Water Policy Information Available from DEQ, DNRC, and FWP

*Category Key:

(1) Supply and distribution of water in Montana.
(2) Water storage in Montana.
(3) Conservation of water resources.
(4) Development of water resources.
(5) Beneficial use of water resources.
(6) Construction, operation and maintenance of works for the conservation, development, storage, distribution, and utilization of water in Montana.
(7) Mitigation of impact of drought and floods.
(8) Efficiency of water distribution systems.
(9) Measures that promote the efficient use of water.
(10) Return flow impacts.
(11) Water banking.
(12) Off-stream and on-stream storage.
(13) Improving the supply and distribution of water in Montana.
(14) Forest fuel levels and the impact on waters release to a watershed.
(15) Coordination across all water users.
(16) Encouraging participation by the private sector, tribal governments and the federal government in improving the supply and distribution of water in Montana.
(17) Other

Department of Environmental Quality

Document	Date	Contact Information	Web Link	Category
MT Nonpoint Source Management Plan	5/01	Carole Mackin 444-7425	http://www.deq.mt.gov/ppa/nonpoint/NonpointPlan.asp	5, 14, 17
Water Pollution Control State Revolving Fund Intended Use Plan and Project Priority List	1/22/03	Todd Teegarden 444-5324	http://www.deq.mt.gov/ppa/tfa/srf/wtr_pol_cntrl/Iup-ppl/pastiupppl.asp	5, 6, 14, 17
Introduction to TMDLs	2001	Carole Mackin	http://www.deq.mt.gov/ppa/mdm/TMDL/pdf/TMDLbrochure.pdf	5, 14, 17
Final Reports for Completed TMDL's	2003	Carole Mackin	http://www.deq.mt.gov/ppa/mdm/TMDL/finalReports.asp	5, 14, 17
MT 303d list	2002	Bob Barry 444-5342	http://nris.mt.gov/wis/environet/2002_303dhome.html	5, 14, 17
MT Stream Management Guide	1998	Bob Bukantis 444-5320	Not online but copies are available	3, 4, 5, 6

Department of Natural Resources and Conservation

Document	Print or Update Date	Contact Information	Web Link	Category*
State Water Plan Development: A Revised Approach	January 1987	DNRC	None	1, 3, 4
Montana State Water Plan Handbook	January 1993	DNRC	None	1, 3, 4
State Water Plan Implementation Update	Sept. 1993	DNRC	None	1, 3, 4
State Water Plan Evaluation – Decision Summary	Nov. 1994	DNRC	None	1, 3, 4
Evaluation of the State Water Planning Process and Implementation	Developed August 22003	Rich Moy, Chief, Water Mgmt MT DNRC	None	1, 3, 4
Issues In Water Management: An Evaluation of Montana's Water Policy	January 1981	DNRC	None	1-6
Liquid Assets: A Report to the 46th Legislature	March 1979	DNRC	None	1-6, 13, 15
Report of the Select Committee on Water Marketing, 49th Legislature	January 1985	EQC	None	3, 4, 5, 13 ,15
Agricultural Water Use Efficiency, State Water Plan Subsection	1989	DNRC	None	4, 5, 6, 8, 10
Agricultural Water Use Efficiency, State Water Plan Issue Paper No. 3	May 20, 1988	DNRC	None	Same as above
Instream Flow Protection – State Water Plan Subsection	1989	DNRC	None	5, 10
Instream Flow Protection – State Water Plan Issue Paper No. 2	April, 1988	DNRC	None	5, 10, 3
Federal Hydropower Licensing and state Water Rights – State Water Plan Subsection	1989	DNRC	None	16, 10, 5, 4, 3, 2, 1
Federal Hydropower Licensing and State Water Rights – State Water Plan Issue Paper No. 4	April 1988	DNRC		
Water Information System – State Water Plan Subsection	1989	DNRC	None	15, 1, 4
Montana Information System – Issue Paper No. 1	April 15, 1988,	DNRC	None	
Water Storage – State Water Plan Subsection	1990	DNRC	None	2, 3, 4, 5, 1, 12
Water Storage Regulations – Background paper, State Water Plan	Feb 1990	DNRC	None	"
Water Storage In Montana, A report to the 57th Montana Legislature	2001	DNRC (Moy or Jesse Aber)	None	"
Water Storage In Montana, A report to the 56th Montana Legislature	1999	DNRC (Moy or Aber)	None	"
Water Storage In Montana, A report to the 55th Montana Legislature	1997	DNRC (Moy or Aber)	None	"
Water Storage In Montana, A report to the 54th Montana Legislature	1995	DNRC (Moy or Aber)	None	"

