2004 Clark Fork Basin Water Management Plan
A STATUS REPORT OF
Chapter 11
Recommendations and Conclusions
January 2014

SUMMARY

In 2004 the Clark Fork River Basin Task Force prepared a water management plan for the Clark Fork River Basin. Plan recommendations were summarized in Chapter 11.[1] In December 2013 the Task Force convened a working group to review the 2004 plan and determine the status and recent developments for each recommendation. The working group's findings are summarized by chapter, and can be found in blue text below each original recommendation.

A note explaining whether the DNRC formally adopted each recommendation or not is also included with each recommendation's status. Please note that DNRC designated certain recommendations as *priority adopted*, signifying that these recommendations were considered to be "cornerstones to the plan" or "likely to be presented to the Legislature soon." For a full explanation of the DNRC's rationale, please see Appendix A: *Clark Fork Basin Water Management Plan: A State Water Plan Section*.

2004 RECOMMENDATIONS AND 2014 STATUS UPDATE

Chapter 6 - Hydropower Water Rights and Basin Water Use

The State of Montana should open discussions with USBR to determine the availability and cost of temporary and long-term contracting options and to determine a quantity of firm storage available from Hungry Horse Reservoir for Montana uses other than hydropower.

- **DNRC Response**: adopted priority as part of the State Water Plan
- **Status** –The 2007 legislature, as suggested by the Task Force, asked the DNRC to seek a contract for 100,000 acre-feet of stored water from Hungry Horse Reservoir from the Bureau of Reclamation (BOR). The Task Force requested that the 2007 Legislature authorize the state to contract up to 1,000,000 acre-feet of water stored in federal reservoirs in Montana (and the Legislature did modify state statutes). The 2007 legislature, at the request of the Task Force, appropriated $260,000 to pay for the first step in the process to obtain water stored in Hungry Horse, a reallocation of costs of the Hungry Horse project to include domestic, commercial, municipal, and industrial uses. A draft cost allocation study was completed in May of 2010 (finalization is pending completion of an Environmental Impact Statement (EIS)). Completion of the EIS is on

[1] The full plan, including Chapter 11, is available at http://dnrc.mt.gov/wrd/water_mgmt/clarkforkbasin_taskforce/water_mgmt_plan.asp (last visited January 28, 2014).

hold pending Confederated Salish and Kootenai Tribes (CKST) Compact negotiations. The estimated cost of the EIS was $1 –$2 million. Subsequent to completion of the draft cost reallocation study, the state decided (in fall 2010 – spring 2011) to include the Hungry Horse water in the CSKT Compact on the premise that the cost of an EIS would not be necessary. Within the proposed compact is 11,000 acre-feet for lease to mitigate future domestic, commercial, and municipal development in Western Montana. The State expects a total of 83,000 acre-feet to be available for consumption on a firm basis as a result of the CSKT supplemental water request. The Task Force remains actively interested in this issue.

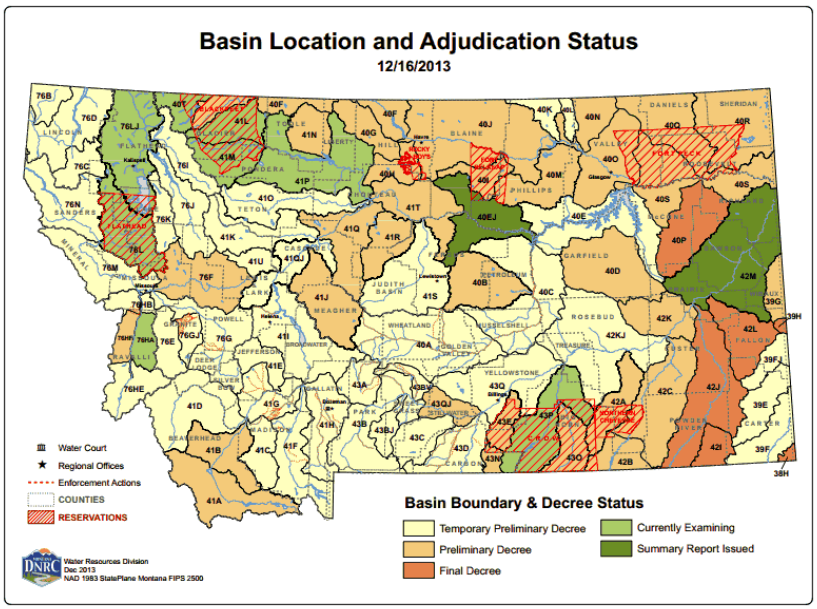
Chapter 7 - Options to Protect the Security of Water Rights

7-1 The State of Montana should complete the state-wide adjudication of water rights by:

- Establishing a reasonable goal, such as 5 years, for achieving enforceable water rights decrees in the Clark Fork basin.
- Providing additional resources for the adjudication process by:
  - Providing additional funding for the Water Court and DNRC; and
  - Re-prioritizing DNRC's existing resources to focus on the adjudication.

