flows north into Canada, then south through Havre to the Missouri. Fresno and Nelson reservoirs store the water for use during the summer months. The Bureau of Reclamation coordinates with the Army Corps of Engineers for flood control, monitoring snowpack to estimate reservoir inflows and storage requirements. The Milk River Joint Board of Control uses the inflow and estimated water quantities available to determine what amounts will be available to irrigators each season.

The entire Milk River Project infrastructure is in need of rehabilitation, but at this time, there is no funding available for major repairs or replacement. The system has not met reliability standards for the past twenty years. A large portion of the cost burden will most likely be borne by project water users, which total 140,000, including Bureau of Reclamation lessees, tribal users, and private water rights users.

Sedimentation has reduced the capacity of the two lower Milk River reservoirs, Fresno and Nelson. Fresno now holds 92,000 acre/feet at full pool, while it was built for 120,000 acre/feet. Nelson has also lost capacity, and leaks about 1,800 acre/feet per month due to seepage through its dikes. A dam safety project will start next year, but it will not address the seepage issues.

Presentation – Tom Richmond, Montana Board of Oil and Gas

Tom Richmond displayed several charts showing data for drilling permits issued in Montana. Coal bed methane permits peaked in 2005, and had nearly disappeared by 2008. Natural gas permits peaked in 2006, and oil permits are peaking now. Economic factors play a large role in which types of permits are sought by energy companies. Most of the current oil drilling permits have been issued in Richland and Roosevelt counties, closer to the most productive areas of the Bakken play. Since 2000, 700-800 oil wells have been drilled in Richland County in Montana. Other old wells were re-drilled horizontally to increase production. In areas outside the Bakken, oil drilling permit numbers are at their lowest point since the beginning of the period that started in 1960. In central Montana, where the rate at which oil can be pumped from the Heath Shale does not match production from the Bakken, drilling is not cost-effective given the current price of oil.

Eric VanderBeek asked about drilling activity in the Judith River basin, through what process are permits are granted by the Board of Oil and Gas, and does the Board ever deny a permit.

Tom replied that the drilling in the Judith is for "geologic exploration," even though there is no category for that, so the permits were granted for oil wells. When permits are requested for an area outside of an existing oil field, the Board of Oil and Gas publishes a notice of the application, and there is a 10-day protest period. If a hearing is scheduled, persons who wish to comment must appear at the hearing. The Board of Oil and Gas does not deny permits, as that would be a "taking" of property rights, but there can be conditions attached to the permits.

The Minerals Management Bureau of DNRC processes leases on state-owned land, and the BLM is the primary regulatory agency on tribal lands. The EPA monitors drilling activity on private and public lands.

Kristi Kline asked when the BOG looks at water resource issues in the permitting process.

Tom said current regulations were developed to protect shallow, good quality aquifers. Oil and gas well casings must be solid from the surface to a point below the lowest fresh water aquifer. No holding ponds are now allowed for production water, the wells must use a closed system. The Board looks at existing water wells in the area of development to see how deep the aquifers are located.

Dave Galt asked about fracking chemical disclosure rules.

In August, 2011, the state adopted rules that require all well fracturing material components be disclosed, and that well fracturing is part of the initial drilling process. If fracturing is contemplated on an existing well, a permit must be obtained. The fracturing material website is at frackfocus.org, and it is a central U.S. depository of data.

Jim Peterson asked about relative depths of the Heath Shale and the Madison Group Aquifer. Oil wells that end in the Heath Shale are above the depth of the Madison Group Aquifer. Eric VanderBeek asked, how can water that discharges in surface springs be protected?

Tom said that there is no known oil in the Heath Shale formation above the Madison Group Aquifer where water quality is high. If there are any connections between those layers, the oil was probably flushed from the shale by moving water in the geologic past.

Dick Iversen commented that the footprint of an oil well operation is 5-6 acres, and once surface water leaves the site, the EPA or Montana DEQ is responsible for water quality regulation. Sites are bermed to prevent drilling and production water from leaving the site.

Tom added that energy companies must have a spill control plan approved by the EPA. Generally no enforcement action occurs unless there is an uncontained spill.

Michael Downey mentioned that the Board of Oil and Gas regulates Class 2 injection wells that are used for either enhanced oil or gas production, or for production waste water disposal.

Doug Hitch asked whether all production water is injected.

Tom replied that production water can be discharged at the surface if it meets water quality standards established by DEQ. He said that much of it is of high enough quality to be used for drilling or fracking purposes. The Board of Oil and Gas regulatory program does not cover water quality testing. He suggested that private well owners should test their own water and that way the results would remain confidential. The MBMG was allocated $660,000 by the 2013 Montana Legislature for groundwater monitoring. The agency is considering using the funding for long-term research.

Dave Galt and Jane Holzer described the MBMG coal bed methane groundwater testing program being administered by conservation districts. About 10-15 wells per county can be tested once by the program. Jane said the program would be more beneficial if more wells in more areas could be tested, especially in far eastern Montana. Some energy development companies have domestic or stock wells tested in the vicinity of their operations, but the results do not become public.

LUNCH

After the lunch break, the group began working on Issue Statement #5, Groundwater Aquifers: Quantity and Quality.

Some suggested recommendations included:

- Short-term, identify 3-5 major aquifers that should be more thoroughly defined and characterized by research
- Expand funding for aquifer research
- Revise the method for prioritizing research locations so that sparsely populated areas of the state receive the same attention as densely populated areas
- Add a risk factor for contamination to the list of criteria considered in the research prioritization process.
- Tie water quality and quantity together in issuance of new groundwater permits
- Account for wastewater when considering available water quantity

Next Steps

- Milk River Sub-basin meeting, March 4 in Havre, early afternoon
- Kristi Kline will find a place for the Havre meeting and invite participants
- BAC meeting March 5 at Ft. Peck Dam Interpretive Center, beginning at 10:00 a.m.
- Michael, Bill and Wendy will draft and send out an agenda
- BAC members will participate in a conference call or have a face-to-face meeting once a week until the recommendation process is completed
- Recommendation suggestions can also be emailed to Wendy, Bill, and Michael for drafting and incorporation into the final report.

The meeting adjourned at 4:00 p.m.

6.1.2 Ft. Peck, March 5, 2014

Lower Missouri River
Basin Advisory Council
Report on Meeting March 5, 2014
Ft. Peck Dam Interpretive Center

Present: Bill Milton, Facilitator
Michael Downey, DNRC Water Resource Planner
Jennifer Patrick, BAC member
Rhonda Knudsen, BAC member
Kristi Kline, BAC member
Dick Iversen, BAC member
Jane Holzer, BAC member
Arnold Bighorn, BAC member
Mike Nieskens, BAC member
Jim Peterson, BAC member

Bill Bergin, Sr., BAC member
Thomas Probert, BLM, BAC Technical Adviser
John Daggett, US Army Corps of Engineers, BAC Technical Adviser
Denise Biggar, DNRC, BAC Technical Adviser
Darin McMurry, US Army Corps of Engineers
Mike Dailey, DNRC
Nate Ward, DNRC
Nancy Heins, Valley County Conservation District
Cody Fulton, Agri-Industries
William Rathert, Rancher
Irene Rathert, Rancher

Present By Conference Call: Eric VanderBeek, BAC member
Dwight Vannatta, BAC member
Bob Goffena, BAC member
Wendy Beye, BAC Administrative Assistant

Facilitator Bill Milton called the meeting to order at 10:00 a.m.

Michael Downey summarized the basin water plan process, and how the BAC's work will be incorporated into the statewide water plan. At present the Lower Missouri Basin Plan is about 50% completed at 100 pages long. The BAC recommendations that will be adopted by the end of May, 2014, will become a part of the basin plan. The basin plan includes scenarios that consider increasing population, and long-term drought conditions. The statewide water plan will refer to the four individual basin plans rather than incorporated in entirety. Recommendations from the individual basins will be considered for inclusion in the final state plan that will be presented to the 2015 Legislature.

John Daggett, US Army Corps of Engineers, presented information on the Corps' management of the Missouri River through and below Ft. Peck Reservoir. All six dams operated on the Missouri by the Corps are treated as one system. The Corps is authorized to manage for flood control, hydroelectric power, water supply, water control, recreation, fish and wildlife, navigation, and irrigation.

About 16% of storage is reserved for flood control each year, with top 7% serving as exclusive flood control. Storage is just under 19 million acre/feet in Ft. Peck. The Corps looks at plains snowpack, mountain snowpack, and rainfall each year to determine how much storage capacity may be necessary to store floodwaters. At present, the Corps is estimating about 30 million acre/feet will enter the reservoir system this spring when the snow melts.

Revisions of the management plan in 2004 and 2006 allows more water to be retained in the reservoirs during drought periods to help protect recreation. Reservoir Control Center presents an annual plan for public comment each year. The plan considers hydroelectric needs, endangered

species, navigation, irrigation (when possible), and flood control. The hydroelectric facility at Ft. Peck produces about 10 billion KW each year, which markets first to preference customers (non-profit rural electric companies), then to the open market. Water releases year around are ordered every day or so to meet power requirements.

About 140 private irrigators are located between Ft. Peck Dam and the North Dakota border. When possible, especially during drought periods, the Corps tries to release enough water to fill irrigation needs, but there is no contractual obligation to do so. Channel changes and new sand bar formations have interfered with irrigators' ability to reach the river, so higher releases would be necessary to allow access to the water.

During drought conditions, all the authorized purposes pay a price, including recreation facilities. Businesses, especially at the upper end of the reservoir, may be left with the water far from their boat ramps. The Corps tries to help by extending the boat ramps where possible, or putting temporary boat ramps in place.

Maintenance costs for the Ft. Peck Dam facility totals about $8.3 million annually, about $3.4 appropriated funds, or 40%, paid for by electric power sales. The 2011 flood left the Corps with $43 million in repairs, mostly at the spillway and a stilling basin to dissipate water energy below the spillway. Congress had to authorize these expenditures. There is also a $15 million turbine renovation project that will begin late this year.

There is water available in the Missouri River below Ft. Peck for additional irrigation, but it may be difficult to access. There are no guarantees, however, that irrigators will receive enough water without having to move their pump sites. The irrigation water authorization only applies to federal water delivery projects, not private irrigators. Michael Downey commented that after a conversation with the Reservoir Control Center, water uses below the dam are taken into consideration in the annual management plans. Tribal rights and water reservation demands must be met.

Water releases vary from day to night, as does the river level below the dam. At night, the release might be 9,000 cfs, and during the heat of the day in the summer, 13,000 cfs. Floating pumps can make use of water more reliably than fixed sites. Some of the conservation districts have helped producers by removing sand bars to improve accessibility to the river. The Corps tries to give producers information in advance of releases. Municipalities haven't had problems accessing water.

Jim Peterson asked whether DNRC will be doing an analysis of water availability both above and below Ft. Peck, and developing a statistical model to estimate the effects of drought on the statewide water use plan.

Michael Downey replied that there are several modeling efforts going on. The Bureau of Reclamation is studying water availability from the headwaters of the Missouri to Ft. Peck. The

water plan that results from the Water Supply Initiative project will raise more questions than it answers on what data is needed for good forecasting of water availability and use.

Jim Peterson asked how a water permit applicant can know whether his application will be granted, with so many agencies involved in determining availability in the Missouri below Ft. Peck.

Michael Downey said there is water available, and DNRC is granting new water right permits. If a downstream state were to try to call for water from Montana, a legal battle would ensue. An individual in Montana who has a water right cannot be forced to give up that right to someone downstream out of state.

The Corps is selling excess water in North Dakota that comes from reservoirs. Last year, barge operations needed more water, and the Corps denied the request. The only releases made are based on the annual operating plans for the reservoir system. The Corps did file for a water right in the 1970s for some of its authorized uses.

Michael Downey gave a short summary of the issue of flowing wells in Montana (artesian wells). There are about 1,500 mostly stock water wells in the Lower Missouri and Yellowstone that run continuously at 10-20 gallons/minute, allowing 24,000 acre/feet to flow onto the ground, down drainage ditches and eventually into rivers. The water quality is probably lower than that of the river. Some of these wells are losing productivity as the water level in the aquifers drops. The BAC could make a recommendation that control valves be installed, with some cost sharing by federal and state grant programs, on these wells to control the flows and conserve water. This would be a voluntary program that should elicit good support. If a water right holder on a flowing well filed for 100 gallons/minute, by installing a valve that reduces the flow to 10 gallons/minute, the water right would not be reduced.

A pilot program in Petroleum and Fergus counties demonstrated that adding valves to flowing wells did make a difference in aquifer water levels.

Bill Milton reminded people attending the meeting that the BAC's goal is make recommendations for measurable actions that will help resolve the issues that were raised in the Lower Missouri River Basin during the scoping meetings held last fall.

<u>Issue Statement #1, Water Resource Inventory</u>

Bill Bergin asked to remove the word "consumptive" from the first sentence.

Bob Goffena said that "historic consumptive use" should be considered whenever a change in a water right is applied for.

At the Milk River sub-basin meeting, participants asked that in the future, when changes are made to the issues statements, they should be tracked so BAC members can better understand how the document has been revised.

Doug Hitch emailed some information on streamflow gages to Michael to be added to this issue statement.

Jim Peterson said that we now have a whole issue statement devoted to streamflow gaging, and maybe that is where that information should be placed.

Michael Downey modified some of the language of the objectives and recommendations based on BAC member comments, and these changes will be reflected in the next version of the issue statements.

The issues raised by Bob Goffena on issue remarks not being a part of the Musselshell River basins decrees will be considered by conference call of the sub-basin irrigator group later. Denise Biggar commented that DNRC does not have the authority to go back and re-open issues on decreed basins at this point. The Water Court would have to order a re-examination based on filed objections.

Dwight Vannatta had to leave the conference call, so will email his comments on issues to Wendy and Michael.

LUNCH

Bill Milton suggested that the afternoon session be spent touching base on all the rest of the issue statements.

Issue Statements #1 and #2 will be handled by an irrigator sub-committee: Bill Bergin, Bob Goffena, Jim Peterson, Peter Marchi, Bill Milton, Michael Downey, and any other BAC members who want to participate.

Kristi Kline asked about water reservations made by municipalities and whether they can be lost through water compacts or adjudication process. Kristi also wondered about whether water compacts issue on the Milk River should be added to Issue Statement #1.

Michael Downey said no, they cannot be lost.

<u>Issue Statement #3, Storage, Distribution Infrastructure Maintenance</u>

Federal government, the state, and local communities in the Milk River need to get together and plan for the St. Mary's diversion project collaboratively. How should this apply to other areas in the Lower Missouri River basin?

Michael Downey explained that two programs, the Renewable Resource Grant and Loan program and the Reclamation Development Grant program, are used to help share costs for projects that enhance water and other renewable resource projects across the state. DNRC staff ranks grant applications by set criteria, then forwards recommendations to the legislature for funding every two years. Unfortunately, the funding assistance is seldom enough to pay for construction of major projects. Grants can, however, pay for preliminary engineering to help design the projects.

Dick Iversen suggested that basins use a strategy that in the short-term, project design be accomplished using state grants; medium-term, study the project and do preliminary engineering; long-term, look for funding sources from all stakeholders.

Michael Downey said that the Milk River has been studied and re-studied, and estimated costs determined, which were overwhelming. If the diversion canal failed catastrophically, 80% of the flow of the Milk River would be lost to all users. The agricultural users should not be the only ones who share in the cost of repairs.

Rhonda Knudsen suggested a recommendation of establishing watershed councils in the short-term to develop funding methods.

Jim Peterson said the legislature is not likely to respond to a request for enough money to make major repairs. Instead, a package should be developed that might include tax-free bonds, tax incentives, private contributions to combine with state and federal funding sufficient to fund a project. The plan should come from the local citizens who are affected by the project, and there should be some benefits to the private partners in the process. Tax credits might help encourage participation. Establish working groups to assess local capacity, incentives, public/private partnerships, and financial commitments to address infrastructure needs.

Kristi Kline said that the St. Mary's Working Group came to a standstill because they need a local coordinator to help keep the group going. The groups need assistance from the state to develop capacity and operational security.

Michael Downey suggested adding that the state should provide operational funding to establish the working groups.

Bill Milton explained that there is now a grant program through DNRC that provides $10,000 per year for two years to help watershed groups hire coordinators and develop funding strategies that would allow the groups to continue operating.

The second objective concerning water storage and delivery efficiencies should perhaps be included in the water availability section of Statement #1. Michael will work on that.

<u>Issue Statement #4, Water Measuring Devices</u>

At present, gaging maintenance is a federal/state/local partnership. There is a budget request from DNRC now to increase funding for streamflow gages.

Each sub-basin should make decisions about where new gaging stations should be placed, and how those stations should be paid for.

Issue Statement #5, Groundwater Aquifers: Quantity and Quality

In addition to groundwater quality monitoring, connections between aquifers and surface water should be identified and characterized.

There was some discussion of whether private well owners would want the results of their well testing to be public information. Participation in a groundwater testing program would be voluntary.

Michael Downey explained the Colorado, Wyoming, Utah, and New Mexico have adopted or in the process of adopting statutes to bring the oil and gas industry back into the regulatory framework for meeting water quality standards. In 2005, the industry was exempted from meeting Clean Water Act Regulations.

Deb Madison, who works for the Ft. Peck Tribe in its environmental issues office, said that after the Poplar aquifer contamination came to light, the tribe has adopted new rules for testing domestic and stock wells within a mile of an oil field or proposed oil field to establish baseline water quality data.

It was decided to recommend that the governor appoint a taskforce to address perceived water quality issues with the energy industry by using standards recently adopted by other western states. This recommendation will be discussed at future meetings when other members of the BAC have had a chance to study it.

Another recommendation was added for supporting federal efforts to deal with flowing wells.

Issue Statement #6, Future Demands

The US Army Corps of Engineers can't promise to make more water available for new water rights permits on the Missouri River downstream of Ft. Peck Dam. Federal law may not allow releases for irrigation. A study in 2009 investigated whether the Corps' original authorizations were still valid, and nothing was changed. There is at present, however, enough water to allow some new permits to be issued.

Issue Statement #7, Watershed Organizations

Michael Downey commented that many of the watershed organizations around the state do not consider irrigation infrastructure to be a top priority.

There was some discussion about keeping the Lower Missouri River Basin Advisory Council going beyond the Water Supply Initiative process. Funding to keep the BACs operating year-round is not a likely scenario, but the legislature might be willing to fund BACs every other year, 6 months before each legislative session. The BACs could evaluate how implementation of their recommendations is going, and what needs to be changed in the statewide water plan.

Smaller, sub-basin groups might be able to function better than a large-scale BAC, especially in eastern Montana where geographical distance impedes collaboration, as do differing issues in each sub-basin.

A recommendation was drafted to support continuation and expansion of the Watershed Capacity Building Program initiated by the 2013 Legislature.