Water Storage In Montana, A report to the 53rd Montana Legislature	1993	DNRC (Moy or Aber)	None	"
Water Storage In Montana, A report to the 52nd Montana Legislature	1991	DNRC (Moy or Aber)	None	"
Montana Water Storage Status Report	Jan. 1989	DNRC (Moy)	None	"
State Water Conservation Projects	March 1977	DNRC (Moy or Kevin Smith)	None	"
The Use of Water user Fees to Repay the Cost of Rehabilitating State Water Projects (required by SB 313 in 1991)	June 1992	DNRC	None	12
A Study: The Feasibility of Assessing Recreational User Fees to Repay Water Storage Project Costs	July 13, 1992	DFWP	None	12
Reconnaissance Investigation of Damsites – Upper Clark Drainage Basin, for Headwaters RC&D, by Aquoneering	June 1990	Headwaters RC&D	None	2
Drought Management – State Water Plan Subsection	1990	DNRC	None	3, 4, 5, 6, 9, 10, 11
The Montana Drought Response Plan	1995	DNRC	http://nris.mt.gov/drought/committee/DroughtP.pdf	
Integrated Water Quality and Quantity Management **– State Water Plan Subsection**	1992	DNRC	None	15
Upper Clark Fork Basin Water Management Plan **– State Water Plan Subsection**	1994	DNRC	None	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15
Montana Groundwater Plan **– State Water Plan Subsection**	1999	DNRC	http://www.dnrc.mt.gov/wrd/gw_plan.htm	
Issues in Ground Water Management By Governors Ground Water Advisory Council	January 1985	DNRC	None	1
Musselshell River Basin Water Management Study	June 1998	US BOR, DNRC, Upper Musselshell Water Users and Deadmans Basin Water Users (Moy, DNRC)	None	
Clark Fork Basin Project: Status Report and Action Plan, Office of Governor, Howard Johnson & Carole Schmidt	December 1988	DNRC (Moy)	None	
Boundaries Carved In Water: An Analysis of River and Water Management in the Upper Missouri Basin,		Northern Lights Institute	None	
A Water Protection Strategy for Montana, by Wright Water Engineers, Frank J. Trelease, ESA & DNRC	Sept 1982	DNRC (Moy)	None	
Order of Board of Natural Resources Establishing Water Reservation (Yellowstone River)	December 1978	DNRC	None	

Yellowstone River Basin Water Reservation Applications EIS, Vol I &II	Dec. 1976	DNRC	None	
Water Reservations and Water Availability in the Yellowstone River Basin	May 1982	DNRC	None	
Lower Missouri River Basin – Final Order, Est. Water Reservations on the Lower Missouri River	Dec. 1994	DNRC (Moy / Larry Dolan)	None	
Lower Missouri River Basin – Final EIS, Est. Water Reservations on the Lower Missouri River	Aug 1994	DNRC (Moy /Dolan)	None	
Missouri River Basin – Final Order for Water Reservation above Fort Peck Dam	July 1992	DNRC (Moy /Dolan)	None	
Missouri River Basin – Final EIS for Water Reservation above Fort Peck Dam	January 1992	DNRC (Moy /Dolan)	None	
Upper Clark Fork Basin Water Reservation Applications – Final Environmental Impact Statement	January 1991	DNRC (Moy)	None	
Water Right Claims Examination Rules Adopted by the Montana Supreme Court	Jan 1991	MT Water Court or DNRC (Jim Gilman)	None	
Proposed Water Right Claim Examination Rules, State Law Library	April 2002	MT Water Court	http://www.dnrc.mt.gov/wrd/home.htm	
Adjudication Claims Examination Manual	May 1995 editions	DNRC (Gilman)	http://www.dnrc.mt.gov/wrd/home.htm	
Adjudication Status Report (web based	January 2003	DNRC (Gilman)	http://www.dnrc.mt.gov/wrd/home.htm	
Report of the Montana Water Adjudication Advisory Committee to the Montana Supreme Court & 55th Legislature	October 1996	MT Water Court	None	
Evaluation of Montana's Water Rights Adjudication Process, Sunders, Snyder, Ross and Dickson, P.C.	Sept 30, 1988	DNRC (Tim Hall)	None	
State ex rel.Greely V Confederated Salish and Kootenai Tribes of Flathead Reservation, Mont 7122.d 754	1985	MT Law Library		
In The Matter of Water Court Procedures Addressing Factual and Legal issues Raised "On Motion" of the Water Court, Case No. WC-92-3	1993	MT Water Court	None	
Joint Amicus Brief of DNRC and Attorney General on Water Court Procedures: In The Matter of Water Court Procedures Addressing Factual and Legal issues Raised "On Motion" of the Water Court, Case No. WC-92-3	March 23, 1993	DNRC or Ag Office	None	
Proposed Water Court "On Motion" Procedures, Office of Montana Attorney General	Sept. 10, 2003	AG's office Candace West	None	
Montana Water Rights	December 2001	DNRC – Curt Martin	http://www.dnrc.mt.gov/wrd/home.htm	
Water Use In Montana – 1980	1982	DNRC	None	