- **DNRC Response**: adopted priority as part of the State Water Plan
- **Status** – The 2005 legislature passed HB 22 imposing a fee and benchmarks aimed at completing preliminary or temporary preliminary decrees by June 30, 2020. The fee was repealed in 2007 and replaced by the transfer of $25 million from the general fund to the water adjudication account. Based upon projections by the Legislative Fiscal Division, these funds will be exhausted by 2016. The benchmarks established by HB 22 still exist and are found at 85-2-271, MCA. The benchmarks require all unexamined water right claims, approximately 57,000 claims, to be examined by DNRC by June 30, 2015. As of November 30, 2013, 56,321 claims have been examined, with 679 claims remaining. Once this examination is complete, DNRC plans to conduct a limited review of up to 90,000 claims that were included in decrees prior to March 28, 1997. As of December 2013, temporary preliminary or preliminary decrees have been completed for all of the Clark Fork and Kootenai basins with the exceptions of 76LJ – Flathead River, to and including Flathead Lake, 76L – Flathead River, below Flathead Lake, and 76HA – Bitterroot River, Main Stem.

Figure 1: Adjudication Status (as of December, 2013)



7-2 All reasonable efforts should be made to ensure that the adjudication results in durable and accurate water rights. To improve the accuracy of the water rights adjudication the Montana Water Court should formally announce that it will examine claims with DNRC issue remarks to which no objections have been filed and resolve those it finds to be inaccurate.

- **DNRC Response**: adopted priority as part of the State Water Plan
- **Status –**The 2005 legislature passed HB 782 requiring that issue remarks must be resolved before issuance of a final decree (85-2-233(11), MCA). An issue remark is a statement added by the DNRC to a water right abstract in a Water Court decree that identifies potential factual or legal issues associated with the claim. If an unresolved issue remark involves non-perfection or abandonment, the Water Court must join the State of Montana through the attorney general as a necessary party to the case.

7-3 The State of Montana and the Confederated Salish and Kootenai Tribes should move as rapidly as possible to resolve the status through negotiation or litigation.

- **DNRC Response**: adopted priority as part of the State Water Plan
- **Status –** The Montana Reserved Rights Compact Commission negotiated a compact (CSKT Compact) with the Confederated Salish and Kootenai Tribes in February 2013 that required ratification by the Montana Legislature. The 2013 legislature considered and debated a bill to ratify the CSKT Compact and declined to pass it. A bill to extend the Reserved Rights Compact Commission until July 1, 2015 and directing the Water Policy Interim Committee to study the Compact passed the legislature but was vetoed by the

Governor.[2] The Reserved Rights Compact Commission submitted a report to the Water Policy Interim Committee for discussion at its January 6 and 7, 2014 meeting.[3]

7-4 The Montana Legislature and DNRC should work together to ensure that DNRC has adequate funding and staffing to carry out its water related responsibilities in a prompt and efficient manner.

- **DNRC Response:** not adopted as part of the State Water Plan
- **Status –** The Water Court estimates that 71.4% of the claims are adjudicated. If this assumption is correct, the Water Court estimates the adjudication will be completed by 2028. This estimate assumes adequate funding for both the Water Court and DNRC. The estimate may be impacted by the passage in 2013 of SB 355, which allows the filing of stock and domestic water right claims that were originally exempt from the adjudication, therefore potentially increasing claims needing to be adjudicated and increasing the DNRC's workload. As outlined in 7-1, the current water adjudication funds may be exhausted by 2016 so additional funding will be necessary to complete the adjudication by 2028.

7-5 The State of Montana should act to reduce the burden on existing water rights holders to protect their rights through:

- Direction from the Montana Legislature in an appropriation to DNRC to investigate and enforce water rights.