Next Steps

The BAC plans to hold four additional public sub-basin meetings in late April and early May to take comments on the draft recommendations report. Participation may be better at these meetings than it was for the scoping sessions, because there will be a document made available to the public, and that will encourage comment. The document could be distributed electronically to the list of persons who have been involved in the Water Supply Initiative in the Lower Missouri over the past 6 months.

After the public meetings, any changes the BAC wants to consider can be incorporated into the final recommendation report that is to be completed by May 31.

The next face-to-face BAC meeting will be in Lewistown at the Calvert Hotel, tentatively on April 10, from 9:30 a.m. to 4:30 p.m. Michael Downey will work on finalizing the date and times.

Weekly facilitated BAC conference calls will be scheduled to continue work on the recommendations until they are finished.

At the next BAC meeting, strategy for involving the public in the recommendation process will be discussed.

Action Items

- Michael Downey and Scott Irvin will work on language for Issue Statements #1 and #2, which may be combined
- The Irrigator BAC Subcommittee will conduct a facilitated conference call to work on water rights issue recommendations.

- Bill Milton will set up weekly conference calls with BAC members, and facilitate them.
- Michael Downey will try to obtain a copy of the criteria used to prioritize groundwater research.

6.1.3 Lewistown, April 10, 2014

Lower Missouri River
Basin Advisory Council
Report on Meeting April 10, 2014
Calvert Inn, Lewistown

Present: Bill Milton, Facilitator
Michael Downey, DNRC Water Resource Planner
Wendy Beye, BAC Administrative Assistant
Kristi Kline, BAC member
Jane Holzer, BAC member
Arnold Bighorn, BAC member
Jim Peterson, BAC member
Bill Bergin, Sr., BAC member
Dwight Vannatta, BAC member
Douglas Hitch, BAC member
Robert Goffena, BAC member
Walt McNutt, BAC member
Michael Lawler, BAC member
Peter Marchi, BAC member
Eric VanderBeek, BAC member
Krista Lee Evans, representing BAC member Dave Galt
Andy Brummond, MT FWP, BAC Technical Adviser
Scott Irvin, DNRC, BAC Technical Adviser
Greg Kruzich, Bur. Rec., BAC Technical Adviser
Attila Folnagy, DNRC Groundwater Hydrologist
Dave Amman, DNRC Hydrologist
Justin Kucera, Bur. Rec.
Joan Bergin, Rancher

Facilitator Bill Milton called the meeting to order at 9:05 a.m. After introductions around the table, he reminded BAC members to refer to the guidelines for discussion and decision-making that were sent out to them when they were first appointed to the BAC, and again a few days prior to this meeting.

Krista Lee Evans commented that in her experience, if consensus could not be reached on a particular issue, that issue was not moved forward in a process, and was not placed in any final

report. If agreement cannot be reached by a group, the issue is not defensible to the public, and confusion arises.

Michael Downey explained that when the BAC guidelines were drafted, DNRC recognized that some issues might be contentious, and thus did not require consensus to move an issue into the final recommendation report.

Bill Milton asked all BAC members present to weigh in on the issue, and it was generally agreed that while consensus is a goal for the group, important issues should not be dropped simply because a few members have differing opinions. Instead, it was suggested that minority opinions on issues be included in the final Recommendations Development Report that will be forwarded to DNRC at the end of May. Several BAC members encouraged open discussion, and hoped that no one would feel constrained to state their opinions. Walt McNutt suggested that on issues and/or recommendations where consensus cannot be reached, a vote be conducted, and a "super majority" (2/3 of BAC members present and voting) would move an issue forward, with a dissenting opinion recorded. After further discussion, the group decided to wait until the final BAC meeting May 21 or 22 to make a decision on the process.

An additional question was raised on whether a BAC member could name a substitute for any meeting, and whether that "proxy" member should be allowed to vote on issues. Michael Downey said he would ask if DNRC wanted to address that issue. He will let BAC members know when he has an answer. The group agreed that no voting would occur at the current meeting.

Krista Lee Evans raised a question about the purpose of the public comment meetings the BAC will schedule for the end of April and beginning of May. Michael Downey responded that a draft recommendation report will be made available to the public prior to the meetings, which will be both informational and an opportunity for the public to comment on specific recommendations. It is even possible that new issues will be raised that should be addressed by the BAC. At the BAC's final meeting, amendments to the draft recommendations report will be considered.

Michael Downey went on to explain the process that will be used by DNRC to draft the statewide water plan that will be presented to the Legislature at the end of summer. DNRC staff will review all the draft recommendations coming from all four river basins in the state, and put together a draft plan. Then two BAC members selected by each basin group will travel to Helena, review the draft report, and make comments or suggestions for changes. That revised draft will be sent out to all BAC members around the state for additional comment, then DNRC will finalize the plan.

After a short break, the BAC began reviewing the four sub-basin issue statements and recommendations.

The Musselshell River Sub-basin issue statements were questioned by Peter Marchi, who was concerned that they could cause conflict among water users. He agreed to work with Bill Milton, Bob Goffena, and Bill Bergin to revise them via conference call next week.

The Milk River Sub-basin issue statements are not yet complete. Kristi Kline will revise issue #2 and send in proposed changes next week. She would like to see the water compacts addressed in the main Lower Missouri River Basin issue statements.

Judith River Sub-basin issues were revised slightly by sub-basin BAC members at a meeting last week. In addition to research on the Madison Group Aquifer, the shallower Kootenai Aquifer was added as a study subject. Krista Lee Evans asked that the phrase "and rural and municipal water sources" be removed. Eric VanderBeek concurred, and no one else objected, so the change was made. The issue statement relating to Ackley Lake was dropped.

The Lower Missouri River Sub-basin below Ft. Peck Dam issue statements will require another conference call next week.

Issue Statement #3 – Water Resource Inventory and Measurement

Krista Lee Evans suggested that "physically available" be changed to "legally available" in the first sentence of the issue statement. After some discussion, the group decided to change the phrase to "legally and physically available." The word "fairly" was struck from the phrase, "It is difficult for managers to ~~fairly~~ distribute water without knowing how much is available,…"

The phrase, "that protect fisheries, and recreational use" was replaced with "and those who want to know streamflow levels" in Goal 1) Objective a).

In Goal 1) Objective b), the word "unmetered" was inserted before "municipal water systems." In section i) the phrase "point of use" was changed to "point of diversion."

In Goal 1) Objective c), the $1 million set amount was changed to "adequate funding."

There was some discussion about exempt wells and whether there should be a change in language about measuring devices on "large volume" wellheads. The phrase "large volume" was dropped from Goal 1) Objective b). No additional language on exempt wells was added, as the legislature is already addressing the issue in the 2015 session.

Issue Statement #2 – Storage, Distribution, Infrastructure Maintenance, and Application Efficiencies for Irrigation Water

Krista Lee Evans suggested changing references to "streamflow" to "surface water." There was no objection from BAC members, so the changes were made.

To avoid confusion about state-owned infrastructure in Goal 1), first sentence, the beginning of the sentence now reads, "~~The state's~~ Montana's aging ~~irrigation~~ water storage and delivery infrastructure inventory must be updated,…"

LUNCH

Tim Davis, DNRC Water Resources Bureau Chief, called in via conference call after lunch. He said he was pleased with the diversity of BAC members, and encouraged by progress made in all four basins around the state. He expects that there will be considerable overlap of issues across all the basins, but recommendations for addressing those issues will vary. DNRC will make sure that BACs are involved in reviewing the draft state water plan before it is finalized for the legislature.

Jim Peterson reminded those present that the water plan will be presented to the 2015 legislature, not for adoption, but for possible amendment by resolution. The Executive branch would adopt a final plan. Implementation, however, can be controlled by legislative funding appropriations.

Issue Statement #5 – Future Demands on Water Resources

Michael Downey said that after listening to Bureau of Reclamation and US Army Corps of Engineers representatives at BAC meetings, there is no additional water held in federal projects (Fresno and Nelson) in the Lower Missouri River basin besides Fort Peck (where none is needed) that can be released for new uses. The phrase, "approaching federal water managers with the goal of releasing more impounded water for use within the state," was dropped from Goal 1) Objective a).

Krista Lee Evans asked that the short-term recommendation of Goal 1) Objective a) be dropped as it targeted the oil and gas industry. Wendy Beye pointed out that the recommendation was the result of a comment made by Dave Galt about the industry being prevented from putting production water to beneficial use because of a two-year limit on the first use of that water. The permitting process has already been changed to make it easier to put production water to beneficial use, and Jim Peterson said no use should be singled out for favor, so the recommendation was dropped.

Bob Goffena said the small off-stream storage projects could help capture spring run-off for use later in the irrigation season, and also retain contract water releases when water users forget to notify water managers that they have finished using their water. A recommendation to explore possible off-stream storage sites was added to Objective a).

A discussion of water banking followed, the group decided to move the first sentence of Objective b) to a Short-term Recommendation: "Water banking strategies should be explored as a tool to facilitate transfers of water to differing uses."

Issue Statement #1 – Water Use Administration and Enforcement

Bill Bergin and Peter Marchi asked that the entire section on enforcement be dropped. Bill Milton suggested that the group start at the beginning of the issues statement to see if there are other changes suggested.

Several BAC members expressed the view that problems with the adjudication process should not be mentioned in the final Recommendations Development Report. The process needs to be completed as efficiently and accurately as possible, but there should be no implication that any existing problems warrant starting all over again.

Krista Lee Evans outlined the details of a Montana Water Court order and supplemental order that will require re-examination of some claims using a more stringent process than was originally applied to them. Scott Irvin said that the re-examination will still not be as rigorous as that used in many basins, and that adjudication will never result in completely accurate water rights decrees. Peter Marchi reminded the group that objections made before Final Decrees can help clean up inaccuracies. Scott Irvin said keeping a strong change of use process in place will also help resolve issues of acreage expansion, over-stated claims, or abandoned claims. The group agreed to strike language pointing out discrepancies in water right claims from Issue Statement #1. A summary of the discussion will appear in the final Recommendation Development Report so the public knows that the BAC wrestled with the issue in response to comments made at scoping sessions.

Support for timely completion of the adjudication process was unanimous, and the 2020 deadline for completion of Temporary Preliminary or Preliminary Decrees for all the basins in the state was re-affirmed. An additional deadline of 2027 was added for completion of Final Decrees. An interim deadline of 2024 was added for moving all Temporary Preliminary Decrees to Preliminary Decrees. Once issue remarks and objections have been addressed, both Temporary Preliminary and Preliminary Decrees become enforceable, and eligible for creation of enforcement projects by petition to a district court.

Because of confusion about the status of the Montana Water Compact Commission, the reference to that body was dropped in Goal 2) Objective b) Recommendation i), and the word "state" substituted. The BAC agreed that federally-ratified water compacts with all the tribes in Montana should be in place as soon as possible to end uncertainty about reserved water rights.

Several meeting participants found the language of the second paragraph of the issue statement confusing. It was changed to read, "With regard to illegal water use, there is growing sentiment for enforcement against such use," but that sentence may be removed if all of the objectives relating to enforcement are removed from 3) Goals. Other objectives in 3) Goals may be retained. Michael Downey will work with Peter Marchi to develop language about possible state-wide standardization of qualifications, pay, liability, accountability, and training for water commissioners. The section encouraging (not mandating) water measuring devices for all diverted water was also considered important. There may also be a more efficient and less antagonistic

way to handle illegal use of water, i.e. with a state water use ombudsman, and that issue will be further explored before final recommendations are finalized.

Issue Statement #4 – Groundwater Aquifers: Quantity and Quality

Krista Lee Evans recommended dropping the phrases, "industrial development continues" and "before such development occurs" from the second sentence in the issue statements. There was no objection, although there was some discussion about leaving in the word "development." It was decided that DNRC couldn't hold up issuing permits while waiting for additional aquifer research to occur. All BAC members agreed that more aquifer research is necessary and needs to be funded by the state.

Krista Lee Evans asked that Objective b) be dropped. A compromise on language was reached, with the following adopted as a short-term recommendation: "Request that DEQ and DNRC work together to educate and encourage local sub-basin groups to address water quality and other issues associated with water use or activities that affect water quantity or quality."

Objective c) was modified to include all aquifers for monitoring against over-use, not just the ones where high-volume wells were contemplated or drilled. The question of exempt wells was discussed again, and there was agreement that a cluster of many exempt wells can use more water than one high-volume well. There was also agreement on the need to spread aquifer research dollars to all four river basins in the state rather than expending funds mainly in the more highly populated closed basin areas of the state. The first short-term recommendation was modified to read, "Support local, state, and federal efforts and increase funding through existing DNRC grant programs to control artesian flowing wells to better conserve groundwater resources."

An agreed-upon schedule for public meetings follows:

April 29 – Harlowton
April 30 – Lewistown
May 6 – Havre
May 7 – Wolf Point

The meetings are proposed to begin at 6:30 p.m., and last until approximately 8:00 p.m., or longer if necessary. Copies of the draft recommendations will be made available for public review as soon as possible.

Next Tasks

Conference Calls: Peter Marchi, Bill Bergin, Bob Goffena, Michael Downey, Bill Milton – to revise language in the Musselshell River Sub-basin Issue Statements.

Kristi Kline, Jennifer Patrick, Dolores Plumage, Michael Downey, Bill Milton – to revise Issue #2 in the Milk River Sub-basin Issue Statements.

Dwight Vannatta, Dick Iversen, Rhonda Knudsen, Walt McNutt, Michael Downey, Bill Milton – to work on Lower Missouri River Sub-basin Issue Statements (below Ft. Peck Dam).

Peter Marchi, Michael Downey – to draft language for standardization of water commissioner program across the state.

All BAC members – to review and accept or reject changes made by calls shown above.

Publicity: Wendy Beye will work with Michael Downey and sub-basin BAC members to publicize public meetings and ensure good participation.

Next Full BAC Meeting: May 21 or 22 at Ft. Peck to make any changes in recommendations after hearing comments at the four sub-basin public meetings, and adopt final Recommendations Development Report.

6.1.4 Ft. Peck, May 28, 2014

Lower Missouri River
Basin Advisory Council
Report on Meeting May28, 2014
Ft. Peck Dam Interpretive Center

Present: Bill Milton, Facilitator
Michael Downey, DNRC Water Resource Planner
Wendy Beye, BAC Administrative Assistant
Kristi Kline, BAC member
Jim Peterson, BAC member
Bill Bergin, Sr., BAC member
Dwight Vannatta, BAC member
Douglas Hitch, BAC member
Robert Goffena, BAC member
Walt McNutt, BAC member
Dick Iversen, BAC member
Rhonda Knudsen, BAC member
Michael Lawler, BAC member
Peter Marchi, BAC member

Eric VanderBeek, BAC member
Dave Galt, BAC member
Thomas Probert, BLM, BAC Technical Adviser
Andy Brummond, MT FWP, BAC Technical Adviser
Denise Biggar, DNRC, BAC Technical Adviser
Attila Folnagy, DNRC Groundwater Hydrologist
Joan Bergin, Rancher

Facilitator Bill Milton called the meeting to order at 10:00 a.m. Introductions around the table included a comment on the current water situation in the attendees' areas of the basin.

Milton reviewed the agenda:

1. Adopt final recommendations today after considering public comments received to date (if a vote is required on an issue, a super majority of 2/3 of BAC members present will prevail);
2. If any minority reports are necessary, author(s) will be chosen and a submission deadline set;
3. Review sub-basin issue statements and recommendations for possible changes;
4. Elect representatives to attend a meeting in Helena July 22-23 to work on the draft state water plan;
5. Comment on the Montana Water Supply Initiative process – what worked, and what didn't work.

Michael Downey, DNRC Water Resource Planner, reviewed the next steps that will be taken in the process of arriving at a state water plan by early December. Once the plan has been completed, it will really just be a starting point in an ongoing planning process to address existing and future concerns about Montana's water resources. There is a possibility that the BAC will meet again in September to review the draft state water plan.

The BAC then tackled actionable recommendations offered by the public during the four public meetings, online through SuveyMonkey, and by emailed written comments. Summaries of public comments are shown below in italics type.

Issue Statement #1

The public and agencies are in agreement with this issue statement and its associated recommendations.

A suggestion made through the SurveyMonkey site: Reverse temporary ruling that individuals may lease their water rights to energy companies.

BAC members agreed that because the water rights prior appropriation doctrine does not favor any one beneficial use over another, there should be no limits placed on the kinds of beneficial uses water may be leased to fulfill.

Another SurveyMonkey suggestion made by a number of responders for Objective b), Recommendation i): Education is of absolute importance in issues such as this however the verbiage "importance of a robust change process" leaves an intimidating connotation and should be removed from the recommendation.

There was a discussion about whether the word "robust" was slightly intimidating. The focus of the recommendation is education, rather than the change process itself, so the word "robust" was dropped.

Walt McNutt, BAC member, pointed out that the water right change process has been shortened and simplified in the past few years, but historical use still has to be proven. That is one way to help make water rights decrees eventually align with past documented beneficial use. The existing change process protects other water rights holders on a stream.

Issue Statement #2

There was a suggestion to add "increasing funding for the current grant and loan program" to Objective a), Recommendation ii).

Walt McNutt, BAC member and former legislator reminded the group that funding for the grant and loan program comes from coal severance taxes, and the amount is dependent upon what is being mined, not an act of the legislature. The phrase was modified to read "…increase funding caps for currently authorized grants and loans," and added to the recommendation. This would allow DNRC more discretion in awarding financial assistance for infrastructure projects that may require larger grants and loans than are currently available.

It was suggested that the state could stipulate that there is a universal public benefit from use of water storage and supply infrastructure, and there should then be universal payment to support its continued existence – through user fees, taxes, etc. – a multi-pronged approach to funding.

BAC members agreed that the state cannot "stipulate" a public benefit, and that state taxpayers are already helping to pay for infrastructure projects through the coal severance tax on a resource that belongs to all the residents of the state. Infrastructure repairs will be accomplished one project at a time, with costs shared by water users and the state through grants and loans.

In regard to the St. Mary's diversion, a local/state/tribal partnership may be the only way to advance the project, as money is not likely to come from the federal government. If local users and the state can set aside funding to begin working on the project a piece at a time, catastrophic failure of the system might be avoided.

The group decided that the St. Mary's Rehabilitation Project should be addressed at the sub-basin level, and in fact, affected water users have been meeting again to work through the funding issue. Kristi Kline, BAC member from the Milk River sub-basin said that since the Bureau of Reclamation controls the project, there isn't much the state can do. The original authorization by Congress limits financial responsibility for repairs or replacement to irrigators and the Bureau of Reclamation.

Montana FWP suggests encouraging consideration of fishery issues when infrastructure repair or replacement is in the planning stage so that costs can be shared and the public benefited.