The Framework Report: A Comprehensive Water and Related Land Resources Plan for the State of Montana	Oct 1976	DNRC	None	
Upper Missouri River Basin Level B Study Report and Environmental Impact Statement	March 1981	Missouri River Basin Commission	None	
Report on the Yellowstone Basin and Adjacent Coal Area, Level B Study	May 1978	Missouri River Basin Commission	None	
Clark Fork of the Columbia River Basin Cooperative Study	1977	USDA SCS & DNRC	None	
Clark Fork of the Columbia River Basin Cooperative Study – Watershed Investigation Reports	1977	USDA SCS & DNRC	None	
Flint Creek Return Flow Study, MBMG Open File Report 364	Dec. 1997	DNRC, US BOR, MBMG & USGS	None	
North Fork Blackfoot River Hydrologic Study	March 2001	DNRC	None	

Montana Fish, Wildlife & Parks

September 16, 2003

Ms. Krista Lee Evans
Legislative Environmental Policy Office
P.O. Box 201704
Helena, MT 59720-1704

Dear Krista:

Thank you for your interest in FWP information and perspectives related to EQC's implementation of HJR 4 this Interim. HJR 4 envisions an extremely broad scope; it is understandable the Council wishes to refine its effort to ensure a manageable workload and practical product. I have attempted to respond to your inquiry as best I can, with the following caveats:

(1) I did not go through past EQC Water Policy Committee or Subcommittee work, as I assumed LEPO staff would do that; I also did not review in detail the past products and processes of the State Water Plan, since the EQC has official statutory involvement in that process.
(2) I assumed you wanted information on all the topics listed in the request form;
(3) I also assumed you wanted references to people and processes that might be of relevance, not just documents;
(4) I provided full references for some, but only descriptions of others.
(5) I assume that you have made a similar information request of DNRC; they will likely have an extensive listing of relevant resources.

Because this response has become so lengthy and because you have stated by e-mail and phone that the goal is to focus, we provide the following specific suggestions for focusing the implementation of HJR 4 on issues that need resolving, and that EQC participation would be especially helpful.

1) **Current implementation of the water salvage law needs to be reviewed.** The combination of hydrologic impacts, adding acres, and federal incentive programs is creating cumulative adverse effects on fisheries and senior water rights. Agencies are trying to work on this, but oversight and potential policy action may be necessary.

2) **The proliferation of private ponds and luxury uses of Montana's water should be reviewed.** This is the subject of another Resolution (HJR 40), so may be addressed in a separate process. FWP supports the process and goals of HJR 40 and will assist in related deliberations if requested.

3) **Reactivation of the Adjudication Advisory Council holds promise to improve the accuracy and efficiency of the statewide adjudication process.** The EQC could provide valuable support of this effort, and a potential conduit for policy recommendations the Council may generate.

4) **Current discussions of water storage should build on past extensive and detailed discussions.** Montana may not be developing storage as a water solution because it is not cost-effective. Even maintaining what we have is extremely expensive. There may be other mechanisms and authorities that solve distribution problems where storage is not a component. Given Montana's highly migratory fisheries, and recent emphasis on restoration of species, consideration of new storage should first focus on potential off-stream sites (consistent with the wording of HJ4).

5) DNRC rulemaking provides an opportunity to ensure state water policy goals are effectively, efficiently, and equitably implemented. DNRC has very few administrative rules to guide its implementation of the Water Use Act. FWP has assisted in their development of "guidance" and "policies" that have since been revoked. Rules would likely be helpful.

The remainder of this letter provides background and references on the topics in your request. I hope this information is helpful. We appreciate the EQC's interest in improving water policy in Montana.

SPECIFIC RESPONSE TO INFORMATION REQUEST, BY TOPIC

The regional review referenced below was likely one of the largest efforts in the last 10 years to collectively analyze the status of water management and policy in the western US. The members of the EQC at the time may have provided comments to this process. A December 17, 1997, letter from then-Governor Racicot provided Montana's perspective on the effort and Executive Branch comments on the final draft report. This work was done for a region larger than Montana, but was so extensive that it might deserve to be reviewed. The main report is likely available at the Legislative Library. I can provide a copy of the Racicot letter upon request.

1) Western Water Policy Review Commission, 1998. *Water in the West: The Challenge for the Next Century – Report of the Western Water Policy Review Advisory Commission*. 200+ pp., plus appendices. See Chapter 6, which summarizes the Commission's findings and recommendations, including their "Principles of Water Management for the Future".

"Sustainable water resource management" is a term that is increasingly popular in national and international resource management circles. The Province of Alberta recently invested in an extensive consultation process related to water management and released their conclusions as:

2) Government of Alberta, 2003. *Water for life – Alberta's strategy for sustainability (discussion draft)*, 62 pp. and *Highlights* (12 pp.) (both available online at Alberta's *Water for life* homepage at http://www.waterforlife.gov.ab.ca/).