- **DNRC Response**: not adopted as part of the State Water Plan
- **Status –** None of these bullets are explicitly accomplished. To date, the Montana Legislature has rejected efforts to provide DNRC with additional funds or authority to investigate and enforce water rights. For example, in 2013, the Legislature rejected language in HB 106 that granted DNRC authority to administratively pursue enforcement actions without having to file an action in district court. Despite the lack of additional funding, in the past three years DNRC assigned one attorney to work primarily on this task, and developed a formal enforcement policy to guide the agency in responding to complaints of illegal water use. Currently, DNRC's enforcement is complaint-driven. If DNRC's effort to informally resolve a complaint is unsuccessful, it has the option of seeking redress in district court.

- Direction from the Montana Legislature to DNRC to provide mediators to resolve water right disputes.

[2] Senate Bill 265 is available at http://leg.mt.gov/bills/2013/billpdf/SB0265.pdf (last visited January 28, 2014); Governor Bullock's veto of Senate Bill 265 is available at http://leg.mt.gov/bills/2013/AmdHtmS/SB0265GovVeto.pdf (last visited January 28, 2014).
[3] The Report on the Proposed Water Rights Compact is available at http://www.dnrc.mt.gov/rwrcc/Compacts/CSKT/WaterCompactReportLR.pdf (last visited January 28, 2014).

- **Status –** The legislature has not provided any direction to DNRC to provide mediators to resolve water right disputes.

  - Administration by DNRC of a program that trains, selects, and evaluates water commissioners.

- **Status –** While the DNRC provides an annual training course to water commissioners, no effort exists to create a selection process for commissioners or to evaluate commissioner performance.

  - Sharing the cost of the water commissioners by all rights holders according to their share of the total basin water rights rather than just those receiving water.

- **Status –** No legislative action redistributed the cost of water commissioners. See 85-5-101(4) and 85-5-111, MCA.
- While not directly responsive to the recommendations in this section, in 2009, the legislature passed HB 40, requiring the DNRC to make a preliminary recommendation of approval or denial on any application for a new permit or for a change of appropriation. This preliminary decision provides water users with some indication as to the possible problems in an application. See 85-2-307, MCA.

7-6 The Montana Legislature could explicitly authorize a judge to award attorney fees to a private party bringing a successful action for an illegal use of water when diversions are made without a water use permit or existing water right.

- **DNRC Response**: adopted priority as part of the State Water Plan
- **Status –** Authorization was enacted in 2005 in HB 609. Section 85-2-125, MCA provides that a party obtaining injunctive relief against the use of water by a person who does not have a water right must be awarded reasonable costs and attorney fees. It is unclear whether this provision is utilized and proven effective.

7-7 DNRC could rules which it is currently developing rules to establish criteria for objecting to water rights permit and change applications that increase the burden on applicants while reducing the burden on existing rights holders in an expeditious manner.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** DNRC partially addressed this with amendments to the objection rule adopted in 2008 which reduces the signature requirements, removed requirements that corporations and other legal entities appear through an attorney, and allows the filing of objections via fax as long as the original is delivered to DNRC. See 36.12.117 ARM.

Chapter 8 - Options for the Orderly Development of Water

8-1 While the adjudication does not determine either the legal or physical availability of water for future appropriations, without completing it, full knowledge of water rights

cannot exist, and additional water development may be at risk to future adjudicatory rulings by the Water Court, particularly in the Flathead and Blackfoot sub-basins in which preliminary decrees have not been issued.

- **DNRC Response:** adopted priority as part of the State Water Plan
- **Status –** Since 2004 the Water Court issued a preliminary decree in Basin 76F, the Blackfoot River. No decree is issued for the Flathead River below and including Flathead Lake.

8-2 DNRC should change the water rights permitting requirements and process by requiring an evaluation of cumulative impacts before granting surface or groundwater permits.

- **DNRC Response:** not adopted as part of the State Water Plan
- **Status –** Not addressed.

8-3 The regulation and management of surface and groundwater should conform to the legal standard that water is a unitary resource by:

- Amending the 35 gpm/10 acre-feet exemption to require a permit for groundwater wells that are developed as part of a common project, such as a subdivision.