BAC member Peter Marchi asked why beneficial use of water to support fisheries should be highlighted above other uses. Andy Brummond of FWP said that sometimes planning for infrastructure projects is too far along by the time fisheries issues are considered. The group decided that conservation districts, who issue 310 permits for work along streams, must involve FWP in the early planning stages, and that provides sufficient opportunity for collaboration.

Issue Statement #3

Any new streamflow gages added to the existing network should be placed in consultation with local watershed groups and water users.

This item was already addressed in Objective a) ii) of Issue Statement #3.

Data from streamflow, canal, and water diversion measurement devices operated by entities other than USGS and DNRC are not often made public. Tribes, the Dept. of Agriculture, water user associations, and other entities should be encouraged to share data.

Several BAC members pointed out that stream gages operated by entities other than USGS or DNRC may not be as accurate, may not measure anything other than flow rate, and do not transmit data electronically, so it is not feasible to include them in the state's public network.

Changes in the types of crops irrigated are changing the amount of water being put to beneficial use. Without water measurement, the impacts of the changes cannot be anticipated.

Rhonda Knudsen, BAC member from Glasgow, said that producers plan their water use for the thirstiest crop they may plant. Some years they use all their water right, others, they don't, but the full amount is accounted for.

Issue Statement #4

A suggestion from SurveyMonkey: The Montana Water Supply Initiative (MWSI) should include estimation of the water resources needed for oil and gas production, how extraction of these

resources will impact groundwater aquifers and where those water resources will come from. Groundwater Control Areas should be established by the state where groundwater withdrawals in recent decades have outstripped the pace of recharge.

Again, BAC members declined to single out any one industry for special attention in its recommendations. Groundwater Control Areas are already authorized as a tool to be used by DNRC.

Several members of the public expressed concern about inter-basin groundwater transfer projects. A recommendation about how to address these transfers might be something the BAC should consider.

BAC members decided that the issue was already addressed by Objective c) ii) in this issue statement.

Wells that are excepted from the water use permitting process – less than 35 gpm and 10 acre/ft per year production – were a topic of discussion at several of the public meetings. It was suggested that the Montana Legislature be encouraged to resolve the issue.

Walt McNutt, former legislator, said a legislative committee is already working on addressing the issue.

According to several members of the public, the question of how the oil and gas industry will impact the state's aquifers should be in the water use plan.

A lengthy discussion of oil and gas development's effects on water supply led to an uneasy agreement among BAC members that again, a particular beneficial use should not be singled out for attention by a state water plan. The state's Groundwater Assessment Steering Committee is already in the process of revising its method of choosing aquifers to be the subject of research, and will likely begin looking at more aquifers on the eastern edge of Montana. Public education on how energy development uses water, and in what quantities, will be necessary to offset perceptions that may not be based on fact. Denise Biggar, DNRC Glasgow, said that all permitted groundwater uses are quantified and water right holders must submit reports to DNRC. Dave Galt, BAC member, said that the quantity of water disposed of in injection wells is also documented and reported to the Board of Oil and Gas. Montana has a strict fracking chemical reporting system, and all the data are available to the public, with much of it posted on websites. Walt McNutt pointed out that in heavily populated areas of western Montana, there is a risk of groundwater contamination from multiple septic systems, so again, a particular beneficial use of water should not be singled out for regulation.

The following came from SurveyMonkey:

Add Short term recommendation, Objective a): DEQ and DNRC to be tasked to provide more on-the-ground inspectors to ensure accurate tracking and record-keeping system is properly employed.

BAC member Rhonda Knudsen said that state agencies should not be told how to spend their budget, for example by hiring additional staff. Their funding is finite, and they may have other priorities in mind. Michael Downey suggested that a recommendation wouldn't force an agency to hire more staff, but would highlight the importance of an issue raised by the public. The BAC decided not to add the recommendation.

The draft recommendations would benefit by including a mention of the importance of groundwater springs on fish & wildlife.

Once again, the BAC decided not to favor any particular beneficial use. When aquifer research is undertaken, all uses of the water will be considered.

Add the following as stated objectives: 1- Permits for uses that could contaminate groundwater should require the applicant to test and periodically monitor for contamination, sending results to DEQ and the GWIC public database at the Montana Bureau of Mines and Geology. 2- The Montana Board of Oil and Gas Conservation and the Department of Environmental Quality should jointly analyze data to project the volumes of hydraulic fracturing flow back water and produced water that will need to be disposed of in the next decade in Montana. They should establish as soon as practicable a system to track and account for each truckload of flow back and produced water, to ensure safe and legal disposal methods are used and to track and verify the actual volumes of water involved. 3-MSU Energy Research Institute, Montana Board of Oil & Gas, the Department of Environmental Quality and the Water Resources Division to provide analysis and assistance to the energy industry to recycle and reuse flow back and produced water to minimize destruction of clean water.

Several BAC members pointed out that any number of beneficial uses of water could contaminate groundwater. A permit that does not normally involve discharge of wastewater does not require any monitoring. Dick Iversen, BAC member from Culbertson, said that local governments have the power through existing statutes to regulate proposed development that might contaminate groundwater. Dwight Vannatta BAC member from Bainville said that in several instances, DEQ said they didn't have sufficient staff to investigate incidents of surface water contamination when they were reported. A decision was made to not add the recommendation, as many BAC members were of the opinion that there is no way to guarantee 100% compliance with regulations, no matter how many inspectors are deployed by the state.

Issue Statement #5

At all the public meetings, the need for instream flows to protect native fisheries was a topic of discussion, with the issue raised by both FWP and the public. The new water leasing procedure

has not helped improve winter river flows because most water rights are only effective during the summer irrigation months. FWP needs to make sure water users understand their local fishery's critical water needs so that water can be managed using the "rule curve" approach. In developing rule curves, simulated models of water flows are created based on estimates of how much water will be available each year, and water managers try to follow the plan, even through the winter months.

Andy Brummond, MT FWP, explained the "rule curve" approach to reservoir water release management. He also said that FWP reserved water rights for instream flows are very limited in quantity, and are only sufficient to "wet the backs" of fish rather than enhance habitat. Additional instream flows not associated with a water right or water reservation are not considered by DNRC when new water use permits are considered. He suggested adding an addition to Objective a) i), "…considering both consumptive and non-consumptive uses, which may or may not have associated water rights, existing on the stream." After some discussion and questions, and a reminder from Denise Biggars, DNRC, that the agency is not allowed by statute to consider non-consumptive uses that have no associated water right or water reservation, the BAC decided not to add the phrase to the recommendation. A compromise was suggested by Kristi Kline, to add "…which may include consumptive or non-consumptive uses" to Goal 1).

A suggestion was made that the title of Issue Statement #5 should be changed, as it doesn't address future oil and gas industry water use or the impacts on water quality.

This suggestion was addressed by the decision to not single out a specific beneficial use of water.

From SurveyMonkey, Objective a): Add short term recommendation ii: Establish areas where groundwater withdrawals in recent decades have outstripped the pace of recharge and whether or not establishment of Groundwater Control Areas is appropriate, to avoid drawing down of water table. Add short term recommendation iii: It should be noted that increasing water supplies is the only strategy to meet future demands. State resource agencies also should work together to conserve water supplies by restricting and monitoring water use that cannot be returned to the aquifer. The US Geological Survey (USGS) notes that available surface water supplies have not increased in 20 years, and groundwater tables are dropping at an alarming rate. As water supplies diminish, the majority of water used in hydraulic fracturing (fracking) cannot be recycled and cannot return to the hydrological cycle.

This proposed recommendation was not adopted for the same reasons given above – no particular beneficial water use should be singled out in the state water plan.

Also from SurveyMonkey, a specific recommendation: A statement demonstrating that thorough evaluation of water development alternatives and their impacts not only to water users, but also to natural systems and fish & wildlife resources, is needed in the BAC's recommendations.

Again, no special attention should be given to a particular beneficial water use.

A suggestion from SurveyMonkey for Objective b): Add short term recommendation ii: Review specific industrial uses of water (for example, exploratory and oil and gas drilling) that deplete the supply of usable water by extracting ground and surface water and mixing it with toxic chemicals. Once used, this produced water cannot be returned to the water supply and is instead stored indefinitely in tanks or ponds. In comparison, water used for agricultural and livestock can be recycled back into our water supply.

Even though the end results of water use for industrial purposes as compared with agricultural uses may differ, no distinction should be made among beneficial uses.

Issue Statement #6

There was wide-spread public support for the state playing a financial role in helping watershed organizations thrive. They can look at citizens' values in a way the state can't, and those values should underlie the state water plan in addition to data and facts. The state might benefit by asking local watershed groups for input whenever the state water plan is updated in the future.

DNRC is likely to ask for input from local groups when the state water plan is next updated.

A responder to SurveyMonkey suggested for Objective b): Add short term recommendation iii: DNRC, DEQ and other "water regulatory" agencies need to provide a single voice (including funding requests) to the Montana Legislature.

Members of the BAC decided that this goal is unattainable.

Sub-basin Recommendations

Facilitator Bill Milton said that each local group will need to work independently on their sub-basin recommendations, but that there will be support from the state for sub-basin watershed groups.

None of the BAC members present offered any changes to the sub-basin issues statements or recommendations.

BAC Representatives to Helena DNRC Draft Water Plan Meeting

There were five volunteers to attend the July 22-23 meeting in Helena to discuss the draft state water plan: Jim Peterson (ranch duties permitting), Bob Goffena, Rhonda Knudsen, Peter Marchi, and Kristi Kline.

Comments on MWSI Process

Several BAC members commented on the diversity of representation on the Basin Advisory Council, and that even with differing opinions, civility prevailed at all the meetings. BAC diversity allowed participants the chance to see the Lower Missouri River basin as a "big picture," rather than focusing on just their local issues. All the BAC members learned a great deal about water resource issues during the process, thanks to presentations by agency representatives and assistance from the BAC Technical Advisers. Several members said that conference calls were not a satisfactory way to discuss issues, partly due to technology issues, but mostly because face-to-face meetings are a better way to do business. They understood, however, that travel distances and weather concerns required the use of conference calls. Two BAC members felt that not enough time was devoted to the process to allow thorough discussion of all the issues raised by the public.

Next Tasks

- Wendy Beye will prepare the Recommendation Development Report and email it to BAC members in time for comments before the final submission deadline of June 15, 2014.
- At least two of the five BAC members who volunteered to attend the Helena DNRC meeting on the draft state water plan will be there July 22-23, 2014.
- A meeting of the BAC will be arranged in September to review the state water plan draft.
- Michael Downey, Bill Milton, and Wendy Beye will continue to inform BAC members by email of the state water plan's progress through the end of 2014.

6.2 Reports of Public Meetings on Draft Recommendations

6.2.1 Harlowton, April 29, 2014

Lower Missouri River
Basin Advisory Council
Report on Public Meeting April 29, 2014
Kiwanis Youth Center, Harlowton

Present: Bill Milton, Facilitator
Michael Downey, DNRC Water Resource Planner
Wendy Beye, BAC Administrative Assistant
Bill Bergin, Sr., BAC member
Douglas Hitch, BAC member
Robert Goffena, BAC member
Peter Marchi, BAC member
Leon Hammond, Project Manager, Upper Musselshell Water Users Assoc.
Gary Olsen, Wheatland County Weed Coordinator
Rachel Frost, Coordinator Missouri River CD Council
Scott Irvin, DNRC, BAC Technical Adviser

Kevin Smith, DNRC Water Projects
Mike Ruggles, MT FWP Fisheries
Gary Hammond, MT FWP Fisheries
Attila Folnagy, DNRC Groundwater Hydrologist
Dave Amman, DNRC Hydrologist
Joan Bergin, Rancher
Betty Goffena, Rancher

Facilitator Bill Milton called the meeting to order at 6:37 p.m., and outlined that the purpose of the meeting was to hear public feedback on the BAC's draft recommendations for the Montana Water Supply Initiative project. Unfortunately, there was really no public representation present.

Michael Downey gave a brief presentation on the MWSI process. Montana's water resources do not meet all of the state's demands, and a collaborative process may help find solutions for water supply issues. The state water plan that will be the end product of the MWSI project will not be an end to all water resource problems, but rather be the beginning of a long-range, on-going planning effort.

After all four BACs submit their recommendations to DNRC mid-June, an advisory group made up of two members from each BAC will meet in Helena with DNRC staff to help draft a state water plan. That draft will go to the Water Policy Interim Committee of the legislature and the Environmental Quality Committee for comment. Then hearings will begin September 22 to present the plan and once again receive comments from the public. By December 5, 2014, the plan will be finalized for presentation to the 2015 Montana legislative session.

Comments on this draft of the Lower Missouri River BAC's recommendations will be accepted through May 19, and may be made in person at this series of public meetings, online on a survey website, by mail to Michael, Bill Milton, or Wendy Beye, or by email.

Even though the BAC recommendations are still in the draft stage, DNRC has submitted some funding requests that relate to those recommendations. There is a proposal to install new streamflow gages on some of the tributaries in the state, including the Judith River, in cooperation with the Montana Bureau of Mines and Geology. An improved network of water measurement devices is a priority mentioned in all the basins curing the scoping meetings.

Bill Milton asked meeting participants to comment on each of the issue statements.

<u>Issue Statement #1</u>

No one had a comment.

<u>Issue Statement #2</u>

Bob Goffena suggested adding "increasing funding for the current grant and loan program" to Objective a), Recommendation ii). Kevin Smith commented that the cost of construction has outpaced increases in cost of living, and it is very expensive to repair or replace irrigation infrastructure.

Issue Statement #3

Gary Olsen said he uses the gage at Harlowton as an educational tool, and asked whether gages are operated year-round. Peter Marchi responded that some are year-round, and others are seasonal; the Harlowton gage operates year-round. The Musselshell Watershed Coalition has solicited funding assistance for the Martinsdale gage for the next two years from cities, counties, conservation districts, and water user associations on the Musselshell. There was a good response to the request.

Issue Statement #4

Peter Marchi pointed out that groundwater may provide additional water for use in the state, but there isn't enough data yet on the state's aquifers to support planning for future use. The BAC is asking that more research be done to characterize aquifers and determine just how much water might be available from them.

Issue Statement #5

Scott Irvin asked the FWP fisheries biologists present what they thought about additional off-stream storage projects.

Mike Ruggles responded that FWP will submit official comments to DNRC using an agency-to-agency protocol. Mike did say that fish need more than just enough water to wet their backs. They need good habitat to thrive. Stakeholders along the Musselshell River need to decide whether they want a sustainable fishery, and then manage water accordingly. Winter flows are as important as summer flows that are supported by releases of water stored in off-stream projects.

Kevin Smith said that building new off-stream storage would be very expensive, and there might not be enough additional water captured to justify that expense. A better option might be expansion of existing reservoirs, or rehabilitation of inlet canals so they could carry more water during run-off periods. Any expansion to capture more water than that allowed by existing water rights would require a new water right permit and priority date.

Bob Goffena asked the fisheries biologists a question: During what periods of the year are instream flows necessary for the health of the Musselshell fishery? For instance, when do sauger spawn, when do the catfish need to move up and down the river, what are the critical periods?

Mike Ruggles said that the 80cfs instream flow for FWP in the lower Musselshell River is just enough to keep banks wet, but is still too low to provide good fish habitat. Montana FWP is beginning to look at "rule curves" for management of water releases of impounded water that would consider all uses, including fisheries, as water levels in reservoirs and the river are managed. In developing rule curves, simulated models of water flows are created based on estimates of how much water will be available each year, and water managers try to follow the plan, even through the winter months.

Bob Goffena said new off-stream storage might help keep water in the river.

Mike Ruggles said the draft recommendations mention FWP funding assistance for projects or research, but don't mention what benefits might be gained by FWP in exchange for that financial assistance.

Scott Irvin said that the CM Russell compact that is about to be signed will set aside 80cfs in the lower Musselshell, concurrent with FWP's reservation.

Issue Statement #6

No comments, except Bill Bergin asked why it was so long. Response: The BAC member who worked on drafting the issue statement feels very strongly that watershed organizations should be a critical element in the state water plan.

Musselshell River Sub-Basin Issue Statements

1. Water rights adjudication

Scott Irvin addressed the issue of water rights adjudication. The process has been going on since 1979, and the Water Court is not likely to back up and start over in any basin, even though some were adjudicated using different claim investigative techniques. Prior to the existing judicial process, an administrative adjudication was occurring in southeast Montana (1970s). The administrative process was more intensive towards field inspections, compared to the existing adjudication. That process was eliminated and replaced with judicial adjudication. Under the judicial process the Water Court has relied heavily on the participation of other water users (objectors) in achieving a certain level of accuracy.

Some tributaries in the Musselshell watershed are still in the litigation phase of adjudication, and it is unknown to the DNRC how long it will take to complete the litigation to the point of enforceable decrees in those tributaries. Water rights holders on the tributaries may not be interested in implementing an enforcement project. How tributaries will be rolled into an enforcement program for the mainstem Musselshell is not clear.

Peter Marchi said he had visited with the Water Court and the estimate for time required to clear up all the litigation on the Musselshell tributaries is ten years. Even when a decree is finally issued, that may not provide any extra water for the mainstem of the river, but at least water use in the tributaries will be measured so we know how much we're actually using.

Bob Goffena continues to worry about the expansion of acreage irrigated with no change in priority dates.

2. Off-stream storage

Kevin Smith said that the existing project infrastructure is old and its original efficiency has been lost. If canals were rebuilt to maximize efficiency again, reservoirs could be filled more quickly. If reservoir capacity is increased, new water rights permits would be necessary, with new priority dates.

New off-stream or on-stream storage projects would be very expensive, and would take land out of production if reservoirs are built on existing farmland. If a new project is contemplated, assurance of funding for a 75-year maintenance program should be a part of the planning.

Scott Irvin agreed that a big barrier to capturing more run-off water is the inefficiency of inlet and delivery canals. Kevin Smith said that at some point it might make sense to channel water through pipes rather than canals to gain efficiency. Scott Irvin pointed out that the loss of water due to canal seepage helps recharge aquifers and provides return streamflow as well.

3. Riparian weeds

Rachel Frost likes the cooperative multi-county approach to weed control, and said the Weed Trust Board also favors that approach. A recent meeting in Jordan brought together the BLM, DNRC, US Army Corps of Engineers, county weed boards, conservation districts, MT FWP, US FWS to discuss the salt cedar problem in the lower Missouri River basin. A start to any control plan will be inventory and education.

4. Musselshell Watershed Coalition

No comments.

The group continued the discussion on state fisheries. Bill Milton asked, "If stakeholders don't understand FWP's water needs, how can they cooperate?"

Mike Ruggles said that many people living along the river don't know what types of fish are in it, much less what those fish need to survive. The endangered species or species of interest get the most attention. MT FWP is beginning to attempt to at least maintain fish in prairie streams that are subject to drought.