The U.S. Department of Interior recently initiated their *Water 2025; Preventing Crises and Conflict in the West* water-related consultation process. It included a series of "regional consulting meetings" in several cities in the Western U.S., including Billings, in spring/summer 2003. The Bureau is taking comments and will be compiling a report from these conferences. FWP is in the process of drafting comments. We found this process disappointing – the background information is reasonable, but the process and scope were overly narrow in implementation. We encourage the EQC to not rely on information or products from Water 2025 as comprehensive or broadly representative of the range of interests, concerns and opportunities for water management in Montana or the West. Information on Water 2025 can be obtained from the related website at http://www.doi.gov/water2025/. FWP would be pleased to provide to the EQC a copy of its comments on this process when complete.

Supply and Distribution of Water in Montana

The document referenced below included a section on Water Quantity, which included graphics and interpretation of water availability and withdrawals, and water consumption, both estimated as of 1990. I recall that these graphics were based upon figures from a USGS report, adapted by EQC staff. I do not have the specific reference to that report, but it may be in the EQC files. Similar calculations were done by the DNRC in previous reports (*Water Use in Montana*, 1975, and *Montana Water Use in 1980*, 1986). These earlier reports are likely available from DNRC, but were not sufficiently comparable to the 1990 USGS report to be included in the 1996 EQC trends analysis. The EQC 1996 report is online at http://leg.mt.gov/content/publications/lepo/indicators.pdf (see pp. 20-21). It would be interesting to see if the 1990 USGS report has been/could be updated to at least 2000. Significant assumptions were made to generate these numbers; the USGS and other hydrology experts could comment on the extent to which these assumptions should be relied upon.

3) Environmental Quality Council, 1996. *Our Montana Environment… Where do we Stand?* (and supporting documentation)

The 1996 EQC report also references numbers of miles of streams considered by FWP to be periodically or chronically dewatered. The reference is from FWP's 1991 *Dewatered Streams List*; that list was revised in 1997 and again in 2003. I can provide the 2003 version upon request, and it is also available in queriable format (by water body) on the Montana Fisheries Information System at http://nris.mt.gov/scripts/esrimap.dll?name=MFISH&Cmd=INST (select water body, then "Partial Report" to check for dewatering concern).

The 1996 EQC report section also references the total square miles of basins in Montana that are closed in some manner to new appropriations; these numbers could likely be updated to 2003 by DNRC staff. It also references cumulative water leases as of 1996. This is incorrect, and could be updated by contacting the instream flow leasing entities in the state; Trout Unlimited (Laura Ziemer or Bruce Farling), the Montana Water Trust (see http://www.montanawatertrust.org/), combined with FWP's cumulative water leases which are reported to the EQC each year, due by December 1st. Specific references to these items are as follows:

4) FWP, 2003 (revised). *FWP Dewatering Concern Areas*. 13 pp.
5) FWP, 2002. *2002 FWP Annual Progress Report – Water Leasing Study*. 18 pp., plus appendices.

In further investigating this topic, we also encourage the Council to consider water not withdrawn to not necessarily be "surplus" or "unused." Montana's fisheries, water quality, hydropower, wildlife, and aesthetics are dependent upon instream flows throughout the year, and FWP and other public entities hold water rights in varying amounts, locations and time periods in an attempt to sustain many of those instream uses.

I know of no other published reports that attempt to quantify the overall supply of water in Montana, though there would be ways to use gauging data to calculate how much water flowed past a selection of stream gauges over specific time periods.

Similarly, I know of no other aggregation of quantitative information on the distribution of water in Montana. It is likely DNRC's water rights database system could be queried in some manner to display totals of water rights claimed and permitted by basin, by type of use, but that would more closely reflect asserted rights more than an accurate assessment of actual distribution. In basins where water commissioners are active, records are kept on water distribution during the commissioner's tenure

(irrigation season). The Montana Water Court compiled an informal list of basins with water commissioners active in 2002. More basins are appointing water commissioners (especially as more Water Court decrees become enforceable), but, as you are likely aware, much of the state is still operating in a less formal manner.

Water Storage in Montana

Increased interest in expanded water storage has arisen periodically in Montana, without much change in total storage since 1975. Below is a list of the related publications I have. These and others could likely be requested from DNRC. Interestingly, the Pattengail proposal recommendation involved 10,000 acre feet of water to be sold annually at $36/acre foot (in 1981 dollars). This is an extremely high rate (even before converting to 2003 dollars) for contract water in comparison to what is currently paid at state and private reservoirs. DNRC staff could likely provide more information on the status of these and other proposals and the reasons they did not move forward.