- **DNRC Response:** not adopted as part of the State Water Plan
- **Status –** This issue is the subject of at least two studies by the Water Policy Interim Committee and a number of unsuccessful legislative efforts. In the 2013 legislature, Governor Bullock vetoed SB 19, which would codify the existing DNRC rule allowing multiple wells as part of a common project. The 2013 legislature passed SB 346, authorizing the establishment of stream depletion zones limiting the volume of exempt wells in closed basins. DNRC proposed administrative rules to address the exempt well issue, but the outcome of the proposal is currently unknown.

- Development of a legally defensible definition of a hydrologic connection between surface and groundwater.

- **DNRC Response:** not adopted as part of the State Water Plan
- **Status –** Prior to the 2004 Clark Fork Basin Watershed Management Plan, the working definition for "hydraulically connected" was as stated in the Chippewa Cree Tribe Compact (85-20-601 Art. II (25) & (26), MCA) and repeated in the Fort Belknap-Montana Compact (85-20-1001 Art. II(21) & (22), MCA). The statutes use the term "hydrologically" rather than "hydraulically." The term "hydraulically connected" is used in statute (85-2-306(3)(ii), MCA), but it is not defined. With Passage of HB 831, the ARMs were modified as shown in 36.12.101(30). The method for determining hydraulic connection described in 36.12.120(14)(e), MCA was removed from the rules in 2007. No definition for "hydraulic connection" exists in statute though the term continues to be used and definitions exist within the ARMs. However, the controlling decision appears to be the Montana Supreme Court decision in TU v. DNRC wherein both direct infiltration and pre-stream capture are evaluated in closed basins by DNRC when

evaluating new appropriations in closed basins. The legislature passed HB 831 in 2007 in response to TU v. DNRC. See 85-2-360, MCA.

- Requiring applicants for a groundwater permit to provide information demonstrating the nature of the surface-groundwater connection.

- **DNRC Response:** not adopted as part of the State Water Plan
- **Status –** HB 831, passed in 2007, requires applicants to do this. Within statute the phrase "aquifers and surface waters that may be affected by the proposed appropriation right" is used. This implies evaluation of hydraulic connectivity.

8-4 The State of Montana should issue water leases as well as new water right permits to allow new water developments.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** DNRC noted that it would need to acquire rights or agreements for contract water from Hungry Horse Reservoir. DNRC has not pursued any other leasing opportunities. See the recommendation above for Chapter 6 for a full explanation of the current status of the Hungry Horse effort.

8-5 The State of Montana should examine and develop appropriate rules for authorization and management of groundwater augmentation to enhance basin water supplies or recharge groundwater resources as potential management.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** In 2007, the Legislature passed HB 831. HB 831 addressed both the issue of mitigation for groundwater development, and the use of aquifer storage and recovery to enhance basin water supplies. HB 831 defined beneficial use to include water used in an aquifer storage and recovery and provided that the DNRC could authorize aquifer storage and recovery projects in closed basins. To date, the DNRC has not received any applications for aquifer storage and recovery. See 85-2-102(4)(f) and 85-2-368, MCA.

8-6 The Legislative Water Policy Committee should be re-established to increase the focus on water issues and water education for legislators.

- **DNRC Response:** adopted priority as part of the State Water Plan
- **Status –** Committee made permanent in 2009 by passage of SB22. See 5-5-202, MCA.

8-7 The Montana Legislature should appoint interim committees to consider:

- The ongoing water rights adjudication; and
- Establishing specialized water courts to oversee water administration instead of relying district courts.

- **DNRC Response:** adopted 8-7a as priority and adopted 8-7b as part of the State Water Plan

- **Status –** The Water Policy Interim Committee (WPIC) is now a permanent interim committee that considers water issues. The 2013 legislature rejected SB 330, which would have required judicial reviews of DNRC decisions to occur in the Water Court rather than district court.

8-8 Single- and multi-purpose organizations such as conservancy or irrigation districts that can manage or participate in the management of water quantity could be created when they would be effective at the scale at which the management would occur.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** The 2009 legislature enacted SB 8, authorizing "Regional resource authorities" that "may be created to provide for collaboration and coordination in the conservation of water resources or in the management of water resources for agricultural and recreational uses." See 7-10-101, MCA. It appears there are no regional resource authorities (RRAs) in the Clark Fork watershed, and as recently as 2011 no RRAs existed in all of Montana.[4] In addition, while there is additional authority to create conservancy districts for the conservation and management of water, no conservancy districts have been created. See 85-9-101 et seq., MCA.