Bill Milton asked those present to think about whether the recommendations should include a statement about improving fish habitat.

Bob Goffena and Bill Bergin said that irrigators are willing to give up some water to help improve river habitat. Bill said that the river always went dry during the summer until the Musselshell Distribution Project was organized, and now it continues to flow all year round. Mike Ruggles said that bass stocked near Lavina just after the distribution project started are still present in the river.

Bill Milton wrapped up by saying that if people get together on the recommendations, the legislature may be more willing to listen.

Participants agreed that even without a public presence at the meeting, the discussion was valuable.

6.2.2 Lewistown, April 30, 2014

Lower Missouri River
Basin Advisory Council
Report on Public Meeting April 30, 2014
Yogo Inn, Lewistown

Present: Bill Milton, Facilitator
Michael Downey, DNRC Water Resource Planner
Wendy Beye, BAC Administrative Assistant
Kristi Kline, BAC member
Mike Lawler, BAC member
Jim Peterson, BAC member
Dave Galt, BAC member
Eric VanderBeek, BAC member
Douglas Hitch, BAC member
Jerry Hanley, Citizen
Cal Frank, Consulting Engineer
Marcia Gans, Citizen
Clint Loomis, Citizen
John Rickert, Citizen
Mary V. Jones, Citizen
Karl Gies, Big Spring Creek Watershed Council (BSCWC)
Michael Chapman, BSCWC and Trout Unlimited

Jerry VanHaur, Citizen
Lonny Bergstrom, Citizen
Jeannie Rickert, Citizen
Mary Schelle, Citizen
Gladys Walling, Citizen
Shelly VanHaur, Citizen
Jacqueline Merceuier, Citizen
Beckie Williams, Citizen
Dave Ballman, Trout Unlimited
Marite Valencia, Trout Unlimited
Harvey Nyberg, Citizen
Sterling Sundheim, Citizen
Ron Moody, CM Russell Committee
Josh Butcher, Rancher
Bob Dunnagan, Citizen
Laurie Lohrer, Central Montana Resource Council
Charlie Denisen, Lewistown News-Argus
Bill Harris, MT State Representative, District 30
Diana R.C. Hewitt, Lewistown City Commission
Scott Irvin, DNRC, BAC Technical Adviser
Attila Folnagy, DNRC Groundwater Hydrologist
Dave Amman, DNRC Hydrologist
Clint Smith, MT FWP
Andy Brummond, MT FWP

Facilitator Bill Milton called the meeting to order at 6:35 p.m., and outlined that the purpose of the meeting was to hear public feedback on the BAC's draft recommendations for the Montana Water Supply Initiative project.

Michael Downey gave a brief presentation on the MWSI process. He emphasized that the planning process is a collaborative approach to managing water resources, and that rather than resulting in a static document, the state water plan will be the first step in a continuous planning process.

After all four BACs submit their recommendations to DNRC mid-June, an advisory group made up of two members from each BAC will meet in Helena with DNRC staff to help draft a state water plan. That draft will go to the Water Policy Interim Committee of the legislature and the Environmental Quality Committee for comment. Then hearings will begin September 22 to present the plan and once again receive comments from the public. By December 5, 2014, the plan will be finalized for presentation to the 2015 Montana legislative session.

Comments on this draft of the Lower Missouri River BAC's recommendations will be accepted through May 19, and may be made in person at this series of public meetings, online on a survey website, by mail to Michael, Bill Milton, or Wendy Beye, or by email.

Mary Jones asked how the MWSI process fits in to all the other water resource meetings in years past.

Michael Downey responded that this process, unlike previous planning attempts, is beginning from the bottom up, with issues identified during last fall's public scoping meetings. The plan will not be static, but will be revised and adjusted as conditions and needs change in the future.

A question was raised about how Fergus County issues will fit into the state plan, and Michael Downey said that many issues overlap in the four statewide basins, but any solutions related to specific sub-basin concerns will need to be explored at the local level.

Bob Dunnagan asked whether the state legislature will actually follow the recommendations in the plan, or can influential lobby groups throw it out.

Michael Downey said that the plan is an Executive Branch document that will guide DNRC's management decisions in the future. The state legislature can pass resolutions to amend the plan, but will not vote on the document itself.

Bill Harris, a state representative, said many other western states have problems with water demands in downstream states. They can't win court cases because they don't have good state water plans in place. This plan will help protect Montana's water for use by Montanans.

Michael Chapman said the recommendations draft does not address exempt wells, and that the legislature has refused to address the issue. These wells, co-located in a residential development, can have a detrimental impact on water supply, and contamination of the aquifer is a possibility when many individual septic systems accompany the exempt wells.

Jim Peterson responded that it's not fair to say that the legislature hasn't wrestled with the issue of exempt wells. The issue is very complicated, and legislators will probably be trying to tackle it again next year.

Jerry VanHaur asked how this plan can be in place when adjudication hasn't yet been completed? It may be a waste of time. Also, there should be a BAC member representing agricultural interests in Fergus County.

Bill Milton said an attempt was made to appoint the twenty members who serve on the Basin Advisory Council from as wide a variety of interests and geographical locations as possible. Applications were solicited all across the Lower Missouri River basin, and there are a number of ranchers serving on the Council.

Bill Milton asked meeting participants to comment on each of the issue statements.

Issue Statement #1

Jim Peterson said the BAC's number one priority issue is to complete the adjudication process. Funding to complete the process was appropriated by the legislature, and a schedule developed that aims to complete all basin decrees to at least the point of Preliminary Temporary by 2020.

A participant commented that we need to protect our water from out-of-state claims.

Issue Statement #2

Shelly VanHaur asked whether municipal domestic water users don't already pay for their water.

Bill Milton explained that Issue Statement #2 was more related to large irrigation infrastructure rather than municipal water systems, but that maybe both should be included in the issue statement.

Michael Chapman said people who use the water and benefit from it should pay for infrastructure maintenance.

Mike Lawler asked Mr. Chapman if he could recommend some language to address the issue.

Mr. Chapman suggested that the state could stipulate that there is a universal beneficial use of water storage and supply infrastructure, and there should then be universal payment to support its continued existence – through user fees, taxes, etc. – a multi-pronged approach to funding.

Issue Statement #3

Cal Frank said streamflow gaging and water measurement dovetail with adjudication for distribution of decreed water.

Michael Downey reported that DNRC has made a budget request for 2015 to fund additional streamflow gages on the state's tributaries, including two new gages in the Judith basin, one on Big Spring Creek.

Beckie Williams asked who will monitor data collected by streamflow gages, particularly water quality data. Who decides whether the water has good quality?

Andy Brummond replied that USGS and DEQ monitor sediment, salinity and TMDL.

Mary Jones said that Big Spring Creek should have a gage that could test water quality.

Issue Statement #4

Mike Lawler said that during the course of BAC meetings, it became clear that Montana doesn't have enough "facts" about water. We need more in order to make informed management decisions, and these recommendations encourage the legislature to "count," characterize, and quantify.

Karl Gies commented that the state needs a baseline of how much water we have and what is its quality.

Bob Dunnagan mentioned the groundwater permit about to be issued by DNRC for a well that would make an inter-basin water transfer from the Madison Aquifer to the Musselshell River basin to serve residents there.

Michael Chapman asked if Musselshell water users interfere with spring water production in the Judith basin, is that fair?

Eric VanderBeek said that the Central Montana Water Authority is applying to DNRC for a grant to study the issue and gather facts about the Madison Aquifer before the water project advances.

Shelly VanHaur told the group about a proposal to pull water originating in Montana and flowing down the Missouri River to serve Las Vegas and southern California. Water from Montana is in demand. She asked whether the adjudication process in the Judith basin is starting all over again.

Scott Irvin said the 2005 tax imposed by the legislature will help fund completion of adjudication with Temporary Preliminary decrees in place by 2020. DNRC is ahead of schedule, and has turned its examination material over to the Water Court for action.

Issue Statement #5

Andy Brummond explained the term "water banking." Some people who choose not to use their water for a particular purpose can quantify it through a regulatory process (not yet in place) and "bank" the water for use at some time in the future without losing the water right because of suspension of beneficial use.

Clint Loomis said the recommendations don't mention minimum streamflows for non-human uses such as fisheries.

Scott Irvin said there are some instream flow water rights for FWP, but they have relatively junior rights to other users. The flows are protected, however, from new water right applications in the future.

Michael Downey said there is a statutorily allowed leasing program available now, where agricultural users can least water to instream flows or other uses.

Clint Smith said instream flows can keep fish wet, but don't necessarily improve habitat or ecosystem function.

A suggestion was made that the title of Issue Statement #5 should be changed, as it doesn't address future oil and gas industry water use or the impacts on water quality.

Dave Galt said that the oil and gas industry uses an insignificant quantity of water in comparison to other uses, and that water quality is monitored.

Bob Dunnagan commented that there can be a large impact on water quantity in a local area because it takes so much water to develop each oil or gas well.

Dave Galt reiterated that the quantity is still not significant compared with other uses such as agriculture.

Beckie Williams asked how the oil and gas industry will impact the state's aquifers. That should be in the water use plan.

Bill Harris commented that a lot of water goes down the river and out of the state. The oil and gas industry can use some of that water, and will help raise the average wage of employees in the state. All users should work together to maintain control of the state's water resources.

Eric VanderBeek said that people need water to drink, and the millions of gallons it takes to fracture an oil well could serve a family for many years. We need to be cautious about impacting water quality, too.

Clint Smith reminded participants that even a non-consumptive use, such as fisheries or recreation, can be good for the state economically, and water has to flow out of the state.

Issue Statement #6

Marcia Gans supports watershed organizations. They can look at citizens' values in a way the state can't, and those values should underlie the state water plan in addition to data and facts.

Judith River Sub-Basin Issue Statements

Jim Peterson said the Judith River basin has some aquifers that people are interested in. We don't even have an accurate measurement of water flowing from Big Spring, much less how much is available in the Madison Aquifer. The only way to see how large water withdrawals will affect the aquifer is to run a long-term (five to ten years) test and monitor other wells and springs in the area. There needs to be a public/private partnership to accomplish this research.

Mike Lawler added that we need facts, and need to consider local values, because we do not all agree on how our water resources should be managed. If the BAC managed to put together these recommendations in a relatively short time, think how much local groups could accomplish.

Doug Hitch said issues raised on the Madison Aquifer will apply in other parts of the state, and in other aquifers located above the Madison. We need more information before the aquifers are developed.

Eric VanderBeek said it's really good to hear public comments. We don't know enough about aquifers and their complex structure and interconnections. All of that needs to be studied more thoroughly. Water is becoming more and more valuable and scarce. Management of water resources shouldn't be a political function.

Meeting Wrap-Up

Bill Milton asked participants to make a final comment on the meeting, the recommendations, the process, or whatever else should be said.

Clint Smith: most concerned about instream flows and natural ecosystems

Jerry Hanley: was a miner for many years, and is glad the state is improving controls on industry, but would hate to see taxpayers further burdened economically

Bob Dunnagan: the MWSI process is moderately useful, but money and politics will probably rule in the end

Michael Chapman: we will all be served by a process that aims to protect, conserve, and reconnect – we need to use water wisely, and fish are the "canary in the mine" for us

Cal Frank: interesting meeting, and it seems that lots of money will be necessary to pay for all we want in the way of research

Marcia Gans: money is not necessarily required – an 8th grader doing a science project discovered PCB contamination in Big Spring Creek

Clint Loomis: the MWSI project is an almost impossible job, and legislators need education to understand the issues

Karl Gies: citizens should stay involved in water resource issues

Gladys Walling: we need to work together

Lonny Bergstrom: funding will be a problem

Shelly VanHaur: we could lose our water – the federal government might take it if we can't prove we are using it

Jeannie Rickart: everyone has to work together

Diana Hewitt: agrees that we need to protect the state's water

Mary Schelle: there should be 100 times as many people here – surely we can find funding for such important issues

Bill Harris: thanks to all who came – we need to figure out exactly what we need to answer questions, and then prioritize to make the most of funding available

Jacqueline Merceuier: is optimistic that solutions can be found

Beckie Williams: we can't survive without water

Sterling Sundheim: differing views are an important part of the conversation

Marita Valencia: our streams may not fit into the "boxes" we want them to

Ron Moody: values are a 1,000-ft view, concerns are a 10-ft view, and this plan is a 40,000-ft view – we do need to complete adjudication, talk about money to clarify issues – hopes the document becomes policy

Josh Butcher: a rancher – feels that water is as valuable as gold because it feeds America – we need to protect our way of life

Bill Milton thanked everyone for coming, and the meeting adjourned at 8:40 p.m.

6.2.3 Havre, May 6, 2014

Lower Missouri River
Basin Advisory Council
Report on Public Meeting May 6, 2014

Great Northern Inn, Havre

Present: Bill Milton, Facilitator
Michael Downey, DNRC Water Resource Planner
Kristi Kline, BAC member
Randy Reed, BAC member
Jennifer Patrick, BAC member
Dolores Plumage, Blaine County Commissioner
Michael Wendland, Hill County Commissioner
Bob Nelson, Walleyes Unlimited
Ronda Wiggers, MT Water Well Drillers Assoc.
Cari Kent, Congressman Steve Daines staff
Mike Lang, MT House Dist. 35/33
Kris Hansen, MT House Dist. 33
Brandon Baney, New Media Broadcasters
Attila Folnagy, DNRC Groundwater Hydrologist
Denise Biggar, DNRC Regional Office Manager Glasgow
Kraig VanVoast, DNRC Havre
Cody Nagel, MT FWP
Greg Kruzich, US Bureau of Reclamation

Facilitator Bill Milton called the meeting to order at 6:30 p.m., and outlined that the purpose of the meeting was to hear public feedback on the BAC's draft recommendations for the Montana Water Supply Initiative project.

Michael Downey gave a brief presentation on the MWSI process. The process of updating the state water plan will consider an inventory of both consumptive and non-consumptive uses, consider the possible effects of drought on Montana's water supply, and plan for new water uses. Each of the lower Missouri's sub-basin has some distinct issues not present in the other sub-basins, but the sub-basins also have many overlapping water resource issues. Water planning is an attempt to develop a collaborative approach to solving problems in water management.

Phase 1 of the MWSI created basin advisory councils (BACs) in all four designated state watershed basins. Those councils then conducted public scoping meetings to identify issues of concern, which were then documented in four separate scoping reports. In Phase 2 of the process, the basin advisory councils began considering alternatives for addressing the identified issues. Phase 3 is the recommendation development phase, and the Lower Missouri River BAC is bringing its draft recommendations back to the public for comment.

After the recommendations have been finalized, a Recommendations Development Report from each basin will be submitted to DNRC. Staff will then consider which issues and recommendations represent statewide concerns and those will be combined into the state water

plan, which will serve as a policy document. Future legislative sessions will be able to use the plan for guidance in addressing water resource issues.

Issue Statement #1

Sorting out water rights issues through the adjudication process is a crucial step in determining how much water is being used in the state.

Kraig VanVoast said that both the upper and lower Milk River basins have had Temporary Preliminary decrees issued, and are now in the objection phase. Temporary Preliminary decrees cannot be enforced until issue remarks have been resolved. If Ft. Belknap Tribe rights are considered, the Milk River basin is closed to issuance of any new water rights, and even groundwater access that could affect surface water is reviewed before permits are issued.

Denise Biggar explained that in basins where there are federal water reservations such as tribal water rights have not yet been settled, a Temporary Preliminary decree can be issued, but it cannot progress to a Preliminary decree until the federal rights have been quantified and agreed upon by the parties.

Issue Statement #2

Aging infrastructure and the costs of repairs or replacement is an important issue in all the state's basins.

Michael Downey asked, "Does anyone here have any ideas for how to get the St. Mary's project done?"

Kris Hansen recalled that at one point, if the state could have set aside its share of the costs and accomplished a beginning, the escalating costs faced by the other funding partners by delaying the project might be avoided. The federal government never authorized any funding.

Randy Reed said the issue is very complex, involving the Blackfeet Tribe, the Ft. Belknap Tribe, Canada, and all the water users. A local/state/tribal partnership may be the only way to advance the project, as money is not likely to come from the federal government.

Issue Statement #3

It is necessary to accurately measure the water flowing through Montana's waterways. A network of streamflow gages is now supported by USGS, DNRC, and local entities, but needs to have funding assured into the future. The network also needs to be expanded.

Jennifer Patrick said the Bureau of Reclamation also participates in the streamflow gaging network in addition to the USGS and DNRC.

Michael Downey said that DNRC is installing a new gage on the Milk River. The placement should be determined with assistance of the local groups.

Kris Hansen said there are other entities that place stream gages, including MSU, MBMG, and Dept. of Agriculture. All the agencies should work together. Maybe the gage information should be located in a central database, perhaps on GWIC, but that might not solve the problem of public information.

Kristi Kline said all the gages measure different parameters. We still need to have the information on streamflows.

Michael Downey said there are few gages on tributaries. There is a lack of information for water management.

Jennifer Patrick said the Milk River has a lot of gages (30 or so), including some in Canada. Ft. Belknap Tribe quit gaging their canal.

Issue Statement #4

The state's aquifers need to be better understood before they are accessed for new water uses.

Kris Hansen said the legislature authorized research in the Fox Hills aquifer, but there aren't enough hydrologists at MBMG. The legislature will not want to add hydrologists permanently just to hurry a project along or add more projects.

Kristi Kline pointed out that the eastern portion of the state has not received much funding for research because the focus has been in the western part of the state.

Kris Hansen said that because in a closed basin, new water has to be purchased so groundwater research is more valuable. That's a reason that groundwater research projects are concentrated in the western part of the state. She doubts that the legislature will want to increase the number of research projects.

Issue Statement #5

Are there additional ways that water can be stored for future uses, or can existing storage facilities be expanded to hold more water?

Issue Statement #6

Local watershed groups are the best way to address local water resource issues and manage water, and should be better supported by the state with funding.

Milk River Sub-basin Issues

Kristi Kline said that the St. Mary project and the Milk River BurRec system are very different from any other infrastructure problems in the state, so it should be handled separately.

A new coordinator for the St. Mary's Working Group has been hired. The Governor's Office has been approached to prioritize the project. The recommendation to ask Montana's Congressional delegation to support the St. Mary's project may not be practical.

Kris Hansen said that it would be better to fix the project before it fails rather than wait for a catastrophe, maybe a piece at a time so that one large sum of money isn't needed all at once.

Randy Reed said that some maintenance has been done piecemeal every year, but that doesn't keep up with the decaying infrastructure.

Kristi Kline said "Who decides what gets fixed each year? The irrigators or the BurRec?"

Randy Reed said the issue is getting more complex each year, with more stakeholders involved in decision-making.

Jennifer Patrick said the Joint Board of Control has worked to repair or replace by charging water users a fee, but there's never enough money to fix all the problem areas.