6) Montana Water Resources Board, 1968. *Montana Register of Dams – Inventory Series No. 3*. 76 pp.
7) Montana Water Resources Board, 1969. *Summary of Potential Projects in Montana –Inventory Series No. 9.* 47 pp.
8) DNRC, 1975. *Yellowstone River Basin – Water Resources Situation Report*. 27 pp.
9) DNRC, 1978. *Potential Off-Stream Reservoir Sites in the Big Hole River Basin*. 49 pp.
10) DNRC, 1981. *Water Storage in the Big Hole – A Recommendation*. 46 pp.
11) DNRC, 1982. *The Appendix to Water Storage in the Big Hole – A Recommendation*. 164 pp.
12) DNRC, 1983. *Prefeasibility Report for the Pattengail Dam Beaverhead County, Montana*. 96 pp.
13) DNRC, 1990. *Montana Water Plan Section: Water Storage*. 19 pp. (includes bibliography) (reviewed in EQC Water Policy Committee report to the 52nd Legislature, 1990)

The Water Plan work on storage (see #13) would likely be a very valuable resource, as it appears to have been the basis for the storage policy referenced in HJR 4. Rich Moy of DNRC could provide background on the process and results of that effort. FWP feels the state's Water Storage Policy (85-1-701 through –704, MCA) is quite practical and thoughtful. We have been disappointed, however, that the last major state project rehabilitation (Tongue River Reservoir) apparently provided no formal flow provision for downstream fisheries needs, and encourage future projects to incorporate that consideration into project planning and implementation. These involve massive commitments of public dollars and should provide a balance of public and private benefits.

Conservation of Water Resources

This is a broad topic. The studies in the 1970s that were aimed at protecting Montana's water from downstream interests (see below) could be considered one form of "conservation".

14) Wright Water Engineers and Frank J. Trelease, 1982. *A Water Protection Strategy for Montana – Missouri River Basin*. 300+ pp. (also Summary Report, 41 pp.)

The many studies related to instream flow and water reservations could also be considered related to conserving water. These include the EIS and Order processes for the instream flow reservations in the Yellowstone, Upper Missouri, Lower (and Little) Missouri, and Upper Clark Fork basins, respectively. The annual instream flow leasing reports from FWP to the EQC, and the 10-year report on the FWP

leasing program finalized by the EQC in 1999 also provide background on FWP efforts to enhance instream flow for priority fisheries using our leasing authority.

The State's efforts in drought response planning and management may also be of interest to the Council. Like the State's Water Storage Policy, the 1995 state drought plan (reference below) arose from a State Water Plan process. The Governor's Drought Advisory Committee, and local drought response committees, are critical in planning for and responding to drought. The Plan envisions a final annual report from each agency, to include; agency assessment and response, drought management objectives, drought mitigation, and problems and successes. DNRC staff are to combine the reports, preparing a final annual report in which they "review and evaluate agency responses, draft suggestions for legislative initiatives, and amend the state drought plan as needed" (Drought Plan, p.12). The EQC may wish to confer with DNRC staff on past recommendations from these reports. Year-end drought reporting has not yet occurred for 2003. In addition to reporting, the Committee has made an effort to provide resources for water conservation to others by researching and posting water conservation information on their website at http://nris.mt.gov/Drought/ (see "What You Can Do"). The Committee's remaining scheduled meetings in 2003 are September 17th and October 23rd. The October meeting traditionally is where year-end discussions take place. Specific references to the Drought Plan and FWP's recent year-end drought reports are provided below:

15) DNRC, 1995. *Montana Drought Response Plan*. 160 pp., including appendices. Available online at http://nris.mt.gov/drought/committee/DroughtP.pdf.

16) FWP, 2001. *Annual FWP Drought Summary – 2000*. 21 pp. plus appendices. Available online at http://nris.mt.gov/drought/committee/reports/DACFWP2000summ.html.

17) FWP, 2002. *Annual FWP Drought Summary – 2001*. 15 pp. plus appendices. Available online at http://nris.mt.gov/drought/committee/2001summaries.html.

18) FWP, 2003. *Annual FWP Drought Summary – 2002*. 17 pp. plus appendices. Available online at http://nris.mt.gov/drought/reports/2002summaries.html.

Other entities are active in promoting water conservation; MSU Extension (through training and publications), municipalities (through regulation and pricing), NRCS (through financial and technical assistance and publications), etc. It is my observation that NRCS has typically thought of "conservation" as making water available to other users, but we are now exploring ways to incorporate instream flow and return flow issues into their programs.

FWP is also involved in encouraging water conservation through participation in reviews of some water permit applications, especially where we feel excessive amounts of water are being proposed to be diverted from live streams to create private ponds or landscape ornaments. In addition to site-specific consultation and participation, FWP staff participated upon request in DNRC's updating of its pond policy, so that water conservation for these purposes could be standardized. The policy has since been revoked, though we understand rule-making is occurring. FWP hopes that our assistance in this regard will be incorporated into DNRC's rulemaking for new pond-related water rights.