8-9 Individual and water user organizations could provide for water use by existing and future users by:

- Examining options for increasing water use through use of high spring flows and snow melt (rain on snow events);
- Increasing water storage;
- Actively managing return flows;
- Continuing to use water leasing and water marketing as management tools; and
- Protecting and rehabilitating wetlands through active floodplain and wetland management, bank storage, etc.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** The recommended actions in item 8-9 are so dispersed (i.e. "individuals and water user organizations") that any attempt to assess progress on these recommendations requires an extensive survey of various organizations and entities. Such an assessment exceeds the scope of this update. Nonetheless, it may be an appropriate task for the Task Force to pursue. The working group is anecdotally aware of activity on some of these bullets. For example, both Trout Unlimited and the Clark Fork Coalition engage in water rights transactions to lease water rights to enhance instream flows. There are also a number of site-specific activities within the Clark Fork basin to improve and protect both wetlands and riparian areas.

8-10 Additional research is needed to:

[4] *See* Montana Watercourse, 2011. Guide to Montana Water Management: Who Does What with Water Resources, p 14. Available at http://www.mtwatercourse.org/media/downloads/Montana%20Watercourse%20Water%20Resources%20Bro_WEB.pdf (last visited January 28, 2014).

- Evaluate the availability of the basin's groundwater, its recharge rate, and groundwater-surface water interrelationships.
- Define more accurately sub-basin hydrology and water, biological, and economic relationships.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** Several research projects that address recommendation 8-10 have been funded and carried out by various entities. Known research is summarized below, organized by the entity sponsoring the research.

Montana Legislature:
The legislature established the Ground Water Assessment Program in 1991 after considering the recommendations of a Ground Water Task Force organized by the Environmental Quality Council in 1989. Statute specifically requires a Ground Water Monitoring program to produce and maintain long-term water-level and water quality records and a Ground Water Characterization Program to systematically assess and document the hydrogeology and quality of the state's major aquifers. As part of a mandate to make groundwater information widely available, the assessment program includes the Ground Water Information Center database.

U.S. Geological Survey:
Since 1978 the USGS has been working on aquifer-system analysis as part of the Rocky Mountains Intermontane Regional Aquifer-System Analysis. The congressionally mandated Regional Aquifer-System Analysis (RASA) Program, as mandated by Congress, initially focused on 28 regional aquifer systems, including the Northern Rocky Mountains Intermontane Basin. The project aims to determine the aquifer boundaries, the quantity and quality of the water within the aquifers, and the recharge characteristics of the aquifer systems within the United States.[5]

The project titled "Monitoring of Water Quality, Bed Sediment, and Biota Quality in the Clark Fork Basin, Butte to Missoula, Montana" began in 1985 to establish baseline metal concentrations and loads from Galen to Missoula. The monitoring program was expanded in 1992 to provide consistent data at important locations during remedial efforts. The

[5] Products of the USGS Regional Aquifer-System Analysis Program in the Northern Rocky Mountains Intermontane Basins include: Briar, D.W., Lawlor, S. M., Stone, M. A., Parliman, D. J.,Schaefer, J. L., Kendy, Eloise, 1996, Ground-water levels in intermontane basins of the northern Rocky Mountains, Montana and Idaho: USGS Hydrologic Atlas: 738-B; Clark, D.W., and Kendy, E., 1992, Plan of study for the regional aqifer-system analysis of the Northern Rocky Mountains Intermontane Basins, Montana and Idaho, U.S. Geological Survye Water-Resources investigations Report 92-4116, 19 p; Clark, D.W.; Dutton, D.M., 1996, Quality of ground water and surface water in intermontane basins of the northern Rocky Mountains, Montana and Idaho: USGS Hydrologic Atlas: 738-C; Dutton, D.M., Lawlor, Sean M., Briar, D. W., Tresch, R. E., 1995, Hydrogeologic data for the northern Rocky Mountains intermontane basins, Montana: USGS Open-File Report: 95-143; Kendy, Eloise, Tresch, R. E., 1996, Geographic, geologic, and hydrologic summaries of intermontane basins of the northern Rocky Mountains, Montana: USGS Water-Resources Investigations Report: 96-4025; and Tuck, L. K.,Briar, D.W.,Clark, D.W., 1996, Geologic history and hydrogeologic units of intermontane basins of the northern Rocky Mountains, Montana and Idaho: USGS Hydrologic Atlas: 738-A.

primary objective of the program is to characterize aquatic resources in the Clark Fork basin of western Montana, with emphasis on trace elements associated with historic mining and smelting activities to evaluate the effectiveness of remedial cleanup of contaminant sources. In the current Lower Clark Fork monitoring network, 10 tributary sites are monitored as part of the Anaconda program and 11 sampling sites are monitored on the Clark Fork and Blackfoot River as part of the Lower Clark Fork Program. See Appendix B: *USGS Clark Fork Monitoring Reference List* for the lengthy list of products associated with this project.