Bill Milton asked whether some bonding mechanism involving cities, counties, irrigators, tribes, and the state might work to pay for major upgrade of the system to keep it running for many more years.

Dolores Plumage responded that public interest has to be generated. The working group did well at the beginning, but the state and federal governments were never really engaged. Members of the group need to be united with one purpose to get the attention of the state and federal players.

Mike Lang said he's been to the working group meetings many times, but some players don't come, especially the cities. If there were a catastrophe, would the state have to come in and fix the siphon? What do we have to spend to fix the project as if there were going to be a catastrophe tomorrow? Maybe it would be cheaper if the federal government wasn't involved, and having to worry about fish issues.

Jennifer Patrick said if something failed catastrophically, the irrigators would be on the hook for the costs of repairs, as the authorization for the BurRec project was one purpose -- irrigation. BurRec also has to consider fish issues. If the diversion dam structure repair could be paid by FWS that would help with costs of the whole project.

Randy Reed said the annual maintenance costs keep creeping up, and it's becoming a burden on the irrigators.

Bill Milton said that a wider group of stakeholders would show the federal and state governments that the project has strong support and a funding match is committed for.

Delores Plumage said that as water is measured in the future, and it becomes more important, a water use authority might be necessary to spread the costs. If the Milk River goes dry in the event of failure of the St. Mary's siphon, all the water to fulfill compact rights will be gone. What is the group not saying to the Congressional delegation that would make a difference?

Cari Kent said that plans that are actionable are necessary before Congress can do anything about appropriating money. Engineering needs to be done, plans drawn up before the request is made. Congressman Daines is pushing for adoption of House Resolution 4422 that would provide some funding for rural water projects, including the North Central Montana Water Authority.

Randy Reed said we shouldn't do any more studies, but get started with actual projects, one step at a time.

Jennifer Patrick agreed that one small project at a time should be pursued.

Michael Downey asked whether a prioritization of small projects has occurred.

Randy Reed said the Canadians have a vision called "Water for Life" that places great importance on water. Canadian law allows water to be quantified, and then used wherever the water right owners want to. Water is strictly a property right in Canada.

Jennifer Patrick said they do have prioritized projects, but failures in unexpected places interfere with implementation of the plan. Changing who is responsible for paying for repairs would require a re-authorization of the whole project by Congress. That was proposed as part of the Blackfeet Compact, but Congress took it out.

Kristi Kline asked whether the prioritized project list could be given to new Congressional members as they are elected rather than re-explaining the whole concept each time.

Randy Reed said that there are other places in the state that have the same infrastructure problems. The state needs to step up in funding repairs or replacement. The loan and grant program in place doesn't provide enough money to make the big repairs.

Kris Hansen and Michael Downey emphasized that there has to be a local match to get money for projects from the state. Kris Hansen said there is room to ask for more money from the water resource appropriations at the next legislative session rather than waiting for money from the

federal government. Local match and support from the Governor's office would speed the process.

Bill Milton went on to review the Fresno Reservoir sedimentation issue.

Kristi Kline said there is a public concern about the level of sedimentation at Fresno Reservoir. It's losing capacity and harming the fishery. The Milk River bed is just naturally erodible, and that occurs when higher water flows through the basin. The sediment builds up behind the Fresno dam as well as affecting water quality.

Randy Reed said that the St. Mary's project turned the Milk River, which was a prairie stream, into an irrigation canal that carries more water all year around. Any flood event scours out the vegetation and moves the soil down river and sends it to the reservoir.

Bob Nelson says that the additional water in the Milk River supports a robust walleye population, but no one fishes because the river isn't floatable.

Cody Nagel said that without the addition of warm water from the Milk River to the Missouri River below Ft. Peck dam, there wouldn't be a warm water fishery there. There are about 40 species of warm water fish that like the type of water that is present in the Milk River.

Kristi Kline said that snowpack is melting earlier in the year because of climate change, which will necessitate changes in water management.

The next issue is ratification of tribal water compacts. Bill Milton asked whether the state should push for that, or the federal government?

Kristi Kline said the Milk River was named in the both the Blackfeet compact and the Ft. Belknap compacts.

Wrap-up

Michael Downey repeated where comments that can be sent.

Randy Reed said he'd really like to see a project turn dirt.

6.2.4 Wolf Point, May 7, 2014

Lower Missouri River
Basin Advisory Council
Report on Public Meeting May 7, 2014

Elks Club, Wolf Point

Present: Bill Milton, Facilitator
Michael Downey, DNRC Water Resource Planner
Arnold Bighorn, BAC member
Dick Iversen, BAC member
Rhonda Knudsen, BAC member
Dwight Vannatta, BAC member
Darryl Crowley, rancher
John Plestina, Editor Wolf Point Herald
Attila Folnagy, DNRC Groundwater Hydrologist
Denise Biggar, DNRC Regional Office Manager Glasgow
Steve Dalbey, MT FWP

Facilitator Bill Milton called the meeting to order at 6:30 p.m., and outlined that the purpose of the meeting was to hear public feedback on the BAC's draft recommendations for the Montana Water Supply Initiative project.

Michael Downey gave a brief presentation on the MWSI process. The process of updating the state water plan will consider an inventory of both consumptive and non-consumptive uses, consider the possible effects of drought on Montana's water supply, and plan for new water uses. Each of the lower Missouri's sub-basin has some distinct issues not present in the other sub-basins, but the sub-basins also have many overlapping water resource issues. Water planning is an attempt to develop a collaborative approach to solving problems in water management.

Phase 1 of the MWSI created basin advisory councils (BACs) in all four designated state watershed basins. Those councils then conducted public scoping meetings to identify issues of concern, which were then documented in four separate scoping reports. In Phase 2 of the process, the basin advisory councils began considering alternatives for addressing the identified issues. Phase 3 is the recommendation development phase, and the Lower Missouri River BAC is bringing its draft recommendations back to the public for comment.

After the recommendations have been finalized, a Recommendations Development Report from each basin will be submitted to DNRC. Staff will then consider which issues and recommendations represent statewide concerns and those will be combined into the state water plan, which will serve as a policy document. Future legislative sessions will be able to use the plan for guidance in addressing water resource issues.

Bill Milton outlined the process for reviewing issue statements and recommendations for the whole Lower Missouri River basin, as well as the sub-basin around the Missouri River below Ft. Peck Dam.

<u>Issue Statement #1</u>

Recommendations were developed to encourage prompt completion of water rights adjudication.

Denise Biggar said that the legislature has a schedule for examining claims, and DNRC is ahead of schedule in completing claims examination process, so now it's up to the Water Court to finish the adjudication. Issue remarks and objections will have to be looked at before Preliminary decrees are issued.

Issue Statement #2

Infrastructure for storing and delivering water need maintenance, repair, or replacement, so the BAC recommended looking at options for funding that work.

Bill Milton said the Musselshell and the Milk river sub-basins have more infrastructure needs than the lowest portion of the Missouri.

Rhonda Knudsen and Arnold Bighorn described the Ft. Peck Tribes irrigation project west of Wolf Point, funded by BIA, that needs repairs, and is not receiving enough funding.

Steve Dalbey commented that FWP is participating in infrastructure repair or replacement designs to help local fisheries. Awareness of fishery issues is limited in some areas of the state.

Denise Biggar said that pump access to the river could be considered as an infrastructure issue.

Issue Statement #3

A water management plan assumes that managers know how much water is available for use, and how much is being used. The BAC recommends that water gaging stations be added to the network, and funding should be assured.

Dwight Vannatta said he had talked to some people about their concerns, but they couldn't make it to the meeting. They wondered what other streams should be gaged, and where the gages should be placed. Quantity of water used should be monitored, and should all streams be gaged, or just the larger ones. This would help when new appropriations are considered.

Bill Milton suggested that local groups make decisions about where they want to see gages placed.

Michael Downey said that even though there are a number of gages on the Milk River operated by the irrigation districts, the data is not public. They are used for internal accounting of water distributed.

Arnold Bighorn said there are two gages on the reservation, one on the Big Muddy River near the Missouri River and one near Poplar.

Dwight Vannatta said people would like to see gages where the tributaries enter the Missouri River to help with determination of availability of water for new appropriations.

Dick Iversen said the BAC was originally concerned that a number of gages were being de-activated due to lack of funding.

Michael Downey asked if anyone had a comment on the recommendation to encourage measuring devices at water diversions.

Dick Iversen wondered if there are accurate measuring devices available for irrigation pumps.

Bill Milton and Denise Biggar said that all contract water used from the Milk River and the stored water projects on the Musselshell must be accurately measured, and the water commissioners feel that the measuring devices are satisfactory.

Meeting participants agreed that at some point in the future, the state will have to require that all water being used be measured.

Darryl Crowley, a rancher, commented that crops grown now may require more water than crops that were grown sixty years ago, and that will affect the volume of water diverted from the river by a water user.

Issue Statement #4

Aquifer development should be approached cautiously so that quantity and quality can be understood and monitored. If aquifer water quality is compromised, then quantity available for future use will be decreased.

Dwight Vannatta asked whether exempt wells should be addressed in this section.

Michael Downey explained that the issue was discussed at a Lower Missouri River BAC meeting, but it was decided that the legislature and the courts will have to sort that out.

Dwight Vannatta said it is becoming a serious problem in the Lower Missouri Sub-basin, and maybe the BAC should encourage the legislature to deal with the issue.

Denise Biggar explained that we are really talking about wells that are excepted from the water use permitting process – less than 35 gpm and 10 acre/ft per year production. Exempt wells are those that existed before 1973 and the users were not required to file for a water right on them.

Issue Statement #5

Future water demand, and possible additional storage or water banking were considered in this issue statement.

A question was raised about what is meant by "water banking."

Michael Downey explained that in this instance, a person holding a water right could "bank" the right, and not use is in a traditional way, but re-allocate it to someone else for a different use in the future without risking loss of the right.

Dick Iversen asked if anyone in the area had taken advantage of the new statute that allows water leasing for a new use.

Denise Biggar said there haven't been any "takers" yet because irrigation water use is limited to just the irrigating season, and the new users (i.e. water depot sales) need water all year round.

Issue Statement #6

All these issues may be addressed more specifically by local watershed groups that will need additional funding support to maintain their operations.

Michael Downey asked whether the Basin Advisory Council is an effective forum, or should there be more small sub-basin groups to handle local issues?

Arnold Bighorn said the BAC is effective, but local issues need to be addressed.

Rhonda Knudsen suggested using a similar structure to create local councils to work on solving local issues. A BAC structure might give the local groups more clout in affecting state political decisions.

Bill Milton said that officially organized groups don't work as well as those that are created from the ground up by local interested partners, but those local groups need state financial support.

Rhonda Knudsen said that ad hoc councils work well if there is a crisis to drive motivation.

Bill Milton said local groups can serve to educate citizens about water quality issues and develop good working relationships between residents and agencies involved in water resource issues.

Dick Iversen said the Lower Missouri Coordinated Resource Management Group has been working for twenty years to educate water users and work through local issues.

Dwight Vannatta said that keeping the BAC functioning might help pull local groups together and keep them running.

John Plestina, a newspaper editor who wrote an article on the radioactive drilling socks that were found near Bainville, said that a local group would be helpful in educating the public and getting information on water quality distributed.

Steve Dalbey said it's a good idea to have a venue in place to handle issues as they arise.

Lower Missouri River Sub-Basin below Ft. Peck Dam

Dwight Vannatta raised the question of bank stabilization so that landowners do not lose land during flood events. There are lawsuits in court right now over ownership of the mineral rights underlying new channels. If there is a drill site for oil or gas near the areas that are shifting, there is a question of who should receive royalties.

Dick Iversen said it may not be an issue for the BAC to tackle as it does not affect water supply, but rather land use. North Dakota hasn't figured out how to deal with the issue either.

Bill Milton suggested that Dwight Vannatta submit comments to the BAC for discussion at the last BAC meeting scheduled May 28.

Denise Biggar said that DNRC and MBMG will be working together to present information on the Fox Hills/Hell Creek Aquifer issues to the Area 2 Conservation District meeting next September. The presentation will include the flowing well issue.

Dick Iversen said that adequate funding to study the Fox Hills Aquifer is a good idea, and the BAC should support that.

Steve Dalbey said that MT FWP is working with the Army Corps of Engineers to include recreational demands and fish habitat needs in the river modeling in the future. He also said that on the western side of the state, Bonneville Power Administration is obligated to provide funds to mitigate the impacts of their dams and powerlines. There is no similar program on the eastern side of the state for the hydroelectric power produced by project dams.

Wrap-Up

John Plestina asked about the meeting at Ft. Peck on May 28.

Michael Downey said that meeting will allow the BAC to complete its recommendation report, but the public is welcome to come and listen.

Public comment is still being accepted through the website link, and will be until May 19.

6.3 Written Public Comments Submitted on Draft Recommendations

6.3.1 Montana Fish, Wildlife and Parks

Montana Fish, Wildlife & Parks

May 12, 2013

Michael Downey
Lower Missouri Basin Advisory Council
Montana Dept. of Natural Resources and Conservation
PO Box 201601
Helena, MT 59620-1601

RE: Comments on Lower Missouri River Basin Advisory Council Recommendations

Dear Mr. Downey:

Since last fall the Lower Missouri River Basin Advisory Council has undertaken the formidable task of exploring the water issues facing the basin. Montana Fish, Wildlife & Parks (FWP) values greatly the time and effort of these volunteer council members.

During the scoping phase, I provided you with comments covering several issues. I appreciate that the Council addressed most of these issues in their recommendations. Like all water users in the basin, FWP shares the need and desire for a complete and accurate adjudication, a much greater understanding of aquifers in the basin, support of local watershed groups, further stream gauging, and the other recommendations put forward by the Council. FWP supports the recommendations of the Council.

At the same time, I am concerned that very important issues relating to instream flow have been overlooked. I appreciate that the Council took the position that one particular purpose of use should not be elevated above any other. That approach is consistent with the prior appropriation doctrine in Montana which does not prioritize by purpose of use. I am not advocating that instream flow be elevated above any other purpose of use, but it does need to be further considered in terms of future water demands.

In my scoping comments I pointed out that while FWP holds many instream flow water rights in the Lower Missouri River Basin, these rights do not reflect the entire flow regime needed to protect and restore native and wild fish. In applying for these water reservations, FWP was constrained by statute which limited the reservation to 50% of the mean annual flow on gauged streams. Given this constraint, the methodologies used to develop these instream flow water rights did not provide for intra- or inter-annual variability (high flow) necessary for proper channel and riparian function. Neither did they address connectivity (fish passage) nor water quality concerns such as temperature. Any ecologically based comprehensive instream flow regime must include all these attributes, which are not fully represented by existing instream flow water rights.

Within the Lower Missouri River Basin, several native species face uncertain futures. The federally endangered pallid sturgeon lives in the full length of the Missouri River within the Council's focus area. Other native species such as sauger (Montana Species of Concern) are on the decline in streams within the Lower Missouri River Basin. As more demand is put on our rivers and streams, these key species will struggle even more to hang on. Even more adaptable

native and non-native wild fish species, such as channel catfish, rely on a comprehensive flow regime in order to thrive.

Statute directs the Council and DNRC to include an inventory of consumptive and non-consumptive uses **associated with existing water rights**. However, the full instream flow regime to support ecological health of our rivers and streams is not being adequately considered in the required inventory, as the existing instream flow water rights lack a number of important attributes noted above. For this reason, the additional instream flow needs may be best considered as future demands on the water resources, even though the demand is already present. Meeting future demands should include meeting the needs of Montana's native and wild fish and aquatic life and in particular the native species that are at greatest risk due to diminishing water supplies.

Connectivity, or the ability for fish to move up and down a river, is also a key for many fish to complete their life cycle. The **Storage, Distribution, Infrastructure Maintenance, and Application Efficiencies for Irrigation Water** issue statement and recommendations identify the problem of degrading water infrastructure throughout the basin, projects to rebuild or replace infrastructure on rivers and streams will be common in the years to come. Such projects should be designed and built to accommodate passage of fish. This is a necessity if funding methods are to include all stakeholders.

Specific to the Lower Missouri below Ft. Peck sub-basin, recommendations to mitigate damage due to water releases from Ft. Peck Dam should also include sloughing easements and riparian buffers as alternatives to or in addition to traditional bank stabilization. Such alternative approaches would need to be used in conjunction with relocation of points of diversion or modifications to the diversion systems to accommodate changes in bank conditions. These alternative approaches provide for the hydraulic processes necessary to provide important habitat for aquatic species reliant on the river. In addition, a more normative flow regime is needed to provide for these hydraulic processes. Further, the releases of water from Ft. Peck Dam create cold-water pollution which is an additional water quality concern beyond contaminants that needs to be addressed.

Thank you for the opportunity to again provide input into this important water planning process.

Sincerely,

Bruce Rich

Bruce Rich
Fisheries Division Administrator

Cc: Bill Milton (electronic)
Wendy Beye (electronic)

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6.3.2 Snowy Mountain Chapter, Trout Unlimited

Snowy Mountain Chapter of Trout Unlimited

302 8th Avenue, North
Lewistown, MT 59457
May 19, 2014

Mr. Michael Downey
DNRC Water Resource Planner
P.O. Box 201601
Helena, MT 59620
mdowney2@mt.gov

Submitted electronically

Dear Mr. Downey:

The Snowy Mountain Chapter of Trout Unlimited has the following comments regarding the Lower Missouri River Basin Advisory Council Draft Recommendations for the Montana Water Supply Initiative. We represent central Montana as a group dedicated to the conservation of cold water habitats and their associated communities of plants and animals.

- There is a miserable lack of consideration for the long and short term water needs of fish and wildlife and associated riparian communities. We believe that a failure to consider fish and wildlife as part of this process is a travesty. A lack of this input ignores major portions of the ecosystem that will accrue to the next generations. There is a lack of consideration for in-stream flows needed to maintain fish and wildlife as well as riparian and upland resources. We see these in-stream flows as a critical component of the surface water community in the lower Missouri River Basin.

- This planning process has failed to consider or evaluate the long and short term water trends that will result from climate change. This plan makes recommendations with major implications for water use planning without considering the current science related to a major world wide factor that is changing not only Montana but the entire planet. We strongly recommend that you consider the influence of climate change as a part of the plan.

- There is currently a real lack of base line surface and sub surface water data. It seems important that this data be the basis for future use decisions. However, there appears to be little incentive to spend the funds necessary to acquire base line data on water quantity or quality. Without this data recommendations will be flawed and often times useless and misleading.

- Oil and gas development is not addressed in the document. This activity must receive the same treatment as other elements. If the plan fails to treat a current and ongoing activity because of political or lobby influences the plan will loose credibility in our eyes as well as those of the general public.