We also encourage water conservation through encouraging accurate adjudication of pre-1973 rights in the Water Court statewide adjudication. FWP does this as a direct participant in some claim reviews, and also by participating in the meetings and deliberations of the Adjudication Advisory Council, which has been reactivated and meets on approximately a quarterly (or somewhat more frequent) basis. Water Court staff distribute summaries of these meetings, and EQC could request to be put on the mailing list for these summaries. The Committee met in Bozeman on September 10th, and will meet in Helena on October 23rd.

FWP has also been active in encouraging the careful consideration and implementation of basin closures. A recent DNRC assessment concluded that continued application of current basin closure and salvage policy interpretation in the Smith basin could lead to a future reduction of almost ½ of the average August streamflow as of the early 1970s. Because FWP's instream rights in the Smith date to 1970, this is of extreme concern. Water users and advocacy groups have pursued these issues as well, most recently in court. The document discussing this situation is referenced below:

19) DNRC, 2003. *Smith River Basin Permit and Change Applications Supplemental Environmental Assessment*. 78 pp. Also associated *Addendum*. See especially Figure 3.2-4, p. 42.

Development of Water Resources

See other references noted above. A query of DNRC's water rights database, based on priority date, might generate information regarding what developments occurred when in Montana. Also of interest may be DNRC's rulemaking process related to water permitting. There are few rules, and many issues, so this effort will likely be broad and hopefully open and productive.

Beneficial Use of Water Resources

Statutory "beneficial uses" of Montana water are defined in 85-2-102(2), MCA, including uses for the benefit of the appropriator, other persons, or the public. DNRC defines many uses, with those uses each having a corresponding "purpose" code in their database information, which could be requested from DNRC.

It may be worth noting that the recent growth in applications that could be considered "luxury" uses of water from Montana's streams (e.g., a moat around a private castle, a reflecting pool, etc.) may argue for revisiting the element that appropriations can be purely for the personal benefit of the appropriator, even to the significant detriment of the stream. Other states have some public interest element to their definitions of appropriate uses of water. As Montana's land uses continue to change, these issues may intensify. Specific to the "fish and wildlife" beneficial use listed in the statute, FWP has suggested that diversions from surface water for private ponds should only be considered a beneficial use of the state's water if the diversion provides a "net benefit to public fish and wildlife". This may be a topic related to Council implementation of HJR 40 as well.

Construction, operation and maintenance of works for the conservation, development, storage, distribution, and utilization of water in Montana

See preceding information. Also relevant may be information from DNRC's State Water Project Bureau. Even though the trend is to turn over state projects to private operators, these staff are active in assisting these operators and in maintaining projects still under state control. There is also apparently a Water Storage in Montana report that is prepared bi-annually and submitted to the Legislature (pursuant to 85-1-704, MCA), which could prove helpful. FWP is currently in negotiations with DNRC and others regarding renewal of water contracts from Painted Rocks reservoir in the Bitterroot drainage, which reportedly requires major upgrades ($5-10 million) in order to continue to provide the public and private benefits to a wide variety of entities in that drainage.

Mitigation of Impacts of Drought and Floods

See information above, especially related to drought (under "Water Conservation"). Regarding floods, the work of the Upper Yellowstone Task Force may be of interest. They were created in the aftermath of

the 1996/97 high flow years in the upper Yellowstone, and have been meeting regularly to discuss issues, competing values, and uses that affect the river. They have recently compiled their recommendations from their deliberations. Information on the Task Force, and electronic access to their recommendations, is at http://upperyellowstonerivertaskforce.org/.

The State Drought Plan emphasizes reducing Montana's vulnerability to drought, rather than solely responding to impacts once they have occurred. I am not aware of a similar official policy for floods, but the Task Force and state Floodplain Administrator (Karl Christians) might be good resources on this topic. Overbank flow is a natural and frequent phenomenon, and planning should be conducted to limit the potential for damage from these flows, rather than trying to prevent them from happening. Further, the use of diking to prevent rivers from gaining access to their flood plains should be carefully evaluated. These structures increase erosive forces within the channel, interfere with natural river processes, and usually have negative impacts on upstream and downstream properties.

Efficiency of water distribution systems

Again, I know of no specific policy-related studies on water conveyance efficiencies. FWP has been involved in several water system efficiency enhancement projects through funding via our Future Fisheries Improvement (FFI) grant program. These have included canal linings, replacement of open ditches with pipelines, irrigation diversion upgrades (all also benefiting the fishery resource), and other delivery efficiency improvements that conserve water for instream use. Descriptions of such projects are included in FWP's annual FFI report, the latest being:

20) FWP, 2002. *Future Fisheries Improvement Program – Report to 2003 Legislature and Fish, Wildlife and Parks Commission*. 39 pp. plus Appendices.

FWP is becoming increasingly aware of the need to consider the potential impacts of these projects on return flow to nearby streams, and we are working these considerations into our proposals and reviews of these types of projects.