The Lower Clark Fork Tributaries project was completed in order to determine the climatic, geological, and environmental variables that influence occurrence and timing of intermittency of first-order streams in the study area, as well as to quantify the timing of streamflow intermittency based on the predominant variables controlling intermittency. The final project of this work was a map showing a prediction (based on an extensive multivariate analysis) of all the intermittent and perennial tributaries in the lower Clark Fork basin.

The South Fork Flathead General Circulation Model was developed to simulate future climate through 2009 and project a wide range of possible scenarios. To determine the sensitivity and potential effect of long-term climate change on the freshwater resources of the United States, the U.S. Geological Survey Global Change study, "An integrated watershed scale response to global change in selected basins across the United States," was started in 2008. The long-term goal of this national study is to provide the foundation for hydrologically based climate change studies across the nation.

The South Fork Flathead was one of fourteen basins for which the Precipitation Runoff Modeling System has been calibrated and evaluated. Precipitation Runoff Modeling System is a deterministic, distributed parameter watershed model developed to evaluate the effects of various combinations of precipitation, temperature, and land use on streamflow and general basin hydrology. Output from five General Circulation Model simulations and four emission scenarios were used to develop an ensemble of climate-change scenarios for each basin. These ensembles were simulated with the corresponding Precipitation Runoff Modeling System model.[6]

Montana Bureau of Mines and Geology (MBMG):
The MBMG, under the Ground-Water Characterization Program, summarizes available information, present maps and cross-sections of aquifers, and maps and hydrographs of groundwater levels and water quality. Groundwater level and water quality data are housed in the Groundwater Information Center (GWIC) database developed and managed

[6] Products of the USGS South Fork Flathead General Circulation Model include: Chase, K.J., Hay, L.E., and Markstrom, S.L., 2012, Watershed scale response to climate change—South Fork Flathead River Basin, Montana: U.S. Geological Survey Fact Sheet 2011–3124, 6 p; Chase, K.J., 2011, Development of a precipitation-runoff model to simulate unregulated streamflow in the South Fork Flathead River Basin, Montana: U.S. Geological Survey Scientific Investigations Report 2011–5095, 39

by MBMG or the National Water Information System housed with USGS.[7] Table 1 lists the main data and interpretive products pertinent to the Clark Fork basin and their availability by sub-basin. Summaries by watershed and references for these products follow.

Table 1: GWIC data and products applicable to the Clark Fork Basin

	Flathead Lake	Lolo-Bitterroot	Upper Clark Fork	Lower Clark Fork	Kootenai
Data Compilations	x	x	x		
Geologic Maps	x	x	x		
Geologic Cross-sections	x	x	x		
Potentiometric Maps	x	x	x		
Hydrographs	x	x	x		
Water Quality Maps	x	x	x		
Resource Development	x	x	x		

In addition, the MBMG is currently work on the "Florence Area Project," which will determine the potential effect of residential groundwater withdrawals from development east of Florence on groundwater levels and stream depletion in the Bitterroot River. Potential groundwater-quality degradation resulting from septic waste drainage will also be investigated. The study focuses on the Threemile and Eightmile Creek drainages and will address changes in the water budget through time, historic and current groundwater-level trends and factors that are controlling these trends, current groundwater usage and effects on stream depletion, effects of future increased well usage on long-term groundwater drawdowns and stream depletion, and groundwater and surface-water quality and effects from residential development.

National Oceanic and Atmospheric Administration:
NOAA has been constantly upgrading their stream flow forecasting (The Advanced Hydrologic Prediction System) adding smaller tributaries(i.e., Stillwater River in the Upper Flathead) to their routine web accessible information (i.e., Stillwater and Whitefish River gaging station forecasts became web accessible in 2004 and 2005). This system is a combination of real-time and longer-term forecasting. The modeling takes into account current and forecast conditions in the watershed above the gaging station.