- Exempt wells are not addressed in the draft recommendations. We can only wonder, why? The long term impacts on sub-surface water will be profound if we continue to allow development via a system of exempt wells and individual septic systems that have the potential to profoundly affect ground water over time.

- We are concerned with proposals for inter-basin transfer of water. Locally we have an example of this issue which purports to transfer quantities of cold clean water from the Madison aquifer to the Musselshell drainage. We in the Judith basin are concerned that this loss of water to another basin will not only directly affect us but it will artificially encourage development in a dryer area and thus exceed capacity by artificial means at extremely high cost which will be borne, in large part, by taxpayers from outside. This is an unwise long term strategy from both a water use and economic perspective.

- There is no mention of the impacts of stream dewatering. In a state where most streams, and many other water sources, are already over allocated, the plan should address this issue as well as the long and short term effects it has on fish and wildlife and humans.

In summary, we find the draft recommendations lacking in their consideration of fish and wildlife resources as well as in addressing current significant issues such as oil and gas development, climate change, inter-basin transfers and others noted above. We request that you strongly consider inclusion of these items in the final plan.

Thank you for the opportunity to comment.

Sincerely,

Mike Chapman
President, Snowy Mountain
Chapter of Trout Unlimited

Copies furnished:

Wendy Beye
LMR BAC Administrative Assistant
wbeye@bitterroot.net

Bill Milton
LMR BAC Facilitator
billmiltonmt@gmail.com

6.3.3 Northern Plains Resource Council

Michael Downey, Section Supervisor/Water Resource Planner
Montana Department of Natural Resources and Conservation
1424 9th Avenue PO Box 201601 Helena, MT 59620

Re: Montana Water Supply Initiative Lower Missouri Basin Advisory Council Draft Recommendations

Thank you for your work on the Montana Water Supply Initiative's Lower Missouri Basin Advisory Council, and for the opportunity to comment on the draft recommendations. Water is Montana's most important natural resource, and its use over the next twenty years is incredibly important. Water is the lifeblood of our citizens, agriculture and economy.

Throughout the initiative's process, Northern Plains Resource Council has commented on the need to study the specific impacts the oil and gas industry's water consumption will have on future demand and availability. Recent events in Carbon County have illustrated why we feel the oil and gas industry's water consumption must be specifically considered in the 2015 water plan.

This week Energy Corporation of America (ECA) began drilling a controversial oil well three miles northeast of Belfry. Trucks were seen taking water from a nearby gravel pit and delivering it to the ECA drill site. Currently, there is no water right or permit for use of the water in the gravel pit. Local farmers and members of Carbon County Resource Council filed a complaint to the Department of Natural Resources and Conservation (DNRC) to report the illegal use of water. The DNRC requires a water right for the use of any new water, and an additional permit for the use of surface water, such as this gravel pit. Taking water from the source until the permit is received is strictly illegal.

ECA's gross violation of Montana's water law and permitting process exemplify why impacts of oil and gas development must be considered in any truly comprehensive state water plan. As an agricultural state we must respect water rights and our neighbors. We must ensure everyone is following the same rules, and confirm that the state has enough water to meet traditional uses, in addition to the growing demand posed by the oil and gas industry.

Throughout the recommendation process the Lower Missouri Basin Advisory Council has also consistently compared the oil and gas industry's water use to other (consumptive) uses, such as agriculture. We have multiple concerns with this comparison that we believe must be addressed.

Water quality
First, we are concerned about threats to water quality from oil and gas development. Although the state has regulations that provide for minimal chemical disclosure, most of the chemicals used in oil and gas drilling are kept undisclosed as trade secrets. This makes it extremely hard to do any solid baseline water testing. Baseline testing is essential to prove that clean water existed before oil and gas development. The state of Wyoming, through their 2013 energy policy entitled "Leading the Charge," is recommending "baseline pre-development water quality

testing." According to the plan, "this initiative seeks to establish minimum baseline water quality testing requirements and standards for oil and gas operators prior to development." The state of Montana, potentially through the Montana Water Supply Initiative, should develop a similar approach to gauge the quality of our water resources.
Even if baseline testing is implemented, the water supply can still be contaminated by irresponsible practices of oil and gas companies. Although the current public debate focuses on contamination from hydraulic fracturing, other deficiencies such as faulty well casing, cement failure, and surface spills are all major threats to water quality and are the most common ways that water becomes contaminated in drilling operations. Earthjustice has documented with an interactive map many of the known contamination cases across the US. However, considering the water contamination from old oil wells the Fort Peck Indian Tribe is facing is not on the map, it is certain that other contamination incidents in Montana are also not accounted for.

There are ways to prevent some of this oil and gas pollution, and neighboring states such as North Dakota have already implemented regulations to do so. According to a recently released report by the Western Organization of Resource Councils (Gone for Good: Fracking and Water Loss in the West, 2013), "after 47 reserve pits overflowed during the spring thaw of 2011, the state Department of Mineral Resources initiated new rules that essentially eliminated reserve pits at the sites of fracked wells. " This water management practice is called a closed-loop system and is a very effective practice for preventing water pollution at well sites. Interestingly, despite this step forward, the filter socks that strain frack water have been exceeding federal radioactivity limits. This is an entirely new threat to our water system and, since the Montana Bakken stems from the same formation, it is a likely threat in Montana as well.

Overall, although it may not be up to the Lower Missouri BAC to prevent contamination from oil and gas, contamination should be accounted for as a possibility in the proposed water budget and a quantity of fresh water should be reserved in case of an emergency. If any of our groundwater or surface water is contaminated by drilling chemicals, fracking chemicals, or radioactive waste water there is no turning back. We need to be extremely careful during this process and make sure the state is prepared to protect our supplies of clean water.

Water quantity
On the other side of the water issue are quantity concerns. Oil and gas development uses large amounts of fresh water. However, there is no single state agency that documents the amount of water used, and lost, from the system by oil and gas development.

In the 2013 Wyoming energy policy report, the state is requiring a "unified groundwater database" that "will share groundwater data that has been collected by water quality, land quality, and solid and hazardous waste divisions within the agency. This system will lead to eliminating redundant data collection, reducing data collection needs, reducing costs, and will enable more informed decision making." Montana also needs to consider this approach. We need to know exactly what our resources are in order for a budget system to work.

As part of this approach, Montana needs to document the water lost to oil and gas drilling operations. As mentioned above, the WORC report "Gone for Good" states that EPA believes between 70 and 140 billion gallons of water are used each year for fracking. This water is

completely lost to the system since the water is contaminated with drilling and fracking chemicals and much of it is disposed of into deep-injection wells. This type of water use contrasts with agricultural water use. Agriculture is the largest water user in Montana, but the water used is sent right back into the overall water cycle. This is not the case with water used for oil and gas development.

To alleviate some of this water loss from oil and gas operations, the State should require recycling of drilling and frack water. Oil and gas companies have the technology to do this and, in Pennsylvania where there are only a few injection wells in the state and no hazardous waste water treatment facilities, water treatment companies are in high demand. Unfortunately, in Montana, deep injecting the water is cheaper at this point despite the fact that the water is lost to the system.

Water marketing

On top of other concerns, we are concerned that our state allows water marketing without truly gauging how much water is available. The 2013 Legislature enacted HB 37 that would allow for temporary water leasing. We believe this bill incentivizes leasing any excess water that water rights holders may have. This bill was specifically developed in response to illegal use and demand from the oil and gas industry. During the summer of 2012, the Department of Natural Resources and Conservation (DNRC) discovered a number of illegal water depots in operation. Instead of enforcing the current law, however, the DNRC pushed HB 37 forward. This kind of ad hoc water management poises serious concerns in the future. As water comes into higher demand, water marketing will become a bigger concern. The LMBAC needs to strongly consider this issue in its water budget.

The possibility that agricultural water rights will be permanently changed into rights for oil and gas use should also be carefully documented and considered. As mentioned above, agriculture returns water to the water cycle, but oil and gas uses contaminate the water and pump it into deep injection wells. A large number of agricultural rights transferred to oil and gas uses will result in a decrease of available water in the system.

Therefore, in order to address these concerns Northern Plains Resource Council asks the Lower Missouri Basin Advisory Council to incorporate the following recommendations in its final recommendations.

1. The Montana Water Supply Initiative (MWSI) must estimate, or recommend studies that seek to estimate, the water quantity needed for oil and gas production, how extraction of these resources will impact groundwater aquifers, and which water resources will be used. The analysis should include projections for future water demands, aquifer recharge rates, and available water to meet those demands.

2. Establish a state wide task force made up of industry, tribes, citizen groups, and government agencies. This task force will be tasked with exploring and researching what other oil and gas producing states are doing to deal with water quality and quantity issues related to energy development. Such a task force must have the ability to set policy while remaining accountable to the specific needs of localized residents. A state wide task force will also allow the positive

work accomplished through the Montana Water Supply Initiative to continue, while enabling citizen participation on decisions regarding our state's most valuable resource.

3. The Governor should appoint a statewide task force to investigate the current condition of all Class 2 injection wells. The task force should project the number and capacity of injection wells that will be required over the next decade and plan for their development and monitoring.

4. A Montana well plugging program should be developed that: 1) includes public outreach efforts to landowners and industry to help identify unplugged wells; 2) implements an inspection program to prioritize and address unplugged bore holes, oil and gas, and uranium wells; and 3) establishes a fund to help plug these wells in an accelerated fashion with active drilling areas prioritized. Establishing a plugging program is critical to maintaining water quality as presence of abandoned wells significantly heightens the risk of methane migration and contamination during oil and gas drilling. Where active drilling and hydraulic fracturing operations take place in the vicinity of abandoned and unplugged wells, the natural protections assumed to be provided by underground geology no longer exist because abandoned wells may act as direct pathways for methane to travel to the aquifer and surface.

5. The Montana State University Energy Research Institute should collaborate with the Montana Board of Oil and Gas Conservation, the Department of Environmental Quality and the Water Resources Division to provide analysis and assistance to the energy industry. This collaboration should encourage recycling facilities and the reuse of flow back and production water to the maximum extent feasible for oil and gas drilling and hydraulic fracturing.

Thank you again for the opportunity to comment and please contact us at 406-248-1154 if you have questions.

Sincerely,

Steve Charter, Chair
Northern Plains Resource Council

6.3.4 Mike Ruggles, Montana FWP

One of the issues I brought to the table was dewatering of the Musselshell River and connectivity. This isn't reflected in the comments. Currently Deadmans is taking all (most) the water with well over 100% snowpack coming off and Deadmans is nearly full. Over 150 cfs above and 9cfs at Shawmut with only a trickle coming from the Deadmans Diversion. I attached photos from last week showing how little water is being released only leaking water is getting by.

It seems to me if people want MTFWP to help out with funding more storage projects and irrigation projects there needs to be some alterations to current conditions that improve conditions for fish and wildlife. Improvements for fish and wildlife have economic benefits and is considered beneficial use.

It seems this water planning process is ignoring this beneficial use for fish and wildlife while saying at times convenient for some users that this plan and some activities will improve conditions.

Mike Ruggles

MT FWP

April 24, 2014

6.3.5 Roy O'Connor, Shawmut, Montana

From: Roy O'connor [mailto:rsoc2001@yahoo.com]
Sent: Friday, April 25, 2014 8:52 AM
To: Downey, Michael
Subject: Lower Missouri River Basin

Dear Sir, I am a landowner on the Musselshell River, with approximately 2-3 miles of the Musselshell River flowing thru my OK Bar Ranch, near Shawmut. I wish to make a few comments regarding state plans for the future of the river basin.

I am very concerned about the lack of foresight with respect to a very critical issue in the basin, that being the dewatering of the river, and the lack of fish passage. I am very involved in these issues in the Clark Fork basin, and am on the Governors Advisory committee for NRDC claims re the superfund designation there. Hundreds of millions of dollars are being expended to recover the rivers and riparian areas health, and we do not want to get in a similar situation in our drainage.

Fish and wildlife are an integral part of Montana's heritage, and our enjoyment of life here. Historically native species migrated up the Missouri into the Musselshell and other tributaries to spawn and fill in vacant nitches, this is no longer possible! Any future plan for these rivers and water use must take into account both fish passage, and a minimum water flow. The Musselshell is considered and named a river, yet at my ranch, after water draws for Deadmans Basin and irrigation, the flow often drop below 2 CFS. This will not support good fish population, especially the historical species such as catfish, sauger, and ling.

Reestablishing healthy water conditions and fish populations is doable, and needs to be part of your basin plan. All the landowners in the basin will benefit, and all the visitors as well. Now is the time to act, and work with FWP, who are committed to helping us landowners work out a viable solution to this problem.

Thank you for considering my comments,
Roy O'Connor
OK Bar Ranch
1191/2 Hwy 12
Shawmut, Mt

6.3.7 Robert Dunnagan, Lewistown, Montana

4/30/2014

Lower Missouri River Basin Adjudication

Comments:

1. There seems to be a miserable lack of consideration for the long and short term water needs of fish and wildlife in this process. Failure to consider fish and wildlife as part of this adjudication would, in my opinion, is a travesty. A lack of this as a major input ignores major parts of the ecosystem.

2. The interbasin transfer of water is a real and current concern. As a current example there is a proposal to drill a number of water wells in the Judith Basin and transfer that water across a hydrographic divide into the Mussleshell Basin. I am first concerned for the loss of a rare commodity, cold clean water, from the Madison aquifer and then transferring that water to a different basin without fully understanding the short and long term impacts of the transfer seems ridiculous. In addition this proposal will be so expensive and require so much of my tax money that I think it is an unwise project. The eventual cost of the water after its long journey to Roundup and beyond may well be in the vicinity of $1 per gallon and that cost will have to be subsidized from my taxes. I believe that this type of transfer of ground water from the Madison aquifer is unwise, unnecessary, and should be avoided at least until we have a much better understanding of the function of the Madison aquifer.

3. It appears to me that we as a community and the adjudication process have failed to consider and evaluate the long and short term trends that are and will result from climate change. We propose to adjudicate without knowledge or projections of the effect of climate change on the recharge area for the Madison aquifer and the basin in general. I think this will have a profound effect on humans, flora, and fish and wildlife. To make long term recommendations and changes without using the very best science available would be another travesty.

4. I see no evaluation of in stream flow and how it will affect fish and wildlife as well as the riparian environment. In stream flow is a critical component of the surface water community in the lower Missouri River Basin.

5. There is, in my opinion, a real lack of current and historical information about stream flow. Without this baseline information recommendations for adjudication of water use will be flawed and oft times useless.

6. Need to monitor oil & gas development use of water. Limit water use & recharge until we understand the impacts on the greater community.

Robert D. Dunnagan, 53 Pine Ridge Lane, Lewistown, Mt 406.366.2730

6.3.8 Tim Gill, CEO ML Ag Credit Inc.

From: Tim Gill <tim@ag-credit.com>
Date: May 22, 2014 at 5:09:56 PM MDT
To: "timdavis@mt.gov" <timdavis@mt.gov>
Subject: State water plan comments

May 22, 2014

Mr. Tim Davis,
DNRC Water Resources Administrator

Thank you for the opportunity to comment on the State Water Plan. Below are just a few concerns we have with a few of the issues presented.

Prioritization: Each water right carries a priority date based on first use, so there should be no prioritization of water or resources of one source over another. Montana water rights should be used according to their order of priority, not a preferred use. Prioritization should follow The Prior Appropriation Doctrine.

Water Quality monitoring at stream flow gauges: Water quality monitoring should not be part of the State Water Plan as the Montana DEQ has the authority to establish water quality standards, not the DNRC.

Measurement of diverted water: In Montana, water rights are property rights. Water users have the right to use their water and that right is protected. Any kind of measurement of diverted water should be voluntary not mandatory. Mandatory reporting could lead to fees as well as fines, for what the government deems improper or insufficient reporting of information. Measurement of diverted water should be voluntary.

Continuation of the Basin Advisory Committees: There are already local watershed groups. These groups need to be more recognized by the state and used for water resource issues. Please discontinue the Basin Advisory Committees.

Respectfully submitted,

Tim H. Gill
President / CEO
ML Ag. Credit Inc.
406.442.3740

6.3.9 Comments Submitted Online via SurveyMonkey

Michael Downey, DNRC Water Resource Planner, set up a survey on the website SurveyMonkey. A total of 45 individuals participated in the on-line survey. Following are specific comments (in red type) captured via that survey.

4 ISSUE STATEMENTS AND RECOMMENDATIONS

4.1 WATER USE ADMINISTRATION

1. Alignment of Adjudication with Actual Historic Use – Goal: The support of efforts and processes to address claims of water use, and proposed changes to claimed water rights is essential for the protection of existing, valid water rights. It is also critical for determining how much water is available for future development and beneficial use.

a) Objective: Water right decrees should accurately reflect the status of existing water rights as they historically existed prior to July 1, 1973. By strengthening the existing water right system, water managers would be in a better position to ensure that water is allocated according to established historic beneficial use.

i) Short-Term Recommendation: The Water Court and DNRC need to do a better job of communicating the adjudication process generally and the process of filing appropriate objections specifically to ensure the most accurate adjudication process possible.

1. Few know how the adjudication really works

2. As long as Montana is the front line in all talks and has a major role in anything going on

3. WE AS ORIGINAL FIRST NATIONS PEOPLE (SPECIFICALLY "TRADITIONAL NATIVE AMERICANS") OWN AND WILL "ALWAYS OWN" "ALL OF THE ENTIRE WATER BASE ON "TURTLE ISLAND" (WHICH IS REFERRED TO AS THE NORTH AMERICAN CONTINENT). THE GROS VENTRE TRIBES AND ALL OF THE TRIBES IN THE MISSOURI RIVER BASIN (AS IT IS REFERRED TO) CLAIM AND RETAIN WATER, GATHERING, HUNTING & FISHING AND TRAVELING RIGHTS IN "ALL USUAL AND ACCUSTOM PLACES"; FROM THE "HEAD-WATERS OF THE MISSOURI" AT THREE FORKS, MONTANA (AND EVEN AS FAR UP IN THE BIG ROCKY MOUNTAINS WHERE THE SPRINGS AND STREAMS ORIGINATE). AND THIS IS ACCORDING TO THE NON-NATIVE AMERICAN LAWS AND THE LAWS OF OUR "CREATOR" (GOD ABOVE). AND AS OUR NATIVE AMERICAN HISTORY "DICTATES" WE WILL "SHARE AND/OR SELL OUR GOD GIVEN "PRECIOUS LIFE GIVING LIQUID WATER SPIRIT" TO OUR PITIFUL NON-NATIVE AMERICAN BROTHERN....

ii) Long-term Recommendation: Evaluate and develop processes to ensure water rights are accurately and consistently defined across Montana. DNRC and the Water Court should work together to develop a post-adjudication strategy to address issues such as place of use on claims

that were verified by a less demanding process than current examination methods. This effort will ensure a more consistent evaluation of all water right claims across Montana.