Measures that promote the efficient use of water

See references above, especially related to drought planning and response. Also, my observation is that the most efficient use of diverted water is often the result of water scarcity or expense. A good opportunity to promote efficiency is through an accurate adjudication (where overclaims are corrected and abandoned rights deleted) and ensuring adherence to the practices that new permit applicants are limited to the "minimum amount necessary" for their proposed use. Diligence is required in both areas. The Adjudication Advisory Council is working on recommendations that would help the Water Court more effectively resolve "excessive use" issues, which would help. Hopefully, DNRC rulemaking will provide appropriate guidance and policy in this regard as well. FWP has helped DNRC define when applications (typically for ponds) are proposing excessive diversion rates, but some standardization would be helpful.

Return flow impacts

As noted above, FWP is becoming increasingly aware of the value of return flows and how to incorporate this element into our project proposals and management. The DNRC's Smith Basin Supplemental EA was a shocking quantification of the effects of multiple near-river wells and water "salvage" (e.g. converting flood irrigation to sprinkler irrigation) projects on streamflows in the Smith mainstem (see preceding reference #19). This issue is of extreme concern and FWP is trying to pursue solutions in any arena possible. Under current law, people can apply to other acres the portion of their water right

diversion rate they save via a conversion project. Even if acres are not expanded, the more efficient irrigation, application method, and more even coverage generates much more "consumption" of water than under the former practice. This is a high benefit to the producer, but the equation does not account for the return flows that occurred in the past that were then used by the fisheries and downstream diverters. The Adjudication Advisory Council has discussed the idea of considering historic "consumption" in the adjudication process, in part due to these concerns of downstream irrigators. DNRC staff in the Lewistown office are excellent resources for this issue, as is the member of the Council representing irrigators in the Mussleshell (Bob Goffena).

There are several studies of these effects that have been conducted by DNRC staff, including studies of return flow in Flint Creek, and the North Fork Blackfoot. I recall there also being some conclusions drawn regarding return flow effects in the Big Hole, but that may not have been published.

This issue really is about subsurface/surface water interaction, with return flow also being characterized as "tributary groundwater". Concerns have been raised that DNRC defines too narrowly what constitutes water that is not "directly or immediately connected to surface water" (from the Upper Missouri River basin closure), thereby allowing new depletions in a closed basin that adversely affect senior water right holders.

Also related to this issue are initial efforts by the NRCS to address the potential incompatibility of sprinkler conversions in intermountain alluvial aquifers (with high and quick return flow – i.e. high levels of tributary groundwater). They have mapped these areas, and used the Farm Bill financial assistance program elements to try to reduce, and potentially reverse, impacts to return flow in these areas. (Contact: Carrie Mosley, NRCS state office, Bozeman) FWP and NRCS have both proposed a working group convene this fall, with DNRC staff, to further discuss these issues and how they can be addressed, given the high producer interest in such conversions and related concerns of adverse hydrological effects. Some potential solutions may need to have legislative consideration.

Water banking

This term has come to have several different meanings. One is the "banking" of water physically in an aquifer for later withdrawal – i.e., hydrologic banking. The other is banking diversionary water rights for use as instream flow (either temporarily or in perpetuity). The NRCS approach to encouraging high sprinkler application in the early season has elements of hydrologic banking. The only document related to this however, would likely be the Farm Bill forms and instructions related to this potential financial assistance practice (Contact: Carrie Mosley), and the related map of high-mountain aquifers where this practice would be promoted. Montana irrigators likely informally practice hydrologic "banking" when they apply water early in the season, assuming that water benefits the stream or groundwater availability later on. Other states have pursued hydrologic banking to a greater extent (e.g., Idaho and others). Often hydrologic banking is the result of well overdrafts requiring some type of physical replacement of water.

Banking of water rights has been proceeding in a somewhat informal manner associated with the Blackfoot Low-Flow response plan, coordinated by the Blackfoot Challenge and other interested parties. In this situation, FWP excuses junior water users in the Blackfoot from a call for our senior water if enough water senior to FWP is conserved to make up for what the juniors need to continue to use. Basically, the senior water users donate a portion of their ability divert to the "bank", and the juniors "borrow" from it. The FWP right is used as incentive for juniors to participate in the Plan, as those that don't get the traditional "call" for water. (Contact Tina Bernd-Cohen, Blackfoot Challenge, for more information.). I am not aware of other water banking in Montana, unless instream flow leasing would qualify, but the State of Washington has a Water Rights Trust that is intended to operate as a "bank".

More information on this program is available at http://www.ecy.wa.gov/programs/wr/instream-flows/wacqstra.html. A summary of the program is as follows:

21) Washington Departments of Ecology and Fish and Wildlife, 2003. *Washington Water Acquisition Program – Finding Water to Restore Streams*. 136 pp.