Natural Resource Damage Program (NRDP):
There are two studies on the Little Blackfoot River that address the relationship between irrigation return flow and surface water flow. The first, "Flow Study on the Lower Little Blackfoot River," was completed in 2008 at the behest of the Pat Barnes Chapter of Trout

[7] More information about the Groundwater Information Center is available at http://mbmggwic.mtech.edu/ (last visited January 28, 2014).

Unlimited. The project was funded by the NRDP. It examined the relationship between irrigation return flows, late season aquifer depletion, and late season aquifer depletion.

In 2009, the Montana Water Trust (now Clark Fork Coalition) commissioned and completed the "Little Blackfoot River Groundwater/Surface Water Interaction Study," also funded by NRDP. The purpose of this study was to "characterize the losing and gaining reaches of a 9.4 mile reach of the Little Blackfoot River from Elliston to Avon, Montana, and to assess the impacts of transferring irrigation water rights to instream use."

- Study water availability to identify places of stress and the impacts of sewer system installations on water quality.

- **Status –** There is little known about what research, if any, was completed on this topic in the Clark Fork Basin. The primary finding was a report, Septic Systems Impact on Surface Waters, completed in 2005 by the Tri-State Water Quality Council.[8] The report discusses statistics and impacts to water quality from septic systems in the Clark Fork Basin and Missoula County.
- Related to this topic, the 2013 Montana Legislature funded a position at the State Library to advance a Water Information System. The System is intended to serve as a "one-stop" for links to water information based on geography.[9]

8-11 Ongoing monitoring by of stream flow, groundwater, and snow pack is critical to both research and water management; funding should be provided to state and federal agencies to continue this monitoring.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** While both USGS and Natural Resources Conservation Service (NRCS) have ongoing monitoring programs monitoring streamflow, groundwater (USGS) and snowpack (NRCS), funding of the programs is a challenge. There are about 60 active surface water monitoring sites and four reservoirs identified on the USGS website as maintaining discharge monitoring sites. Some monitoring sites, such as FERC licensed facilities, must be maintained pursuant to licensing requirements. Funding for federal facilities operated by the USBR or the Corps of Engineers seems fairly secure. Funding for sites maintained by USGS, however, is less secure. USGS sites are subject to the vagaries of federal appropriations. Some USGS sites are costs-shared with either state or local agencies. In the past several years, a number of sites on small tributaries e.g. Blacktail Creek at Butte, Race Track Creek, Nevada Creek at the mouth, among others were discontinued. While the reasons for discontinuing some of these sites may be other than fiscal considerations, the Task Force may want to take a closer look at funding issues for monitoring sites.

[8] *See* Tri-State Water Quality Council. 2005. *Septic System Impact on Surface Waters: A Review for the Inland Northwest. Available at* http://watercenter.montana.edu/training/decisions/landuse/docs/septic_system_impacts.pdf *(last visited January 28, 2014).*

[9] *See* Montana State Library, Water Information System, http://geoinfo.montanastatelibrary.org/geography/water/ (last visited January 28, 2014).

Chapter 9 - Options for Conserving Water

9-1 Cities and counties could use their zoning and subdivision review powers to:

- Protect areas in which surface waters recharge groundwater.
- Require water meters in new subdivisions and government-owned water systems.
- Promote conservation through adoption of model conservation ordinances that regulate water use during periods of a water distribution shortfall.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** The recommended actions in item 9-1 are so dispersed that any attempt to assess progress on these recommendations an extensive survey of various organizations and entities. Such an assessment exceeds the scope of this update. Nonetheless, it may be an appropriate task for the Task Force to pursue.

9-2 DNRC can help to promote water conservation by

- Improving its system for handling and managing water data to make the data more accessible to the public.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** Since the adoption of the CFTF 2004 Watershed Management Plan, DNRC vastly improved access to water right information. All pumping test data is submitted to the MBMG, reflecting passage of SB 324 in 2007 as proposed by the Task Force. Form 633 (pumping test data) and the Hydrologic Assessments are currently being submitted to the MBMG. Access is through the GWIC database.

- Requiring measurement of water use for new water permits and change authorizations.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** Current policy within DNRC requires measurement of water use for new permits and change authorizations at least through finalization of the notice-of-completion.