1. They should do a good job first ,that way they would not have to go back and fix mistakes

2. The need to complete adjudication cannot be used as an excuse to do nothing else in the meantime. All the issues discussed in this report and others need to be addressed simultaneously.

3. Reverse temporary ruling that individuals may lease their water rights to energy companies.

4. When are they going to fix all the problems with over-stated and abandoned claims?

5. Montana should have the right to work with ALL water rights

b) Objective: Analysis of historic water use in DNRC's change application process is important for the protection of existing water rights. The DNRC administrative process is more rigorous than that conducted for adjudication purposes, and is science based. DNRC must maintain the integrity of its change process and continue to analyze water right claims for actual, historic beneficial use, including consumptive volume. However, there are issues of trust and credibility that undermine implementation of the change process. Better understanding among the public on the change process would strengthen this system.

i) Short term Recommendation: DNRC needs to educate water users and other appropriate agencies and entities of the importance of a robust change process. DNRC also needs to provide a better explanation of measures that have streamlined and simplified the current change process.

1. Education is a good idea but need more information on what robust change means

2. I agree that education is good but should strike the words " importance of a robust" in the recommendation.

3. Remove the words "importance of a robust" I believe it's important to educated water users on what the change process is rather than the "importance" of the process.

4. Education can be a good thing, but not sure what a "robust" change process means. The term "importance of a change process" should suffice.

5. Education is of absolute importance in issues such as this however the verbiage "importance of a robust change process" leaves an intimidating connotation and should be removed from the recommendation.

6. Education is good but should remove the words "importance of robust". This issue deals with those with water right, many current holders do not like the current change process and feel it is too difficult already.

7. Strike the words "importance of a robust"

8. Please remove "importance of a robust"

9. I wouldn't call this a "robust" change.

10. I have no issue educating water users, but at this time do not support the current change process.

11. They need every one who is part of any on going plan to either reject any plan

2. Completion of Adjudication -- Goal: Completion of the adjudication process is critical to the ability of water users and water managers to understand, manage, enforce, and defend Montana's water resources.

a) Objective: The completion of water rights adjudication process will determine how much water is put to historical beneficial use. The process must be completed as efficiently and accurately as possible.

i) Short-term Recommendation: Provide the tools (funding and personnel) necessary for the Water Court and DNRC to complete the adjudication process at least to the point of Temporary Preliminary or Preliminary decrees not later than 2020.

1. Not able to approve this without knowing the costs.

2. This sounds like I'm signing a blank check. It would seem that the plan should give an idea of the cost of such a recommendation.

ii) Medium -term Recommendation: Support funding and if necessary extension of the Adjudication Program to move Temporary Preliminary to Preliminary decrees to complete an accurate adjudication process by 2024 and Final Decrees by 2027.

1. Water right holders would like to see the current adjudication process completed. The plan should include existing funding and I'm concerned about the additional costs.

2. There needs to be an explanation of necessary funding in the future.

3. Perhaps it would be good to define what those funding levels are and what appropriate funding means.

4. Plan should include existing funding to the effort and define what is meant by "necessary funding in the future".

5. This should include existing funding to the effort and define what is meant by "necessary funding in the future".

6. Plan should include existing funding to the effort and define what is meant by "necessary funding in the future"

7. Define "necessary funding in the future" and include existing funding

8. Support the existing funding.

b) Objective: The resolution of outstanding federal and tribal reserved water rights presents an obstacle to the final adjudication of state water rights. The state must continue its efforts to negotiate water compacts with tribal nations, and advocate for ratification by Congress.

i) Short-term Recommendation: The state and the state's Congressional delegation must continue working to complete all the tribal water compacts still in process.

1. If this is not done, then the courts will do it. That result may not be in the best interest of all involved.

2. failure to complete tribal and federal compacts will force the courts to do so

3. failure to complete tribal and federal compacts will force the Courts to do so.

4.2 STORAGE, DISTRIBUTION, INFRASTRUCTURE MAINTENANCE, AND APPLICATION EFFICIENCIES FOR IRRIGATION WATER

Montana's irrigation water storage and distribution infrastructure is in many cases nearly a century old, and has become increasingly inefficient in storing spring runoff and delivering it to crops during the irrigation season. Once the water reaches the end user, application efficiency may be improved by a switch to, for instance, pivot sprinkler systems, but the switch may have unanticipated effects on surface water or groundwater. There is a lack of research on the consequences of changing delivery systems and application methods.

1) Strategy for Updating Infrastructure – Goal: Montana's aging water storage and delivery infrastructure inventory must be updated, and a prioritization process for repair, alteration, or replacement implemented. In addition, more research on the positive and negative consequences of changing methods of water application will help avoid unintended consequences in the future.

a) Objective: The cost of maintaining and/or altering water storage and delivery infrastructure is often too high to be paid by local water users alone. The state needs to develop a project prioritization strategy to use available funding in the most efficient manner possible. New funding methods that involve all stakeholders who benefit from water projects should be explored

i) Short Term Recommendation: Support operational funding to develop public/private partnerships to assess local capacity, incentives and financial commitments necessary to support state and federal authorizations that are adequate to complete infrastructure rehabilitation efforts.

1. cost information needs to be provided.

2. Cost data should be provided

3. please provide cost data

4. Costs should be provided.

5. I might support this but just how much is it going to cost and where is the funding going to come from.

6. cost data should be provided

ii) Short-term Recommendation: Set up an infrastructure improvement funding program to address problems with water storage and delivery systems.

1. need cost information.
2. Please ensure the cost data is provided when making these decisions.

3. Cost data should be provided

4. please provide cost data

5. Costs should be provided.

6. You're inconsistent with the short term recommendation above, because you don't know the effect of the public/private partnerships the previousrecommendations seeks to develop.

7. I also every spring run of would be an ideal place for water storage just make sure take a place is close by

8. cost data should be provided

9. Again where is the funding going to come from

iii) Short-term Recommendation: Utilize the MT Watershed Coordination Council to distribute financial and technical assistance to existing and new watershed groups.

1. Need cost information.

2. cost data should be provided

3. Where is the financial assistance going to come from

4. Cost data should be provided

5. please provide cost data

6. Costs should be provided.

7. The recommendation should be clear that it supports the status quo.

8. I'm not so sure the MWCC should actually distribute funds, but instead provide assistance for preparation of grant applications, and technical assistance in development of long-range plans to help watershed groups be more effective.

b) Objective: Improvements in water storage and delivery efficiency may have either positive or negative effects on surface water. Improved methods of water application on crops may conserve water, but the effects of changing methods on return flows, groundwater, soil, and water quality vary from site to site, and need to be carefully explored before any particular method is encouraged.

i) Short-term Recommendation: Quantify the surface water-ground water impacts from changes in irrigation water distribution, application methods and timing across watersheds to account for wide-ranging precipitation patterns, geology and topography.

1. Cost data should be provided

2. "wide-ranging precipitation patterns" should be identified as based on historical data. NOT a prediction of what might be possible in a model driven scenario.

3. The Montana Water Supply Initiative (MWSI) should include estimation of the water resources needed for oil and gas production, how extraction of these resources will impact groundwater aquifers and where those water resources will come from. Groundwater Control Areas should be established by the state where groundwater withdrawals in recent decades have outstripped the pace of recharge.

4.3 WATER RESOURCE INVENTORY AND MEASUREMENT

The current status of water measurement and water resource research makes it difficult to determine how much water is legally and physically available for existing and future uses. Wise management of the state's water resources requires an adequate assessment of surface and groundwater availability and an inventory of how much water is beneficially used. The state's network of streamflow gages does not cover enough streams to provide critical water quantity and quality data in all the sub-basins. In addition, many water delivery systems have no accurate method of recording the quantity supplied to a specific user. It is difficult for managers to fairly distribute water without knowing how much is available, and how much is arriving at the place of use. The State of Montana needs to increase its water measurement and monitoring program so

that it is sufficient to understand water supply and use, enforce water right decrees and compacts, and better understand the relationship between water quality and quantity.

1) Streamflow Gages -- Goal: Funding for Montana's existing streamflow gage network must be ensured, and new gages installed to monitor flows on streams that lack historical data. Selected water quality parameters should also be monitored by many of the gages. As demand for water within and outside the state increase in the future, measurement of water availability and water deliveries to end users will be essential for sound water management.

a) Objective: Partnerships among federal, state, and local agencies and organizations should be supported to fairly pay the costs of installing and maintaining streamflow gages. The data collected needs to be immediately available to anyone who needs the information for impending flood warnings, water availability, distribution of water, wastewater releases, water quality, and those who want to know streamflow levels.

i) Short-term Recommendation: Maintain the existing stream gage network operated by the USGS for key mainstem and tributary gages via the USGS/DNRC Cooperative Agreement Program.

1. A secure funding program to keep all existing gages operating, and to install new gages where needed is essential.

ii) Short-term Recommendation: Institute a telemetered (real-time) stream gage program operated by DNRC/MBMG. Sub-basin watershed organizations should submit recommendations for new streamflow gage installation sites.

1. A state-operated gage network would supplement the USGS gage network.

b) Objective: In order to distribute available water to users, measuring devices should be installed on pumps, headgates, unmetered municipal water systems, and all non-exempt wells in all watersheds.

i) Medium-term Recommendation: DNRC should develop a program to encourage and incentivize the installation of measuring devices at the point of diversion.

1. This seems overly costly. Most streams do not have this and I am not sure what it would gain.

c) Objective: A good understanding of surface and groundwater resources is necessary to ascertain the status of water resources in Montana. Surface and groundwater research, whether accomplished by federal, state, or contracted private entities, must be funded, starting with the most critical areas first, and eventually the entire state.

i) Short-term Recommendation: Adequate funding should be appropriated for research on surface and groundwater quantities in the state.

1. Needs to include cost data.

2. Cost data should be provided

3. This should include the cost data

4. The plan should include cost data, not the vague "adequate" amount of funding.

5. please provide cost data

6. Cost needs to be addressed.

7. Costs should be provided.

8. Plan should define "adequate" funding.

9. We need this if fracking is in our areas we don't need what others State are put up with

10. The state must characterize its aquifers as soon as possible, and determine whether they are being depleted or contaminated before irreparable damage occurs.

ii) Short-term Recommendation: The Ground Water Steering Committee should re-evaluate project funding criteria for the Ground Water investigation Program to better reflect statewide priorities and directly implement priorities reflected in the State Water Plan.

4.4 GROUNDWATER AQUIFERS: QUANTITY AND QUALITY

There is a need for additional research on the quality and quantity of Montana's aquifers. As more users tap the state's groundwater sources, it is essential to document the quality and quantity of groundwater. Water quality must be periodically monitored using site-specific parameters. An aquifers' ability to recharge at a rate that meets water withdrawals/discharge must be monitored to avoid depleting the resource.

1) Groundwater Monitoring -- Goal: A more comprehensive system of groundwater monitoring for quantity and quality should be adopted by the state.

a) Objective: Montana's aquifers and groundwater/surface connections must be defined and characterized.

i) Short-term Recommendation: Support additional funding for groundwater assessments and investigations so that additional aquifers and groundwater/surface connections can be defined and characterized.

1. Cost data should be provided.

2. Cost data should be included

3. Cost data should be provided

4. please provide cost data

5. At what cost? Needs to be addressed.

6. The draft recommendations would benefit by including a mention of the importance of groundwater springs on fish & wildlife.

7. Costs should be provided.

8. Yet again, this is like a blank check. How much spent now? How much more is needed to be considered adequate?

9. Add Short term recommendation: DEQ and DNRC to be tasked to provide more on-the-ground inspectors to ensure accurate tracking and record-keeping system is properly employed.

ii) Short-term Recommendation: Identify and develop public/private partnerships to accomplish the stated objectives.

1. Add the following as stated objectives: 1- Permits for uses that could contaminate groundwater should require the applicant to test and periodically monitor for contamination, sending results to DEQ and the GWIC public database at the Montana Bureau of Mines and Geology. 2- The Montana Board of Oil and Gas Conservation and the Department of Environmental Quality should jointly analyze data to project the volumes of hydraulic fracturing flow back water and produced water that will need to be disposed of in the next decade in Montana. They should establish as soon as practicable a system to track and account for each truckload of flow back and produced water, to ensure safe and legal disposal methods are used and to track and verify the actual volumes of water involved. 3-MSU Energy Research Institute, Montana Board of Oil & Gas, the Department of Environmental Quality and the Water Resources Division to provide analysis and assistance to the energy industry to recycle and reuse flow back and produced water to minimize destruction of clean water.

2. I don't know what this is

iii) Short-term Recommendation: Change the Ground-Water Assessment Steering Committee prioritization process for groundwater research to divide the funding among all four state river basins. This will balance priorities across rural-urban conflict situations, emerging ground water needs/limitations and quantifying new ground water resources.

1. The oil and gas industry is impacting aquifers in the far eastern portion of the state, but funding for research there has been very limited. Population should not be the basis for distribution of groundwater research funds.

b) Objective: Statewide groundwater testing data should all be included in the existing public web portal. The availability of improved data will help inform and protect all water users.

i) Short-term Recommendation: Request that DEQ and DNRC work together to educate and encourage local sub-basin groups to address water quality and other issues associated with water use or activities that affect water quantity or quality.

1. Need cost information

2. Costs should be provided.

3. Isn't that what they are supposed to do anyway?

c) Objective: As more groundwater is used for beneficial operations, aquifers must be monitored to avoid overuse or adverse impacts to surface water connected to aquifers.

i) Short-term Recommendation: Support local, state, and federal efforts and increase funding through existing DNRC grant programs to control artesian flowing wells to better conserve groundwater resources.

1. Need Cost information

2. Cost data should be provided

3. Provide cost data.

4. A lot of water going to waste out here

ii) Medium-term Recommendation: Increase funding levels for the Ground Water Assessment Program (GWAP) and the Ground Water Investigation Program (GWIP) administered through the MT Bureau of Mines and Geology to advance more projects across all four major river basins. Funding needs to address the increased need for information and keep pace with rising research costs.

1. Need cost information

2. This is important work for the Bureau and should be continued. Cost data, however, should be provided.

3. Cost data should be provided by the Bureau of Mines and Geology

4. This needs to be done by the MTBMG exclusively (not farmed out to university graduate programs), and a budget needs to be supplied.

5. Costs should be provided.

6. Wow, do you have a whole pad of blank checks? Don't you think you should put some kind of funding ideas in a question like this? I think you should.

4.5 FUTURE DEMANDS ON WATER RESOURCES

Basin scoping meeting participants agreed that more water from spring runoff should be captured by increasing the capacity of existing reservoirs, by building new small-scale off-stream reservoirs, or by enhancing natural floodplain wetlands water storage. Negotiation for additional water from federal storage projects to meet demand within the state is a possibility, keeping in mind the role full reservoirs play in recreation. Adoption of voluntary conservation programs, or in the case of industrial water use, development of recycling technology, might free up water for reallocation to additional uses. Some of the state's aquifers contain water of sufficient quantity and quality to help meet new demands. A water banking program could serve as a tool to help facilitate transfers of water to uses associated with rapidly changing demands.

1) Future Demands -- Goal: There may be strategies that if adopted would increase the quantity of water available to help meet future resource demands.

a) Objective: State water resource agencies should work together to increase water supplies by actively exploring additional storage opportunities, considering incentives for voluntary water conservation by users, instituting more aquifer monitoring programs, and testing new wastewater recycling technologies.

i) Short-term Recommendation: Explore the potential for small off-stream storage projects in the Lower Missouri River basin.

1. This whole section of the report is mis-named. This section addresses strategies to eke out additional small amounts of water from an already almost wholly allocated or over-allocated system. If you were really talking about future demands you would be seriously addressing the potential impacts of oil and gas development.

2. Add short term recommendation ii: Establish areas where groundwater withdrawals in recent decades have outstripped the pace of recharge and whether or not establishment of Groundwater Control Areas is appropriate, to avoid drawing down of water table. Add short term recommendation iii: It should be noted that increasing water supplies is the only strategy to meet future demands. State resource agencies also should work together to conserve water supplies by restricting and monitoring water use that cannot be returned to the aquifer.The US Geological Survey (USGS) notes that available surface water supplies have not increased in 20 years, and groundwater tables are dropping at an alarming rate. As water supplies diminish, the majority of water used in hydraulic fracturing (fracking) cannot be recycled and cannot return to the hydrological cycle.

b) Objective: Water banks would create greater certainty for prospective water users, thereby enhancing economic development and providing options to boost stream flows during periods of drought.

i) Short-term Recommendation: Various water banking strategies should be explored as a tool to facilitate transfers of water to differing uses.

1. NEEDS MORE SPECIFIC GAGING PROCESS

2. Fish and Wildlife are a defined beneficial use of water in the state of Montana. As such, any water plan should mention the impacts of future water use/development on fish and wildlife and the ecosystems that support them, ideally emphasizing the benefits of natural systems and flow regimes (i.e. habitat development, life-history triggers, floodplain function, fish passage & connectivity, etc.). The draft plans developed by the other basins in the state have some acknowledgement of the relationship between water planning and fish & wildlife. It is highly recommended that the Lower Missouri River Plan put in place similar considerations. Additionally, there are numerous references to increasing off-stream storage reservoirs. It should be noted that the development of new off-stream storage would come at a cost to the natural systems that support fish & wildlife, mentioned above. Careful deliberation should be taken when considering off-stream storage and its impacts to water quality and quantity. Holding more water back via off-stream storage would degrade the natural systems and the fish & wildlife benefits they provide. Also, increasing off-stream storage would have detrimental effects to water quality from a fish & wildlife perspective, such as altered temperatures, nutrient inputs, and turbidity. However, off-stream storage might have fewer detrimental impacts than alternatives such as groundwater aquifer development. A statement demonstrating that thorough evaluation of water development alternatives and their impacts not only to water users, but also to natural systems and fish & wildlife resources, is needed in the BAC's recommendations. Regarding increased storage in the Judith River Sub-basin, it should be clearly understood by the members of the Lower Missouri BAC and any recommendations developed, that by far the majority of water that enters the Lower Missouri River from the Judith River Sub-basin comes from Big Spring and Warm Spring Creek. Historic USGS gage data on the Judith River near Utica averaged 55 CFS from 1919-1975, which yields approximately 40,000 Acre-Feet per Year (AFY). Based on the Judith River Sub-basin contribution provided by DNRC (211,600 AFY*), the approximate historic contribution of the Judith River above Big Spring Creek is 19% of the total contribution of the sub-basin. By contrast, estimates based on base-flow levels from Big Spring (120 CFS) and Warm Spring Creek (100 CFS) indicate that, combined, they contribute approximately 75% of the sub-basin contribution to the Lower Missouri This information does not support the idea of increasing off-stream storage capacity in the Upper Judith River Basin and suggests that careful consideration would be required to determine if enough water is available for further off-stream storage from the Judith River above Big Spring Creek. *Amman, D. 2013. Lower Missouri River Basin: Surface Water Supply Overview. http://www.dnrc.mt.gov/wrd/water_mgmt/state_water_plan/lower_missouri/presentations/surface_water_supply_overview

3. Same as above

4. Add short term recommendation ii: Review specific industrial uses of water (for example, exploratory and oil and gas drilling) that deplete the supply of usable water by extracting ground and surface water and mixing it with toxic chemicals. Once used, this produced water cannot be returned to the water supply and is instead stored indefinitely in tanks or ponds. In comparison, water used for agricultural and livestock can be recycled back into our water supply.