Off-stream and on-stream storage

See references noted above. FWP notes that HJR 4 only refers to off-stream storage. It is our understanding that new storage of either type is rarely considered cost-effective in Montana. Given the highly migratory nature of many of Montana's fish species, the emphasis on conservation of these species, the cost to ensure onstream dams are passable for fish, it would seem difficult to justify new onstream storage projects. In addition, there is significant financial need to rehabilitate at least one current state reservoir (to the estimated cost of $5-10 million), and likely others. Given that an element of the state's overall water policy vision is the "conservation of fish and wildlife" (85-1-101(5), MCA), FWP believes that water quantity issues can be addressed more cost-effectively through means other than the construction of additional onstream storage.

Improving the supply and distribution of water in Montana

Given that Montana is a headwaters state, the overall supply of water in Montana is likely relatively fixed (though dependent on climatic conditions), except for the few locations where water flows in from another state or Canada. The distribution is also fairly strongly influenced by prior appropriation water law and local convention. Having said that, however, there are many ways to be creative in working within current water law doctrine to try to get water where it's needed. From our perspective, that's usually into streams during low-flow periods. In addition, FWP does not consider high or winter flows to be "extra" or "unused" water – as these conditions are critical for channel formation and flushing, and triggering spawning movements for some of our most valued fish species. So, FWP's perspective on how to "improve" supply and distribution of water would be to maintain natural flow regimes, and enhance flows in low-flow periods. There are many documents that could be cited on the importance of both these elements; please contact me if you would like specific references.

There is some evidence that the supply of surface water may even be declining due to global climate changes. See reference below for evidence of this occurring on a stream along the Rocky Mountain Front.

22) Land and Water Consulting. 2003. *Blackleaf Creek Assessment: Report to the Teton County Conservation District*. 17pp.

FWP has used its water leasing authority to rewater severely dewatered tributaries in priority fisheries areas. These leases have often been combined with water efficiency projects thereby creating win-win redistributions of water (in compliance with water law) in specific streams. We continue to look for and pursue such projects. See reference to FWP's most recent leasing report (#5, above).

Forest fuel levels and the impact on water release to a watershed

There has been discussion of timber harvest manipulation to increase water yields for many years. Recent drought impacts in Colorado brought this topic to the forefront for a short period. An article described the brief 2002 public controversy over it.

24) High Country News, December 23, 2002. *'Logging for water' creates a buzz*'. Online at http://www.hcn.org/servlets/hcn.Article?article_id=13615.

Another 2002 article quoted a Boulder, Colorado, hydrologist as saying, "The link between logging for fire mitigation and logging for water is a false one." It also states that the researcher whose work underpins much of the support for logging for water concludes that flows increased the most during wet years, and almost not at all during droughts. See

25) Denver Post, November 10, 2002. *A clear-cut drought solution? Logging urged to boost runoff, but eco-groups object*. Available online at http://www.denverpost.com/Stories/0,1413,36%257E25%257E,00.html (type author (Stein) and search by 11/10/02; $1.95 cost)

Finally, FWP staff have heard anecdotal statements from at least one hydrologist indicating that removal of cover as a result of logging increases peaks in the hydrograph but decreases low flows.

Coordination across all water users

I'm not sure the context of this topic, whether to enhance general coordination on water issues in Montana, whether it refers to coordination of water use and timing in a basin to enhance overall management, or whether it applies to the EQC wishing to coordinate this study broadly with water users. Not knowing more about the intent of this topic, my only suggestion is that coordination among water users can be an excellent water conservation tool, and there are several tools available to maintain and enhance that. First the state's commitment to stream gauging is an excellent way to provide for information around which water users can coordinate; and water users (both diversionary and instream), water supply forecasters, and others rely heavily on these gauges for their water management.

Watershed groups, and the associated Montana Watershed Coordination Council (MWCC), are another manner where coordination among water users is occurring and has potential to be improved. There are upwards of 60 watershed groups active in Montana, some more focused on water management than others. DNRC staff assisting those groups trying to enhance timing and/or amount of streamflow is invaluable as well. The MWCC also supports a website (http://water.montana.edu/watersheds/default.asp), a large listserv (200+ members in Montana and beyond), and is planning the second Montanan Watershed Symposium to be held in December 2003. The listserv provides a broad opportunity to query a variety of Montanans on water use, water policy, and other natural resource issues. The Symposium might be of interest to EQC members and staff as well; the keynote address will include a focus on the future of Water in the West, and water quantity issues is one of four major themes of the Symposium. Information on the Symposium will be posted on the MWCC website (see above) as it becomes available.

Encouraging participation by the private sector, tribal governments and the federal government in improving the supply and distribution of water in Montana

See preceding response. Also, the EQC has an excellent tradition of requesting representatives of a broad cross-section of interests provide their perspectives on specific questions of interest to the Council. If you would like suggestions on some of the recent "shakers and movers" in water issues, we would be pleased to help with this inquiry.

Sincerely,

Kathleen Williams
Water Resources Program Manager