- Reaching agreement with DEQ to coordinate information required from groundwater pump tests.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** In 2007, legislation passed requiring the results of any aquifer testing required by a state agency to be forwarded onto the MBMG for inclusion in the data collected and made available through the GWIC. As result of this statute DNRC, DEQ, and the MBMG have taken steps to standardize the data collected from groundwater pump tests since all of the data must be reported to MBMG per statutory requirements.

9-3 Pursuant to the mandate of its organic act, the USFS should optimize favorable flow conditions in its management. It should do so.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** In 2011 the USFS published a "Watershed Condition Framework," which describes a methodology for assessing and tracking the condition of priority watersheds on national forests. Indicators used to assess watershed condition include water quantity (including "flow characteristics").[10] The Watershed Condition Framework directly addresses watershed restoration objectives and standards laid out in the 2012 USFS National Forest Management Act (NFMA) planning regulations, which will guide and constrain forest-level land and resource management plans. At the local national forest level in Montana, the apparent focus is on maintaining stream flows (numerous applications for in-stream flow appropriations) for fisheries. The potential for flow management should be addressed in the Clark Fork Basin, as well as ties to the Watershed Condition Framework.

9-4 Individuals and water user organizations can take additional actions to provide for the long-term, sustainable use of water by:

- Measuring water uses and diversions;
- Improving water conveyance efficiency;
- Managing groundwater provided by irrigation;
- Identifying, managing, and protecting areas in which surface waters recharge groundwater; and
- Managing the supply side, e.g. using artificial recharge.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** The recommended actions in item 9-4 are so dispersed that any attempt to assess progress on these recommendations an extensive survey of various organizations and entities. Such an assessment exceeds the scope of this update. Nonetheless, it may be an appropriate task for the Task force to pursue.

9-5 Individuals, organizations, and, where appropriate, government agencies should work together to form sub-basin planning entities which in turn can and should develop and implement drought plans targeted at the objectives of local water users.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** The Blackfoot is identified as having a drought management plan. Also, in 2001, PPL Montana, in consultation with CSKT, submitted a drought management plan for approval by the Secretary of the U.S. Department of Interior (DOI). The FERC license for Kerr Dam requires the maintenance of certain lake levels and minimum instream flows below the dam. The drought management plan attempts to balance these requirements during drought conditions when there is insufficient water to achieve the necessary lake levels while maintaining the minimum instream flow requirements. DOI,

[10] The Watershed Condition Framework is available at: http://www.fs.fed.us/publications/watershed/Watershed_Condition_Framework.pdf (last visited January 28, 2014).

through the Bureau of Indian Affairs, issued a Final EIS on the drought management plan in 2010, and a Record of Decision on the plan may be issued in 2014.

9-6 Government agencies and water user organizations should provide long-term, coordinated education for water users, including information about activities that might affect groundwater recharge and quality and the connection between wasting water and wasting electricity.

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** The Task Force 2009 conference on conjunctive groundwater-surface water management addressed some of these issues.

9-7 Specific research topics that should be pursued include:

- The connection between groundwater infiltration and base stream flow;

- **DNRC Response:** adopted as part of the State Water Plan
- **Status –** A brief review indicates that there is research relating to a number of these bullets. However, time constraints precluded identifying all of the studies conducted. Each time DNRC receives an application for a significant groundwater development within a closed basin the applicant must provide a site specific analysis assessing the connection between groundwater and surface water. In addition, there was considerable research done at the old Milltown dam site by University of Montana researchers looking at the influence of the reservoir behind the dam on wells adjacent to the reservoir. Discussions with DNRC staff indicate that there are likely a substantial number of other projects that look at this issue.

- The connection between the basin vegetation and base flow;

- Status – DNRC staff, while not immediately in possession of any such research, suggested the U.S. Forest Service Rocky Mountain Research Station at UM as a useful source of information on this issue. It has also been suggested that a landscape-level assessment would be needed to quantify this relationship.

- Quantification of water conservation activities; and

- **Status –** Cursory inquiry into the quantification of water conservation activities did not reveal that any such research exists.

- The 7-day average low flow in a 10-year period (sometimes known as 7Q10).

- **Status –** The USGS published 7Q10 values for gaging stations within the Clark Fork and Kootenai Basins with 10 or more years of record.[11]

[11] See McCarthy, P.M. 2005. Statistical Summaries of Streamflow in Montana and Adjacent Areas, Water Years 1900 through 2002, Scientific Investigations Report 2004-5266, USGS, USDI, Reston, Virginia.