4.6 WATERSHED ORGANIZATIONS

During the Montana Water Supply Initiative scoping meetings in the Lower Missouri River Basin, four facts became evident. First, local watershed organizations provide a very important structure for promoting communication and collaboration on water resource issues. Second, local watershed organizations provide an effective forum that earns the trust and respect of participating stakeholders. Third, functioning watershed and sub-basin groups provide a workable and cost-effective structure for local stakeholders, state agencies, and federal agencies to communicate more effectively and arrive at solutions that all parties support and are willing to implement in good faith. Fourth, local mediation efforts reduce the need for costly judicial solutions to water resource management.

A number of sub-basins across the state have established watershed organizations with a goal of promoting communication and collaboration on water resource-related issues -- efforts that have reduced the need for costly judicial solutions to water resource problems. Existing groups, including the Clark Fork Coalition, the Musselshell Watershed Coalition, the Big Springs Watershed Council, the Greater Gallatin Watershed Council, the Big Hole Watershed Committee, and the Blackfoot Challenge were organized for different reasons, yet they all provide a trusted forum for discussion of issues. These organizations can serve an educational function, assist in the periodic updating of a statewide water use plan, and evaluate successes and failures in implementation of the statewide plan.

1) Watershed Organizations -- Goal: The state should recognize and support autonomous grassroots organizations in watershed basins. These organizations will help local, state and federal agencies, organizations, and citizens work from the same water resource playbook in order to optimize collaborative problem-solving efforts.

a) Objective: Local citizen groups allow diverse interests to come together to discuss and adopt water management strategies to solve problems that are critical in their watershed. If water management strategies are to be successful, water users need to trust and respect the decisions of water managers. Watershed organizations provide a forum for building that trust. Current technical and financial support of these groups by state and federal agencies is a key to their success, but additional funding for general staffing of the organizations is needed.

i) Short-term Recommendation: Support continuation and expansion of the Watershed Capacity Building Program initiated by the 2013 Legislature.

1. NOT EXPANSIION

2. Cost data should be provided by DNRC

3. DNRC should proved data cost

4. Cost data.

5. Costs should be provided.

6. The "and expansion" in the above recommendation resembles a blank check.

ii) Short-term Recommendation: Build on Montana's Watershed Coordination Council's work, to increase the capacity of sub-basin community forums to function collaboratively with agencies to identify, respond, and resolve important water quantity and quality issues within their region.

1. Cost data should be provided by DNRC

2. DNRC should proved data cost

3. NOT EXPANSIION

4. Costs should be provided.

b) Objective: To request that state and federal agency representatives work with water users, local watershed groups, municipalities, tribes, and conservation districts to improve cooperation and facilitate shared dialogue among all stakeholders in Montana's water resources.

i) Short-term Recommendation: Enhance education opportunities through the state's conservation districts to more broadly address water resource issues by providing additional grant funding opportunities.

1. Cost data should be provided by DNRC
2. DNRC should proved data cost
3. Cost data. This should not be funded at the expense of the inventory projects.
4. Costs should be provided.
5. Blank check.
6. The Conservation Districts are a key tool to educating citizens and stakeholders and working with local community groups to protect and preserve water, soil & air quality.

ii) Short-term Recommendation: Review the roles of resource agencies in data collection, data analysis, data publication, collaboration with other state and federal agencies, and enforcement of laws and regulations. Make necessary changes to clarify roles, responsibilities and effectiveness. Create a user-friendly template to communicate all of the above to those who work with and depend on water.

1. Cost data should be provided by DNRC

2. DNRC should proved data cost

3. Costs should be provided.

4. Add short term recommendation iii: DNRC, DEQ and other "water regulatory" agencies need to provide a single voice (including funding requests) to the Montana Legislature.

5. Why don't they just do their jobs.

c) Objective: Evaluate continuation of the BACs in each region to help support, network, facilitate, and evaluate the implementation of recommendations adopted in the final state water plan.

i) Short term recommendation: Convene water resource agencies, BAC members, and local sub-basin stakeholders for conferences and workshops to assess the merits, purpose and structure for ongoing BACs in all the four regions.

1. I have seen some of the BAC groups in action and the work seems overly broad and ineffective. The BAC structure should not be formalized because the DNRC already does good work.

2. Typically a waste of time. Not totally opposed but not in favor.

3. Costs should be provided.

4. Would rather see sub basin watershed councils. A basin wide council like the ones that created this plan would be too large to adequately represent all of the users.

5. I don't know what this is

Other General Comments

1. Thank you for your commitment do doing a good job on this process and thank you for taking into account facts for all the discussions. Agriculture has been -- and will continue to be -- the primary water user in Montana. There will be a push to put more focus on industrial use, but that is minor compared to everything else. Please resist attempts to put more financial burden on industry.

2. I support the effort and I am grateful the the facts show that industrial water use in Montana is minimal as compared to the water use in the state as a whole.

3. I support the effort and particularly the fact that you have followed the major discussions over the course of the BAC's work and am thankful for their use of facts and understanding that industrial water use in Montana is very minor when compared to state wide water use and the document reflects this fact.

4. THE LEGISLATURE DOES NOT HAVE UNLIMITED MONEY ,SO WE NEED TO PRIORITIZE

5. I am absolutely incredulous that Montana's 20-year Water Plan will not address one of the state's most critical water issues today – the massive consumptive use and water contamination issues presented by the practice of fracking by the oil-and-gas industry. Montana's water resources and legitimate beneficial users are too critical to our state and our state's economies to ignore this pertinent issue. The oil-and-gas industry is not regulated like other beneficial water users and, frankly, is exempt from many of the regulations those entities must follow. For those on the Lower Missouri River Basin Advisory Committee who believe that this issue is too political or somehow not related to the other water issues you are addressing, you are WRONG. Your decision to look-the-other-way and disregard this critical issue will have long-term negative consequences for Montana's water resources. Our water is truly more precious than gold – or oil or gas or any other finite extractable natural resource. Please reverse your decision to ignore this issue and stand up for Montana's water resources by including an honest discussion of fracking impacts on water in Montana's 20-year Water Plan.

6. Regulate and monitor gas and oil water use in the basin.

7. This needs to be based on historical and current data. Hypothetical future conditions and sources of pollution have no place in this process and are just that, hypothetical. The Supreme Court clearly states that the possibility that something could pollute cannot require regulation.

8. The plan should include clear acknowledgement of the value of instream flow for fish and wildlife and the values to society that they support. The plan should discuss the option of acquiring private water rights through purchase from willing sellers in order that the use of these water rights may be changed to support instream flow.

9. After I read the report, it's obvious that its focused on the primary users of water in Montana as it should be.

10. While I have indicated support for all the recommendations, my support is qualified in two ways: 1. They would require a large expenditure of public money that I don't see coming. I don't think there exits the political will for most of those recommendations to be acted on. 2. You have left out some very important issues: water for healthy maintenance of fish and wildlife and ecological integrity and impacts of oil and gas development, both existing in eastern MT and potential elsewhere. Given the above, I believe that you need to look at a COMPLETE list of recommendations and then prioritize them.

11. IMPORTANT info. missing from DNRC's proposals on the Lower Missouri region that could have a dramatic impact on the Milk River, Musselshell River, Missouri River? There is nothing in the proposal that acknowledges the need to work within the confines of the aquatic ecosystem, maintain minimum flows and ensure the overall health of the river systems from an environmental standpoint. The following language is found in the Yellowstone River Proposal: "INSTREAM FLOW MAINTENANCE: Despite the lack of on-stream main stem storage reservoirs, the natural hydrology of the Yellowstone River has been significantly altered by present-day levels of development. Instream flow maintenance pertains to maintenance of a stream's complete hydrologic regime. Maintenance of instream flows is a significant issue, not only on the main stem Yellowstone River and its larger tributaries, but also on smaller tributaries

necessary for the functionality of the river system." Why is there no such language in the Lower Missouri proposal? The previous Montana Water plan (1989) had an instream flow protection subsection present, that has now all but disappeared in your current plan for the lower Missouri River. Montana law states 85-1-101 (5) The water resources of the state must be protected and conserved to assure adequate supplies for public recreational purposes and for the conservation of wildlife and aquatic life. 75-5-101 also states: (1) conserve water by protecting, maintaining, and improving the quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses. Please consider adding this language to your proposal. This will ensure proper respect is given in conserving adequate supplies of water for the conservation of our aquatic ecosystem in the Lower Missouri River watershed. Thank you for your time and consideration. If you'd like to visit further, please contact me through email.

12. Add recommendation: Treatment and recycling options for produced water (from industrial activities including but not limited to Oil and Gas exploration and drilling, mining, etc): Encourage the MSU Energy Research Institute, Montana Board of Oil & Gas, the Department of Environmental Quality and the Water Resources Division to provide analysis and assistance to energy, mining etc industries to recycle and reuse flow back and produced water to minimize destruction of clean water.

13. With all of the oil development going on in eastern montana it is hard for me to believe that there aren't any recommendations concerning this issue. People are really worried about their water out here and all of your recommendations are to support bigger programs in Helena. Nothing on fracking, nothing on monitoring, Really! Is the Oil and gas industry running this group. Sure looks like it to me. BTW - nothing on recreation or fish and wildlife? What a joke.

14. I do believe the Montana folks work hard to use their water right fairly some sore spots but can be worked out

15. I would support more specific recommendations addressing the impacts of the oil and gas industry on surface and groundwater quality and quantity. I am not confident that the current regulatory system and level of enforcement can sufficiently protect our most precious natural resource.

16. I read through the Lower Missouri River Basin Advisory Council Recommendations and it all looks very good. As a Life Science Teacher for the past 32 Years at Lewistown Junior High School, my students every year have done water quality studies on Little Casino Creek and Big Spring Creek here in our community. It was one of my students who discovered the PCB contamination in Big Spring Creek. That issue is resolved now and the water is cleaned up. I feel that monitoring Water Quality is very important in Montana. I also liked the idea of Telemetered Stream Gage Program. We look at Snotel sites in the winter months to see how much snow is in the mountains. We also use a flow meter to measure flow rates in the two streams here but to be able to go to a computer and have my students look at real time data in waterways in Central Montana would be very educational. As a member of he Central Montana Search and Rescue Unit here we were called out during the flooding in 2012 to warn families in the valley that flood waters were coming. If Disaster and Emergency Services agencies could forecast flooding events through the monitoring of these Telemetered Stream Gages, they may even be able to save lives. Good work on the part of the advisory council.

5 SUB-BASIN ISSUE STATEMENTS

5.1 JUDITH RIVER

1. I support the recommendations, but again there is need to address how they would be prioritized in light of limited resources.

2. Include short term recommendations: 1-Include an estimation of the water resources needed for oil & gas production and address how extraction of these resources will impact groundwater aquifers 2-Establish areas where groundwater withdrawals in recent decades have outstripped the pace of recharge and whether or not establishment of Groundwater Control Areas is appropriate. 3- Oil & gas exploration and drilling is appropriate in "non sensitive" areas. The Basin Advisory Council should in future outline areas where the water supply should be exempt from drilling to protect our water supply for families, farming and ranching.

3. Cleaning up the PCB's in Big Spring Creek was a huge boost to clean water issues in Central Montana,

5.2 LOWER MISSOURI RIVER BELOW FT. PECK DAM

1. "Existing laws and regulations governing water quality should be enforced, and perhaps strengthened." Remove "perhaps strengthened". - Objective A states, the State should implement practices and policies to require testing by all entities holding permits under Montana's Clean Water Act. The State already does require this testing!! During development the BLM and DEQ require baseline and monthly/quarterly monitoring and samples for the life of the projects. This is how we determine what class of water we are dealing with. Short term recommendation ii - asks that permits for uses that could contaminate ground or surface water should require testing. The Supreme Court has a ruling that states the possibility something COULD pollute, cannot require regulation.

2. Remove “perhaps strengthened” from the sentence: “Existing laws and regulations governing water quality should be enforced, and perhaps strengthened.” 2) Under Objective A, it states that the State should implement practices and policies to require testing by all entities holding permits under Montana’s Clean Water Act. POINT OUT THAT THEY ALL READY DO!

3. There are existing laws and regulations governing water quality that should be enforced before going out and implementing new ones that are redundant or are already on the books. Any entities holding permits under the Montana Clean Water Act already require testing so why are they pushing so hard for baseline testing when it already exists.

4. Remove “perhaps strengthened” from the sentence: “Existing laws and regulations governing water quality should be enforced, and perhaps strengthened.” Under Objective A, it states that the State

should implement practices and policies to require testing by all entities holding permits under Montana's Clean Water Act but they already do this.

5. Needs to be a better understanding of what the current law is Remove "perhaps strengthened" from the sentence: "Existing laws and regulations governing water quality should be enforced, and perhaps strengthened". Under Objective A, it states that the State should implement practices and policies to require testing by all entities holding permits under Montana's Clean Water Act. They already DO.

1) Remove "perhaps strengthened" from the sentence: "Existing laws and regulations governing water quality should be enforced, and perhaps strengthened." 2) Under Objective A, it states that the State should implement practices and policies to require testing by all entities holding permits under Montana's Clean Water Act. POINT OUT THAT THEY ALL READY DO!

6. The existing laws and regulations governing water quality are only in need of proper monitoring and enforcement. Until this is properly implemented, strengthening these regulations is unwarranted, unnecessary and irrelevant.

7. I have no issue with recommendation 5.2.1. They are good. However, 5.2.2 I disagree with the words "perhaps strengthen" in subpart 1. Montana water laws are already too strict, and any suggestion that they need to be strengthened is ridiculous. 5.2.2 (1) (a) objective ii is very strange. All permits for uses that currently discharge into surface or ground water are required to monitor now. The state cannot regulate uses that COULD pollute. 5.2.2 (1) (c) How in the world can you have a small group made up of ALL concerned and affected parties, such a group already exists by statute.

8. See earlier comments

5.3 MILK RIVER

1. NEED TO HAVE A PLAN TO KEEP THE ST. MARY'S PROJECT VIABLE IN THE FUTURE!

2. Montana law states 85-1-101 (5) The water resources of the state must be protected and conserved to assure adequate supplies for public recreational purposes and for the conservation of wildlife and aquatic life. 75-5-101 also states: (1) conserve water by protecting, maintaining, and improving the quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses. I have been on the river during the drought years, where the river is literally flowing BACKWARDS. This has dramatic impacts on the river ecosystem as a whole and can be devastating to our native fish populations. Please be mindful and good stewards of this public resource.

3. I do know some things about this water should be measured going in to Canada and what is coming back this need to be taking care of

5.4 MUSSELSHELL RIVER

1. NEED MORE STORAGE IN THE LOWER BASIN TO KEEP THE RIVER FLOWING

2. Montana law states 85-1-101 (5) The water resources of the state must be protected and conserved to assure adequate supplies for public recreational purposes and for the conservation of

wildlife and aquatic life. 75-5-101 also states: (1) conserve water by protecting, maintaining, and improving the quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses.

3. Water rights adjudication -- strongly agree with all the recommendations Off-stream water storage -- agree with the recommendation Riparian weeds -- agree with the recommendation Musselshell Watershed Coalition -- agree with recommendations

6.3.10 Survey Data from SurveyMonkey

DNRC Water Resource Planner Michael Downey created a survey using the website SurveyMonkey to gauge public response to the Lower Missouri River Basin Advisory Council's Draft Recommendation Report. Each recommendation section was presented separately, and available rankings included Strongly Support, Support, Support With Modification, Oppose, Strongly Oppose, as well as a field for comments, which are listed in Section 6.3.9 above.

Most of the respondents were individuals who did not represent a constituency, while 9.3% represented business and development. Other categories represented by one or two respondents each were statewide organizations, municipalities or local governments, local organizations, conservation groups, recreation, researchers, and state or federal agencies.

Nearly all of the recommendations presented drew support or even strong support from a majority of respondents. Exceptions were:

1. **DNRC needs to educate water users and other appropriate agencies and entities of the importance of a robust change process. DNRC also needs to provide a better explanation of measures that have streamlined and simplified the current change process.** This recommendation received support and strong support, but 30% of respondents checked "support with modification," and comments indicated a problem with the word, "robust."
2. **Support funding and if necessary extension of the Adjudication Program to move Temporary Preliminary to preliminary decrees to complete an accurate adjudication process by 2024 and Final Decrees by 2027.** This received support, strong support, but also nearly 40% of respondents checked "support with modification," presumably related to costs of implementation.
3. **Utilize the MT Watershed Coordination Council to distribute financial and technical assistance to existing and new watershed groups**. Most respondents supported this recommendation, but 20% supported with modification, again most likely due to unspecified cost information.
4. **DNRC should develop a program to encourage and incentivize the installation of measuring devices at the point of diversion**. This recommendation was almost evenly split between "support" or "strongly support" and "oppose" or "strongly oppose." It may be that some respondents believed the recommendation would <u>require</u> measuring devices at the point of diversion.

5. **Adequate funding should be appropriated for research on surface and groundwater quantities in the state.** While most respondents checked "support" or "strongly support," 19% checked "support with modification." Cost of funding seemed to be the issue.
6. **Support additional funding for groundwater assessments and investigations so that additional aquifers and groundwater/surface connections can be defined and characterized.** A majority of respondents checked "support" or "strongly support," but 23% checked "support with modification." Cost was again mentioned as a reason.
7. **Increase funding levels for the Ground Water Assessment Program (GWAP) and the Ground Water Investigation Program (GWIP) administered through the MT Bureau of Mines and Geology to advance more projects across all four major river basins. Funding needs to address the increased need for information and keep pace with rising research costs.** This recommendation drew support or strong support, but 21% checked "support with modification," because of unknown costs of implementation.
8. **Various water banking strategies should be explored as a tool to facilitate transfers of water to differing uses.** This recommendation received support and strong support, but 19% supported with modifications, mostly related to providing more water for support of fisheries.
9. **Convene water resource agencies, BAC members, and local sub-basin stakeholders for conferences and workshops to assess the merits, purpose and structure for ongoing BACs in all the four regions.** This recommendation was supported by 42% of respondents, while 64% either opposed or strongly opposed it.